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# The Mission of Brigham Young University

The mission of Brigham Young University—founded, supported, and guided by The Church of Jesus Christ of Latter-day Saints—is to assist individuals in their quest for perfection and eternal life. That assistance should provide a period of intensive learning in a stimulating setting where a commitment to excellence is expected and the full realization of human potential is pursued.

All instruction, programs, and services at BYU, including a wide variety of extracurricular experiences, should make their own contribution toward the balanced development of the total person. Such a broadly prepared individual will not only be capable of meeting personal challenge and change but will also bring strength to others in the tasks of home and family life, social relationships, civic duty, and service to mankind.

To succeed in this mission the university must provide an environment enlightened by living prophets and sustained by those moral virtues which characterize the life and teachings of the Son of God. In that environment these four major educational goals should prevail:

- All students at BYU should be taught the truths of the gospel of Jesus Christ. Any education is inadequate which does not emphasize that His is the only name given under heaven whereby mankind can be saved. Certainly all relationships within the BYU community should reflect devout love of God and a loving, genuine concern for the welfare of our neighbor.
- Because the gospel encourages the pursuit of all truth, students at BYU should receive a broad university education. The arts, letters, and sciences provide the core of such an education, which will help students think clearly, communicate effectively, understand important ideas in their own cultural tradition as well as that of others, and establish clear standards of intellectual integrity.
- In addition to a strong general education, students should also receive instruction in the special fields of their choice. The university cannot provide programs in all possible areas of professional or vocational work, but in those it does provide the preparation must be excellent. Students who graduate from BYU should be capable of competing with the best in their fields.
- Scholarly research and creative endeavor among both faculty and students, including those in selected graduate programs of real consequence, are essential and will be encouraged.

In meeting these objectives BYU's faculty, staff, students, and administrators should also be anxious to make their service and scholarship available to The Church of Jesus Christ of Latter-day Saints in furthering its work worldwide. In an era of limited enrollments, BYU can continue to expand its influence both by encouraging programs that are central to the Church's purposes and by making its resources available to the Church when called upon to do so.

We believe the earnest pursuit of this institutional mission can have a strong effect on the course of higher education and will greatly enlarge Brigham Young University's influence in a world we wish to improve.

—Approved by the BYU Board of Trustees
November 4, 1981

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# The Aims of a BYU Education

*Education is the power to think clearly, the power to act well in the world's work, and the power to appreciate life.*

— Brigham Young[1]

The mission of Brigham Young University is "to assist individuals in their quest for perfection and eternal life" ("The Mission Statement of Brigham Young University" [hereafter Mission Statement]). To this end, BYU seeks to develop students of faith, intellect, and character who have the skills and the desire to continue learning and to serve others throughout their lives. These are the common aims of all education at BYU. Both those who teach in the classroom and those who direct activities outside the classroom are responsible for contributing to this complete educational vision.

The statement that follows reaffirms and expands on the earlier and more general Mission Statement adopted in 1981. As the quotations under each heading suggest, this document also draws on the religious and educational teachings of the university's founding prophet, Brigham Young. Quotations within the text come from the scriptures and from the counsel of modern prophets, whose teachings about BYU lay the foundation of the university's mission.

The following four sections discuss the expected outcomes of the BYU experience. A BYU education should be (1) spiritually strengthening, (2) intellectually enlarging, and (3) character building, leading to (4) lifelong learning and service. Because BYU is a large university with a complex curriculum, the intellectual aims are presented here in somewhat greater detail than the other aims. Yet they are deliberately placed within a larger context. The sequence flows from a conscious intent to envelop BYU's intellectual aims within a more complete, even eternal, perspective that begins with spiritual knowledge and ends with knowledge applied to the practical tasks of living and serving.

## Spiritually Strengthening

*Brother Maeser, I want you to remember that you ought not to teach even the alphabet or the multiplication tables without the Spirit of God.*

—Brigham Young[2]

The founding charge of BYU is to teach every subject with the Spirit. It is not intended "that all of the faculty should be categorically teaching religion constantly in their classes, but . . . that every . . . teacher in this institution would keep his subject matter bathed in the light and color of the restored gospel."[3]

This ideal arises from the common purpose of all education at BYU—to build testimonies of the restored gospel of Jesus Christ. A shared desire to "seek learning, even by study and also by faith" (D&C 88:118) knits BYU into a unique educational community. The students, faculty, and staff in this community possess a remarkable diversity of gifts, but they all think of themselves as brothers and sisters seeking together to master the academic disciplines while remaining mastered by the higher claims of discipleship to the Savior.

A spiritually strengthening education warms and enlightens students by the bright fire of their teachers' faith while enlarging their minds with knowledge. It also makes students responsible for developing their own testimonies by strenuous effort. Joseph Smith's words apply equally to faculty and students at BYU: "Thy mind, O man! if thou wilt lead a soul unto salvation, must stretch as high as the utmost heavens, and search into and contemplate the darkest abyss, and the broad expanse of eternity—thou must commune with God."[4] Students need not ignore difficult and important questions. Rather, they should frame their questions in prayerful, faithful ways, leading them to answers that equip them to give "a reason of the hope that is in" them (1 Peter 3:15) and to articulate honestly and thoughtfully their commitments to Christ and to his Church.

## Intellectually Enlarging

*Every accomplishment, every polished grace, every useful attainment in mathematics, music, and in all science and art belong to the Saints, and they should avail themselves as expeditiously as possible of the wealth of knowledge the sciences offer to every diligent and persevering scholar.*

—Brigham Young[5]

The intellectual range of a BYU education is the result of an ambitious commitment to pursue truth. Members of the BYU community rigorously study academic subjects in the light of divine truth. An eternal perspective shapes not only *how* students are taught but *what* they are taught. In preparing for the bachelor's degree, students should enlarge their intellects by developing skills, breadth, and depth: (1) skills in the basic tools of learning, (2) an understanding of the broad areas of human knowledge, and (3) real competence in at least one area of concentration. Further graduate studies build on this foundation.

## Undergraduate

**1. Skills.** BYU undergraduates should acquire the basic tools needed to learn. The essential academic learning skills are the abilities

to think soundly, to communicate effectively, and to reason proficiently in quantitative terms. To these ends, a BYU bachelor's degree should lead to:

- *Sound thinking*—reasoning abilities that prepare students to understand and solve a wide variety of problems, both theoretical and practical. Such skills include the ability to keep a proper perspective when comparing the things that matter most with things of lesser import. They also include the ability to engage successfully in logical reasoning, critical analysis, moral discrimination, creative imagination, and independent thought.
- *Effective communication*—language abilities that enable students to listen, speak, read, and write well; to communicate effectively with a wide range of audiences in one's area of expertise as well as on general subjects. For many students this includes communicating in a second language.
- *Quantitative reasoning*—numerical abilities that equip students with the capacity to understand and explain the world in quantitative terms; to interpret numerical data; and to evaluate arguments that rely on quantitative information and approaches.

**2. Breadth.** BYU undergraduates should also understand the most important developments in human thought as represented by the broad domains of knowledge. The gospel provides the chief source of such breadth because it encompasses the most comprehensive explanation of life and the cosmos, supplying the perspective from which all other knowledge is best understood and measured. The Lord has asked his children to "become acquainted with all good books, and with languages, tongues, and people" (D&C 90:15); to understand "things both in heaven and in the earth, and under the earth; things which have been, things which are, things which must shortly come to pass; things which are at home, things which are abroad; the wars and the perplexities of the nations . . . ; and a knowledge also of countries and of kingdoms" (D&C 88:79).

"Because the gospel encourages the pursuit of all truth, students at BYU should receive a broad university education [that will help them] understand important ideas in their own cultural tradition as well as that of others" (Mission Statement). Specifically, BYU undergraduate students should be educated in the following broad areas of human knowledge:

- *Religion*—the doctrines, the covenants, the ordinances, the standard works, and the history of the restored gospel, as well as an awareness of other religious traditions.
- *Historical perspective*—the development of human civilization, appreciation for the unique contributions of America to modern civilization, and a general historical perspective, including perspective on one's own discipline.
- *Science*—The basic concepts of the physical, biological, and social sciences, and a recognition of the power and limitations of the scientific method—preferably through laboratory or field experience.
- *Arts and letters*—lively appreciation of the artistic, literary, and intellectual achievements of human cultures—including Western culture and, ideally, non-Western as well.
- *Global awareness*—informed awareness of the peoples, cultures, languages, and nations of the world.

**3. Depth.** BYU undergraduates should develop competence in at least one area of concentration. Competence generally demands study in depth. Such in-depth study helps prepare students for their life's work; it also teaches them that genuine understanding of any subject requires exploring it fully. Students normally acquire such depth from their major and minor fields. BYU's religion requirement also asks all students to develop depth in scriptural studies and religion.

Depth does not result merely from taking many courses in a field. Indeed, excessive course coverage requirements may discourage rather than enhance depth. Depth comes when students realize "the effect of rigorous, coherent, and progressively more sophisticated study." Depth helps students distinguish between what is fundamental and what is only peripheral; it requires focus, provides intense concentration, and encourages a "lean and taut" degree that has a "meaningful core" and a purposefully designed structure (Memorandum to the Faculty No. 13). In addition to describing carefully structured academic majors, this description applies to well-designed BYU courses of all kinds.

The chief result of depth is competence. BYU's students should be "capable of competing with the best students in their field" (Mission Statement). Even so, undergraduate study should be targeted at entrance-level, not expert-level, abilities. The desire for depth should not lead to bachelor's degrees that try to teach students everything they will need to know after graduation. Students should be able to complete their degrees within about four years.

Undergraduate programs should prepare students to enter the world of work or to pursue further study. Often this requires educational activities that help upperclassmen culminate their studies by integrating them in a capstone project, honors thesis, senior seminar, or internship. By the time they graduate, students should grasp their discipline's essential knowledge and skills (such as mathematical reasoning, statistical analysis, computer literacy, foreign language fluency, laboratory techniques, library research, and teaching methods), and many should have participated in scholarly or creative activities that let them demonstrate their mastery.

## Graduate

Building on the foundation of a strong bachelor's degree, graduate education at BYU asks for even greater competency. Graduate studies may be either academic or professional and at either the master's or doctoral level. In all cases, BYU graduate programs, like undergraduate programs, should be spiritually strengthening as well as intellectually enlarging.

Graduate programs should help students achieve excellence in the discipline by engaging its primary sources; mastering its literature, techniques, and methodologies; and undertaking advanced systematic study—all at a depth that clearly exceeds the undergraduate level. In addition, graduate programs should prepare students to contribute to their disciplines through their own original insights, designs, applications, expressions, and discoveries. Graduate study should thereby enable a variety of contributions—such as teaching complex knowledge and skills, conducting original research, producing creative work that applies advanced learning in the everyday world, and extending professional service to the discipline and to society.

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These intellectual aims of a BYU education are intended to give students understanding, perspective, motivation, and interpersonal abilities—not just information and academic skills. BYU should furnish students with the practical advantage of an education that integrates academic skills with abstract theories, real-world applications, and gospel perspectives. Such an education prepares students who can make a difference in the world, who can draw on their academic preparation to participate more effectively in the arenas of daily life. They are parents, Church leaders, citizens, and compassionate human beings who are able to improve the moral, social, and ecological environment in which they and their families live. They are scientists and engineers who can work effectively in teams and whose work reflects intellectual and moral integrity; historians who write well and whose profound understanding of human nature and of divine influences informs their interpretation of human events; teachers whose love for their students as children of God is enriched by global awareness and foreign language skill; artists whose performances seek to be flawless in both technique and inspiration; business leaders whose economic judgments and management styles see financial reward not as an end but as a means to higher ends. BYU graduates thus draw on an educated intellect to enhance not only what they

*know* but also what they *do* and, ultimately, what they *are*.

## Character Building

*A firm, unchangeable course of righteousness through life is what secures to a person true intelligence.*

—Brigham Young[6]

Because it seeks to educate students who are renowned for what they are as well as for what they know, Brigham Young University has always cared as much about strong moral character as about great mental capability. Consequently, a BYU education should reinforce such moral virtues as integrity, reverence, modesty, self-control, courage, compassion, and industry. Beyond this, BYU aims not merely to teach students a code of ethics but to help them become partakers of the divine nature. It aspires to develop in its students character traits that flow from the long-term application of gospel teachings to their lives. This process begins with understanding humankind's eternal nature and ends with the blessing of eternal life, when human character reflects in fully flowered form the attributes of godliness. Along the way, the fruits of a well-disciplined life are augmented and fulfilled by the fruits of the spirit of Jesus Christ—such as charity, a Christlike love for others, which God "hath bestowed upon all who are true followers of his Son, Jesus Christ" (Moroni 7:48). Students thus perfect their quest for character development by coming unto Christ through faith, repentance, and righteous living. Then their character begins to resemble his, not just because they think it should but because that is the way they are.

President David O. McKay taught that character is the highest aim of education: above knowledge is wisdom, and above wisdom is character. "True education," he explained, "seeks to make men and women not only good mathematicians, proficient linguists, profound scientists, or brilliant literary lights, but also honest men with virtue, temperance, and brotherly love."[7] Consequently, a BYU education should bring together the intellectual integrity of fine academic discipline with the spiritual integrity of personal righteousness. The result is competence that reflects the highest professional and academic standards—strengthened and ennobled by Christlike attributes.

Thus understood, the development of character is so important that BYU "has no justification for its existence unless it builds character, creates and develops faith, and makes men and women of strength and courage, fortitude, and service—men and women who will become stalwarts in the Kingdom and bear witness of the . . . divinity of the gospel of Jesus Christ. It is not justified on an academic basis only."[8] Rather, it fulfills its promise when "the morality of the graduates of this University provide[s] the music of hope for the inhabitants of this planet."[9]

Every part of the BYU experience should therefore strengthen character—academic integrity in taking a test or writing a research paper; sportsmanship on the playing field; the honest reporting of research findings in a laboratory; careful use of university funds derived from the tithes of Church members; treating all other people with dignity and fairness; and wholehearted acceptance of commitments made to bishops and parents. Character is constructed by small decisions. At this personal level of detail, BYU will realize its hope of teaching "those moral virtues which characterize the life and teachings of the Son of God" (Mission Statement).

## Lifelong Learning and Service

*We might ask, when shall we cease to learn? I will give you my opinion about it; never, never. . . . We shall never cease to learn, unless we apostatize from the religion of Jesus Christ.*

—Brigham Young[10]

*Our education should be such as to improve our minds and fit us for increased usefulness; to make us of greater service to the human family.*

—Brigham Young[11]

Well-developed faith, intellect, and character prepare students for a lifetime of learning and service. By "entering to learn" and continuing to learn as they "go forth to serve," BYU students strengthen not only themselves—they "also bring strength to others in the tasks of home and family life, social relationships, civic duty, and service to mankind" (Mission Statement).

**1. Continual Learning.** BYU should inspire students to keep alive their curiosity and prepare them to continue learning throughout their lives. BYU should produce careful readers, prayerful thinkers, and active participants in solving family, professional, religious, and social problems. They will then be like Abraham of old, who had been "a follower of righteousness, desiring also to be one who possessed great knowledge, and to be a greater follower of righteousness, and to possess a greater knowledge, . . . desiring to receive instructions, and to keep the commandments of God." In this lifelong quest, they, like Abraham, will find "greater happiness and peace and rest" (Abraham 1:2). Thus a BYU diploma is a beginning, not an end, pointing the way to a habit of constant learning. In an era of rapid changes in technology and information, the knowledge and skills learned this year may require renewal the next. Therefore, a BYU degree should educate students in how to learn, teach them that there is much still to learn, and implant in them a love of learning "by study and also by faith" (D&C 88:118).

**2. Service.** Since a decreasing fraction of the Church membership can be admitted to study at BYU, it is ever more important that those who are admitted use their talents to build the kingdom of God on the earth. Hence, BYU should nurture in its students the desire to use their knowledge and skills not only to enrich their own lives but also to bless their families, their communities, the Church, and the larger society. Students should learn, then demonstrate, that their ultimate allegiance is to higher values, principles, and human commitments rather than to mere self-interest. By doing this, BYU graduates can counter the destructive and often materialistic self-centeredness and worldliness that afflict modern society. A service ethic should permeate every part of BYU's activities—from the admissions process through the curriculum and extracurricular experiences to the moment of graduation. This ethic should also permeate each student's heart, leading him or her to the ultimate wellspring of charity—the love for others that Christ bestows on his followers.

## Conclusion

*Education is a good thing, and blessed is the man who has it, and can use it for the dissemination of the Gospel without being puffed up with pride.*

—Brigham Young[12]

These are the aims of a BYU education. Taken together, they should lead students toward wholeness: "the balanced development of the total person" (Mission Statement). These aims aspire to promote an education that helps students integrate all parts of their university experience into a fundamentally sacred way of life—their faith and reasoning, their knowledge and conduct, their public lives and private convictions. Ultimately, complete wholeness comes only through the Atonement of him who said, "I am come that they might have life, and that they might have it more abundantly" (John 10:10). Yet a university education, guided by eternal principles, can greatly "assist individuals in their quest for" that abundant "eternal life" (Mission Statement).

A commitment to this kind of education has inspired the prophets of the past to found Church schools, like BYU, on the principle that "to be learned is good if they hearken unto the counsels of God" (2 Nephi 9:29). These prophets have known the risks of such an enterprise, for "that happiness which is prepared for the saints" shall be hid forever from those "who are puffed up because of their learning, and their wisdom" (see 2 Nephi 9:42–43). Yet they have also known that education plays a vital role in realizing the promises of the Restoration; that a broad vision of education for self-reliance and personal growth is at the very heart of the gospel when the gospel is at the heart of education. To the degree that BYU achieves its aims, the lives of its students will confirm Brigham Young's confidence that education is indeed "a good thing," blessing all those who humbly and faithfully use it to bless others.

*Notes*

1. Brigham Young, quoted by George H. Brimhall in "The Brigham Young University,"; *Improvement Era*, vol. 23, no. 9 (July 1920), p. 831.
2. Brigham Young, in Reinhard Maeser, *Karl G. Maeser: A Biography* (Provo: Brigham Young University, 1928), p. 79.
3. Spencer W. Kimball, "Education for Eternity," Preschool Address to BYU Faculty and Staff, 12 September 1967, p. 11.
4. Joseph Smith, *Teachings of the Prophet Joseph Smith*, sel. Joseph Fielding Smith (Salt Lake City: Deseret Book Company, 1972), p. 137.
5. Brigham Young, *Journal of Discourses* (hereafter *JD*), vol. 10 (London: Latter-day Saints' Book Depot, 1854–86), p. 224.
6. Brigham Young, *JD* 8:32.
7. David O. McKay, "Why Education?" *Improvement Era*, vol. 70, no. 9 (September 1967), p. 3.
8. Spencer W. Kimball, "On My Honor," in *Speeches of the Year*, 1978 (Provo: Brigham Young University Press, 1979), p. 137.
9. Spencer W. Kimball, "Second Century Address and Dedication of Carillon Tower and Bells," Brigham Young University, 10 October 1975, p. 12.
10. Brigham Young, *JD* 3:203.
11. Brigham Young, *JD* 14:83.
12. Brigham Young, *JD* 11:214.

Approved by the BYU Board of Trustees on March 1, 1995.

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# Brigham Young University: A Unique Environment

## Religious Environment

The Church of Jesus Christ of Latter-day Saints sponsors BYU to provide a university education in an atmosphere that nurtures spiritual growth and a strong conviction of the divinity of Jesus Christ. Church programs are closely correlated at all levels with the activities of the university, and students will find many opportunities to grow spiritually.

### Religion Classes

All students at BYU should include regular gospel study as a continuous part of their university experience. Full-time undergraduate students take one religion class each semester of enrollment until a total of 14 semester hours of religion credit has been earned. See The University Core section of this catalog for more information.

### University Devotionals

University devotionals, held throughout the year on Tuesdays at 11:05 a.m., form an inspirational and integrative part of the university experience. These assemblies are occasions to celebrate the shared sense of values and community in the university. Participation in these gatherings will renew spiritual commitment and extend knowledge of significant religious, intellectual, and cultural matters. Devotional speakers, selected from the General Authorities and other leaders of the Church as well as university personnel, come to teach the gospel and affirm the spiritual dimension of the university experience for students, faculty, and staff.

Most campus offices and services are closed during university devotionals and forums so that members of the university community may participate.

### BYU Stakes and Wards

To give students maximum opportunity to participate, the Church is organized into a number of BYU stakes composed of several wards of approximately 150 members each. All single students living away from home who are members of The Church of Jesus Christ of Latter-day Saints become members of a Young Single Adult (YSA) ward. Single LDS students living at home have the option of attending their home ward or a designated YSA ward. Married students not living in university housing may attend either the designated BYU ward or the residential ward in which they live.

## Other Religious Denominations

Approximately twenty-five other religious denominations are represented in the BYU student body. These students are encouraged to attend a congregation of their faith in the surrounding area, if possible.

## Academic Environment

The academic environment extends beyond the four walls of a university classroom. Serious students seek enrichment in the library, at university forums and lectures, and through research. Some students may choose to become involved in the Honors Program or live in one of the "quiet halls" on campus—and everyone benefits from drawing on the resources available at college advisement centers.

### New Student Orientation

The purpose of New Student Orientation (NSO) is to 1) welcome new and transfer students into the BYU community of disciple-scholars, 2) help new students understand and appreciate the unique opportunities provided by a BYU education, 3) introduce key campus resources, and 4) offer new students a great chance to connect with other students, faculty members, and university staff.

NSO events and activities range from the academic through the informational to the out-and-out fun, but they are always friendly and focused on the needs of new students. NSO activities vary according to the term or semester. In addition to a welcome from the administration and a campus tour, each orientation may include a university devotional; library tour; meetings about colleges and majors, financial aid and scholarships, the Honors Program; and an introduction to several of the traditions at the Y.

Many of the activities are organized around Y Groups, small cohorts of students led by upperclassmen, which offer students personalized attention and support. Orientation at BYU balances the various needs of new students by combining appropriate resources, activities, and personnel. To become fully integrated into an institution as large and complex as BYU, active participation in NSO is vital.

New Student Orientation is held three times a year, immediately prior to winter semester, summer term, and fall semester. Please see http://fye.byu.edu/fye/about-nso for detailed information and registration.

### University Forums

University forums are held on selected Tuesdays at 11:05 a.m. and are designed to enrich the general education experience.

Speakers are noted authorities in the arts and humanities, sciences, media, and government, chosen for their contributions to their field and their ability to inspire and communicate. Participation in these assemblies and the associated question-and-answer sessions prompts inquiry into significant intellectual, cultural, and social issues and helps lay the foundation for lifelong learning. A forum speaker may be nominated by any member of the university community (student, faculty, or staff). Please see the nomination form at http://ge.byu.edu/ge/forum-speaker-nomination.

## Harold B. Lee Library

The Harold B. Lee Library (HBLL) collection numbers over eight million volumes, including books, e-books, periodicals, government documents, microfilm, and other nonprint items. The library's Web-based catalog contains numerous full-text databases and many electronic indexes to other sources. The library provides thousands of seats for research at tables, on soft chairs, and in group study rooms. Both wireless and Ethernet access are available along with printing, copying, and scan to e-mail services.

The library houses the L. Tom Perry Special Collections whose non-circulating collections include books and manuscripts related to Mormonism, western Americana, incunabula, Victorian and Edwardian literature, historical manuscripts and photographs, motion pictures, and many other preserved items for research and use. The Religion and Family History Library supports family history and genealogy through an extensive collection of microfilm, microfiche, and online resources.

The general collection is housed on five levels of the library. A learning commons is located on the ground floor (level 3), and professional librarians and support staff provide research assistance at seven additional help desks. Instruction in library and information literacy is available. The general library facilities are open to students, faculty, administrative and staff personnel, alumni, and other community patrons.

The Lee Library provides excellent teaching and research support for faculty and other university personnel. Library subject specialists and archival curators are available for instruction or lectures on library resources and to assist in designing class assignments that involve library research.

The library is open during fall and winter semesters from 7:00 a.m. to midnight Monday through Friday and from 8:00 a.m. to midnight Saturday.

Through cooperative agreements implemented through state and national library consortia, BYU students and faculty may also use the facilities of other college and university libraries in Utah as well as select libraries in other states. Libraries operated by The Church of Jesus Christ of Latter-day Saints are also available to BYU students and employees, including the library of the Church Historical Department located in Salt Lake City.

The Lee Library provides a faculty delivery service for pickup and delivery of books to and from faculty and administrative offices.

For books unavailable at the Harold B. Lee Library, an interlibrary loan service is available. Requests should be submitted through the ILLiad request system available on the library's web page (http://library.byu.edu).

## Research and Creative Activities at BYU

One of the most exciting and valuable learning experiences available to both undergraduate and graduate students at BYU is the opportunity to participate in original research and creative activities. BYU has accomplished faculty members in all areas, many of whom enjoy international reputations for the quality of their creative endeavors. Many professors enlist the help of undergraduate students, who work side by side with faculty mentors and graduate students in a laboratory or studio setting.

A wide variety of research experiences are available in many departments across campus. For example, the student might be involved in the synthesis of a new medicinal drug in the chemistry laboratory or participate in the discovery of a new species of dinosaur on a Colorado mesa. Other examples of programs involving student participation include the study of robotics systems, computer architecture, battery technology, high-energy physics, international business methods, child psychology, educational methodology, molecular genetics, social implications of drug use, stability and satisfaction in marriage, Church history, and a host of other topics. Students who are interested in participating in research programs are encouraged to contact their major department chair or speak directly with individual professors.

The **Office of Research and Creative Activities (ORCA)** manages, on behalf of the administration, two programs whose purpose is to bring together students and faculty in mentored experiences. The first is the ORCA Mentoring Grants for Undergraduates Program. Requests for proposals go out to all undergraduate, full-time students. One-third of all proposals are usually funded at $1500 each. Awards are made early in the semester following application. The second is the Mentored Environments Grants Program. Faculty are encouraged to submit proposals to create or enhance a mentored environment for undergraduate and graduate students. Awards range from $2,000 to $20,000, and proposals are collected in late fall and awarded in midwinter. For more information, contact any department or college, or contact ORCA at A-285 ASB, (801) 422-3841, http://orca.byu.edu.

## Internships

Internships and other applied learning experiences, such as clinical and field studies, integrate academic studies with professional or career-related work experience. They are required by some degree programs and recommended by others to strengthen or complement a student's major or minor field of study. In addition to experiences within the United States, opportunities in international settings are also available when approved by the David M. Kennedy Center for International Studies.

Students who want or need academic credit for internships and other formal applied, cooperative learning experiences must receive prior department and university approval and complete formal registration before commencing. Course offerings vary according to student and program needs. Registration in a department's 199R, 299R, 399R, 496R, 599R, or 688R course is required for internship credit. Individual departments specify course numbers for clinical, practicum, or other applied, cooperative learning courses. Credit varies, generally ranging from 0.5 to 12 credit hours. Grades are based on both academic and work-related accomplishments.

To learn more about the opportunities and benefits of applied, cooperative learning experiences, contact a college or department internship coordinator, visit or call the BYU Internship Office (5435 HBLL, 801-422-3337), or go to https://intern.byu.edu/.

## Center for Service and Learning

2010 WSC and 2330 WSC
(801) 422-8686
yserve.byu.edu

The mission of the Center for Service and Learning is to "provide every student with a meaningful service opportunity...to instill in the heart and mind a desire to give lifelong service." In order to provide every student with a meaningful service opportunity, the Center administers over 70 community service programs. These programs, which are led and staffed by student volunteer program directors and service council members, serve individuals and organizations in the local community. As student volunteers learn to serve their community, their desire to be engaged in lifelong service becomes an integral part of their character.

Students choose to make service a part of their lives for academic, leadership, recognition, social, and spiritual reasons. Through the Center, students can enroll in Student Development 290: *Learning Through Service*, which links theories of service with actual service experiences. They can also develop their leadership skills by serving on the student service council or as a program director. By completing the requirements for any of the three recognition programs, they can receive official documentation and certification of their service. They can socialize with other students as they serve, and can recognize the spiritual aspects of service as they participate in reflection events.

More than 23,000 students are engaged in service each year through Center programs. These programs provide a variety of services, including serving children and adults with cognitive or physical disabilities, mentoring at-risk youth, tutoring children in the public schools, tutoring other BYU students in their college classes, helping build houses for low-income families, or providing manual labor to clean up and maintain community neighborhoods. These programs are under the leadership of more than 250 student volunteer leaders who are learning leadership skills as they administer their programs. In addition to these formal community service programs, Stop-n-Serve is available in 2330 WSC for students to drop in and perform service in the few minutes they may have between classes.

### Student Development Course Work

The Counseling and Career Center offers courses under the title Student Development. These courses are designed to help with the personal challenges and tasks facing college students. Some of the relevant student-centered topics are college study skills, life planning, time management, decision making, and test taking strategies. Several courses are designed to help students decide on a college major and career and to make the transition from college to the world of work. Each class has material to help students identify their values, develop character, and make progress with their personal goals for life. The BYU Undergraduate Catalog and the current class schedule list these courses under Student Development. For further information contact the Counseling and Career Center, 2510 WSC, (801) 422-6291.

### Academic Support Office

2500 WSC
(801) 422-2723
E-mail: academic_support@byu.edu
Web: http://aso.byu.edu/

All students admitted to the university have the potential to succeed academically; however, some students have difficulty achieving the level of success required to remain in good academic standing. The mission of the Academic Support Office (ASO) is to assist students in maintaining that level of academic success. The ASO, a department of Student Life, uses the combined resources of the university to help students who are on the academic standing of warning, probation, or continued academic probation (CAP) resolve most academic problems.

Students with academic problems often have difficulties in one or more of the following areas: (1) Personal concerns outside the academic realm such as adjustment problems, illness, or relationship problems that distract from academic goals. Such problems may be addressed by helping students refocus on their goals and giving referrals to appropriate on-campus resources. (2) Inadequate academic preparation to meet the rigors of a university experience. Study-skills training helps students identify strategies appropriate to the university experience. (3) Learning styles that worked in high school but are not productive at the university. Assessment and advisement may help students identify and use academic strengths more successfully.

Advisors and peer coaches are trained to assist students with time management, study skills, learning style, and other academic concerns. Students who experience academic difficulties and are on warning, probation, CAP, or are facing academic suspension or dismissal from the university are encouraged to contact the ASO. Students on good or previous academic standing who would like access to these kinds of resources should visit the Career and Academic Success Center (CASC) in 2590 WSC (801-422-2689).

### Graduate Studies

105 FPH
Phone: (801) 422-4091

To the student seeking advanced study, Brigham Young University offers a variety of graduate degree opportunities. Excellent graduate programs can be found in each of the colleges and schools, and successful completion results in the awarding of a master's or doctoral degree.

The master's degree requires advanced course work, demonstrated mastery in vital aspects of a discipline, skill in research methodology and theory, and preparation for future creative work. In certain disciplines, graduate programs blend scholarly insight with technical knowledge and skill. Integrative examinations, a major culminating piece of written work or performance, and an accompanying oral defense of that work may be required.

The doctoral degree requires the student to demonstrate an impressive scholarly competence, which includes the ability to conduct and report research in a highly effective manner. Advanced systematic study in a discipline is also essential and is followed by comprehensive examinations that require students to integrate and understand the collective knowledge of their disciplines. A dissertation resulting from independent research is defended in a concluding oral examination.

Students who are interested in pursuing advanced degrees are encouraged to become involved in research and creative activities during their undergraduate experience.

For information about master's and doctoral degree programs, students should consult the BYU Graduate Catalog online at http://graduatestudies.byu.edu.

Application information is available online at http://graduatestudies.byu.edu, through Graduate Studies, and through individual departments. For information regarding admission to the J. Reuben Clark Law School, see the Law School section of this catalog.

## Cultural Environment

Students can immerse themselves in culture at BYU. Dance, theatre, music, art exhibits, museums—all nourish the soul seeking after "anything virtuous, lovely, or of good report or praiseworthy."

As part of their educational experience, students, both individually and in groups, present concerts, exhibitions, films, plays, recitals, and productions which are available to the community. Classical, contemporary, and original works are offered throughout the year. Each of the performance areas also have ensembles that perform on and off campus.

The BYU Performing Arts Series presents some of the most celebrated artists in the world. Concerts and productions are scheduled

throughout each year in the Harris Fine Arts Center and other venues.

In recent years the Performing Arts Series has included:

Utah Symphony
Guarneri String Quartet
Frederica von Stade
Shangri-la Chinese Acrobats
Zagreb Saxophone Quartet
Brian Stokes Mitchell
Lea Salonga
Theater Mitu
The Cashore Marionettes
Parsons Dance
The Martha Graham Dance Company
Chanticleer
The King's Singers

For further information on student, faculty, and Performing Arts Series productions, contact the Fine Arts Ticket Office at (801) 422-HFAC (4322), or visit our website at http://www.byuarts.com/.

## Museum of Art

The Museum of Art was completed and opened during fall 1993. Funded by private donors, the 100,000-square-foot museum is located directly north of the Harris Fine Arts Center. A sculpture garden separates the two buildings, and together they form striking visual and performing arts centers. The museum houses the university's superb collection of paintings, sculpture, decorative arts, and works on paper.

Major bodies of work the university owns are by eminent artists such as Mahonri Y. Young, J. Alden Weir, Maynard Dixon, C. C. A. Christensen, and Minerva Teichert. Besides its rich array of American art, the collection includes 20th century and contemporary landscape, documentary and street photography and a growing collection of important religious works and rare prints by Rembrandt, Dürer, and Daumier. The museum is also committed to exhibiting and exploring the art of our time, acquiring work by significant living artists such as Dan Steinhilber, Harrell Fletcher, Georges Rousse, and Lewis Baltz.

Major traveling exhibitions and exhibitions from the museum's permanent collections are scheduled on a rotating basis. Previous exhibitions include works by Rodin, Carl Bloch, and Islamic artifacts in the exhibition entitled *Beauty and Belief*.

Students play an important role in the Museum of Art. Not only are they employed in service capacities in each of the museum's departments but the museum also offers a rigorous internship program that affords selected students opportunities to be mentored on significant projects in museum education, curation, registration, administration, and even fabrication. Many students also serve as volunteer docents.

The museum offers a variety of educational programs for campus and community audiences as well. Included in the museum are a print study room, a lecture room, and an orientation theater. The museum also features a café, bookstore, and auditorium.

## M. L. Bean Life Science Museum

Larry L. St. Clair, Director
Leigh Johnson, Associate Director
Marta Adair, Assistant Director
290 MLBM

**Note:** The expanded and remodeled Bean Life Science Museum is scheduled to reopen in the late spring of 2014!

The Monte L. Bean Life Science Museum is accredited by the American Alliance of Museums. Its vast teaching and research collections include more than two million arthropods, fish, amphibians, reptiles, mammals, birds, and prepared shells, and more than 600,000 plants, lichens, and bryophytes. Specimens for these collections, which represent creative work by university faculty and students, have been gathered from around the world, making the museum one of the major repositories of scientific-quality, biological collections in the western United States.

The museum and its collections are utilized by university classes in biology, plant and wildlife sciences, education, art, and other disciplines. The Monte L. Bean Life Science Museum also maintains and manages the Lytle Ranch Preserve. Located in the northernmost extension of the Mojave Desert southwest of St. George, Utah, this 600-acre desert classroom is situated in a part of Utah that is unique not only for its plant and animal communities but also for its setting at the crossroads of three major bioregions.

Public programs include temporary and permanent exhibits of natural communities that illustrate complex relationships between plants, animals, and their physical environment. Educational programs which serve more than 100,000 annual visitors and provide classes and programs for BYU students as well as public and private schools and many other organizations. Museum hours are Monday through Friday from 10:00 a.m. to 9:00 p.m. and Saturday from 10:00 a.m. to 5:00 p.m. The museum is closed on Sunday. Admission is free.

*The Western North American Naturalist*, a nationally recognized peer-reviewed natural history journal, is housed in the museum. Other museum publications include professional and popular works such as *A Utah Flora, Bark and Ambrosia Beetles of South America, Snakes of Utah,* and *Common Rocky Mountain Lichens*.

## Museum of Peoples and Cultures

Paul R. Stavast, Director
Kari Nelson, Curator of Education
105 ALLN

The Museum of Peoples and Cultures (MPC) houses, cares for, and performs research on archaeological and ethnographic collections from around the world. The strengths of the museum's holdings are in prehistoric Utah, the American Southwest, Mesoamerica, Andean cultures, and Polynesia. An approved state and federal archaeological repository, the museum also holds a noncirculating library and a photographic archive documenting BYU archaeological research and artifactual materials.

Institutional objectives are to interpret and help elucidate the history and culture of the peoples of the world and to convey that knowledge to the scholarly community as well as to the general public. The museum's strongest commitment lies in serving the teaching and research functions of the university. In this, BYU's "teaching museum," not only do students perform office and collections duties, but they also curate all exhibitions as part of the formal curricula taught by museum staff adjunct to the Department of Anthropology. Students plan and execute public programs and design promotional strategy as part of their course work as well. These curricula are available in the department's Certificate in Museum Practices program. Students concurrently

enrolled in a cognate master's program are eligible to apply to this graduate program. Three of the certificate courses (Anthr 511, 522, and 525) have no prerequisite and are available for undergraduate enrollment.

The museum's student exhibitions are staged in Allen Hall and change with each certificate class. The museum also produces occasional satellite exhibits at other university locations, such as the Museum of Art and the Joseph Smith Building. Tours of the Allen Hall galleries can be arranged by calling (801) 422-0020. Because scheduling is based on student employee availability, it is advisable to book tours from one to three weeks in advance. Visitors may also choose to guide themselves through the galleries, but groups larger than fifteen people should contact the museum in advance for logistical instructions.

The MPC offers many community educational opportunites. Available for loan to classrooms and inbound populations are anthropology teaching kits that explore the native cultures of various geographical areas. The kits include replica artifacts, handicrafts, and educational books and videos. Students and civic volunteers are invited to help with educational programming, public relations, archaeological research, and public presentations. The MPC hosts an activity patch program for Scouts of all ages and other interested parties. Museum patches can be earned by visiting the museum and completing the patch requirements. For information about any of these programs, call (801) 422-0020.

Located at 700 North 100 East in Provo (one block south of the Brick Oven restaurant), the museum is open from 9:00 a.m. to 5:00 p.m. Monday through Friday. Admission is free, and guided tours can be arranged for a nominal charge. The MPC is closed on holidays.

## Recreational Environment

Students can enjoy the small-town friendliness of Provo or drive 45 miles to the north for the cosmopolitan diversity that Salt Lake City offers. Whereas Salt Lake City is home to Ballet West, the Mormon Tabernacle Choir, and the Utah Symphony, the Provo area prides itself on its own Utah Valley Symphony and several fine community music, dance, and theatre groups.

### Intercollegiate Competition

BYU sponsors 21 NCAA intercollegiate sports for men and women. The men compete in 10 sports: baseball, basketball, cross country, football, golf, swimming and diving, tennis, indoor track and field, outdoor track and field, and volleyball. The women compete in 11 sports: basketball, cross country, golf, gymnastics, soccer, softball, swimming and diving, tennis, indoor track and field, outdoor track and field, and volleyball.

The Cougars are independent in football and compete in the West Coast Conference in the majority of the other sports. On September 1, 2010, BYU announced an eight-year deal with ESPN to televise Cougar football on its sports networks. BYUtv also partners with athletics to broadcast more than 135 live athletic events each year in sports such as football, basketball, volleyball, soccer, baseball, softball, and gymnastics.

Consistently ranked among the nation's top 30 athletic programs, BYU has won NCAA championships in football, men's track and field, men's golf, women's cross country, and men's volleyball. The Cougars have also won two NIT titles in men's basketball.

### Extramural Competition

The extramural sports program at BYU provides opportunities for students to participate on an intercollegiate level throughout the United States and Canada in team sports not designated NCAA.

One of the best organized and most respected programs in the country, BYU's extramural sports program offers five sports for men (ice hockey, lacrosse, racquetball, rugby, and soccer) and one sport for women (racquetball). Many of the teams have been nationally ranked during the last several years.

### Athletic Facilities

BYU's athletic facilities are among the best in the nation. Major sports complexes include the Marriott Center (basketball), LaVell Edwards Stadium (football), Smith Fieldhouse (volleyball/gymnastics), Miller Park (baseball/softball), Clarence Robison Track, South Field (soccer), Richards Building (swimming/diving), and the Tennis Complex.

In 2003-04 the Athletic Department opened two new buildings, the Indoor Practice Facility (IPF) and the Student Athlete Building (SAB). The IPF is 422 by 222 feet with a height of 86 feet at the center. It is one of the largest indoor practice facilities in college athletics. It features two artificial turf fields and four batting cages.

The 126,300 square-foot SAB is home to the student-athlete academic center, athletic administration offices, strength/conditioning complex, training facilities, football offices and locker room, Legends Grille, and Legacy Hall—a three-story museum/hall of fame celebrating more than 100 years of BYU Athletics.

### Intramural Activities

The campus intramural program, consisting of more than thirty events involving thousands of participants in both men's and women's activities, is one of the largest and most comprehensive in the United States. Students may participate in team activities and individual events. The intramural program offers divisions for different skill levels in each activity and provides awards for the winners in each division. Numerous employment opportunities are available as game supervisors and officials.

### A Great Outdoors

The Wasatch Mountains overlook BYU on the east, and to the west lies Utah Lake. Within an hour's drive are several canyons and ski resorts; six national parks are only a half day away. Outdoor gear can be rented on campus for everything from skiing to windsurfing.

**The Mission of BYU**

**The Aims of a BYU Education**

**A Unique Environment**

**Map of Campus**

**Nondiscrimination**

**Right to Change Courses**

**Accreditation**

# Statement of Nondiscrimination

Admission to Brigham Young University is nondiscriminatory. The university admits persons regardless of race, color, national origin, religion, age, gender, veteran status, genetic information, or disability who meet university and department academic requirements and agree to abide by the university's standards of conduct and behavior. The university does exercise the "religious" exemption in admissions as granted in Title IX of the Education Amendments, 20 U.S.C. 1681(a)(3), and in hiring employees as granted in 41 CFR 60-1.5(a)(5).

Inquiries regarding this statment and/or its application may be directed to the Equal Opportunity Office at (801) 422-5895 during office hours (8 a.m. - 5 p.m. weekdays). Individuals may also contact the university's 24-hour hotline at 1-888-238-1062 or visit http://www.ethicspoint.com.

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Right to Change Courses

Accreditation

# Reservation of Right to Change Courses

The university makes every reasonable effort to provide accurate information in the contents of this catalog but reserves the right to make changes at any time without prior notice. The university reserves the right to change or discontinue graduation requirements, department majors, individual courses, instructors, and all other aspects of university operations. In the event the university determines to make changes in curriculum, it will post these changes as soon as practical within this online catalog. It is recommended that students regularly check this catalog for possible changes.

If colleges or majors are discontinued, or if substantial changes in requirements for degrees are made, the university will endeavor to allow students disadvantaged by the change to continue under existing programs and requirements. As a general rule, these types of substantial changes will only be made effective each fall semester.

The university may place a hold on a student's registration privileges if the student neglects academic work or makes unsatisfactory progress toward graduation.

# Accreditation

Brigham Young University is accredited by the Northwest Commission on Colleges and Universities.

Accreditation of an institution of higher education by the Northwest Commission on Colleges and Universities indicates that it meets or exceeds criteria for the assessment of institutional quality evaluated through a peer review process. An accredited college or university is one which has available the necessary resources to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is also addressed through accreditation.

Accreditation by the Northwest Commission on Colleges and Universities is not partial but applies to the institution as a whole. As such, it is not a guarantee of every course or program offered, or the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend the institution.

Inquiries regarding an institution's accredited status by the Northwest Commission on Colleges and Universities should be directed to the administrative staff of the institution. Individuals may also contact:

**Northwest Commission on Colleges and Universities**
**8060 165th Avenue N.E., Suite 100**
**Redmond, WA 98052**
**(425) 558-4224**
**www.nwccu.org**

**The following organizations have given accreditation to programs or units at the university:**

- Academy of Nutrition and Dietetics, Accreditation Council for Education in Nutrition and Dietetics
- Accreditation Board for Engineering and Technology, Inc.
- Accrediting Council for Education in Journalism and Mass Communications
- American Alliance of Museums
- American Association for Marriage and Family Therapy, Commission on Accreditation for Marriage and Family Therapy Education
- American Bar Association, Council on the Section of Legal Education and Admissions to the Bar
- American Psychological Association, Commission on Accreditation
- American Speech-Language-Hearing Association, Council on Academic Accreditation in Audiology and Speech-Language Pathology
- Association to Advance Collegiate Schools of Business
- Commission on Accreditation of Athletic Training Education
- Commission on Collegiate Nursing Education
- Council on Accreditation of Parks, Recreation, Tourism and Related Professions
- Council on Education for Public Health
- Council on Social Work Education
- Facility Management Accreditation Commission, International Facility Management Association Foundation
- National Accrediting Agency for Clinical Laboratory Sciences
- National Association of Schools of Art and Design, Commission on Accreditation
- National Association of Schools of Dance, Commission on Accreditation
- National Association of Schools of Music, Commission on Accreditation
- National Association of Schools of Public Affairs and Administration
- National Association of Schools of Theatre, Commission on Accreditation
- Professional Landcare Network
- Teacher Education Accreditation Council, Accreditation Committee

**Financial Aid & Scholarships**

**Tuition and Fees**

# Financial Aid and Scholarships

Financial Aid Office
C-144 ASB
(801) 422-4104

Over the past decade the cost of obtaining an excellent university education has increased considerably. As a result, many students and their families have found it difficult to obtain the funds to pursue an education. The university is sensitive to this situation and to those students who are hard-pressed to finance their studies. Major changes have been made by the university to improve the delivery system through which students can receive financial aid. There is a firm commitment to assist those who truly need the resources to further their studies.

Financial aid at BYU comes from various federal, state, and university programs in the form of grants, scholarships, and loans. The Financial Aid Office coordinates these financial aid programs and assists students in identifying the financial resources for which they might qualify. Because the number of students applying for financial assistance usually exceeds the funds available through university programs, the distribution of financial aid at BYU is based on an assessment of the student's and family's financial need. There are some exceptions to need-based awarding, e.g., BYU academic scholarships, performance, talent and athletic awards, and BYU short-term loans.

The process of determining a student's eligibility for financial aid is called *need analysis.* In a need analysis, income and asset information from both students and parents is examined to determine the family's ability to contribute toward educational costs. This figure, called the *expected family contribution* (EFC), is subtracted from what it will cost the student to attend BYU for a specific length of time (typically, one academic year). If the cost of education is more than the family can contribute, the student has demonstrated *financial need*.

BYU uses the government need analysis form, the Free Application for Federal Student Aid (FAFSA), in determining how much the student and family should be able to contribute. All students applying for federal financial aid must complete this form. The application process is not complete until the results of the FAFSA have been received by the Financial Aid Office.

Even though a standard formula is used to analyze a student's financial situation, the Financial Aid Office is willing to consider unusual circumstances regarding a student's/parent's financial situation.

Applying for financial aid can be complicated and time consuming. Considerable delays and frustrations can arise from filling out forms incorrectly or failing to submit the proper documents in a timely manner. Students and their parents are encouraged to read instructions carefully and to complete all forms and documents correctly. Professional counselors are available and eager to assist in answering questions and helping with the application process, and can be reached by calling 801-422-4104.

## Eligibility Requirements

Applicants for federal financial aid (Federal Pell Grants, Federal Direct Subsidized and Unsubsidized Loans, and Federal Direct PLUS Loans) must be U.S. citizens or permanent residents. In addition, students must maintain satisfactory academic progress to have federal financial aid disbursed to them. Any student enrolled in a degree-seeking program, and meeting these requirements, may apply for financial aid.

Students who have a baccalaureate degree and are returning to receive a teaching certificate may also apply for Federal Direct Subsidized and Unsubsidized Loans if they have a cumulative 2.0 GPA and are admitted to the teacher licensure program. In addition, post-baccalaureate students may be eligible for Federal Direct Subsidized and Unsubsidized loans if they are enrolled in prerequisite courses for admission to a graduate program.

Rules and regulations governing the disbursement of federal financial aid are subject to change. Contact the Financial Aid Office if you have additional questions regarding your eligibility for financial assistance.

## Scholarships

Brigham Young University offers scholarships to select students who have demonstrated a serious and diligent commitment to spiritual preparation and academic excellence as an investment in their education. Scholarship funds are provided through the tithes of the LDS Church and the offerings of generous individuals. They are given to encourage continued commitment to spiritual and intellectual growth. The gift of a scholarship assumes an obligation on the part of the recipient to use that investment to prepare for expanded and purposeful service in the Lord's kingdom. The principle of replenishment is endorsed, and all are invited to make a similar investment in someone else's future by contributing to the university's scholarship programs when in a financial position to do so.

Although the contributions of the Church and others have been generous, funds are still insufficient to invest in all students. Consequently, policies and procedures have been established to better ensure fairness in awarding available scholarship funds consistent with the university's aims and donors' wishes. For additional information about our policies and procedures, please contact the Financial Aid Office, C-144 ASB, Provo, UT 84602-1009, telephone (801) 422-4104; e-mail: scholarships@byu.edu; Web: http://scholarships.byu.edu.

### Academic

The majority of BYU scholarships are awarded to students based on academic merit. After the scholarship application deadline, students are ranked by their academic preparation and performance. Beginning at the top of the ranked order, scholarships are awarded until funds are exhausted.

BYU scholarships are not renewable, and most are awarded for two semesters only. Unless students receive a four-year award, *they must reapply every year by the appropriate deadline to be considered*. Applicants must also officially declare a major by the end of their sophomore year.

**Heritage Scholarships** are eight-semester, full LDS tuition awards to incoming freshman students. These scholarships honor the intellectual, spiritual, and cultural heritage of the Church and the university.

**National Merit Scholarships** are eight-semester, full LDS tuition awards sponsored by BYU for a number of the incoming freshman students who qualify as finalists in this competition. To be considered, finalists must inform National Merit Corporation that BYU is their first-choice university. National Merit Corporation will then forward necessary materials to BYU. *Because funds are limited, finalists are not guaranteed a BYU-sponsored National Merit Scholarship*.

**Brigham Young Scholarships** are generally two-semester awards that cover either half or full LDS tuition. Students must reapply each year by the appropriate deadline to be considered for future scholarships.

*New Freshman Students*

New freshman academic scholarships are based on a candidate's unweighted high school GPA and composite ACT/SAT score, as calculated and certified by BYU Admissions Services.

*Former Students*

Academic scholarships are based on overall academic performance. Primary considerations are based on the student's cumulative BYU grade point average. Candidates will be considered in the same applicant pool as continuing students.

*Continuing Students*

Academic scholarships are based on overall scholastic performance. Primary considerations are based on the student's cumulative BYU grade point average.

- Fall/Winter
  The Scholarship Committee will consider the cumulative GPA earned at BYU through fall semester. To qualify for an academic scholarship, the BYU cumulative GPA must be within the awarding range.
- Spring/Summer
  The committee will consider academic performance through fall semester.

## Alumni Association

Generations of BYU students have benefited from the generous support of the Church and private individuals. With that support they have received a first-rate education that has helped them "go forth to serve." Part of that service includes providing for the education of future generations.

Applicants for the Alumni Replenishment Grant are considered based on need and other criteria along with a moral commitment to repay the amount of the grant, so that future students can receive and continue such financial assistance.

### Alumni Association Replenishment

The Alumni Association Replenishment Grant is available to junior, senior, and graduate students whose total cost of education may not be met through other financial aid programs. Scholarships are awarded annually in amounts equal to half or full LDS tuition. The scholarship recipients will be asked to replenish the fund once they are in a financial position to do so.

To be considered, both the cumulative and BYU GPA must be at least 3.0 by the end of fall semester. Applicants must also demonstrate financial need and be willing to replenish the scholarship fund at a later date. To apply, complete the online scholarship application available through myBYU, including the Financial Need section as well as the Alumni Replenishment Grants section.

### Alumni Association Regional Replenishment

Several chapters of the BYU Alumni Association offer replenishment grants to students whose permanent residence lies within their boundaries.

To apply, complete the online scholarship application available through myBYU, including the Financial Need section as well the Alumni Regional Replenishment Grants section.

## Athletic

The university awards grants-in-aid to outstanding athletes who qualify under the rules and regulations of the West Coast Conference and the National Collegiate Athletics Association (NCAA).

For program applications, deadlines, and additional information, apply directly to the coach of the sport in which you wish to participate or contact Intercollegiate Athletics, 331 SAB, Provo, UT 84602, (801) 422-2046, e-mail: athletics@byu.edu.

## College and Departmental

In addition to the scholarship programs described in this bulletin, other private scholarships are available through the colleges and some departments. Students can check with their college or department for additional information and applications.

## International

International students are eligible to apply for academic scholarships after completing one full enrollment (12 credits) at BYU. The deadline to submit the continuing student scholarship application is March 1. Scholarships are awarded annually.

The university offers a limited number of grants each year to international undergraduate students who demonstrate unusual financial need. Eligible candidates must have an F-1 visa, have earned 24 credit hours at BYU, and be in good academic standing.

Generous friends of the university have established a few additional scholarships to assist international students with their studies. To apply, complete the online scholarship application through myBYU.

## International Study Programs

The International Study Programs Office offers scholarships and grants to assist undergraduate students participating in its programs. These program discount award amounts vary depending on financial need, GPA, year in school, major, length and type of program, and other pertinent factors.

To apply, students must apply for a program through the ISP website, and complete the ISP Financial Aid portion of that application. All applicants must have a minimum 3.0 GPA, as well as a current FAFSA on file with BYU. The FAFSA is found at www.fafsa.ed.gov.

For program applications, deadlines, and additional information on scholarships, please contact International Study Programs, 101 HRCB, 801-422-3686, isp@byu.edu, or go to http://kennedy.byu.edu/isp/.

## Jerusalem Center

The Jerusalem Center for Near Eastern Studies offers financial aid to undergraduate students participating in the various Jerusalem Center study programs. This financial aid is administered under the following categories:

*Grants* are awarded primarily on the basis of financial need. These grants will vary according to the applicant's financial need and the funds available. Individual FAFSA information must be on file at BYU for students to be considered.

*Scholarships* are awarded primarily on the basis of academic performance and will vary as stated above. A minimum GPA of 3.40 is required to be considered.

For program applications, deadlines, and additional information, contact the Jerusalem Center Office, 301 HCEB, Provo, UT 84602-1524, telephone (801) 422-6017, e-mail: jerusalem@byu.edu, website: http://ce.byu.edu/jc.

## Need-Based

While the majority of its scholarships are merit-based, BYU budgets a limited number of need-based awards for U.S. citizens and permanent residents. Each applicant's circumstances and resources are reviewed and evaluated; unfortunately, there is always more need than available funding. Interested students must complete the Financial Need section of the scholarship application available through myBYU, as well as the FAFSA (Free Application for Federal Student Aid), by the appropriate deadline.

## Other Private

Generous friends of the university have contributed a number of private scholarships. Many of these scholarships carry specific stipulations and restrictions. To be considered for these scholarships, complete the online scholarship application available through myBYU, including the Other Scholarships section if applicable.

## Research

The following scholarships promote and reward research:

The Undergraduate Scholarship Awards are given to a select number of students in good academic standing—generally juniors and seniors—to fund research projects. To obtain the application instructions and guidelines, deadlines, and additional information, contact the Office of Research and Creative Activities, A-285 ASB, Provo, UT 84602-1231, telephone (801) 422-3841.

Students should also contact their department and college to learn about other research opportunities and awards.

## ROTC

Both the Army ROTC and the Air Force ROTC offer competitive scholarships to qualified students enrolling in their programs. ROTC scholarship recipients may receive full tuition and fees, or room and board, plus a book allowance each semester. In addition, both scholarship and non-scholarship cadets who are contracted with ROTC receive a monthly stipend [$300 (up to $500) a month as they progress through the program]. For further information and application requirements, contact the Military Science Department (Army ROTC), 320 Wells ROTC Building, Provo, UT 84602-8301, telephone (801) 422-3601, e-mail: armyrotc@byu.edu; or the Aerospace Studies Department (Air Force ROTC), 380 Wells ROTC Building, Provo, UT 84602-8301, telephone (801) 422-2671, e-mail: afrotc@byu.edu.

## Students with Disabilities

Generous donors have established a few private scholarships to assist students with disabilities. Because funds are limited, the Scholarship Committee will consider the nature of the applicant's disability and its impact on his or her ability to function in class and earn a living. Academic performance and financial need will also be considered. Interested students must complete the appropriate section (under "Other Scholarships") of the scholarship application available through myBYU and submit appropriate current documentation of the disabling condition from a licensed professional to the University Accessibility Center, 2170 WSC, Provo, UT 84602, (801) 422-2767 v/tty.

## Talent Awards

BYU offers talent awards in the areas of communications, dance, music, theatre and media arts, and visual arts. For these awards, demonstrated talent is a more important criterion than scholastic achievement. Awards range in value from $100 to full tuition for one year. For further information and application materials, contact the appropriate department directly:

*Communications*: Department of Communications, 360 BRMB, Provo, UT 84602-6403, (801) 422-2997, e-mail: comms_secretary@byu.edu.

*Dance*: Department of Dance, 294 RB, Provo, UT 84602-2005, (801) 422-5086, e-mail: dance@byu.edu.

*Music*: School of Music, C-550 HFAC, Provo, UT 84602-6410, (801) 422-4784, e-mail: music@byu.edu.

*Theatre and Media Arts*: Department of Theatre and Media Arts, D-581 HFAC, Provo, UT 84602-6405, (801) 422-6645, e-mail: tmasec@byu.edu.

*Visual Arts*: Department of Visual Arts, E-509 HFAC, Provo, UT 84602-2500, (801) 422-8773, e-mail: sonya_schiffman@byu.edu.

### General University Scholarship Policies

Students granted university scholarships must do the following to remain eligible for their award:

1. Abide by the Honor Code and adhere to the Dress and Grooming Standards of BYU, and
2. Register as a full-time student and complete a minimum of 14 credit hours per semester.

> Note: Scholarships may be applied to approved International Study Programs and the BYU Jerusalem Center. Scholarships may not be used for Independent Study or Continuing Education courses, BYU-Idaho or BYU-Hawaii courses, audited classes, or credit earned through special examination.

Additional provision:

Students who have received scholarships for a total of eight semesters, excluding spring and summer terms, are ineligible for future fall/winter scholarships through the Financial Aid Office, but may be considered for spring/summer scholarships.

**Discontinuance**

A student claims a scholarship by registering for classes and using the scholarship to pay tuition. If the student then does not attend school or, once enrolled, discontinues for nonemergency reasons, the scholarship will be cancelled and the student will be billed for the appropriate tuition and discontinuance fees. Students who need to discontinue because of illness, injury, or extenuating circumstances should contact OneStop Student Services (D-155 ASB) for appropriate action.

**Note:** Exceptions to these policies may sometimes be granted according to individual needs and circumstances. Students wanting an exception must submit a formal written petition to the Financial Aid Office prior to the necessary change. Petitions may be submitted to D-155 ASB, Provo, UT 84602 or emailed to sch-petitions@byu.edu.

## BYU Short-Term Loan

A short-term loan is available to full- or part-time day students or full-time evening students admitted to day school. A student may borrow up to the cost of tuition only, and because the loan is "short-term" the loan must be repaid during the same semester or term in which the money is borrowed. The loan is not available for Independent Study, job interviewing, or debt payments. Students can apply for a short-term loan by logging onto myBYU and, under campus links, clicking the *School* tab, clicking on *My Financial Center*, clicking *Account Summary* and then applying for the short term loan.

## Federal Programs

### Federal Pell Grant

A Federal Pell Grant is awarded by the U.S. Department of Education based on financial need. A Pell Grant is not a loan and does not have to be repaid. Only undergraduate students who have not already earned a bachelor's degree are eligible for a Pell Grant. (Students who pay graduate tuition are not eligible.) In addition, students must meet other eligibility requirements (see preceding Eligibility Requirements). Federal Pell Grants are based on an eligibility index determined by a federal formula. Pell Grant payments are disbursed to BYU students one semester at a time and vary with the number of hours for which a student is enrolled per semester (spring and summer terms combined are considered one semester).

- 12.0 or more semester hours equal a full-time payment.
- 9.0–11.5 semester hours equal a three-quarter-time payment.
- 6.0–8.5 semester hours equal a half-time payment.
- Fewer than 6.0 semester hours equal a less-than-half-time payment.

In determining hours for Federal Pell Grant payments, please note that:

1. Audit hours, hours through Special Courses and Conferences, and hours obtained by challenging classes may not be used.
2. Continuing Education, Salt Lake Center, Study Abroad, and Jerusalem Center classes, etc., may be used only during the term or semester for which the student is admitted to BYU day school.

### William D. Ford Direct Loan Program

Direct Loans are available to undergraduate and graduate students. Students must meet the eligibility requirements described previously. Undergraduate students must be enrolled in at least 6.0 credit hours per semester or term; graduate students, at least 4.5 credit hours per semester or term. Audit hours, hours through Special Courses and Conferences, and hours obtained by challenging classes may not be used in determining hours. Repayment begins six months after a student graduates, drops below half-time enrollment, or discontinues from the university.

The Direct Loan Program offers the following types of loans:

- Subsidized—based on financial need as determined by information provided on the FAFSA and the resulting Expected Family Contribution (EFC). The government pays the interest on the loan while the student is enrolled in school at least half-time, during the grace period, or during deferment periods. Subsidized loans are not available to graduate students.
- Unsubsidized—not based on financial need and interest begins to accrue once the loan is disbursed. Students who receive subsidized loans may also receive unsubsidized loans. Although students do not go into repayment until after graduation, they may make interest payments.
- Parent PLUS—for parents of dependent students, and, like the unsubsidized loan, interest begins to accrue once the loan is disbursed. Parents go into repayment 60 days following the second disbursement unless a deferment is approved. Parents may borrow up to the student's Cost of Attendance minus any financial aid received by the student. A credit check is done and the loan is generally approved unless there is an adverse credit history. For students whose parents are denied a PLUS loan, an additional unsubsidized loan may be approved.
- GradPLUS—for graduate and professional students. Like the Parent PLUS, interest begins to accrue once the loan is disbursed. Students go into repayment 60 days following the second disbursement, but loan deferment is an option. Students may borrow up to the Cost of Attendance minus any other aid they receive. A credit check is made, and if there is no adverse credit history, the loan is generally approved.

To avoid the burden of excessive debt, students should consider other forms of financial aid such as grants, scholarships, part-time employment, savings, and family assistance. Students should also contact their state educational agency to apply for state grants and other state aid that may be available. High school counselors and employers may also provide information regarding other sources of financial aid.

### Satisfactory Academic Progress (SAP)

Federal regulations require schools to establish, publish, and apply reasonable standards for determining whether a student receiving federal financial aid is maintaining satisfactory academic progress in his or her course of study. Satisfactory Academic Progress is measured using qualitative and quantitative standards as follows:

*Undergraduate Students*

- Qualitative Standard
  - Maintain a cumulative GPA of 2.0 or higher
- Quantitative Standards

  *Pace (Rate of Progress)*: Students must successfully complete at least 66.67% of all credits attempted. Rate of progress is determined by dividing the total number of earned hours by the total number of attempted hours.

  - Earned hours include letter grades A, B, C, D, and P.
  - Attempted hours include earned hours and all non-progress hours, E, I, IE, UW, W, WE, and T, as well as repeated hours, transfer credit, AP and IB credit, foreign language examination credit and other examination credit.
  - For transfer students, W's, E's, IE's, and UW's from the transfer institution are excluded when calculating rate of progress.

  *Maximum Time Frame (Attempted Hours)*: Federal regulations allow for a student to attempt 150% of the number of credit hours required for graduation. The majority of BYU undergraduate degree programs require 120.0 hours. This allows a maximum time frame of 180.0 attempted credit hours as defined above. For students in majors requiring more than 120.0 hours, the maximum attempted hours will be adjusted to 150% of the number of hours needed for graduation.

  The following adjustments to the maximum attempted credit hour limit will also be made upon request from individual students:

  - Exclude transfer credits and/or AP/IB credits which do not satisfy university core or major/minor course requirements.
  - Exclude up to 20.0 credits in one or more documented previous majors which do not fulfill other graduation requirements.
  - Increase the maximum attempted credit hour limit to include hours required for one additional major, excluding hours which fulfill other BYU graduation requirements.

*Graduate Students*

Qualitative standard based on assessment by Graduate Studies Office.

- Graduate programs evaluate students' progress as "satisfactory," "marginal," or "unsatisfactory." Only students with a "satisfactory" or "marginal" designation meet SAP.
- Students must maintain a cumulative GPA of 3.0 or higher.

Qualitative standard of maximum time frame defined by program of study.

- Master's and Doctoral candidates must complete their degree within 150% of the number of credit hours required for their program of study.

*Annual Review of SAP*

SAP is evaluated once a year at the end of winter semester. After all winter grades post, there will be a review of all student's SAP eligibility.

- Students who "pass" this review meet SAP and will be eligible for federal financial aid for spring and summer terms of the current academic year and fall and winter semesters of the following academic year.
- Students who "fail" this review do not meet SAP and will not be eligible for federal financial aid for spring and summer terms of the current academic year and fall and winter semesters of the following academic year. Students will be notified of their failed SAP status and options for rehabilitating their standing by the Financial Aid Office via the Message Center. The most direct course for undergraduate students is simply to meet the minimum standards of a cumulative grade point average of 2.0 and a course completion rate of 66.67%, assuming they are within the maximum time frame. Upon meeting these requirements, students once again become eligible for aid in future enrollments if they meet all other requirements.

*Petition for Override of SAP*

In rare circumstances, a student who has extenuating reasons for not meeting SAP may meet with his or her financial aid counselor to determine if a financial aid probation period is appropriate.

## Important Tax Information

Under the Tax Reform Act of 1986, only scholarship, fellowship, benefit, and grant amounts used for tuition, fees, books, supplies, and equipment required for courses of instruction are excluded from the recipient's gross income. Any of these funds used for other expenses, such as room and board, must be included in income. If funds are received from any of these sources, a detailed record should be kept of all expenditures for tuition, fees, books, and required equipment and supplies. For more detailed information, consult a personal tax advisor.

## Exception to University Financial Aid Policy

Students desiring an exception to University Financial Aid Policy must meet with their OneStop counselor to discuss their situation. Students may call 801-422-4104 to schedule an appointment.

## Additional Information Regarding Financial Aid

Students with questions regarding financial aid at Brigham Young University are invited to visit the web site: http://financialaid.byu.edu.

## Estimated College Expenses

*On entering the university, students are responsible for making arrangements to cover enrollment expenses and should have sufficient funds on hand for at least the first semester.*

For estimated costs, please see the Financial Aid Web site: http://financialaid.byu.edu.

# Tuition and Fees

Student Services
D-155 ASB
(801) 422-4104

## Tuition Rates

Tuition and general fees for all academic programs are established annually by Brigham Young University. BYU is a non-profit corporation affiliated with the Church of Jesus Christ of Latter-day Saints, and significant portions of university operating costs are paid with the tithes of Church members. In recognition of this support, Church members are assessed lower tuition fees than those who are not members. This practice is similar in principle to that of state universities charging higher tuition to nonresidents. Students are considered members of the Church if they have been baptized at any time during the semester or term.

Tuition rates for the 2014–2015 academic year are as follows:

**2014-2015 Tuition**

**Undergraduate Students**

| Semester Charges | | | Term Charges ** | | |
|---|---|---|---|---|---|
| **Credit Hours** | **LDS** | **Non-LDS** | **Credit Hours** | **LDS** | **Non-LDS** |
| **12.0 +** | $2,500 | $5,000 | **6.0 +** | $1,250 | $2,500 |
| **9.0 – 11.5** | $2,375 | $4,750 | **4.5 – 5.5** | $1,188 | $2,375 |
| **0.5 – 8.5** | $264/credit | $528/credit | **0.5 – 4.0** | $264/credit | $528/credit |

**Graduate Students ***

| Semester Charges | | | Term Charges ** | | |
|---|---|---|---|---|---|
| **Credit Hours** | **LDS** | **Non-LDS** | **Credit Hours** | **LDS** | **Non-LDS** |
| **8.5 +** | $3,155 | $6,310 | **4.5 +** | $1,578 | $3,155 |
| **0.5 – 8.0** | $371/credit | $742/credit | **0.5 – 4.0** | $371/credit | $742/credit |

**Graduate School of Management and Law School Students***

| Semester Charges | | | Term Charges ** | | |
|---|---|---|---|---|---|
| **Credit Hours** | **LDS** | **Non-LDS** | **Credit Hours** | **LDS** | **Non-LDS** |
| **8.5 +** | $5,810 | $11,620 | **4.5 +** | $2,905 | $5,810 |
| **0.5 – 8.0** | $683/credit | $1,366/credit | **0.5 – 4.0** | $683/credit | $1,366/credit |

The university reserves the right to change tuition and fees without notice.

* Includes all students who have previously received a Bachelor's degree—even if enrolled in undergraduate courses.

** Tuition for spring-summer length classes will be calculated as if 1/2 of the credit hours were allocated towards spring term and 1/2 towards summer term. However, the full amount calculated for spring-summer length classes will be billed along with spring term and will be subject to the normal spring term deadlines.

** The Law School offers no courses during spring and summer; therefore, Law School students should refer to the graduate tuition rate to determine tuition charges during spring and summer terms.

## Noncredit and Audited Course Fees

Tuition for noncredit courses or for courses being audited is charged at the same rate as for credit courses. Noncredit and audit hours will be included when calculating tuition charges.

## Payment of Tuition and Fees

Tuition and fees are considered due and payable seven calendar days prior to the first day of class. Failure to pay by this date will result in holds being placed on the student's account, restricting the ability to add additional classes, unless the student has pending financial aid. Class registrations will be dropped if payment of tuition and fees is not received by midnight on the add deadline. Classes will generally not be dropped if adequate financial aid is pending. However, it is the student's responsibility to ensure that financial aid or other forms of payment are available to satisfy tuition and fees prior to the deadline.

## Short-Term Loans

The university makes short-term loans available to assist students to meet the tuition payment deadline. These loans are intended to be used for short-duration financing needs. Short-term loans are due as follows:

| Registration Period | Due Date |
|---|---|
| Fall 2014 | November 1, 2014 |
| Winter 2015 | March 1, 2015 |
| Spring-Summer 2015 | |
| Spring 2015 | June 1, 2015 |
| Summer 2015 | August 1, 2015 |

A $20 processing fee will be charged for each short-term loan. No interest is charged on those loans if they are paid by the due date. Short-term loans outstanding after the due date bear interest at the rate of 12 percent per annum. Holds on registration for future semesters or spring-summer(s) are placed on all student accounts the day the short-term loan is disbursed and are not released until the loan is paid in full. This may affect the ability of some students to take advantage of priority registration.

## Pro-Rata Charges for Dropped Classes

Students may drop classes without penalty through the add deadline. After the add deadline, tuition will be recalculated based on the student's current enrollment status. A pro-rata tuition charge will be applied after the add deadline for dropped classes that result in reduction in the original tuition charge. The pro-rata charge applies to tuition and most class fees. Certain class fees relate to the delivery of required supplies or services and are not refundable. The pro-rata charges are as follows:

| If class is dropped beginning: | The pro-rata charge will be: |
|---|---|
| **Fall Semester** | |
| September 10, 2014 | 15% |
| September 22, 2014 | 25% |
| October 27, 2014 | 50% |
| November 11, 2014 | 100% |
| **Winter Semester** | |
| January 13, 2015 | 15% |
| January 26, 2015 | 25% |
| March 2, 2015 | 50% |
| March 18, 2015 | 100% |
| **Spring-Summer (including semester-length offerings)** | |
| **Spring Term** | |
| May 6, 2015 | 15% |
| May 11, 2015 | 25% |
| May 26, 2015 | 50% |
| June 3, 2015 | 100% |
| **Summer Term** | |
| June 30, 2015 | 15% |
| July 6, 2015 | 25% |
| July 20, 2015 | 50% |
| July 29, 2015 | 100% |

The recalculation of tuition and fee charges may result in a refund. The amount of the refund a student will receive is based on the date the classes are dropped, or in the case of an official discontinuance, the date that the student reports such discontinuance to the Discontinuance Office (B-150 ASB).

Any refund due the student will be paid by check through the mail approximately ten days after the classes are dropped. If the student has elected direct deposit for student account refunds, the refund will be deposited into the student's bank. Payments originally paid by credit card will be returned to the credit card. Unpaid university charges may be deducted from the refund amount.

Refunds will not be paid to students whose tuition has been paid by a loan, scholarship, or benefit.

If a student with federal financial aid drops below half-time enrollment (for tuition assessment purposes: undergraduate, 6 hours per semester or 3 hours per term; graduate, 4.5 hours per semester or 2.5 hours per term), the federal program or lender may require that a portion of the refund be returned.

A petition for exception to the refund schedule will be considered for students forced to discontinue because of circumstances that are beyond their control, such as death in the immediate family, life-threatening situations, medical incapacitation, a university error, or military leave. Students should not submit petitions based on ignorance of university policies and procedures. These will be denied. Petition forms are available in D-155 ASB.

## Collection of Unpaid Tuition and Fees

BYU retains all legal remedies to collect unpaid tuition, fees, and other amounts due to the university for housing, traffic fines, etc. BYU uses a variety of methods to keep students informed of amounts due the university, including financial Web sites, statements, and various forms of correspondence. It is the student's responsibility to remain aware of obligations to the university and to make payment on a timely basis.

If BYU is unable to collect amounts due the university within a reasonable time, the debt may be referred to an outside collection agency and/or attorney for collection. All collection costs, including collection agency fees, attorney fees, and court costs will be charged to the student's account.

Failure to pay all amounts due BYU, including collection fees, may also result in various actions, including but not limited to

withholding services and restricting the student's ability to register for class, participate in graduation, receive a transcript or diploma, or be considered for readmission to the university. The university also reserves the right to report both positive and negative payment histories to credit-reporting agencies.

# Payments for Tuition and Fees

Tuition and fees include charges such as tuition, class fees, tuition reassessments, tuition late fees, Study Abroad fees, and health plan charges. Students are responsible to pay the correct amount of tuition, fees, and past due balances in **U.S. dollars** (checks must be drawn on a U.S. bank). Tuition and fees cannot be paid using the BYU Signature Card. The following options are available for making tuition and fee payments. For more information on making payments to BYU, please visit http://finserve.byu.edu/content/payment-options-byu-provo-campus-only.

## Pay Tuition Online

BYU encourages you to take advantage of the fast, easy, and secure way to pay online. Payments may be made online by logging into myBYU and selecting the My Financial Center link under the School heading.

1. **eCheck** (BYU's preferred payment method)

   eCheck is a *free* electronic check option that uses a secure Web transmission to electronically withdraw funds directly from a payer's checking or savings account. The payer must provide his/her bank routing and account number to make an eCheck payment. Payments from mutual fund, money market, line of credit, or brokerage accounts cannot be accepted.

2. **Credit Card with a Service Fee**

   BYU accepts Visa, Mastercard, Discover and American Express for all charges including tuition payments. However, the payer will be charged a **nonrefundable** credit card fee equal to 2% of the tuition when making a payment on tuition and fee charges.

   Debit cards are considered credit cards for tuition and loan payment purposes and would therefore be subject to the same credit card restrictions and service charges. **Note:** Because eChecks and debit cards both deduct payments directly from a checking or savings account, students can avoid the service charge by choosing the eCheck option.

   **Note the Credit Card Refund Policy:** Existing credit card regulations prohibit BYU from making a refund to you in cash or check when you make a payment by credit card and there is an adjustment made to the charges paid. When you pay by credit card and there is a reduction in the amount of your charges, we are required to refund the amount back to the credit card you used to make the payment.

## Pay Tuition by Mail

Check or money order payments may be mailed to Student Financial Services, A-153 ASB, Provo, UT 84602. Please make checks payable to Brigham Young University or BYU. **Do not mail cash.** Include with your check the student's BYU ID number and the amount to apply to each category.

## Pay Tuition in Person

Payments may be made throughout the year in person at D-155 ASB. Tuition may be paid using check, money order, or cash. **Credit cards and the Signature Card cannot be used to pay tuition or fees at BYU cashiering locations** (see Pay Tuition Online above for acceptable use of credit cards). Check or money order payments may also be left in the drop boxes in the D wing on the main floor of the ASB.

## Pay Tuition by Wire Transfer

To pay tuition using an international or domestic wire transfer, please contact us for wire transfer instructions via phone (801) 422-4104 or via email at wires@byu.edu.

# University Fees

## Class Fees

| | |
|---|---|
| Ec En 220 | 11 |
| **Geol 410 | 550 |
| ***Geol 490R, 590R | variable |
| Math 97 | 75 |
| Music 160R, 260R, 359R, 360R, 460R, 560R, 660R (Fall/Winter) | 410 |
| Music 160R, 260R, 359R, 360R, 460R, 560R, 660R (Spring/Summer) | 205 |
| Music 250R (Fall/Winter) | 205 |
| Music 250R (Spring/Summer) | 103 |
| PWS 112 | 90 |
| RMYL 189 | 100 |
| †RMYL 427 | variable |
| SFL 110, 340 | 50 |
| SFL 185R, 287, 487 | 30 |

| | |
|---|---|
| SFL 215 | 80 |
| StAc 116, 117 (bowling) | 45 |
| †StAc 150, 151, 152, 153 (skating) | variable |
| †*StAc 161, 162, 164 (skiing) | $40 |
| †StAc 175, 176 (scuba) | variable |
| TEE 229 | $30 |
| VAStu 330 | $15 |

*Student must also have equipment and purchase lift passes.
**See department for a refund application.
***See department for a fee card.
†See department for amount.

Class fee refunds are based on the same schedule as listed for tuition refunds. Those with asterisks (*) are exceptions to this schedule and must be requested at the respective academic department.

### Materials/Service Fees

The following courses charge fees based on materials consumed or services provided. Contact the individual department or professor to determine the appropriate payment procedure.

CM 105, 155, 210.

EC En 212, 301.

IT 101, 443, 447.

TEE 200, 229, 490R, 593R.

TMA 285, 475R.

VAStu 104, 105, 133, 155, 216, 217, 330, 350, 351, 356R, 358, 359, 456R.

### Student Teaching/Practicum Fees

#### Fingerprint Fee

Students in teacher education must be fingerprinted and pass a background check prior to starting practicum experiences with K–12 students. Fees for fingerprinting and background checks are set by the Utah State Office of Education and are listed on the Education Advisement Center Web site: http://education.byu.edu/ess/fingerprint.html.

#### Licensure Fee

Students who meet all program requirements qualify for a Level 1 teaching license in Utah. Fees for licensure are due with the student teaching application. Licensure fees are set by the Utah State Office of Education and are listed on the Office of Field Services Web site: http://education.byu.edu/ess.

### Miscellaneous Fees and Fines

| | |
|---|---|
| Admission evaluation fee (nonrefundable) | $35 |
| Bicycle registration (Provo City license) | 1 |
| Change of registration fee—per class (after add deadline) | 10 |
| Dishonored check charge | 20 |
| Examination, special equivalency | 20 |
| NDFS-dietetics insurance and ADA dues | 50 |
| Graduation (undergraduate) fee (nonrefundable) | 15 |
| Identification photo for replacement ID card (no charge for first replacement | 10 |
| Incomplete grade contract fee per class (to a maximum of $30) | 10 |
| National League of Nursing Diagnostic Exam | 40 |
| Physical education locker | 5 |
| Traffic violation fines, variable according to violation | 5–300 |
| Transcript fee: Electronic<br>Paper | 5<br>6 |

## Health Insurance Requirement

BYU requires all students with 9.0 or more credits in a semester or 4.5 or more credits in a term to carry adequate medical insurance. This applies the entire time a student has continuing status, including students taking a semester or term off. All participants in groups on tour, Study Abroad, or internships are required to carry adequate medical insurance.

To satisfy the health coverage requirement, you have several options:

1. Enroll in the Student Health Plan
2. Enroll in a group medical plan provided by your parents', your own, or your spouse's employer
3. Purchase an individual plan that meets the following guidelines:
    - 80% coverage for all major medical expenses, including physician, hospital, and ancillary services in Utah

- An individual annual deductible of no more than $1,000; and
- An annual plan limit of no less than $100,000.

Students with 9.0 or more credits in a semester or 4.5 or more credits in a term must enroll in the BYU Student Health Plan or provide verification of other adequate insurance coverage when first enrolling at BYU and **prior to the beginning of fall semester each year thereafter**. Students who do not return a properly completed waiver form via the Web to the BYU Student Health Plan Office prior to the last day to add/drop will be automatically enrolled in and assessed the appropriate premium (single or married student rate) for the BYU Student Health Plan. The web site is located at http://health.byu.edu/index2.php?page=shc/ped.php.

The BYU Student Health Plan is an annual plan but is billed and must be paid each semester/terms within Spring-Summer. The health plan fee is due on the add deadline of each semester or term within Spring-Summer. Following fall semester, students who will not be attending BYU for one or more semesters or terms within Spring-Summer (except as described above) are eligible to remain on the BYU Student Health Plan but must continue to pay the health plan fee on a timely basis. Following fall semester, students who will no longer be attending BYU may also opt out of participation in the health plan. If you choose to not remain on the student health plan, you must submit in writing such decision to the BYU Student Health Plan Office by the due date of the plan fee.

For the latest BYU Student Health Plan fees, check the Web site at http://health.byu.edu/index2.php?page=shc/health.php.

## Appeals

Students with unusual circumstances may appeal for special consideration of any item in this section to the Student Services Office. Appeal forms may be obtained at the Student Services windows at D-155 ASB.

**Academic Honesty Policy**
**Admissions**
**Calendar**
**Discontinuance**
**Grading & Records**
**Graduation**
**Honor Code**
**Housing**
**Registration**
**Petition Services**
**Using the Catalog**

# Academic Honesty Policy

The first injunction of the Honor Code is the call to "be honest." Students come to the university not only to improve their minds, gain knowledge, and develop skills that will assist them in their life's work, but also to build character. "President David O. McKay taught that character is the highest aim of education" (The Aims of a BYU Education, p. 6). It is the purpose of the BYU Academic Honesty Policy to assist in fulfilling that aim.

BYU students should seek to be totally honest in their dealings with others. They should complete their own work and be evaluated based upon that work. They should avoid academic dishonesty and misconduct in all its forms, including but not limited to plagiarism, fabrication or falsification, cheating, and other academic misconduct:

## Plagiarism

Intentional plagiarism is a form of intellectual theft that violates widely recognized principles of academic integrity as well as the Honor Code. Such plagiarism may subject the student to appropriate disciplinary action administered through the university Honor Code Office, in addition to academic sanctions that may be applied by an instructor. Inadvertent plagiarism, whereas not in violation of the Honor Code, is nevertheless a form of intellectual carelessness that is unacceptable in the academic community. Plagiarism of any kind is completely contrary to the established practices of higher education, where all members of the university are expected to acknowledge the original intellectual work of others that is included in one's own work. In some cases, plagiarism may also involve violations of copyright law.

*Intentional Plagiarism*—Intentional plagiarism is the deliberate act of representing the words, ideas, or data of another as one's own without providing proper attribution to the author through quotation, reference, or footnote.

*Inadvertent Plagiarism*—Inadvertent plagiarism involves the inappropriate, but nondeliberate, use of another's words, ideas, or data without proper attribution. Inadvertent plagiarism usually results from an ignorant failure to follow established rules for documenting sources or from simply being insufficiently careful in research and writing. Although not a violation of the Honor Code, inadvertent plagiarism is a form of academic misconduct for which an instructor can impose appropriate academic sanctions. Students who are in doubt as to whether they are providing proper attribution have the responsibility to consult with their instructor and obtain guidance.

Examples of plagiarism include:

*Direct Plagiarism*—The verbatim copying of an original source without acknowledging the source.

*Paraphrased Plagiarism*—The paraphrasing, without acknowledgment, of ideas from another that the reader might mistake for your own.

*Plagiarism Mosaic*—The borrowing of words, ideas, or data from an original source and blending this original material with one's own without acknowledging the source.

*Insufficient Acknowledgment*—The partial or incomplete attribution of words, ideas, or data from an original source.

Plagiarism may occur with respect to unpublished as well as published material. Acts of copying another student's work and submitting it as one's own individual work without proper attribution is a serious form of plagiarism.

## Fabrication or Falsification

Fabrication or falsification is a form of dishonesty where a student invents or distorts the origin or content of information used as authority. Examples include:

- Citing a source that does not exist.
- Attributing to a source ideas and information that are not included in the source.
- Citing a source for a proposition that it does not support.
- Citing a source in a bibliography when the source was neither consulted nor cited in the body of the paper.
- Intentionally distorting the meaning or applicability of data.
- Inventing data or statistical results to support conclusions.

## Cheating

Cheating is a form of dishonesty where a student attempts to give the appearance of a level of knowledge or skill that the student has not obtained. Examples include:

- Copying from another person's work during an examination or while completing an assignment.
- Allowing someone to copy from you during an examination or while completing an assignment.
- Using unauthorized materials during an examination or while completing an assignment.
- Collaborating on an examination or assignment without authorization.
- Taking an examination or completing an assignment for another or permitting another to take an examination or to complete an assignment in place of the student.

## Other Academic Misconduct

Academic misconduct includes other academically dishonest, deceitful, or inappropriate acts that are intentionally committed. Examples of such acts include but are not limited to:

- Inappropriately providing or receiving information or academic work so as to gain unfair advantage over others.
- Planning with another to commit any act of academic dishonesty.
- Attempting to gain an unfair academic advantage for oneself or another by bribery or by any act of offering, giving, receiving, or soliciting anything of value to another for such purpose.
- Changing or altering grades or other official educational records.
- Obtaining or providing to another an unadministered test or answers to an unadministered test.
- Breaking and entering into a building or office for the purpose of obtaining an unauthorized test.
- Continuing work on an examination or assignment after the allocated time has elapsed.
- Submitting the same work for more than one class without disclosure and approval.

Faculty are responsible to establish and communicate to students their expectations of behavior with respect to academic honesty and the student's conduct in the course. Responsible instructors will investigate alleged academic dishonesty, determine the facts, and take appropriate action. In a case where academic dishonesty is determined to have occurred, the instructor must notify the Honor Code Office of the incident as a means of encouraging behavior change and discouraging repeat violations. In addition, the instructor shall consult with the department chair concerning disciplinary actions to be taken. If the incident of academic dishonesty involves the violation of a public law, such as breaking and entering into an office or stealing an examination, the act should also be reported to appropriate law enforcement officials. If an affected student disagrees with the determination or action and is unable to resolve the matter to the mutual satisfaction of the student and the instructor, the student may have the matter reviewed through the university's Student Academic Grievance Procedure.

## Applicable Actions

A wide range of possible actions exists for cases of academic dishonesty. Instructors should take actions that are fair and equitable under the circumstances and should attempt to reach an understanding with the affected student on the imposition of an appropriate action. In some cases, the department, the college, or the university may also take actions independent of the instructor. Examples of possible actions include but are not limited to the following:

### For instructors (in consultation with the department chair):

Reprimanding the student orally or in writing.

Requiring work affected by the academic dishonesty to be redone.

Administering a lower or failing grade on the affected assignment or test.

Administering a lower or failing grade for the course (even if the student withdraws from the course).

Removing the student from the course.

### For departments and colleges:

After consulting with the Honor Code office, dismissing the student from the program, department, or college.

Recommending probation, suspension, or dismissal from the university.

### For the university:

The university may elect to discipline a student for academic dishonesty in addition to, or independently from, discipline imposed by a faculty member, a department, or a college. University discipline may be administered through the Honor Code Office or through the Dean of Student's Office. The Honor Code Office will maintain a record of all violations of this Academic Honesty Policy reported to it by the faculty. The university may elect to place an affected student on probation, or to suspend or dismiss the student, and to place a temporary or permanent notation on the student's permanent academic transcript indicating that he or she was suspended or dismissed due to academic misconduct.

The university may report an incident of academic misconduct to appropriate law enforcement officials and may prosecute an affected student if the act in question involves the commission of a crime (e.g., breaking into an office or building, stealing an examination, etc.).

## Honor Code Office Involvement

The Honor Code Office will maintain a record of all violations of the Academic Honesty Policy reported to it by the faculty. If the occurrence is sufficiently egregious or if a pattern of dishonesty or misconduct is discovered, the Honor Code Office may take additional action on behalf of the university based upon the nature of the infraction(s). The Honor Code Office, in consultation with the involved academic personnel, including the associate academic vice president in charge of undergraduate studies as needed, may determine to place a student on probation or to recommend that a student be suspended or dismissed for academic dishonesty and other forms of academic misconduct.

## Shared Responsibility Policy Statement

Students are responsible not only to adhere to the Honor Code requirement to be honest but also to assist other students in fulfilling their commitment to be honest.

## Faculty Academic Integrity

The substantive standards of academic honesty stated in this policy apply *a fortiori* to faculty. Indeed, all members of the BYU community are expected to act according to the highest principles of academic integrity.

Academic Honesty Policy
Admissions
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# Admissions

Admissions Office
A-41 ASB
(801) 422-2507

## General Admission Policies

Brigham Young University, Brigham Young University—Idaho, Brigham Young University—Hawaii, and LDS Business College exist to provide an education consistent with the religious and family values taught by The Church of Jesus Christ of Latter-day Saints. We prefer to admit members of the Church in good standing but will not unlawfully discriminate against applicants based upon gender, race, creed, religion, national origin, age, or disability who meet the requirements, who agree to abide by the Honor Code and Dress and Grooming Standards, and who are otherwise qualified based upon available space.

Students must be in good Honor Code standing to be admitted to BYU and must continue to abide by the Honor Code and Dress and Grooming Standards while attending BYU, whether on or off campus. An applicant who is currently excommunicated or disfellowshipped from, on probation with, or voluntarily disaffiliated from The Church of Jesus Christ of Latter-day Saints is inadmissible until reinstated to full fellowship.

"The mission of Brigham Young University—founded, supported, and guided by The Church of Jesus Christ of Latter-day Saints—is to assist individuals in their quest for perfection and eternal life. That assistance should provide a period of intensive learning in a stimulating setting where a commitment to excellence is expected and the full realization of human potential is pursued."

To this end, the university seeks qualified students of various talents and backgrounds, including geographic, educational, cultural, ethnic, and racial, who relate together in such a manner that they are "no more strangers and foreigners, but fellow citizens with the saints, and of the household of God" (Ephesians 2:19). It is the university's judgment that providing educational opportunities for a mix of students who share values based on the gospel of Jesus Christ and come from a variety of backgrounds and experiences is an important educational asset to BYU.

**Social Security Number:** The Admissions Office no longer requires students to submit a Social Security number when applying for admission. All students will be assigned an appropriate identification number. If students are applying for any kind of financial aid, however, the government will require the Admissions Office to collect their Social Security number. Numbers may be obtained at the nearest Social Security office or the local post office.

**Full Disclosure:** Failure to disclose and submit all documents required for admission, including transcripts from each institution in which the applicant has or is currently enrolled, or any falsification of information required for admission consideration may result in immediate suspension and loss of all credit earned at BYU.

**Admission Status and Academic Standing:** Admission status (admit or deny) and academic standing (good, warning, or probation) will be determined by the admissions committee. This review is for all applicants, including former BYU students.

**Official Notice of Admissions Committee Action:** Applicants will receive electronic notice of the official action taken by the admissions committee (oral communication does not constitute a valid offer of admission). Admission can be granted only by the Admissions Office and not by any other BYU department. An official offer of admission is valid only for the semester or term indicated. Students who wish to change the entry date specified in their notice of acceptance must request permission to do so from the admissions committee before the designated deadline for the entry date they desire.

**Admission Deadlines:** All materials must be postmarked on or before the deadline date of the semester or term for which the student is applying.

**Fall Semester**

New freshman priority deadline: December 1*
New freshman applicants: February 1
Transfer or former applicants: February 1

**This deadline does not apply to international new freshmen for admissions decisions. However, international freshman applicants who meet the December 1 deadline will have priority status when choosing on-campus housing.*

**Winter Semester**

All applicants: October 1

**Spring-Summer**

**Spring Term**

All domestic applicants: February 1
International applicants: December 1

**Summer Term**

New freshman priority deadline: December 1*
New freshman applicants: February 1
Transfer or former applicants: February 1

**This deadline does not apply to international new freshmen for admissions decisions. However, international freshman applicants who meet the December 1 deadline will have priority status when choosing on-campus housing.*

**Please note:** The university president and the admissions committee reserve the right to make exceptions to admission policy and guidelines as deemed appropriate.

# US Applicants

## New Freshmen

New freshmen are high school or home school graduates with no college credit or with college credit completed prior to high school graduation. Students who are high school age and will not be completing high school are also considered new freshmen.

**High School Graduation Alternatives:** Those who complete their secondary education through the General Education Development (GED) test, home study, home school, or other programs will be reviewed individually by the admissions committee to determine admissibility. Additional information (achievement tests, personal interview, etc.) may be required as part of the application process.

**High School Preparation:** Students are encouraged to complete high school courses from the following list of college-preparation courses. Of particular importance are English and mathematics. Writing and math skills are basic for critical thinking. Students who perform well in these classes enhance their possibility of admission. In addition, those who complete Advanced Placement (AP) or International Baccalaureate (IB) courses will receive additional consideration in admission decisions.

Four years of English: composition, grammar, and courses that encourage "writing to learn."

Four years of mathematics (two or three years beyond algebra 1): geometry, intermediate algebra, precalculus, trigonometry, calculus.

Two to three years of laboratory science: chemistry, physics, biology, physiology, anatomy, genetics, botany, zoology.

Two years of history or government: US history, US Constitution, US government, Civil War, world history, medieval history, ancient history.

Two or more years of foreign language (advanced skill in one language is preferred).

Courses in computer science and the arts (music, drama, painting, etc.) can also be worthwhile. Students should be careful to take classes with substantial content that challenges them. Typing and computer skills are valuable assets in today's world, and should be learned either independently or through high school courses.

**LDS Seminary:** Students are encouraged to participate in LDS seminary during each year of high school. Brigham Young University is committed to the concept that thoughtful and consistent study of the scriptures is vital to the preparation of those desiring to enter BYU. The number of years of LDS seminary completed (released-time, early morning, or home study) will influence additional consideration in admission decisions.

**American College Test (ACT) or Scholastic Aptitude Test (SAT):** All new freshman applicants, or students whose high school graduating class has yet to graduate, and transfer students who have completed fewer than 24 semester (36 quarter) hours of college credit at the time of application are required to take the ACT or SAT. The ACT is administered nationally six times each year (September, October, December, February, April, and June). The SAT is offered seven times a year in October, November, December, January, March (or April, alternating each year), May, and June. Students are encouraged to take the test during the last semester of their junior year in high school and again in the first semester of their senior year in high school. Because test results take approximately four weeks after the test date to arrive at the Admissions Office, students should plan to take the test at least a month before the deadline for the semester in which they intend to enroll. Registration information and materials can be obtained from most high school or college counseling offices or from the American College Testing Program, 500 ACT Drive, P.O. Box 168, Iowa City, IA 52243-0168, (319) 337-1270 (www.act.org) or from College Board SAT Program, P.O. Box 025505, Miami, FL 33102, (866) 756-7346 (www.collegeboard.com).

**Application:** Those applying as new freshman students must complete the following requirements:

- Complete parts 1, 2, 3, 4, 5, 6, and 7 of the online application at besmart.com
- Pay the non-refundable, one-time $35 application fee
- Submit transcripts* from all high schools attended (including transcripts for grade 9)
- Submit official transcripts from all colleges/universities attended (if applicable)
- Submit ACT/SAT scores

**Any college or high school work that is completed internationally will need to be evaluated by a third party. Our preferred evaluation agency is IERF (www.ierf.org).*

The application deadlines for new freshmen are as follows:

- December 1: Priority deadline for summer term and fall semester*
- February 1: Final deadline for spring/summer terms and fall semester
- October 1: Deadline for winter semester

**This deadline does not apply to international new freshmen.*

**Admission Criteria:** Those who complete their application by the December 1 priority deadline will be given extra consideration in the admission process and will be notified of their admission decision no later than February 28. All new freshman applications go through a holistic review process which is comprised of the following elements: ecclesiastical endorsement, unweighted high school GPA, ACT or SAT score, seminary attendance, service, leadership, individual talents, creativity, AP/IB courses taken, unique or special circumstances, and other factors showing a student's ability to strengthen the BYU community.

Note that students who are denied as new freshmen will not be reconsidered for admission until they have completed 24 hours of college credit, with at least one college course having been completed after high school graduation.

**Housing:** The admission application is also the application for on-campus housing. Students who complete the admission and housing application by the December 1 priority deadline will receive extra consideration in the admission process and priority in on-campus housing selection. Please note that while it is anticipated that all freshman applicants who meet the December 1 priority deadline will have the opportunity to live in on-campus housing facilities, those who apply early in the process will have an advantage in their housing selection.

## Early Admission

High school students who would like to be considered for full-time admission to Brigham Young University before high school graduation have the same requirements as new freshman applicants.

## Homeschooled Applicants

Applicants who have been homeschooled in lieu of attending a traditional high school environment must receive a composite ACT score of 27 or higher to be competitive for admission consideration. These individuals must also complete all other application requirements for freshman applicants. Applicants should contact Admissions Services (801-422-5000) for more details on the application process for homeschooled students.

*Print material is subject to change. Please refer to our websites for the most accurate information.*

*Regardless of printed admission policies and procedures, the university reserves the right to refuse or rescind admission to any applicant.*

## Transfer Students

### Transfer with Fewer than 24 College Credits

This student type refers to students who have completed fewer than 24 semester hours (36 quarter hours) of graded college credit after high school graduation. This does not include AP, IB, or CLEP credit; or institute of religion credit. College credits must be completed by the application deadline. These students will be evaluated for admission based on both their high school and college work.

Students who have completed college work and apply for admission prior to graduating from high school will be evaluated as new freshmen *regardless of the number of college hours completed*. Once a student has graduated from high school and has taken at least one course at another college or university, this applicant will be considered a transfer student and college credits taken during high school will count toward the 24 credit hour threshold.

Note that students who are denied as new freshmen will not be reconsidered for admission until they have completed 24 hours of college credit, with at least one college course having been completed after high school graduation.

**Application:** Those applying as transfer students with fewer than 24 credits must complete the following requirements:

- Complete parts 1, 2, 3, 4, 5, 6, and 7 of the online application at besmart.com
- Pay the non-refundable, one-time $35 application fee
- Submit transcripts* from all high schools attended (including transcripts for grade 9)
- Submit official transcripts* from all colleges/universities attended
- Submit ACT/SAT scores

**Any college or high school work that is completed internationally will need to be evaluated by a third party. Our preferred evaluation agency is IERF (www.ierf.org).*

The application deadlines for transfer students are as follows:

- February 1: Deadline for spring/summer terms and fall semester
- October 1: Deadline for winter semester

**Admission Criteria:** All applications of transfer students with fewer than 24 credits go through a holistic review process which is comprised of the following elements: ecclesiastical endorsement, unweighted high school GPA, ACT or SAT score, completed college coursework, seminary attendance, service, leadership, individual talents, creativity, AP/IB courses taken, unique or special circumstances, and other factors showing a student's ability to strengthen the BYU community. Transfer applicants will receive their admission decisions no later than February 28.

BYU does not accept vocational transfer credit (college courses leading to an applied associate degree or certification) from any institution. This type of credit includes subjects such as auto mechanics, cosmetology, dental hygiene, and other technical fields. Once admitted, each incoming transcript will be checked for vocational credit, and those vocational credits will be marked as non-transferrable credit. If vocational credit is earned as part of an associate of arts or science degree, it will still be marked as non-transferrable. However, the associate degree will still be recognized as long as at least 35% of the credit within the degree is considered to be academic credit.

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### Transfer with 24 or More College Credits

This student type refers to students who have completed 24 or more semester hours (36 quarter hours) of graded college credit after high school graduation. This does not include AP, IB, CLEP or institute of religion credit. College credits must be completed by the application deadline.

Students who have completed college work and apply for admission prior to graduating from high school will be evaluated as new freshmen *regardless of the number of college hours completed*. Once a student has graduated from high school and

taken at least one course at another college or university, this applicant will be considered a transfer student and college credits taken during high school will count toward the 24 credit hour threshold.

**Application:** Those applying as transfer students with 24 or more credits must complete the following requirements:

- Complete parts 1, 2, 3, 4, 6, and 7 of the online application at besmart.com
- Pay the non-refundable, one-time $35 application fee
- Submit official transcripts* from all institutions attended

**Any college or high school work that is completed internationally will need to be evaluated by a third party. Our preferred evaluation agency is IERF (www.ierf.org).*

The application deadlines for transfer students are as follows:

- February 1: Deadline for spring/summer terms and fall semester
- October 1: Deadline for winter semester

**Admission Criteria:** All transfer applications go through a holistic review process which is comprised of the following elements: ecclesiastical endorsement, leadership experience, GPA, course selection, quality of coursework, Institute of Religion involvement, academic goals, and other similar factors. Transfer students with 90 or more graded semester credit hours are unlikely to be admitted. Transfer applicants will receive their admission decisions no later than 4 weeks after the final admission deadline.

BYU does not accept vocational transfer credit (college courses leading to an applied associate degree or certification) from any institution. This type of credit includes subjects such as auto mechanics, cosmetology, dental hygiene, and other technical fields. Once admitted, each incoming transcript will be checked for vocational credit, and those vocational credits will be marked as non-transferrable credit. If vocational credit is earned as part of an associate of arts or science degree, it will still be marked as non-transferrable. However, the associate degree will still be recognized as long as at least 35% of the credit within the degree is considered to be academic credit.

**Evaluation of Transfer College Credit:** All college transcripts will be evaluated to determine admissibility of an applicant even if all or any of that credit is not accepted for transfer. Transfer Services in the Registrar's Office will determine the transferability of undergraduate credit to BYU.

Factors which can affect the transfer of credit include:

The transfer institution is accredited by one of the following regional associations or is an institution sponsored by The Church of Jesus Christ of Latter-day Saints:

Middle States Association of Colleges and Schools
New England Association of Schools and Colleges
North Central Association of Colleges and Schools
Northwest Commission on Colleges and Universities
Southern Association of Colleges and Schools
Western Association of Schools and Colleges

In addition to accreditation, the following criteria are also considered when determining the transferability of credit and equivalencies: comparable credit hours, course level, seat time, and course descriptions. Vocational and technical credit is not accepted, even if earned at an accredited institution.

Additional factors that can affect the transfer of credit:

1. Military courses are evaluated using the ACE recommendations in the upper-division baccalaureate category from the Guide to the Evaluation of Educational Experiences in the Armed Services.
2. An associate of arts or science degree from any one of the main feeder institutions (BYU-Idaho, College of Eastern Utah, Dixie State College, Mesa Community College, LDS Business College, Salt Lake Community College, Snow College, and Utah Valley University) will fill most BYU university core requirements with the exception of Advanced Written and Oral Communication, Languages of Learning, and the religion hours at BYU. Advanced Written and Oral Communication and the Languages of Learning requirements may be filled by completing specific courses at other colleges. Students who have questions about the completion of university core courses are invited to contact Transfer Services in the BYU Registrar's Office, (801) 422-8522, for further information.
3. Most associate of arts or science degrees from other approved transfer institutions not listed above will fill most BYU university core requirements with the exception of American Heritage, Advanced Written and Oral Communication, Languages of Learning, and the religion hours at BYU. American Heritage, Advanced Written and Oral Communication, and the Languages of Learning requirements may be filled by completing specific courses at other colleges. NOTE: Associate of arts or science degrees must include at least 35% solid, academic classes (i.e., general education) in order to fulfill BYU's university core requirements as stated above. Associate of arts or science degrees that include more than 65% vocational or technical courses will be evaluated on a course-by-course basis. Students who have questions about the completion of university core courses are invited to contact Transfer Services in the BYU Registrar's Office, (801) 422-8522, for further information.
4. Credit is evaluated on a course-by-course basis for students who do not complete an associate of arts or science degree. Transfer guides have been established for some of BYU's main feeder institutions. A list of these transfer guides can be found at http://transfer.byu.edu.
5. Credit earned more than eight years before admission or readmission (including transfer credit) may, at the discretion of the university, be accepted to meet general education and university graduation requirements as well as major requirements.
6. Credit earned from an LDS institute of religion must receive a Pass (P) grade and be posted to an official CES transcript.

**Note:** Any exceptions to this policy must be approved by the academic vice president.

*Print material is subject to change. Please refer to our websites for the most accurate information.*

*Regardless of printed admission policies and procedures, the university reserves the right to refuse or rescind admission to any applicant.*

## Former Students

Former students are students who were admitted to the university as fully-matriculated students, completed coursework at BYU, but have been absent from the university for more than one major semester. Students who have attended only BYU's Visiting Student Program, Evening Classes, Salt Lake Center, or other Continuing Education programs are not considered fully-matriculated students and will not be classified as former students.

**Application:** Those applying as former students must complete the following requirements:

- Complete parts 1, 2, and 3 of the online application at besmart.com
- Submit official college transcripts* from any schools attended since last attending BYU

*Any college or high school work that is completed internationally will need to be evaluated by a third party. Our preferred evaluation agency is IERF (www.ierf.org).*

The application deadlines for former students are as follows:

- February 1: Deadline for spring/summer terms and fall semester
- October 1: Deadline for winter semester

**Admission Criteria:** Former student status is not a guarantee of admission. Former students with additional transfer credit must have earned at least a 3.2 GPA or higher on additional work.

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## Visiting Student Program

The Spring/Summer Visiting Student Program is available to students who are not currently admitted to BYU; the program is for those who will be pursuing a degree at another university or who would like to receive some credit from BYU. Admission to the Visiting Student Program does not imply continued enrollment at BYU beyond spring-summer.

**Application:** Applicants interested in the Visiting Student Program must complete the following requirements:

- Complete parts 1, 2, and 3 of the online application at besmart.com
- Pay the non-refundable, one-time $35 application fee
- Submit official college transcripts* from all institutions attended
- If fewer than 24 semester/36 quarter hours of college credit have been completed, also submit
  - High school transcript*
  - ACT/SAT scores

*Any college or high school work that is completed internationally will need to be evaluated by a third party. Our preferred evaluation agency is IERF (www.ierf.org).*

**Admission Criteria:** The application deadline for the Visiting Student Program is the week before classes begin. Admission to the Spring/Summer Visiting Student Program is determined on a first-come, first-serve basis. Students must have a 2.5 college GPA or a 2.5 high school GPA and an 18 or higher on the ACT.

*Print material is subject to change. Please refer to our websites for the most accurate information.*

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## BYU Concurrent Enrollment

**Local** high school students who wish to be considered for admission as part-time students while enrolled in high school will apply as concurrent enrollment students.

**Application:** Applicants desiring to attend BYU as concurrent enrollment students must meet the following criteria:

- Complete parts 1, 2, and 3 of the online application at besmart.com
- Pay the non-refundable, one-time $35 application fee
- Complete junior year of high school and be at least 16 years old
- Have an unweighted cumulative GPA of 3.70 or higher
- Indicate unconditional support from the high school counselor and parent
- Agree to enroll in no more than 11.5 credit hours during fall and winter semesters and no more than 5.5 hours during spring and summer terms
- Fill out the concurrent enrollment voucher available at http://admissionsforms.byu.edu

Note that a new concurrent enrollment voucher must be submitted for each semester of enrollment at the university.

Please refer to the Evaluation of Transfer College Credit section of the catalog for specific information on the transferability of college credit.

*Print material is subject to change. Please refer to our websites for the most accurate information.*

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## Postbaccalaureate Studies (PBS)

Students who have already received a baccalaureate degree or higher from any institution, including BYU, are not eligible for admissions consideration to pursue another baccalaureate degree or major. However, these students may use university resources during spring-summer through Evening Classes or through BYU Independent Study. Fall and winter admission resources are reserved for undergraduate students and students who have been officially admitted into a graduate program.

**Application:** Postbaccalaureate applicants must complete the following requirements:

- Have a baccalaureate degree
- Have a cumulative GPA of 3.0 or higher
- Complete parts 1, 2, 3 and 7 of the online application at besmart.com
- Pay the non-refundable, one-time $35 application fee
- Submit official transcripts* from each institution awarding a degree

**Any college or high school work that is completed internationally will need to be evaluated by a third party. Our preferred evaluation agency is IERF (www.ierf.org).*

The application deadline for the postbaccalaureate Studies program is the first day of classes. International students are not normally eligible for this program.

*Print material is subject to change. Please refer to our websites for the most accurate information.*

*Regardless of printed admission policies and procedures, the university reserves the right to refuse or rescind admission to any applicant.*

## Evening Classes

Evening classes are available to non-degree seeking students who are 21 years of age or older and have not been admitted to the university, or to those who have already earned a baccalaureate degree. Evening class students may take up to 8.5 credit hours per semester or spring-summer. Any student formally admitted to BYU may also enroll in courses offered through the Evening Classes Office. **For further details, please visit the Evening Classes website (eveningclasses.byu.edu) or contact the Evening Classes Office:**

Phone: 801-422-2872
E-mail: evening_classes@byu.edu
Mail: 211 HCEB, Provo, UT 84602

## Salt Lake Center

Any student who is currently admitted to BYU (including the Bachelor of General Studies Program and Evening Classes) may register for undergraduate level classes at the BYU Salt Lake Center. Students not currently admitted to BYU may also register for undergraduate classes at the BYU Salt Lake Center provided they satisfy the requirements for registration (see http://slc.byu.edu for more information).

Phone: 801-933-9400
E-mail: slc@byu.edu
Address: 345 West North Temple Street, 3 Triad Suite 300, Salt Lake City, UT 84180

## Deferments

### Continuing Student Leave of Absence

BYU daytime eligible students may take a leave of absence for one major semester (fall or winter) per academic year without prior notification to the university. An academic year begins with fall semester and continues through the next spring-summer.

*Note: International students must obtain clearance from International Services before taking a leave of absence.*

Consider the following prior to taking a leave of absence:

- **Ecclesiastical Endorsement:** You must have a current ecclesiastical endorsement to register for subsequent semesters. To complete this requirement, ask your bishop to submit the Continuing Student Ecclesiastical Endorsement Form found online at https://honorcode.byu.edu.
- **Scholarship:** The continuing student scholarship application deadline for fall, winter, and spring-summer scholarships is March 1, regardless of BYU attendance.
- **Federal Loan Repayment:** Student loans have a grace period of six months beginning on the date that the borrower drops below at least half-time enrollment. If your leave of absence extends beyond six months, you will have to start repaying your loans.
- **Reapplication for Admission:** If you fail to enroll in classes before the add/drop deadline of the major semester (fall/winter) immediately following your leave of absence, you will lose your continuing student status and will have to reapply for admission as a former student. Re-admission is NOT guaranteed. Note: If you attend another school during your leave of absence, remember to send an updated transcript to BYU so your credits can be applied to your BYU record. If you do not attend another school, your academic status will remain the same as it was when you took your leave of absence.
- Suspended and dismissed students should consult with the Academic Support Office (see http://ccc.byu.edu/aso/academic-suspension).
- New freshman, transfer, and former students must attend the semester or term to which they have been admitted.
- A leave of absence may be taken **directly prior** to a missionary deferment (consecutive semesters). Following your mission, you **must** enroll at Brigham Young University within a given time period, as noted in the *Missionary Deferment* section below.
- Be sure to resolve any university holds as they may prohibit your ability to register and/or receive other university services.

### Missionary Deferment

BYU students who want to defer their enrollment for an LDS mission must complete a Missionary Deferment form, available at http://admissionsforms.byu.edu. The deferment form should be submitted **after** receiving a mission call, and **before** the end of the semester in which the student was due to enroll. The following conditions must also be met:

- Do not attend any college or university between leaving and returning
- Complete a full mission and receive an ecclesiastical endorsement from the mission president
- Return for the semester or term indicated on the Missionary Deferment form

| Return from Mission | Enroll No Later Than |
|---|---|
| October-April | Fall Semester |
| May-September | Winter Semester |

If a student wishes to discontinue after classes begin, he/she must work OneStop Counseling.

## International Applicants

To be considered for admission as an international applicant, students will need to demonstrate strong academic qualifications, evidence of competencies in English, and a willingness to adhere to the Honor Code and Dress and Grooming Standards.

Once admitted to the university, all international students must make a deposit of $4,000 USD before they will be able to register for classes. The deposit will be held in an escrow account with the intent to be released to the student during his final semester before graduation. Students who experience unforeseen financial hardship while studying at BYU may petition to use up to $3,000 of their deposit before their final semester. International students who have already accessed the $3,000 USD from their deposit and who find they are unable to cover the costs associated with continued education at BYU will receive the final $1,000 in the form of a plane ticket to return to their home country.

In addition to the deposit, international students requiring an I-20 must provide proof of finances for the first year of study. The I-20 will not be issued and a registration hold will be placed on the student's file until the proof of finances has been provided. Once the financial support requirement has been cleared, the I-20 will be processed and sent to the student, and the registration hold will then be released.

### International New Freshmen

New freshmen are secondary or home school graduates with no college credit or with college credit completed prior to secondary school graduation. Students who are secondary school age but will not be completing secondary school are also considered new freshmen.

**Secondary School Graduation Alternatives:** Applicants who complete their secondary education through the General Education Development (GED) test, home study, home school, or other alternative secondary education programs will be reviewed individually by the admissions committee to determine admissibility. Additional information (achievement tests, personal interview, etc.) may be required as part of the application process.

**LDS Seminary:** Students are encouraged to participate in LDS seminary during secondary school. Brigham Young University is committed to the concept that thoughtful and consistent study of the scriptures is vital to the preparation of those desiring to enter BYU. The number of years of LDS seminary completed (released-time, early morning, or home study) will influence additional consideration in admission decisions.

**American College Test (ACT) or Scholastic Aptitude Test (SAT):** All new freshman applicants (or students whose secondary school graduating class has yet to graduate) and transfer students who have completed fewer than 24 semester (36 quarter) hours of college credit at the time of application are required to take the ACT or SAT. The ACT is administered throughout the year; consult their website (www.act.org) for more specific dates. The SAT is also administered throughout the year; consult their website (www.collegeboard.com) for specific test dates. Because test results take approximately four weeks after the test date to arrive at the Admissions Office, students should plan to take the test at least a month before the deadline for the semester in which they intend to enroll. Registration information can be obtained from each of the aforementioned websites.

**Application:** Those applying as international new freshman students must complete the following requirements:

- Complete parts 1, 2, 3, 4, 5*, 6, 7, and 8 of the online application at besmart.com.
- Pay the non-refundable, one-time $35 application fee
- Submit ACT/SAT scores
- Submit TOEFL/IELTS scores
- All international students will need to have their secondary school and college (if applicable) transcripts sent to an international transcript evaluation agency. ** BYU's preferred transcript evaluation agency is the International Education Research Foundation (IERF) www.ierf.org/byu-ces/. Completed evaluations will be submitted electronically to the Admissions Office by the agency. Information on fees, requirements, and how to submit your official transcripts can be found on the organization's website.

  **Part 5 will only need to be submitted if the applicant attended a US-accredited school.*

  ***If the secondary school/college is located in the United States or is a US-accredited school, the transcripts will not need to be evaluated by a third party.*

The application deadlines for international new freshmen are as follows:

- February 1: Final deadline for spring/summer terms and fall semester
- October 1: Deadline for winter semester

**Admission Criteria:** All new freshman applicants will be notified of their admission decision no later than February 28. All new freshman applications go through a holistic review process which is comprised of the following elements: ecclesiastical endorsement, secondary school GPA, ACT or SAT score, seminary attendance, service, leadership, individual talents, creativity, unique or special circumstances, and other factors showing a student's ability to strengthen the BYU community. It is recommended that new freshmen have a 3.4 GPA (US equivalent) and an ACT score in the mid 20's to be competitive for admission.

**English:** All nonnative English-speaking applicants must send official results of the TOEFL or IELTS exam to BYU. Applicants need to have a total Internet-based test (iBT) TOEFL score of 80 or higher, with no section score below 20. Those who take the Academic IELTS should earn a score of 6.5 overall, with a subscore no lower than a 6.5 in speaking, and a subscore no lower than 6.0 in reading, writing, and listening. Tests must be on official international test dates. Institutional tests are not acceptable.

## Homeschooled International Applicants

These individuals must complete all application requirements for international new freshman applicants. Their academic qualifications will be reviewed on a case-by-case basis. International homeschooled applicants should contact the International Admissions Office (801-422-5584 or intladmissions@byu.edu) for more details.

**Housing:** The admission application is also the application for on-campus housing. Housing Services will contact the students with further information once admitted.

**Registration and Completion Requirements:** All undergraduate international students in attendance must register for and complete at least 12 hours of daytime credit per semester or spring-summer.

**Official University Visa Policy:** Students should not attempt to enter the United States to attend BYU as a full-time student without presenting an I-20 form from BYU (certificate of eligibility), a valid passport, and a valid F-1 visa, or other appropriate immigration documents. Maintaining visa status is the responsibility of the student.

**Note:** All international students must report to International Services, 1351 WSC, (801) 422-2695, within one week of arrival on campus.

*Print material is subject to change. Please refer to our websites for the most accurate information.*

*Regardless of printed admission policies and procedures, the university reserves the right to refuse or rescind admission to any applicant.*

## International Transfer Applicants

### International Transfer Applicants with Fewer than 24 College Credits

This student type applies to applicants who have completed fewer than 24 semester hours (36 quarter hours) of graded college credit after secondary school graduation. This does not include AP, IB, CLEP, or LDS institute of religion credit. College credits must be completed by the application deadline in order to count toward the 24 credit hour threshold. These students will be evaluated for admission based on both their secondary school and college work.

Students who have completed college work and apply for admission prior to graduating from secondary school will be evaluated as new freshmen, *regardless of the number of college hours completed*. Once a student has graduated from secondary school and taken at least one course at another college or university, this applicant will be considered a transfer student and any college credits taken during secondary school will count toward the 24 credit hour threshold.

Note that students who are denied as new freshmen will not be reconsidered for admission until they have completed at least 24 hours of college credit, with at least one college course having been completed after secondary school graduation.

**Application:** Those applying as international transfer students with fewer than 24 credits must complete the following requirements:

- Complete parts 1, 2, 3, 4, 5*, 6, 7, and 8 of the online application at besmart.com
- Pay the non-refundable, one-time $35 application fee
- Submit ACT/SAT scores
- Submit TOEFL/IELTS scores
- All international students will need to have their secondary school and college (if applicable) transcripts sent to an international transcript evaluation agency.** BYU's preferred transcript evaluation agency is the International Education Research Foundation (IERF) www.ierf.org/byu-ces/. Completed evaluations will be submitted electronically to the Admissions Office by the agency. Information on fees, requirements, and how to submit your official transcripts can be found on the organization's website.

  **Part 5 will only need to be submitted if the applicant attended a US-accredited school.*

  ***If the secondary school/college is located in the United States or is a US-accredited school, the transcripts will not need to be evaluated by a third party.*

The application deadlines for international transfer students are as follows:

- February 1: Deadline for spring/summer terms and fall semester
- October 1: Deadline for winter semester

**Admission Criteria:** All applications of transfer students with fewer than 24 credits go through a holistic review process which is comprised of the following elements: ecclesiastical endorsement, secondary school GPA, college GPA, ACT or SAT score, seminary attendance, service, leadership, individual talents, creativity, unique or special circumstances, and other factors showing a student's ability to strengthen the BYU community. It is recommended that students have a 3.4 GPA and an ACT score in the mid 20's to be competitive for admission. Transfer applications will receive their admission decisions no later than February 28.

BYU does not accept vocational transfer credit (college courses leading to an applied associate degree or certification) from any institution. This type of credit includes subjects such as auto mechanics, cosmetology, dental hygiene, and other technical fields. Once admitted, each incoming transcript will be checked for vocational credit, and those vocational credits will be marked as non-transferrable credit. If vocational credit is earned as part of an associate of arts or science degree, it will still be marked as non-transferrable. However, the associate degree will still be recognized as long as at least 35% of the credit within the degree is considered to be academic credit.

**English:** All nonnative English-speaking applicants must send official results of the TOEFL or IELTS exam to BYU. Applicants need to have a total Internet-based test (iBT) TOEFL score of 80 or higher, with no section score below 20. Those who take the Academic IELTS should earn a score of 6.5 overall, with a subscore no lower than 6.5 in speaking, and a subscore no lower than 6.0 in reading, writing, and listening. Tests must be on official international test dates. Institutional tests are not acceptable.

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*Regardless of printed admission policies and procedures, the university reserves the right to refuse or rescind admission to*

*any applicant*.

## International Transfer Applicants with 24 or More College Credits

This student type applies to students who have completed 24 or more semester hours (36 quarter hours) of graded college credit after secondary school graduation. This does not include AP, IB, CLEP, or LDS institute of religion credit. College credits must be completed by the application deadline in order to count toward the 24 credit hour threshold.

Students who have completed college work and apply for admission prior to graduating from secondary school will be evaluated as new freshmen, *regardless of the number of credit hours completed*. Once a student has graduated from secondary school and taken at least once course at another college or university, this applicant will be considered a transfer student and any college credits taken during secondary school will count toward the 24 credit hour threshold.

**Application:** Those applying as international transfer students with 24 or more credits must complete the following requirements:

- Complete parts 1, 2, 3, 4, 6, 7, and 8 of the online application at besmart.com
- Pay the non-refundable, one-time $35 application fee
- Submit TOEFL/IELTS scores
- All international students will need to have their secondary school and college (if applicable) transcripts sent to an international transcript evaluation agency.* BYU's preferred transcript evaluation agency is the International Education Research Foundation (IERF) www.ierf.org/byu-ces/. Completed evaluations will be submitted electronically to the Admissions Office by the agency. Information on fees, requirements, and how to submit your official transcripts can be found on the organization's website.

  **If the secondary school/college is located in the United States or is a US-accredited school, the transcripts will not need to be evaluated by a third party.*

The application deadlines for international transfer students are as follows:

- February 1: Deadline for spring/summer terms and fall semester
- October 1: Deadline for winter semester

**Admission Criteria:** All transfer applications go through a holistic review process which is comprised of the following elements: ecclesiastical endorsement, leadership experience, GPA, course selection, quality of coursework, institute of religion involvement, academic goals, and other similar factors. It is recommended that transfer students have a 3.4 GPA (US equivalent) to be competitive for admission. International transfer applicants with three or more years of work at another college or university are unlikely to be admitted. International transfer applicants will receive their admission decisions no later than 4 weeks after the final admission deadline.

**Evaluation of Transfer College Credit:** All college transcripts will be evaluated to determine admissibility of an applicant even if all or any of that credit is not accepted for transfer. Transfer Services in the BYU Registrar's Office will determine the transferability of undergraduate credit to BYU.

Factors which can affect the transfer of credit include:

The transfer institution is accredited by one of the following regional associations or is an institution sponsored by The Church of Jesus Christ of Latter-day Saints:

Middle States Association of Colleges and Schools
New England Association of Schools and Colleges
North Central Association of Colleges and Schools
Northwest Commission on Colleges and Universities
Southern Association of Colleges and Schools
Western Association of Schools and Colleges

In addition to accreditation, the following criteria are also considered when determining the transferability of credit and equivalencies: comparable credit hours, course level, seat time, and course descriptions. Vocational and technical credit is not accepted, even if earned at an accredited institution.

Additional factors that can affect the transfer of credit:

1. An associate of art or science degree from any one of the main feeder institutions (BYU-Idaho, College of Eastern Utah, Dixie State College, Mesa Community College, LDS Business College, Salt Lake Community College, Snow College, and Utah Valley University) will fill most BYU university core requirements with the exception of Advanced Written and Oral Communication, Languages of Learning, and the religion hours at BYU. Advanced Written and Oral Communication and the Languages of Learning requirements may be filled by completing specific courses at other colleges. Students who have questions about the completion of university core courses are invited to contact Transfer Services in the BYU Registrar's Office, (801) 422-8522, for further information.

2. Most associate of arts or science degrees from other approved transfer institutions not listed above will fill most BYU university core requirements with the exception of American Heritage, Advanced Written and Oral Communication, Languages of Learning, and the religion hours at BYU. American Heritage, Advanced Written and Oral Communication, and the Languages of Learning requirements may be filled by completing specific courses at other colleges. NOTE: Associate of arts or science degrees must include at least 35% solid, academic classes (i.e., general education) in order to fulfill BYU's university core requirements as stated above. Associate of arts or science degrees that include more than 65% vocational or technical courses will be evaluated on a course-by-course basis. Students who have questions about the completion of university core courses are invited to contact Transfer Services in the BYU Registrar's Office, (801) 422-8522, for further information.

3. Credit is evaluated on a course-by-course basis for students who do not complete an associate of arts or science degree. Transfer guides have been established for some of BYU's main feeder institutions. A list of these transfer guides can be found at http://transfer.byu.edu.

4. Credit earned more than eight years before admission or readmission (including transfer credit) may, at the discretion of the university, be accepted to meet general education and university graduation requirements as well as major requirements.

5. Credit earned from an LDS institute of religion must receive a Pass (P) grade and be posted to an official CES transcript.

**Note:** Any exceptions to this policy must be approved by the academic vice president.

**Registration and Completion Requirements:** All undergraduate international students in attendance must register for and complete at least 12 hours of daytime credit per semester or spring-summer.

**Official University Visa Policy:** Students should not attempt to enter the United States to attend BYU as a full-time student without presenting an I-20 form from BYU (Certificate of Eligibility), a valid passport, a valid F-1 visa, or other appropriate immigration documents. Maintaining visa status is the responsibility of the student.

**Note:** All international students must report to International Services, 1351 WSC, (801) 422-2695, within one week after arrival on campus.

*Print material is subject to change. Please refer to our websites for the most accurate information.*

*Regardless of printed admission policies and procedures, the university reserves the right to refuse or rescind admission to any applicant.*

## International Former Students

Former students are students who were admitted to the university as fully-matriculated students, completed coursework at BYU, but have been absent from the university for more than one major semester. Students who have attended only BYU's Visiting Student Program, evening classes, Salt Lake Center, or other continuing education programs are not considered fully-matriculated students and will not be classified as former students.

**Application:** International applicants who are applying as former students must complete the following requirements:

- Complete parts 1, 2, 3, and 8 of the online application at besmart.com
- Submit official college transcripts from any schools attended since last attending BYU

The application deadlines for international former students are as follows:

- February 1: Deadline for spring/summer terms and fall semester
- October 1: Deadline for winter semester

**Admission Criteria:** Former student status is not a guarantee of admission. Former students with additional transfer credit must have earned at least a 3.2 GPA or higher on additional work.

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*Regardless of printed admission policies and procedures, the university reserves the right to refuse or rescind admission to any applicant.*

## Visiting Students

*International students are not normally eligible for this program.*

## Post-Baccalaureate Studies (PBS)

*International students are not normally eligible for this program.*

## Deferments

### Continuing Student Leave of Absence

BYU day-time eligible students may take a leave of absence for one major semester (fall or winter) per academic year. An academic year begins with fall semester and continues through the next spring-summer. *International students must obtain clearance from the International Student Services Office before taking a leave of absence.*

Consider the following prior to taking a leave of absence:

- **Ecclesiastical Endorsement:** You must have a current ecclesiastical endorsement to register for subsequent semesters. To complete this requirement, submit the Continuing Student Ecclesiastical Endorsement Form found online at https://honorcode.byu.edu.
- **Scholarship:** The scholarship application deadline for fall, winter, and spring-summer scholarships is March 1, regardless of BYU attendance.
- **Re-application for Admission:** If you fail to enroll in classes before the add/drop deadline of the major semester (fall/winter) immediately following your leave of absence, you will have to reapply for admission as a former student. Re-admission is NOT guaranteed. Note: If you attend another school during your leave of absence, remember to send an updated transcript to BYU so your credits can be applied to your BYU record. If you do not attend another school, your academic status will remain the same as it was when you took your leave of absence.
- Suspended and dismissed students should consult with the Academic Support Office (see http://aso.byu.edu/suspension-and-dismissal).
- New freshman, transfer, and former students must attend the semester or term to which they have been admitted.
- A leave of absence may be taken **directly prior** to a missionary deferment (consecutive semesters). Following your mission, you **must** enroll at Brigham Young University within a given time period, as noted in the *Missionary Deferment* section below.
- Be sure to resolve any university holds as they may prohibit your ability to register and/or receive other university services.

### Missionary Deferment

International students who want to defer their enrollment for an LDS mission must complete a Missionary Deferment form, available at http://admissionsforms.byu.edu. This form needs to be completed by the student, and signed by a representative from International Services. The deferment form should be submitted **after** receiving a mission call, and **before** the end of the semester in which the student was due to enroll. The following conditions must also be met:

- Do not attend any college or university between leaving and returning
- Complete a full mission and receive an ecclesiastical endorsement from the mission president
- Return for the semester or spring-summer indicated on the Missionary Deferment form

| Return from Mission | Enroll No Later Than |
|---|---|
| October-April | Fall Semester |
| May-September | Winter Semester |

If a student wishes to discontinue after classes begin, he/she must work with OneStop Counseling.

## BYU Independent Study

BYU Independent Study is a distance education program that offers online and paper courses for anyone, anytime, anywhere. They offer almost 500 university, high school, middle school, and personal enrichment courses that can help students make up credit, graduate on time, enhance their curriculum, or earn university credit. **For further details, please visit the Independent Study website (ce.byu.edu/is) or contact the Independent Study Office:**

Phone: 801-422-2868 (Utah County) or 1-800-914-8931 (toll-free)
E-mail: indstudy@byu.edu
Mail: 120 Morris Center, Provo, UT 84602-0300

## Graduate Studies

BYU offers over 100 different masters and doctoral degrees in a variety of subjects from law to food science. **For information on available programs and their admission requirements, please visit the Graduate Studies website (gradstudies.byu.edu) or contact the Graduate Studies department:**

phone: 801-422-4091
E-mail: gradstudies@byu.edu
Mail: 105 FPH, Provo, UT 84602

## College Level Examination Program (CLEP) Credit

BYU discontinued giving credit for general exams in 2000. Additionally, BYU does not give credit for subject exams.

# University Calendar

The annual calendar at BYU includes fall, winter, and spring-summer. Fall semester 2014 begins the first Tuesday in September and ends before the Christmas holidays. Winter semester is from early January to late April. Spring-summer begins April 28. Registering for spring-summer allows students to accelerate their progress in many degree programs.

Show All | Hide All

## Admissions Dates & Deadlines

| | Fall | Winter | Spring-Summer | |
|---|---|---|---|---|
| | Fall 2014 | Winter 2015 | Spring 2015 | Summer 2015 |
| **Admission Application Deadline**<br>Last day new freshman, transfer, and former students may submit admission applications | Feb 1, 2014 | Oct 1, 2014 | Feb 1, 2015 | Feb 1, 2015 |
| **International Student Admissions**<br>Last day international students may submit admission applications | Feb 1, 2014 | Oct 1, 2014 | Dec 1, 2014 | Feb 1, 2015 |

Additional information

## Ecclesiastical Endorsement Deadline

| | Fall | Winter | Spring-Summer | |
|---|---|---|---|---|
| | Fall 2014 | Winter 2015 | Spring 2015 | Summer 2015 |
| **Ecclesiastical Endorsement Deadline**<br>All enrolled continuing undergraduate, graduate, intern, or Study Abroad students' Continuing Student Ecclesiastical Endorsements are due to avoid registration delays | Mar 15 | Mar 15 | Mar 15 | Mar 15 |

Additional information

## Financial Aid & Scholarship Deadlines

| | Fall | Winter | Spring-Summer | |
|---|---|---|---|---|
| **Scholarship Application Deadlines** | Fall 2014 | Winter 2015 | Spring 2015 | Summer 2015 |
| **New Freshmen/International**<br>Last day **new freshmen and international** students may submit undergraduate applications for academic scholarships and talent awards | Feb 1, 2014 | Oct 1, 2014 | Feb 1, 2015 | Feb 1, 2015 |
| **Continuing Students**<br>Last day **continuing** undergraduate students may submit scholarship applications | Mar 1, 2014 | Mar 1, 2014 | Mar 1, 2015 | Mar 1, 2015 |
| **Transfer Students**<br>Last day **transfer** undergraduate students may submit scholarship applications | Feb 1, 2014 | Oct 1, 2014 | Feb 1, 2015 | Feb 1, 2015 |
| **Former Students**<br>Last day **former** undergraduate students admitted spring-summer, or fall semester 2014 may submit scholarship applications | Mar 1, 2014 | Oct 1, 2014 | Mar 1, 2015 | Mar 1, 2015 |
| | | | | |
| **Financial Aid Deadlines** | | | | |
| **BYU Short-term Loans Due**<br>Full payment due on BYU short-term loans | Nov 1 | Mar 1 | Jun 1 | Aug 1 |

| | | | | |
|---|---|---|---|---|
| **FAFSA Deadline**<br>Last day federal government will accept Free Application for Federal Student Aid (FAFSA) for this academic year | Jun 30 | Jun 30 | Jun 30 | Jun 30 |

Additional information

Graduate Student Dates & Deadlines

| | Fall | Winter | Spring-Summer | |
|---|---|---|---|---|
| | Fall 2014 | Winter 2015 | Spring 2015 | Summer 2015 |
| **Application Deadlines**<br>Departmental application deadlines for entry to graduate studies may be as early as this date. For specific program and department deadlines and requirements, refer to the degree programs on the Graduate Studies website: graduatestudies.byu.edu | Dec 1, 2013 | Feb 1, 2014 | Oct 15, 2014 | Jan 15, 2015 |
| **Apply for Graduation**<br>Last day graduate students may apply for graduation to receive a diploma for this semester | Oct 24 | Jan 30 | May 1 | May 22 |
| **Schedule Thesis/Dissertation Defense Deadline**<br>Last day graduate students in dissertation or thesis programs may schedule a final oral examination (defense of their work) and submit copies of their work to their graduate committee for graduation. Note: Ample time should be allowed to make corrections in a dissertation or thesis after the final oral examination and before the deadline for submitting the ETD | Nov 21 | Feb 20 | May 22 | Jun 12 |
| **Thesis/Dissertation Defense Deadline**<br>Last day graduate students in dissertation or thesis programs may have a final oral examination (defense of their work) for graduation. Note: Ample time should be allowed to make corrections in a dissertation or thesis after the final oral examination and before the deadline for submitting the ETD | Dec 5 | Mar 6 | Jun 5 | Jun 26 |
| **Submission to Dean Deadline**<br>Last day graduate students may submit their dissertation or thesis along with ADV Form 8d for signature to the dean of their college for graduation | Dec 12 | Mar 13 | Jun 12 | Jul 2 |
| **Final Submission Deadline**<br>Last day graduate students may submit the ETD of their dissertation or thesis so that the status shows Grad Office Review and take ADV Form 8d to Graduate Studies (105 FPH); complete remaining degree requirements; pay fees; and submit exam results and any I and T, etc., grade changes to the Registrar's Office for graduation (including any prerequisite Independent Study) | Dec 19 | Mar 20 | Jun 18 | Jul 10 |

Additional information

Graduation Dates & Deadlines

| | Fall | Winter | Spring-Summer | |
|---|---|---|---|---|
| | December 2014 | April 2015 | June 2015 | August 2015 |
| **Apply for Graduation**<br>Last day for undergraduates to apply and pay fee for graduation | Sep 15 | Nov 15, 2014 | Feb 15 | Apr 15 |
| Last day undergraduates may submit to the Registrar's Office all incompletes, T grades, special exams, GE challenges, military | Nov 21 | Mar 27 | May 22 | Jul 17 |

| | | | | |
|---|---|---|---|---|
| credit, official transcripts of work completed at other schools, and any other information pertaining to graduation | | | | |
| Last day Independent Study final exams may be submitted for graduation | Nov 25 | Apr 3 | May 29 | Jul 23 |
| **Graduation – University Commencement** | Dec 19 (no exercises) | Apr 23 | Jun 18 (no exercises) | Aug 13 |
| **Graduation – College Convocations** | | Apr 24 | | Aug 14 |

Additional information

Health Plan Dates & Deadlines

| | Fall | Winter | Spring-Summer | |
|---|---|---|---|---|
| | Fall 2014 | Winter 2015 | Spring 2015 | Summer 2015 |
| **Health Plan Deadline** Last day for new and continuing students to submit Student Health Plan enrollment or certification of other coverage through the MyBYU Web site | Sep 9 | Jan 12 | May 5 | Jun 29 |

Additional information

Records/Registration Dates & Deadlines

| | Fall | Winter | Spring-Summer | | |
|---|---|---|---|---|---|
| | Fall 2014 | Winter 2015 | Spring 2015 | Summer 2015 | Semester-length 2015 |
| **Priority registration begins** | Mar 24 | Oct 27 | Feb 3 | Feb 2 | Feb 2 |
| **Discontinue Before Semester** Last day to officially discontinue enrollment without a withdraw date posted on the transcript | Sep 1 | Jan 4 | Apr 27 | Apr 27 | Apr 27 |
| **Add/Drop Deadline** Last day to add classes Last day to drop classes without incurring a pro-rata tuition charge Last day to drop a class without a W (official withdrawal) appearing on the transcript | Sep 9 | Jan 12 | May 5 | Jun 29 | May 5 |
| **Withdraw Deadline 1st Term** Last day to withdraw from a first term class for academic reasons | Oct 6 | Feb 9 | Jun 2 | N/A | N/A |
| **Discontinuance Deadline 1st Term** Last day to officially discontinue from first term classes for nonacademic emergencies | Oct 6 | Feb 9 | Jun 2 | N/A | N/A |
| **Add/Drop Deadline 2nd Term** Last day to add second term classes Last day to drop a second term class without a W (official withdrawal) appearing on the transcript | Oct 29 | Mar 5 | N/A | Jun 29 | N/A |
| **Withdraw Deadline** Last day to withdraw from a class for academic reasons | Nov 10 | Mar 17 | N/A | Jul 28 | Jul 8 |
| **Withdraw Deadline 2nd Term** Last day to withdraw from a second term class for academic reasons | Nov 25 | Apr 1 | N/A | Jul 28 | N/A |
| **Discontinuance Deadline** Last day to officially discontinue from the university or withdraw from all classes for | Nov 25 | Apr 1 | Jun 28 | Jul 28 | Jul 28 |

| | | | | | |
|---|---|---|---|---|---|
| nonacademic emergencies | | | | | |
| **Grade rolls available** | Dec 11 | Apr 14 | Jun 15 | Aug 10 | Aug 10 |
| **Grades due** | Dec 30 | Apr 30 | Jun 26 | Aug 20 | Aug 20 |
| **Grades available** | Jan 5 | May 4 | Jun 29 | Aug 24 | Aug 24 |

Additional information

## Tuition Dates & Deadlines

| | Fall | Winter | Spring-Summer | | |
|---|---|---|---|---|---|
| | Fall 2014 | Winter 2015 | Spring 2015 | Summer 2015 | Semester-length 2015 |
| **Tuition Deadline** Tuition due in full. Ability to add additional courses will be restricted due to non-payment | Aug 26 | Dec 29 | Apr 21 | Jun 15 | Apr 21 |
| **Final Tuition Payment Deadline** Final tuition deadline. Current class enrollment will be dropped for non-payment. Late payments will not be accepted. | Sep 9 | Jan 12 | May 5 | Jun 29 | May 5 |

Additional information

## University General Dates & Deadlines

| | Fall | Winter | Spring-Summer | | |
|---|---|---|---|---|---|
| | Fall 2014 | Winter 2015 | Spring 2015 | Summer 2015 | Semester-length 2015 |
| **Annual University Conference** | Aug 25-27 | | | | |
| **New Student Orientation** | Aug 28-30 | Jan 3 | | Jun 19-20 | |
| **Classes begin** | Sep 2 | Jan 5 | Apr 28 | Jun 22 | Apr 28 |
| **Last day of first term classes** | Oct 21 | Feb 25 | | | |
| **Second term classes begin** | Oct 22 | Feb 26 | | | |
| **Friday class instruction – no Tuesday classes** | Nov 25 | | | | |
| **No classes held** | Nov 26 | | | | |
| **Last day of class instruction** | Dec 11 | Apr 14 | Jun 15 | Aug 10 | Aug 10 |
| **Exam preparation days** | Dec 12 | Apr 15-16 | Jun 16 | Aug 11 | Aug 11 |
| **Final exams** | Dec 15-19 | Apr 17-18, 20-22 | Jun 17-18 | Aug 12-13 | Aug 12-13 |
| **Monday class instruction – no Tuesday classes** | | Feb 17 | | | |
| | | | | | |
| Holidays | | | | | |
| **Labor Day holiday** | Sep 1 | | | | |
| **Thanksgiving holiday** | Nov 27-28 | | | | |
| **Christmas holiday** | Dec 25-26 | | | | |
| **New Year's Day Holiday** | Jan 1-2 | | | | |
| **Martin Luther King Day holiday** | | Jan 19 | | | |
| **Presidents' Day holiday** | | Feb 16 | | | |
| **Memorial Day holiday** | | | May 25 | | |
| **Independence Day holiday** | | | | Jul 4 | |
| **Pioneer Day holiday** | | | | Jul 24 | |

Additional information

**Academic Honesty Policy**
**Admissions**
**Calendar**
**Discontinuance**
**Grading & Records**
**Graduation**
**Honor Code**
**Housing**
**Registration**
**Petition Services**
**Using the Catalog**

# Discontinuance

OneStop Counseling Center
D-148 ASB
(801) 422-7075
http://onestop.byu.edu/discontinuance

Discontinuance is defined as withdrawing from ALL classes for the current semester or term. A student who discontinues is no longer considered to be currently enrolled. **Note:** Newly admitted students (new freshman, transfer, and former students) discontinuing from the semester or term they were admitted will lose their admission status and will need to reapply to attend a future semester. Students should contact a OneStop counselor in D-148 ASB about being readmitted.

Continuing students who discontinue from a major semester (fall or winter) will have that semester counted as a leave of absence. (For more information, see the Leave of Absence section of this catalog). Discontinuance may also have an impact on other areas of campus where students are required to be enrolled in a certain number of credit hours, such as:

- housing
- financial aid
- scholarships
- health center
- employment
- counseling services
- computer lab
- exercise facilities

The OneStop counselors in D-148 ASB are available to consult with students or parents regarding these issues.

The discontinuance process includes the following:

1. **Before the add deadline**, students may discontinue by dropping all their classes online through MyMAP in MyBYU. **However, discontinuance on or after the first day of class will result in a withdraw date being posted on the student's transcript.**
2. **After the add deadline**, students must discontinue by submitting the Request for Discontinuance form available from the OneStop Counseling Center at D-148 ASB or the website (http://onestop.byu.edu/discontinuance).
3. If discontinuing **after the withdraw deadline**, students will need to obtain signatures from their instructors indicating *withdraw passing* (W) or *withdraw failing* (WE).
4. Once the Request for Discontinuance form is completed and submitted to the OneStop Counseling Center (D-148 ASB), the student will be withdrawn from classes.
5. **After the discontinuance deadline**, if non-academic circumstances arise, students may work with their instructors to get an incomplete contract. (See information about incompletes in the Grading section of this catalog.) If a student desires to discontinue after the deadline, it will be necessary to file a petition (see http://petitions.byu.edu).

## Please Note

- International or multicultural students must obtain clearance from International Services and/or Multicultural Student Services (respectively) before discontinuing.
- Students admitted only for evening classes or as a BGS student must discontinue through the Office of Evening Classes (120 HCEB, 801-422-2872).
- Students admitted to the Salt Lake Center should discontinue through the Salt Lake Center Office (801-933-9400, 345 W. North Temple, 3 Triad Center, Suite 300, Salt Lake City, UT 84180).
- Law School students must initiate their discontinuance through the dean of the Law School, 348-A JRCB.
- Students who leave the university under emergency conditions and subsequently do not return are still responsible to discontinue before the discontinuance deadline. They should contact the OneStop Counseling Center (D-148 ASB) as soon as possible.

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# Grading and Records

## Grading

Grade point averages are computed by assigning numeric values to the letter grades:

### Letter Grade Values

| | |
|---|---|
| A | 4.0 |
| A– | 3.7 |
| B+ | 3.4 |
| B | 3.0 |
| B– | 2.7 |
| C+ | 2.4 |
| C | 2.0 |
| C– | 1.7 |
| D+ | 1.4 |
| D | 1.0 |
| D– | 0.7 |
| E, I, IE, WE | 0.0 |

The grade given in a course is the teacher's evaluation of the student's performance, achievement, and understanding in that subject as covered in the class. The following adjectives indicate the meaning of the letter grades:

A Excellent
B Good
C Satisfactory
D Minimum passing
E Failure

Hence, the grade **A** means that the student's performance, achievement, and understanding were excellent in the portion of the subject covered in the class.

There are prerequisites that qualify students to be admitted to the more advanced classes offered by a department. A senior has added experience, understanding, and preparation. Consequently, a senior progresses in courses that would have been impossible as a freshman. The level of performance, achievement, and understanding required to qualify for each grade that carries credit is higher in a more advanced class than in those classes that precede it, and the student is prepared to work at this higher level.

Additional grade designations are as follows:

1. If a student drops from a class by the add/drop deadline, the transcript will not show any registration for that class. If the student officially withdraws from a class after the add/drop deadline but by the withdraw deadline, the record will be marked **W** (official withdraw). A **W** is not calculated into the GPA.

2. A **WE** grade will be given if a student petitions to withdraw from a class after the withdraw deadline and he or she is failing the class at that time. A **WE** is calculated into the GPA.

3. A grade of **P** indicates a passing grade. It has no effect on the GPA.

4. The letter grade **I** (Incomplete) is given on a contractual basis with the instructor to students who are unable to complete the work by the end of the semester or term. An incomplete grade may be given for nonacademic extenuating circumstances (serious illness, personal injury, death in the immediate family, etc.) that arise *after* the discontinuance deadline (the twelfth week of a semester or the sixth week of a term). To be eligible for an incomplete, the student must have attended up until the discontinuance deadline and be passing the class. If extenuating circumstances arise before the discontinuance deadline, the student should discontinue or petition through the Registrar's Office to be officially withdrawn from the class(es). The Incomplete Grade Contract should be completed and signed by the instructor and the $10 fee paid before submission of the official grade roll at the end of the semester. A copy of the Incomplete Grade Contract must be submitted to the Records Office. A grade of E will be posted until a valid Incomplete Grade Contract is submitted to the Records Office.

   Class attendance in a subsequent semester or reregistration is not permitted to make up the incomplete. In some special instances, such as a lab class, attendance may be required for the portion of the class or lab section missed. Once all the work has been completed, the instructor should complete the portion of the Incomplete Grade Contract, showing the grade earned, and submit the form to the Records Office (B-150 ASB).

   The instructor may designate the specific length of time the student has to complete the course requirements (not to exceed one year). If the work is not completed and the new grade submitted by the instructor within the agreed upon deadline, the I grade will be changed to an IE (the IE grade is considered and calculated as a failing grade). (To extend the contract date within the one-year deadline contact the Records Office, B-150 ASB.)

5. A grade of **T** indicates course work in progress and is only used in certain approved courses in which work may extend beyond the semester. It is not calculated into the GPA. The T grade may be changed to A, B, C, D, E, or P, depending on the grade

rule for the course, when the work is completed.

6. The grade **NS** is placed on the student record when a grade roll has not been submitted to the Records Office by the grade submission deadline. After the deadline, an official grade change must be submitted by the instructor, either online through the grade roll or with a Grade Change Authorization form. An NS is not calculated into the GPA.

## Numeric Grade Values (Law School)

In fall semester 1987 the Law School was granted permission to grade their courses on the numeric grading system. In fall semester 1994 the Law School was granted permission to change the numeric grading system to a new numeric scale. All current Law School students with previously earned numeric grades had their grades converted to the new numeric scale:

| 1987–1994 | Description | Fall 1994 |
|---|---|---|
| 80–90 | Superior | 3.7–4.0 |
| 75–79 | Excellent | 3.3–3.6 |
| 71–74 | High pass | 3.0–3.2 |
| 66–70 | Pass | 2.7–2.9 |
| 59–65 | Low pass | 2.2–2.6 |
| 50–58 | Fail | 1.6–2.1 |

## Grade Changes

After the final grade submission deadline, grades may be changed only for the following reasons:

- making a calculating error in computing the grade
- posting the wrong grade to the grade roll
- changing a T grade after the course work is completed
- posting a grade if no grade was submitted
- reevaluation of the previous grade with no additional work submitted

When such corrections need to be made, an official grade change must be submitted by the instructor, either online through the grade roll or with a Grade Change Authorization form.

If a student completes any additional work beyond the end of the semester or term (original T grades excluded), grade changes should not be made. Instead, the student should request to have an Incomplete Grade Contract.

A previous grade cannot be changed to a W (Official Withdrawal). If the student had a nonacademic emergency, he or she should file a petition for withdrawal with the Registrar's Office.

## Student Academic Grievance Policy

There may be occasions when a student believes her/his academic work or conduct has been unfairly or inadequately evaluated[1] by the faculty.[2] Usually such differences of opinion can be amicably resolved informally between the student and teacher. If not, the following procedures are intended to encourage satisfactory resolution of academic grievances with a minimum of formal procedure.

1. The grievance must be initiated by the student no later than four months (120 days) from the last day of the examination period of the semester in which the alleged unfair or inadequate evaluation occurred. A grievance related to restrictions limiting participation in university academic programs must be initiated within 30 days of the decision in question.

2. The student should initially address the grievance in writing to the faculty member or administrator responsible, requesting review and resolution. If the faculty member or administrator is unavailable or the student has a valid reason to believe the matter will not be dealt with fairly or that retribution may result, the student may submit the grievance directly to the applicable department chair. (The faculty member, administrator, or department chair shall have the right to consult others regarding the matter as reasonably necessary and with due regard to the student's right to privacy under the Family Educational Rights and Privacy Act.)

3. If the grievance is addressed to the faculty member, and it is not resolved satisfactorily, the student may submit a written request for further review to the department chair within 30 days of the faculty member's decision.

4. The department chair's decision shall be given in writing to both the student and the faculty member within 30 days after receiving the student's request and all supporting material for review.

5. If the matter is still unresolved, the student may submit a written request for formal review to the dean or director of the applicable college or school within 30 days of the department chair's written decision.

6. If formal review is requested, the applicable dean or director shall be assisted in reviewing the grievance by a committee, as described in the following paragraphs.

   6.1 The dean or director will appoint several individuals associated with the university to serve as an ad hoc review panel. At least two of these individuals must be faculty with continuing faculty status from outside the area of study in which the grievance arose. One of these faculty members will be appointed to chair and conduct the proceedings, which should take place within 30 days after receiving the student's written request and all supporting materials. Faculty appointed to a panel reviewing a graduate student's grievance must have graduate faculty status.

   6.2 In reviewing the grievance, the review panel, the affected student, and the affected faculty member are responsible to identify or provide relevant sources of information. The review is intended to be collegial and not adversarial. Accordingly, legal counsel is not allowed to attend nor advocate in the review process. Presentation of the issues should be concise and relevant. The chair of the review panel shall be responsible to conduct the review and establish applicable procedures if such are not available from the dean or director. Any formal presentation should be limited to pertinent issues and panel members allowed sufficient time for questions. Following presentation and discussion of the grievance, the review panel will deliberate in closed session and submit its written recommendation to the dean or director.

   6.3 The dean or director will determine the resolution of the grievance and give the decision in writing to the student and faculty member within 10 days of receipt of the review panel's recommendation. This decision is final and not subject to further appeal, unless it involves termination of a graduate program or termination from the university.

   6.4 If the matter involves termination of a graduate program and is not resolved to the graduate student's satisfaction,

the student may submit a written request for review to the Dean of Graduate Studies. The written request for review should contain an outline of the grievance and its disposition and set forth facts supporting the student's request for review. The request for review must be made within 30 days of the date of the written decision by the college dean. The Dean of Graduate Studies will convene a formal administrative review of relevant matters that have not been resolved at the department or college level. Following the review, the Dean of Graduate Studies will make the final determination.

6.5 If the matter involves termination of an undergraduate student from the university for academic reasons or revocation of a degree, the student may submit a written request for review to the Academic Vice President. The written request for review must contain an outline of the grievance, its prior disposition, and set forth facts supporting the student's request for review. The request for review must be made within 30 days of the date of the written decision by the dean or director. The Academic Vice President may either make a decision on the matter or delegate the review to an associate AVP who will convene an ad hoc review panel to study the issues and prepare a written recommendation for the Academic Vice President. A written decision by the Academic Vice President will be sent to the student within 30 days of receipt of the written recommendation of the panel, unless an extension is necessary and all parties are notified of the extension in writing.

**Notes**

1. Academic evaluations which are subject to this policy include grading, restrictions limiting participation in university academic programs, dismissal from the university or a university program for academic reasons, actions arising from incidents of academic dishonesty, the withholding, and/or revocation of a diploma for academic reasons, and the withholding of or special notation on transcripts for academic reasons. Evaluations relating to admissions to the university, ecclesiastical endorsements, discipline administered by the Honor Code Office, or petitions are not covered by this policy. Persons who believe they have been unlawfully discriminated against or sexually harassed should contact the Equal Opportunity Office.
2. For purposes of this policy, "faculty" means any teacher or other individual authorized by the university to academically evaluate students, or who has a legitimate need to know regarding the processing and disposition of an academic grievance.

## Scholastic Recognition Each Semester

The dean of each academic college at the close of each semester will post a list of names of undergraduate students who are ranked in the top 5 percent of their college for the given semester, who have earned a minimum of 14 credit hours, and who have earned a minimum grade point average of at least 3.5 for the semester.

## Grades

After the semester/term has ended and all grades have been submitted by the faculty, students may access their grades through AIM in MyBYU.

# Records

Registrar's Office
B-150 ASB
(801) 422-2631

The Registrar's Office is the official guardian of all permanent records of all academic work done at the university. The office is also responsible for issuing official transcripts of credit. Official transcripts include only credit completed through BYU.

## Classification of Students

Students are classified as follows:

| Credit Hours Earned | Classification |
|---|---|
| 0.5–29.9 | Freshman |
| 30–59.9 | Sophomore |
| 60–89.9 | Junior |
| 90 and over | Senior |

## Access to Education Records—FERPA

Student education records at BYU are generally accessible to eligible students according to the provisions of the Family Educational Rights and Privacy Act (FERPA). BYU has adopted Access to Student Records Procedures that explain in detail student rights relating to their education records.

The following is notice of student rights to their education records, a summary of the procedures for exercising those rights, and a description of student directory information that may be disclosed to the public without the students' consent as required by law:

Eligible students, admitted and enrolled at BYU, generally have the right to:

1. Inspect and review their education records within a reasonable period of time upon submitting to the appropriate department managing their education records a written request, with proof of identification, specifying the records to be inspected. The department will notify the student of the time and place the records may be inspected.
2. Petition BYU to amend or correct any part of the education record believed to be inaccurate, misleading, or in violation of their privacy rights. Students may submit a written request to the department holding the record, clearly identifying the part of the record they want changed, and specify why it is inaccurate or misleading. If the department decides not to amend the record as requested, the department will notify the student of the decision and advise them of their right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures as outlined in university procedures will be provided to the student when notified of the right to a hearing.
3. Control the disclosure of personally identifiable information contained in the student's education record, except as otherwise authorized by law. BYU will disclose student education records without the written consent of the student in the following limited circumstances:

a. To school officials and to specified agents of the university who have a legitimate educational interest in the records.
   - A school official or specified agent of the university is:
     - the Board of Trustees or its agents
     - a person employed by the university in an administrative, supervisory, academic, research or support staff position, (including law enforcement unit personnel and health staff); or
     - a person or company, with whom the university has contracted as its agent to provide a service instead of using university employees or officials (such as Student Clearinghouse, an attorney, auditor or collection agent); (the contracted party is subject to the same conditions of use and redisclosure of education records that govern other school officials); or
     - a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks; or
     - a person employed by, under contract to, or designated by the university to perform a specific task.
   - A school official or specified agent has a legitimate educational interest if the official is:
     - performing a task that is specified in his or her position description or by contract agreement;
     - performing a task related to a student's education;
     - performing a task related to student discipline; or
     - performing a service or benefit relating to the student or the student's family, such as health care, counseling, job placement, or financial aid.
   - To officials of another school, upon request, in which a student is enrolled, or seeks or intends to enroll.
   - To the Secretary of the U.S. Department of Education, the Attorney General of the United States, the Comptroller General of the United States, and state and local educational authorities, in connection with certain state or federally supported education programs.
   - In situations where a student has sued the university, or the university has taken legal action against a student, as necessary for the university to proceed with legal action as a plaintiff or to defend itself.
   - In connection with a student's request for or receipt of financial aid, as necessary to determine the eligibility, amount or conditions of the financial aid, or to enforce the terms and conditions of the aid.
   - As required by state law disclosure that was adopted before November 19, 1974.
   - To organizations conducting certain studies for or on behalf of the university on condition that the organizations conducting the studies not permit the personal identification of students by anyone other than the organizations' representatives. Additionally, all information provided must be destroyed by the requesting organizations when no longer needed for the study's purpose.
   - To accrediting organizations to carry out their functions.
   - To either parent of an eligible student if the student is claimed as a dependent for income tax purposes regardless of which parent claims the student as a dependent. Parents requesting information from a student's file shall be responsible to demonstrate that the student in question is a dependent pursuant to Section 152 of the Internal Revenue Code. In addition, BYU may disclose to parents of an eligible student information regarding violations of local, state, or federal law or of the Church Educational System Honor Code regarding the use or possession of controlled substances for student violators under the age of 21.
   - To comply with a judicial order or a lawfully issued subpoena in which case the order or subpoena shall be directed to the Office of the General Counsel for review prior to dissemination of the education record. The university will make a reasonable attempt to notify the student in advance of disclosure when non-directory information is released in response to subpoenas or court orders.
   - To appropriate parties, including parents or guardians, in a health or safety emergency.

     BYU may (without the consent of the perpetrating student) disclose to the victim of a crime of violence or non-forcible sex-offense, (as defined in the Clery Act) the results of any disciplinary proceeding conducted by BYU against the alleged student perpetrator regardless of the outcome of the proceeding.

4. File a complaint with the U.S. Department of Education concerning failures by BYU to comply with the requirements of FERPA. The name and address of the office that administers FERPA is Family Policy and Compliance Office, U.S. Department of Education, 400 Maryland Avenue SW, Washington, DC 20202-4605, www.ed.gov/offices/om/fpco/.

BYU has designated the following student information as directory information that it may disclose to the public without the consent of the student:

### Directory Information

Name
Addresses and telephone numbers
E-mail address
Month/Day/Place of birth
Names of parents or spouse
Major and minor fields of study
Participation in officially recognized activities and sports
Weight and height of members of athletic teams
Pictures
Dates of attendance (current and past)
Number of months/semesters enrolled
Class standing (freshman, sophomore, etc.)
Enrollment status (full-time, part-time, less than half-time)
Degrees and awards received
Previous educational institutions attended
Dates of employment and job titles for student employment positions
Anticipated future enrollments
Course registrations prior to the beginning of a semester or term
Expected date of graduation
Deferred registration eligibility

Students have the right to restrict disclosure of the above directory information. To request restriction of disclosure, students must file a written request in the Registrars' Office. Forms for this request are available in the Office of the Registrar.

## Transcript Record Holds

A hold will be placed on a student's record for failure to meet certain university obligations (outstanding fees, etc.). Until the obligation is fulfilled, no copy of the academic record or diploma or information about the record will be released, and graduation may be delayed or denied.

## Earning Credits

Students earn approved university credit in the following ways:

### Regular Course Work

Complete work in regular courses offered at BYU. Complete college-level courses through Independent Study, Evening Classes, or other Continuing Education programs.

### Transfer Work

Transfer credit for college-level courses completed at an accredited college or university and transferred to Brigham Young University. (See the Admissions section of this catalog for further explanation on transfer college credit.)

### Advanced Placement (AP) Exam

Complete an AP exam with a score of 3, 4, or 5. College credit may be awarded based on the subject and score.

### Military Credit

Serve in the armed forces. Students who have been on active duty for more than one year may receive additional credit for college-level training and experience in the service. To receive credit, bring the military service DD-214 form to Transfer Services in the Registrar's Office, B-150 ASB.

### International Baccalaureate (IB)

Students who complete the International Baccalaureate (IB) examinations with a score of 5, 6, or 7 may receive college credit. An IB course at the subsidiary level will normally be given 3 hours of general credit. An IB course completed at the higher level may receive 6 hours of general credit and possibly fill a general education requirement.

### Challenge Examination

Students may receive credit by challenging some courses at the university through a separate examination procedure. Departments reserve the right to decide which courses may be challenged by examination. Religion courses, internship courses, exercise sciences and dance activity courses, and other activity participative courses, such as music, youth leadership, and ROTC, may not be challenged.

The challenge examination is not meant to certify that a student has attended the class and completed all course requirements. The challenge examination credit merely shows that the student's skill and knowledge is sufficient to pass a challenge examination for the course.

Only students who have completed at least one course at BYU through day or evening school or the Salt Lake Center are eligible for the challenge examination option. Students currently enrolled are eligible to take the exam, but the credit will not be posted to the transcript until the other BYU credit and grades are posted. Students who are suspended or dismissed from the university are not eligible to challenge courses. Students who are suspended or dismissed may not have challenge examination credit posted to their record even if the examination was taken prior to the suspension or dismissal.

Once students have graduated, they are not eligible for challenging any additional credit at BYU unless it is specific to the graduate program to which the students have been admitted. (See current BYU Graduate Catalog for information on how to challenge graduate courses.)

Some challenge exams for credit are offered in the Testing Center, and others are arranged through the department offering the course. A fee payable to Student Services in D-155 ASB is required. The student should check with the department to see if the exam is offered in the department or through the Testing Center. To earn academic credit and a grade for the course, the student must sign a Challenge Examination Form and have the Testing Center or the department submit it to the Records Office in B-150 ASB. The time limit for a student to choose course credit is determined by the individual academic department, not to exceed one year from the date of the exam. No additional fees are charged to post the credits to the transcript. The student's transcript and cumulative grade point average reflect the grade earned on the exam. The procedure to take exams and request academic credit follows.

*Procedure for Challenge Exams Given at the Testing Center*

1. Contact the appropriate department for the exam procedure and content before going to the Testing Center.
2. Go to the Testing Center (265 HGB). (For testing dates on GE challenge exams, see table in University Core: General Education section of the current class schedule.)
3. Pay the $20 required fee at the Testing Center.
4. After the exam is graded and the choice is made to receive graded credit, obtain a Challenge Examination Form at the Testing Center and have it validated there. To accept the grade and receive credit for the course, sign the Challenge Examination Form and have the Testing Center submit it to the Records Office (B-150 ASB). After taking the exam there is a limited time to request that the grade be submitted to receive course credit. The time limit to choose course credit is determined by the department, not to exceed one year. Graded credit will be added to the student's official university transcript, and the progress report will show any GE requirement as fulfilled. (Students taking the Physical Science examination may take the grade or an exemption if their score is 75 percent or above. If their score is between 60 and 74 percent, they may receive graded credit.)
5. Students enrolled in the course when they pass its challenge exam **must** also drop the course. Students who drop the class after the *add deadline* (six class days after a semester or term starts) will receive a W on their transcript for dropping the course. If the course is not *officially* dropped before the withdraw deadline, the grade given by the instructor based on class performance will appear on the transcript.

*Procedure for Challenge Exams Not Given at the Testing Center*

1. Whether or not students are enrolled in the course they are challenging:
    a. Complete the Challenge Examination Form available from the department.
    b. Arrange with the department to take the exam.

c. Pay the $20 required fee (per course) at Student Services (D-155 ASB) and have the form validated.

d. Present the validated form to the department examiner.

e. Have the grade and credit recorded on the form by the examiner and obtain the necessary departmental signatures.

f. After seeing the grade, students may choose to have the credit posted to their academic record by signing the Challenge Examination Form and having the department send the completed form to the Records Office (B-150 ASB). After taking the exam there is a limited time to request that the grade be submitted to receive course credit. The time limit to choose course credit is determined by the department, not to exceed one year from the date of the exam.

2. Students enrolled in the course when they pass its challenge exam **must** also drop the course. Students who drop the class after the *add deadline* (six class days after a semester or term starts) will receive a W on their transcript for dropping the course. If the course is not *officially* dropped before the withdraw deadline, the grade given by the instructor based on class performance will appear on the transcript.

### Exemption Examinations for GE Requirements

Some general education requirements can be accomplished by successfully completing an examination. Exemption examinations for selected GE courses are offered at the Testing Center. (See table in University Core: General Education section of the current class schedule for dates of exemption examinations.)

Procedure for Exemption Exams

1. Contact the appropriate academic department for exam procedure and content before going to the Testing Center.
2. Go to the Testing Center (265 HGB) on one of the examination days. (See table in University Core: General Education section of the current class schedule.)
3. Pay the $20 required fee per class at the Testing Center.

Students enrolled in the course when they pass its exemption examination **must** also drop the course. Students who drop the course after the *add deadline* (six days after a semester or term starts) will be officially withdrawn. (This shows as a W on the transcript.) If the course is not *officially* dropped before the drop deadline, the grade given by the instructor based on class performance will appear on the transcript.

**Note:** The progress report of students who pass an exemption exam at the Testing Center will be updated automatically at the end of the semester or term. Students should retain their score report for their records.

## Earning BYU Credit While on Academic Suspension

Students who have been academically suspended from Brigham Young University are not eligible to enroll in courses through day school, evening school, or any of the Continuing Education programs offered by the university except those courses offered through Independent Study. Students should consult their advisement center to determine which Independent Study courses to take.

## Repeating Classes

Students may repeat any course taken at BYU if the course is still being taught or an equivalent course exists. However, **all** grades are calculated into the grade point average (GPA) and **all** credit counts in the total hours.

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# Graduation

Graduation Services
B-150 ASB
(801) 422-7675

## Graduation Information

### Adherence to University Standards / Honor Code

Students must be in good Honor Code standing to graduate from BYU.

The term "good Honor Code standing" means that a student's conduct is consistent with the Honor Code and the ideals and principles of The Church of Jesus Christ of Latter-day Saints. Excommunication, disfellowshipment, or disaffiliation from The Church of Jesus Christ of Latter-day Saints automatically results in the withdrawal of the student's ecclesiastical endorsement and the loss of good Honor Code standing. Further, a student is not in good Honor Code standing if his or her ecclesiastical endorsement has either lapsed or has been withdrawn, or if the Honor Code Office has placed a "hold" on the student's records.

Students who are not in good Honor Code standing are ineligible for graduation, even if they have otherwise completed all necessary coursework. In unusual circumstances, a student may petition the Dean of Students Office to allow an exception to the ecclesiastical endorsement requirement [under the process set forth in the Church Educational System Honor Code section.]

### Application for Graduation

All students desiring to graduate must apply for graduation. Students applying for the bachelor degree should do so by the appropriate deadlines for graduation. The deadlines for each graduation are listed below:

September 15 for December graduation (no graduation exercises)
November 15 for April graduation (graduation exercises)
February 15 for June graduation (no graduation exercises)
April 15 for August graduation (graduation exercises)

In order to apply for graduation, students must have an active ecclesiastical endorsement covering the graduation for which they plan to apply. Students access the online graduation application through the "Apply for Graduation" link in the "School Menu" on MyBYU. After submitting the online graduation application, the student account will be charged a one-time $15.00 fee for graduation and the student will be instructed to contact their individual college advisement center (if applicable) to finish the graduation application process. Students will be notified of the status of their graduation application via email.

Students who apply after the deadline dates will need to contact their college advisement center to be considered for graduation. Graduation Services (B-150 ASB) will notify students of graduation deadlines and procedures via email.

### Attendance at Commencement

All candidates for graduation are encouraged to attend the commencement and convocation exercises. Diplomas will be mailed to students after all grades are posted to their official record and all graduation requirements are certified complete. Commencement exercises are held in April and August only. December graduates are invited to the April commencement following their graduation, and June graduates are invited to August commencement following their graduation. Students must have applied for graduation and been submitted by their individual college advisement center by the deadline for the commencement program in order to be listed in the university commencement program. The names of students who have been approved to "walk" at a commencement ceremony and graduate in a future graduation will not be listed in the commencement program. Names will be listed in the commencement program of the graduation for which the student has applied and been submitted. If a student has an Honor Code hold two weeks prior to commencement, their name will be removed from the commencement and convocation programs. If the hold is removed after the commencement program goes to the press and prior to commencement day, the student is authorized to walk but their name will not be listed in the program.

### Deadlines for Transfer, Correspondence, and Incomplete Credit

All incomplete grades must be removed from the student's record, special examinations must be passed and recorded, and all transfer credit for required classes must be on file in the Registrar's Office at least four weeks before graduation. Any BYU Independent Study coursework (including finals) needed for graduation must be completed at least three weeks before graduation.

### Earning Lower Degree After Receiving Higher Degree

A person having already earned a baccalaureate degree or higher from any institution, including BYU, is ineligible to earn a baccalaureate degree at BYU unless exception has been granted by the Undergraduate Steering Committee (USC). Petitions for exception can be directed to the Admissions Office, which will forward the petition to the USC. If a student is able to finish the degree without being readmitted to BYU (through transfer work and independent study), any request for exception to this policy must be directed to Graduation Services in the Registrar's Office.

### Adding a Program to a Completed Degree

A person who has a completed undergraduate degree is ineligible to add a second major or a minor to their official record.

### Independent Study Credit

A maximum of 36 semester hours of Independent Study credit may be applied toward the 120-semester-hour requirement for a baccalaureate degree.

**Note:** See the Bachelor of General Studies Program section of this catalog for BGS requirements.

## Scholastic Recognition (for undergraduates only)

### University Honors

This section provides a brief overview of the requirements to graduate with University Honors. The staff in the Honors Advisement Center, 350D MSRB, (801) 422-5497, is available on a walk-in basis to answer questions about the program. To graduate with University Honors, a student must:

1. Complete an honors enrollment form.
2. Complete the honors commitment interview.
3. Complete the honors core curriculum.
4. Complete the honors great questions essay.
5. Complete the honors experiential learning requirement.
6. Complete the senior graduation review.
7. Complete the honors thesis requirement.
8. Submit a graduation portfolio.

The requirements for graduation with University Honors complement both major and university core education. The honors curriculum includes and enhances the university core components; the honors thesis requirement enhances the major education component.

A more detailed explanation of the Honors Program is available in the Honors Program section of this catalog.

### Latin Scholastic Distinctions

Latin Scholastic Distinctions at graduation are determined by GPA for the top 10 percent of the graduating seniors based on cumulative total and BYU grade point averages. This includes all coursework earned in integrated bachelor and master programs.

*Summa Cum Laude* is awarded on the basis of grade point average to the top 1.0 percent of the baccalaureate candidates who have earned a minimum 45 semester residency hours of credit at BYU.

*Magna Cum Laude* is awarded on the basis of grade point average to the top 1.1 to 5.0 percent of the baccalaureate candidates who have earned a minimum 45 semester residency hours of credit at BYU.

*Cum Laude* is awarded on the basis of grade point average to the top 5.1 to 10.0 percent of the baccalaureate candidates who have earned a minimum 45 semester residency hours of credit at BYU.

## Graduation Requirements

### Baccalaureate Degree Requirements

The baccalaureate degree is awarded for completion of a specified program of university study. It recognizes important changes in outlook, understanding, and proficiency that result from university experience. At BYU this program of study includes the University Core, the discipline of a specific major, university requirements, and each student's choice of electives. In addition, a minimum of 30 semester credit hours in residence on the BYU campus in Provo, a minimum total of 120 credit hours, and a cumulative GPA of at least 2.0 are required. The average number of BYU credit hours that BYU graduates earn is 128. Students ought to work toward graduating near the 130 credit hour mark.

#### University Core Requirements for the Baccalaureate Degree

See the University Core section of this catalog for complete information.

#### Major Requirements for the Baccalaureate Degree

See specific major requirements in the Academic Departments/Schools/Areas, Degrees, and Courses section of this catalog.

### Minimum University Requirements

**Residency Requirement**

At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student to qualify for a baccalaureate degree. Residency credit does not include any hours earned through Independent Study coursework or credit by examination.

**Total Credit-Hour Requirement**

A candidate for a baccalaureate degree must complete a minimum of 120 credit hours.

#### Grade Point Average Requirement

To graduate from BYU students must earn a minimum 2.0 cumulative BYU grade point average and a minimum 2.0 total cumulative grade point average. Students must also meet any stipulated minimum grade point average requirements in their major.

#### Honor Code Requirement

Students must be in good standing with the Honor Code Office and have a current ecclesiastical endorsement.

## D Credit

Students may use a course in which they receive a D- ("minimum passing") to complete major, minor, religion, or general education requirements. Those receiving a D- in a course will not be required to retake the course unless a higher minimum grade is stipulated in a degree program or course sequence description in the undergraduate or graduate catalog.

Courses taken at other colleges or universities with D grades will count toward the total hour requirement for graduation, but will not fill BYU university core requirements and in most instances will not fill major requirements.

## Major Requirements

The curricular requirements of a specific major must be satisfactorily completed, including any additional departmental requirements related to the major. A minimum of 20 credit hours in the major must be completed in residence as an admitted day student, 10 of these on the BYU campus in Provo.

Students must select and declare a major by the time they have 60 earned BYU credit hours (excluding language exam credits). Once a student has 75 earned BYU credit hours (excluding language exam credits), they will not be allowed to change their major, unless special permission is granted.

In order to encourage timely progress towards graduation, advisement centers may require mandatory advisement before students are allowed to register for classes. Deans, in consultation with advisement centers, may also place registration holds and mandate specific course completion in order to facilitate a timely graduation.

### Double Major

Second majors (exclusive of some language second majors) are rare and *must be approved* by the college advisement center supervisors involved and the dean of the college responsible for the primary major. The second major *proposal and approval process* requires an evaluation of all University Core and major requirements and a time-to-graduation analysis. Petitions for a double major must be submitted prior to earning 75 BYU hours (excluding language exam credits). College advisement centers are prepared to assist interested students in this process. Courses used to satisfy the requirements of a student's major can also be used to satisfy the requirements of an approved second major, unless not permitted by the requirements of the proposed second major. Students who graduate with a second major only receive one degree (the one associated with the primary major) and one diploma. Only the primary major will be listed in the university commencement program and on the diploma.

## Changes of Requirements

University graduation requirements are occasionally modified or changed. The university informs students of such modifications through the online catalog, online class schedules, and all advisement centers on campus. Students who leave the university for an extended period of time may be informed of such changes through these sources.

## Policy on Previous Graduation Requirements and Credit

Brigham Young University is committed to providing its students with an excellent university education consisting of a broad general education that includes religious education and a strong major education. Programs of the university change and develop in the continuing effort to make learning and experience as valuable as possible. Development, growth, and improvement are expected parts both of our lives and our institutions. It is because of the commitment to a superb education that the university's programs develop and improve and that students are expected to meet the current standards of the university when they graduate, even though they may have begun their studies long ago under quite different expectations.

Students who complete a baccalaureate degree within eight academic years of enrollment at BYU qualify for graduation by meeting those religion, university, and general education requirements in effect when they initially enrolled, even though there may have been changes in general education and religion requirements since that time.

In addition, students who complete a baccalaureate degree within eight academic years of enrollment at BYU qualify for graduation by meeting those major education requirements in effect when they officially declared the major with which they plan to graduate even though such declaration was made at some point following their original enrollment. (A student officially declares a major one of two ways: [1] by indicating the choice of major on part 2 of the CES Admission and Scholarship Application or [2] by submitting a Change of Major Form to a college advisement center at a subsequent time.)

Students have eight years from the time of their initial enrollment in which to complete all requirements for graduation. Students who have not graduated within eight years of their initial enrollment at BYU will be required to meet with an academic advisor in the area of their primary major to determine major and university core graduation requirements and the use of credit previously earned. Where University Core or major requirements have changed or where credit previously earned was in an area of substantial change, students may be required to do additional work to meet graduation requirements.

After discussion with an academic advisor, students may petition the Dean of Undergraduate Education to accept old general education courses to fulfill current general education requirements. This means that credit earned more than eight years before admission or readmission (including transfer credit) may be accepted to meet general education or major graduation requirements at the discretion of the university.

All students who receive undergraduate degrees from BYU are required to complete the University Core requirements unless 1) a student is on the previous GE program and within eight years of initial enrollment; or 2) a student is granted an exception by the Dean of Undergraduate Education.

BYU offers the Bachelor of General Studies Program to assist students who are unable to come back to campus to finish their degrees.

## Advisement

An important corollary of the university's commitment to provide its students with an excellent university education is its commitment to help students find their way through their programs effectively and efficiently. Students whose educational experience has extended beyond eight years from the time of initial enrollment and who find that changes in programs will require additional work and preparation should consult with college or department advisors for help in planning their schedules in the best and most encouraging way possible.

The university's requirement that a student graduate under current or very recent standards is meant to benefit the student and is in no way established to deter a determined person from returning to the university after years away. Good advisement can be of great help in working out a program of study at the university, taking into account individual needs, concerns, and experience.

## MyMAP

BYU offers students a helpful academic planning system (MyMAP) that enables them to plan their academic progress towards graduation. MyMAP is an online tool students may use to plan specific courses to fill University Core, major, minor, and elective requirements, and organize those courses into semesters/terms. In addition, students may register for these courses using the Register tab. Easy access to course descriptions can be found on any MyMAP tab by simply clicking on the course title. As a student fully utilizes MyMAP, they will find that they have important information at their fingertips. Students may access MyMAP under the School section of MyBYU. To learn more about MyMAP go to http://mymap.byu.edu.

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# Church Educational System Honor Code

Brigham Young University, Brigham Young University—Hawaii, Brigham Young University—Idaho, and LDS Business College exist to provide an education in an atmosphere consistent with the ideals and principles of The Church of Jesus Christ of Latter-day Saints. That atmosphere is created and preserved through commitment to conduct that reflects those ideals and principles. Members of the faculty, administration, staff, and student body at BYU, BYU—Hawaii, BYU—Idaho, and LDSBC are selected and retained from among those who voluntarily live the principles of the gospel of Jesus Christ. Observance of such is a specific condition of employment and admission. Those individuals who are not members of The Church of Jesus Christ of Latter-day Saints are also expected to maintain the same standards of conduct, except church attendance. All who represent BYU, BYU—Hawaii, BYU—Idaho, and LDSBC are to maintain the highest standards of honor, integrity, morality, and consideration of others in personal behavior. By accepting appointment on the faculty, continuing in employment, or continuing class enrollment, individuals evidence their commitment to observe the Honor Code standards approved by the Board of Trustees "at all times and . . . in all places" (Mosiah 18:9).

## Honor Code Statement

*We believe in being honest, true, chaste, benevolent, virtuous, and in doing good to all men. . . . If there is anything virtuous, lovely, or of good report or praiseworthy, we seek after these things* (Thirteenth Article of Faith).

As a matter of personal commitment, faculty, administration, staff, and students of Brigham Young University, Brigham Young University—Hawaii, Brigham Young University—Idaho, and LDS Business College seek to demonstrate in daily living on and off campus those moral virtues encompassed in the gospel of Jesus Christ, and will

Be honest
Live a chaste and virtuous life
Obey the law and all campus policies
Use clean language
Respect others
Abstain from alcoholic beverages, tobacco, tea, coffee, and substance abuse
Participate regularly in church services
Observe the Dress and Grooming Standards
Encourage others in their commitment to comply with the Honor Code

Specific policies embodied in the Honor Code include (1) the Academic Honesty Policy, (2) the Dress and Grooming Standards, (3) the Residential Living Standards, and (4) the Continuing Student Ecclesiastical Endorsement. (Refer to institutional policies for more detailed information.)

## Good Honor Code Standing

Students must be in good Honor Code standing to be admitted to, continue enrollment at, and graduate from BYU. The term "good Honor Code standing" means that a student's conduct is consistent with the Honor Code and the ideals and principles of The Church of Jesus Christ of Latter-day Saints. Excommunication, disfellowshipment, or disaffiliation from The Church of Jesus Christ of Latter-day Saints automatically results in the loss of good Honor Code standing. Further, a student is not in good Honor Code standing if his or her ecclesiastical endorsement has either lapsed or has been withdrawn, or if the Honor Code Office has placed a "hold" on the student's records.

All students, upon admission to BYU, are required to observe the standards of the Honor Code at all times, whether on or off campus. When the Honor Code Office receives reports of misconduct prior to a prospective student's admission or readmission, those reports are referred to the Admissions Office for appropriate action. When the Honor Code Office receives reports of student misconduct after admission or readmission, but before registration for classes, the Honor Code Office typically notifies the student, indicating that a "hold" will be placed on the student's registration if the matter is not resolved to the satisfaction of the Honor Code Office by a specified date. The Honor Code Office also reserves the right to place a "hold" on the record of any student based on reports of student misconduct prior to notifying the student.

## Conduct

All students are required to conduct themselves in a manner consistent with the Honor Code. In addition, students may not influence or seek to influence others to engage in behavior inconsistent with the Honor Code.

Students must abstain from the use of alcohol, tobacco, and illegal substances and from the intentional misuse or abuse of any substance. Sexual misconduct; obscene or indecent conduct or expressions; disorderly or disruptive conduct; participation in gambling activities; involvement with pornographic, erotic, indecent, or offensive material; and any other conduct or action inconsistent with the principles of The Church of Jesus Christ of Latter-day Saints and the Honor Code is not permitted.

Violations of the Honor Code may result in actions up to and including separation from the university.

## Homosexual Behavior

Brigham Young University will respond to homosexual behavior rather than to feelings or attraction and welcomes as full members of

the university community all whose behavior meets university standards. Members of the university community can remain in good Honor Code standing if they conduct their lives in a manner consistent with gospel principles and the Honor Code.

One's stated same-gender attraction is not an Honor Code issue. However, the Honor Code requires all members of the university community to manifest a strict commitment to the law of chastity. Homosexual behavior is inappropriate and violates the Honor Code. Homosexual behavior includes not only sexual relations between members of the same sex, but all forms of physical intimacy that give expression to homosexual feelings.

## Dress and Grooming Standards

The dress and grooming of both men and women should always be modest, neat, and clean, consistent with the dignity adherent to representing The Church of Jesus Christ of Latter-day Saints and any of its institutions of higher education.

Modesty and cleanliness are important values that reflect personal dignity and integrity, through which students, staff, and faculty represent the principles and standards of the Church. Members of the BYU community commit themselves to observe the following standards, which reflect the direction of the Board of Trustees and the Church publication *For the Strength of Youth*. The Dress and Grooming Standards are as follows:

### Men

A clean and well-cared-for appearance should be maintained. Clothing is inappropriate when it is sleeveless, revealing, or form fitting. Shorts must be knee-length or longer. Hairstyles should be clean and neat, avoiding extreme styles or colors, and trimmed above the collar, leaving the ear uncovered. Sideburns should not extend below the earlobe or onto the cheek. If worn, moustaches should be neatly trimmed and may not extend beyond or below the corners of the mouth. Men are expected to be clean-shaven; beards are not acceptable. Earrings and other body piercing are not acceptable. Shoes should be worn in all public campus areas.

### Women

A clean and well-cared-for appearance should be maintained. Clothing is inappropriate when it is sleeveless, strapless, backless, or revealing; has slits above the knee; or is form fitting. Dresses, skirts, and shorts must be knee-length or longer. Hairstyles should be clean and neat, avoiding extremes in styles or colors. Excessive ear piercing (more than one per ear) and all other body piercing are not acceptable. Shoes should be worn in all public campus areas.

## Residential Living Standards

As stated in the Honor Code, Brigham Young University is committed to providing a learning atmosphere consistent with the principles of the Church. The university is likewise committed to creating such an atmosphere for students residing on and off campus and between semesters. To achieve this, BYU has established living standards to help students learn some of the high ideals and principles of behavior expected at Brigham Young University. Therefore, the university requires students to adhere to the following applicable standards:

### Housing

All single BYU undergraduate students who are not residing with their parents must live in university on-campus or university-contracted, sex-segregated housing unless specifically excused in writing by the Off-Campus Housing Office.

### Visiting Hours

#### Helaman Halls

Visitors of the opposite sex are permitted in the lobbies but not in the bedroom area, except during an established open house, at which times room doors must remain open. Lobby visiting hours begin after 8:00 a.m. and extend until 12:00 midnight, Saturday through Thursday. On Friday night, lobby visiting hours extend until 1:30 a.m.

#### Heritage Halls

Visitors of the opposite sex are permitted in the lobbies and apartment kitchens but not in bedrooms or bathrooms. Lobby visiting hours are from 8:00 a.m. to 12:00 midnight daily, Saturday through Thursday, and extend until 1:30 a.m. on Fridays. Apartment visiting hours are from 10:00 a.m. to 11:00 p.m. Sunday through Thursday and extend until 12:00 midnight on Friday and Saturday.

#### Off-Campus Visiting Hours, Wyview Park, and Foreign Language Student Residence

Visitors of the opposite sex are permitted in living rooms and kitchens but not in the bedrooms in off-campus living units, Wyview Park, and the Foreign Language Student Residence. The use of the bathroom areas by members of the opposite sex is not appropriate unless emergency or civility dictates otherwise, and then only if the safety, privacy, and sensitivity of other residents are not jeopardized. Visiting hours may begin after 9:00 a.m. and extend until 12:00 midnight. Friday night visiting hours may extend until 1:30 a.m. Off-campus landlords may establish a shorter visiting period if proper notice is given to students.

### Guests

All guests of students must comply with the Residential Living Standards while on the premises of university-contracted housing. Students are expected to help their guests and other residents understand and fulfill their responsibility under the Residential Living Standards and the Honor Code. Approval forms must be submitted for all guest requests, and are available from hall advisors and area offices. Approved guests may stay a maximum of three nights.

### Maintaining the Standards

Violations of these standards may be reported to the Honor Code Office, 4440 WSC, (801) 422-2847, or the Off-Campus Housing Office, (801) 422-1513.

## Continuing Student Ecclesiastical Endorsement

Students are required to be in good Honor Code standing to be admitted to, continue enrollment at, and graduate from BYU. In conjunction with this requirement, all enrolled continuing undergraduate, graduate, intern, and Study Abroad students are required to obtain a Continuing Student Ecclesiastical Endorsement for each new academic year. Students begin the Continuing Student Ecclesiastical Endorsement process online at http://www.endorse.byu.edu. For questions regarding the online process, please visit http://honorcode.byu.edu. Students should have their endorsements completed by March 15 to avoid registration delays for fall semester or any semester thereafter. Those applying to BYU should use the online new-student Admissions Application Part 3 found at http://beSmart.com.

**LDS students** may be endorsed only by the bishop of the ward (1) in which they live and (2) that holds their current Church membership record.

**Non-LDS students** are to be endorsed by (1) the local ecclesiastical leader if the student is an active member of the congregation, (2) the bishop of the LDS ward in which they currently reside, or (3) the nondenominational BYU chaplain.

**Former LDS students** are not eligible to receive an ecclesiastical endorsement (See Withdrawn Ecclesiastical Endorsement below).

## Requirements

Whether on or off campus or between semesters, all students are expected to abide by the Honor Code, which includes (1) the Academic Honesty Policy, (2) the Dress and Grooming Standards, and (3) the applicable Residential Living Standards. Students are required to be in good Honor Code standing to graduate.

LDS students must fulfill their duty in The Church of Jesus Christ of Latter-day Saints, attend Church meetings, and abide by the rules and standards of the Church on and off campus.

Students who are not members of The Church of Jesus Christ of Latter-day Saints are also expected to maintain the same standards of conduct. They are encouraged to participate in services of their preferred religion. All students must be in good Honor Code standing to graduate, to receive a diploma, and to have the degree posted.

## Withdrawn Ecclesiastical Endorsement

A student's endorsement may be withdrawn at any time if the ecclesiastical leader determines that the student is no longer eligible for the endorsement. If an endorsement is withdrawn, no confessional information is exchanged without authorization from the student. Students without a current endorsement are not in good Honor Code standing and must discontinue enrollment. Students who are not in good Honor Code standing are not eligible for graduation, even if they have otherwise completed all necessary coursework. Excommunication, disfellowshipment, or disaffiliation from The Church of Jesus Christ of Latter-day Saints automatically results in the withdrawal of the student's ecclesiastical endorsement and the loss of good Honor Code standing. Disaffiliation is defined for purposes of this policy as removal of an individual's name from the official records of the Church.

The decision to withdraw an ecclesiastical endorsement may be appealed through appropriate ecclesiastical leaders only. As a matter of practice, BYU does not intervene in ecclesiastical matters or endorsements. In unusual circumstances, however, a student may petition the Dean of Students Office to allow an exception to the ecclesiastical endorsement requirement. As part of the petition, a student must (i) complete an Application for Exception to Policy (this form may be obtained from the Dean of Students Office); (ii) sign a release allowing appropriate university officials to freely communicate with the student's ecclesiastical leaders; (iii) prepare a written statement outlining the reasons why, in light of the student's extenuating circumstances, the university should allow an exception; and (iv) submit the completed application, release, and relevant statements to the Dean of Students Office, 3500 WSC, Brigham Young University, Provo, Utah, 84602 for consideration.

When considering the petition, the Dean of Students will focus *not* on the merits of the ecclesiastical leader's decision to withdraw the endorsement but instead on whether the student has demonstrated sufficiently compelling grounds to warrant an exception to the university's ecclesiastical endorsement requirement. In addition to speaking with the student's present and former ecclesiastical leaders, the Dean of Students may also choose to personally interview the student, who may further explain the circumstances which might justify an exception to the ecclesiastical endorsement requirement. The student bears the burden of persuasion that he or she should be considered to be in good Honor Code standing, notwithstanding the lack of an ecclesiastical endorsement. The Dean of Student's decision regarding the petition will be reviewed by the Vice President of Student Life if requested by the student. The decision by the Vice President of Student Life is final.

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# Housing

Campus Accommodations Office
100 SASB
Phone: (801) 422-2611
Toll-free: (877) 403-0040
Fax: (801) 422-0837
E-mail: housing@byu.edu
Internet: http://www.byu.edu/oncampushousing/

Quality residential living is an important, indeed an integral, part of the total educational experience at BYU, and students should carefully consider the accommodations available in view of the type of living experience they desire, the time they have available for activities within their housing situation, and their economic needs. Housing is available on campus and in the surrounding communities, and programs have been established within campus residence halls and with off-campus landlords to integrate living experiences with the total university educational program.

## On-Campus Housing

On-campus housing includes room-and-board residence halls and apartment-style living for men and women—each directed by a competent hall advisor—and family apartments. Assisting the hall advisor in room-and-board areas and the apartment-style living are several resident assistants—mature, advanced students who reside with the student group. Students are known personally by the staff and have someone available to assist with normal student problems.

The residence hall program is designed to provide experiences in self-government, sharing relationships, and other responsibilities that encourage maturity and independence.

All residents have access to the BYU Computer Network which provides them with Internet access as well as printing capabilities with Open Access printing. Using the Internet, residents may access many campus resources including ScholarSearch (BYU Library), Blackboard (course specific web sites), and many other resources.

### Residence Halls for Men and Women

Board and room in **Helaman Halls** is provided for both men and women. Each hall contains student lounges; study rooms; common shower and restroom areas; and laundry and storage facilities. The central building features a spacious dining facility (Cannon Commons), a reception area, offices, and mail service for the entire residence area. Recreational facilities include sports courts and large lawn areas.

### Apartment Living for Men and Women

**Heritage Halls** and **Wyview Park** provide apartment-style housing for both men and women. Apartments are furnished, except for bedding and kitchen items.

New Heritage Halls apartments have a combination kitchen-dining-living room, three bedrooms (designed for two people each), and two bathrooms. Each building has a large lobby/living area, activity rooms, laundry, and storage facilities.

Wyview Park apartments have a kitchen and dining room, living room, two or three bedrooms, and a bathroom. Two-bedroom apartments have one private bedroom and one shared bedroom. Three-bedroom apartments have two private bedrooms and one shared bedroom.

### Residences for Families

Accommodations for student families are provided at **Wymount Terrace**. Each apartment is furnished with an electric or gas range, refrigerator, garbage disposal, and blinds. A limited assortment of furniture can be rented from the Student Family Housing Office. Residents have access to sports courts, children's playgrounds, and large lawn areas.

These apartments do not have washer/dryer hookups, but the areas have self-service laundry facilities.

Wymount Terrace has 898 one-, two-, or three-bedroom apartments and is located on the northeast side of campus.

### Foreign Language Student Residence

The College of Humanities sponsors the Foreign Language Student Residence, located near the Missionary Training Center. Students pledge to speak only the foreign language in their apartment while they live and study together under the supervision of a faculty advisor and a native speaker.

All rooms in the complex are shared; single rooms are not available. Male and female residents in each target language eat five meals a week together, with the cost of some meals included in the fees. For details contact the Foreign Language Student Residence program office at 3086 JFSB or (801) 422-3765.

## Agreements for On-Campus Housing

Students who wish to live on campus are not required to complete a separate housing application. Students are instead given a room selection date based upon the completion date of their admission application. The final admission deadline is February 1st of each year.

### Single Student On-Campus Housing

A $100 security deposit and $50 processing fee are due at the time of room selection. The *security deposit* is refundable (1) if the student is not admitted to the university or on-campus housing, (2) if cancellation is received before the deadline shown on the agreement, or (3) at the end of the agreement if there is no debt owed to the university.

Students should be prepared to live by the terms of the agreement once they have acquainted themselves with its terms and submitted it; this will avoid any possible misunderstanding or financial loss. Agreements are made for the academic school year.

### Student Family On-Campus Housing

Family housing apartment availability is updated online at 4:00 p.m. Monday-Friday (excluding holidays) at www.byu.edu/familyhousing. For student family housing, the completed agreement must be submitted with a $100 security deposit and a nonrefundable $50 processing fee. Parts 1 and 2 must both be completed for the agreement to be valid.

# Off-Campus Housing

C-141 ASB
(801) 422-1513
Internet: och.byu.edu

Brigham Young University is committed to creating an atmosphere conducive to intellectual and spiritual development for all of its students, including those who live off campus. The BYU Off-Campus Housing Office was established to assist in this task by:

1. Aiding students in locating off-campus housing.
2. Encouraging landlords to maintain and improve rental facilities.
3. Advising and giving counsel to students and landlords in their relationships with one another.
4. Attempting to ensure that BYU living standards are maintained off campus.

To help achieve these ends, single undergraduate BYU students are required to live in university-contracted housing (see below). At present, more than 22,000 rental spaces have been contracted by the university for single undergraduate students living off campus. For further information concerning off-campus rentals and BYU regulations, contact the Off-Campus Housing Office at 801-422-1513 between 8:00 a.m. and 5:00 p.m. Monday through Friday or visit the OCH web site at och.byu.edu.

## BYU Housing Referral Service

The BYU Off-Campus Housing Office maintains a complete referral service for all university-contracted rental facilities. Thousands of rental units of all types are available, including large- and medium-sized apartment complexes, condominiums, duplexes, and houses. *Some* housing for families and graduate students is also listed, although student family housing and graduate student housing is not subject to university contracting.

Listings are available at och.byu.edu. A guide with housing tips and essential rental data on apartment complexes may be found on the OCH web site. Officials are also available to help students who have problems finding suitable off-campus housing.

## Student Address Verification

*All BYU students are required to provide the residential address where they reside (not a post office box) as part of the registration process. Unless specifically excused by the Off-Campus Housing Office, all single undergraduate BYU students are required to live in university-contracted housing either on or off campus.* The requirement may be waived by the Off-Campus Housing Office through a waiver for the following students:

1. Single parents with children.
2. Single students living with parents.
3. Single students who are taking classes away from Provo.
4. Under hardship conditions, as determined by the Off-Campus Housing Office, the university housing requirement may be waived for other students who have a special circumstance or hardship.

Hotels, motels, and studio apartments are not contracted housing for single students. A studio apartment is a living unit that does not provide a separate bedroom but combines the living and sleeping area.

Students who do not provide their residential address or who live in housing not contracted by the university and who are not excused by the BYU Off-Campus Housing Office are subject to the following sanctions:

1. Non-compliance fees up to $175.00 will be incurred, and future registration may be stopped, until the student verifies that he or she is living in or will be living in university-contracted housing.
2. Students falsifying their addresses will be subject to the above consequences as well as disciplinary action by the university for Honor Code violations.

When a student signs an agreement to live in a facility not contracted by the university and has not been excused from the university housing requirement, these sanctions will be applied even though the student's tenancy extends beyond the current fall, winter, or spring-summer in which the student is enrolled. A student in this situation will have to either move from the uncontracted housing unit, regardless of the consequences, or forego registration and other privileges at the university until complying with this policy.

The university contracts off-campus living units whose owners have agreed to:

1. Adequately separate single men and women.
2. Exercise reasonable efforts to maintain the BYU Residential Living Standards.
3. Maintain the facilities in good repair.
4. Not abuse basic tenant rights.

*The university cannot guarantee that owners and managers are employing their best efforts to maintain the standards, that all*

*residents are complying with BYU standards, or that contracted living units always meet the physical criteria. Thus, students are individually responsible to carefully choose an acceptable apartment and compatible roommates. Students should first inform their area management if they suspect that the standards and the physical criteria are not being maintained. Students may also contact the BYU Off-Campus Housing Office and/or the BYU Honor Code Office with concerns after efforts for resolution have been made with area management.*

Because a student's living environment has a profound influence on academic performance and spiritual growth, BYU promotes an environment in contracted off-campus housing facilities that is consistent with its mission and with the moral virtues taught by The Church of Jesus Christ of Latter-day Saints. Specifically, the BYU off-campus housing program *sets guidelines* for landlords and students, which, if followed, will cultivate that desired moral climate. BYU off-campus housing personnel attempt to rectify any deviations from these standards and policy guidelines.

**Academic Honesty Policy**
**Admissions**
**Calendar**
**Discontinuance**
**Grading & Records**
**Graduation**
**Honor Code**
**Housing**
**Registration**
**Petition Services**
**Using the Catalog**

# Petition Services

Students who encounter a non-academic emergency or circumstances affecting the academic record may submit a request to make a change to the record through the Petition Services Office. A petition may be filed asking for an exception to university policy by providing justification and documentation to support the request. Possible requests may include adding or withdrawing from a class after the deadline, adding challenge exam credit, or extending an incomplete deadline.

Situations that may **not** be petitioned through the Registrar's Office are:

- Reinstatement after being deleted for nonpayment of tuition
- Removal of transfer credit from a transcript
- Verification that a student is full time if they are not.

Any petitions for exceptions to academic records policies must be submitted to the Registrar's Office within **one year** from the semester or term in question.

Petition forms and additional information concerning petitions may be obtained at the Registrar's Office (B-150 ASB) or at http://registrar.byu.edu/registrar/petitions/.

**Academic Honesty Policy**
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# Registration

Registration Office
B-130 ASB
(801) 422-2631

## Who May Register?

Students are eligible to register if they are either continuing BYU students or new students who have been notified of acceptance from the Admissions Office for the semester/term they wish to attend.

Continuing student status ends when a student graduates, or if they do not complete any day school classes for two consecutive semesters (fall and winter). Students who have lost continuing student status must be readmitted by the Admissions Office before they can register.

Students must be in good Honor Code standing to register and to continue enrollment at BYU. The term "good Honor Code standing" means that a student's conduct is consistent with the Honor Code and the ideals and principles of The Church of Jesus Christ of Latter-day Saints. Excommunication, disfellowshipment, or disaffiliation from The Church of Jesus Christ of Latter-day Saints automatically results in the withdrawal of the student's ecclesiastical endorsement and the loss of good Honor Code standing. Further, a student is not in good Honor Code standing if his or her ecclesiastical endorsement has either lapsed or has been withdrawn, or if the Honor Code Office has placed a "hold" on the student's registration.

## The Registration Process

Complete registration instructions and deadlines are listed in the current class schedule for each semester or term or on the web site http://registrar.byu.edu.

Registration is based on a priority system (fall and winter semesters only) that allows students to begin registration according to the number of credit hours completed. Priority begins with graduate students and seniors, then juniors, sophomores, and freshmen. Post-baccalaureate non-degree-seeking graduates will be given access after continuing freshmen. Newly admitted freshmen will register together in a separate priority (fall semester only). New freshman beginning Winter semester will be assigned to the last registration date, regardless of college credit.

Students can determine their priority registration for fall and winter semesters by logging onto the AIM system, typing MyMAP in the Quick URL box, clicking on the "Register" tab, then clicking on the "+" near the appropriate semester tab. These dates will be posted 2-3 weeks before registration begins. Students may begin registering for fall semester in late March and for winter semester in October by following the instructions in the current class schedule or on the web site.

Spring and summer registration is not based on a priority system. Class schedules become available in December, and eligible students can register for spring and summer beginning in February.

## Adding and Dropping Classes

Students may use the web registration system to add and drop classes until the add deadline. Each academic department determines how classes are added. Each class has a registration method assigned. **"O"** means the registration is online through the add deadline. **"S"** means department or faculty permission-to-add code is required. **"F"** means online registration until the first day of classes; instructor permission-to-add code thereafter.

**To add a class that requires a permission-to-add code:**

1. Contact the instructor/department and obtain a permission-to-add code.
2. Log into MyBYU and select the Register tab under MyMap.
3. Select the year-term, teaching area, and class number of the class you want to add.
4. In the left column select the "P" for the class you want to add.
5. A pop-up box will appear. Enter the permission-to-add code (they are not case sensitive).
6. Hit "enter."
7. Select "OK" to verify the transaction.

**To drop a class once school begins:**

Use MyMAP during the add period (first **six** class days of a semester or term).

Dropping all classes after the first day of class will result in a withdraw date on the transcript.

**Note:** A student can be registered for more than one section of an R-suffix course and therefore must drop each unwanted section.

To withdraw from a class after the add/drop dealine, see "Withdrawal from Classes" below.

## Full-, Three-Quarter-, or Part-Time Status

A student who registers for 12 or more credit hours a semester or 6 or more credit hours a term is full-time for tuition purposes. Registration for 9 to 11.5 credit hours per semester or 4.5 to 5.5 credit hours per term is deemed three-quarter-time for tuition purposes. Registration for 0.5 to 8.5 credit hours a semester or 0.5 to 4 credit hours a term gives the student part-time status. International students and students receiving financial assistance may be required to register for more hours to be considered full-time. Credit hours for spring-summer semester length classes count in spring term.

## Verification of Full-Time Status for Graduate Students

Graduate students (master's and doctoral students) who are enrolled for at least 2 credit hours per semester and who can be certified by their department as being engaged full-time in pursuit of their degrees can petition for graduate full-time status. Requests for such an exception should be directed to the Office of Graduate Studies (gradstudies.byu.edu or call 801-422-4091).

## Withdrawal from Classes

Students who choose to withdraw from a class must do so officially. Students who do not officially withdraw before the published deadline will receive a failing grade.

**To withdraw from a class:**

1. During the withdraw period (seventh through fiftieth day of a semester or seventh through twenty-fifth day of a term) students may use MyMAP to withdraw from classes. A $10 fee per class will be charged to the student's account and a W will be posted on the student's transcript (a "W" does not affect GPA).
2. To withdraw from classes for extenuating circumstances after the withdraw deadline, students may petition for an exception to university policy through the Petitions Office (B-150 ASB). There is a $10 fee per class if the petition is approved.

The university reserves the right to assign a failing grade for academic dishonesty reasons even if the student is able to withdraw him/herself from the class before the failing grade has been assigned.

## Class Attendance Policy

Students are expected to attend classes for which they are registered. Each class instructor may determine the relationship of class attendance to the final grade for the course. Faculty should tell students what relationship attendance has to the final grade for the course, but students must take responsibility for their actions. Notification to teachers of emergency absences (death in the family, serious illness, etc.) is the student's responsibility.

## Auditing Classes

Students who wish to audit a class (take a course without receiving any credit for it) must add the class with a permission-to-audit code within the first six class days of a semester or term. Audited classes do not appear on transcripts for completed semesters and do not count for enrollment verification purposes. However, audit hours do count toward maximum hours per semester and tuition charges. *Students must be officially enrolled either for credit or audit to be eligible to attend class.*

## Class Preparation Time

The expectation for undergraduate courses is three hours of work per week per credit hour for the average student who is appropriately prepared; much more time may be required to achieve excellence. These three hours may include one hour of lecture plus two hours of work outside class, three hours in a laboratory with little outside work, or any other combination appropriate to a particular course.

## Maximum Hours per Enrollment Period

An undergraduate student in good standing may register for as many as 18 credit hours in any one semester (9 per term) by following the regular registration procedure. College advisement centers may authorize a student who has demonstrated superior academic ability to register for a maximum of 21 hours per semester (11 per term). This authorization is given by the advisor flagging approval on a student's record. *The student will not be able to register for the additional hours until the first day of the semester/term.* Registering for classes through Continuing Education or auditing classes constitutes a part of the total registration. Through a petition process after the first day of school, exceptions to these rules may be granted by the university registrar (B-150 ASB).

A graduate student may take up to 22 hours/semester. For exceptions to go over 22 hours, graduate students must consult with the Graduate Studies Office (105 FPH, 801-422-4091).

Credit hours for spring-summer semester length courses count in spring term.

## Final Examinations

The university schedules exam preparation and examination periods. An examination period occurs at the end of each semester and term. The examination period is preceded by exam preparation days, which give time for conscientious review, study, and synthesis of the semester's work. The exam preparation and the examination periods are firmly scheduled parts of the semester; students must not make plans that interfere with these important academic activities. Students may not take final examinations early. If illness or other uncontrollable circumstances prevent a student from taking an examination at the scheduled time, that student is responsible to inform the class instructor as soon as possible.

The instructor may give the grade *Incomplete* for nonacademic extenuating circumstances occurring **after** the discontinuance deadline. The incomplete cannot be given unless the student and instructor together prepare a contractual agreement (see Grading and Records for further information.)

In cases where a student has conflicting examinations or three or more examinations in one day, individual arrangement for alternative test times may be made by the instructor.

## Registration Holds

The university may place a hold on a student's records that will block registration privileges. The hold will be indicated on the registration system. It is the student's responsibility to contact the appropriate office to clear any holds before attempting to register for classes. A student may see if they have any holds by going to the Register tab in MyMAP.

**Academic Standards:**

Academic Support Office (801) 422-2723

**Ecclesiastical Endorsement:**

Honor Code Office (801) 422-2847

**Financial Status (past due balance):**

Student Accounts (801) 422-4104

**Graduate School:**

Office of Graduate Studies (801) 422-4091

**Loans:**

Collections Office (801) 422-7648
Financial Aid and Scholarships Office (801) 422-4104

**Advisement Centers (CAC holds):**

Education (801) 422-3426
Engineering and Technology (801) 422-4325
Family, Home, and Social Sciences (801) 422-3541
Fine Arts and Communications (801) 422-3777
Humanities (801) 422-4789
International and Area Studies (801) 422-3548
Life Sciences (formerly Biology and Agriculture) (801) 422-3042
Marriott School of Management (801) 422-4285
Nursing (801) 422-4173
Physical and Mathematical Sciences (801) 422-2674
University Advisement (Open Major) (801) 422-3826

**General Information**

**Departments and Programs**

- BYU Conference Center
- BYU Salt Lake Center
- Conferences and Workshops
- Especially for Youth Programs
- Evening Classes
- Independent Study

**Bachelor of General Studies Program (BGS)**

# Division of Continuing Education

391 HCEB
(801) 422-4149

**Dean:** Wayne J. Lott
**Associate Dean:** Lee J. Glines
**Associate Dean:** Darin R. Oviatt
**Assistant to the Dean—Financial Services:** Jonathan S. Spackman
**Assistant to the Dean—Compliance:** R. Neil Carlile

The Division of Continuing Education provides educational programs and university services for part-time and off-campus students. These educational opportunities also assist regular daytime students. The same university standards required of regular day students apply to those enrolled through the Division of Continuing Education while they are on campus.

**Organization.** Continuing Education programs represent BYU. Continuing Education departments, including the BYU Salt Lake Center, will be distinguished in the material that follows.

## Requirements for Enrollment in Continuing Education Classes

Noncredit classes are open to anyone who abides the standards and has the desire and necessary ability.

Credit classes are open to ecclesiastically endorsed:

1. Matriculated students.
2. Individuals who are twenty-one years of age or older.*
3. Individuals desiring to audit courses.
4. High school students who meet current university requirements for concurrent enrollment.

Students who have been suspended from Brigham Young University or any other institution of higher learning for any reason are not eligible to register in Continuing Education credit classes until such suspension is cleared.

**Enrollment Limitations.** Persons enrolling in credit courses offered by the Division of Continuing Education who are officially admitted to the university can take any courses offered to a maximum of 18 credit hours per semester (9 hours per term). All others, twenty-one years of age and older, who have not been formally admitted to the university are limited to a maximum of 8.5 credit hours per semester (4 hours during spring or summer term).* Contact the Division of Continuing Education for any additional conditions of enrollment.

**Student Responsibility.** Enrollment in a Continuing Education course *does not* constitute admission to BYU or any other university on a degree-seeking basis. It is the student's responsibility to gain admission to the university of his or her choice as a degree-seeking student through the institution's normal procedures. At BYU students may accomplish this through the Office of Admissions.

**Note:** Non-matriculated students enrolled through the Division of Continuing Education are not eligible for university employment, housing, or financial aid except for assistance that is available to part-time students through the Division of Continuing Education.

*Some exceptions exist at the BYU Salt Lake Center.

# Conferences and Workshops

Robert A. Holcombe, Director
113 HCEB
(801) 422-3559

The Department of Conferences and Workshops assists the university's colleges, schools, and departments in developing and offering outreach programs. The department can help with both credit and noncredit programs, including conferences, workshops, symposia, continuing professional education courses, seminars, association meetings, test-prep courses, and youth camps. Programs can use either campus or off-campus facilities to extend university offerings to alumni, youth, the campus community, and other adults.

For a comprehensive listing of courses or for information on how we can help you plan a conference, visit our Web site at conferences.byu.edu.

- BYU Conference Center
- BYU Salt Lake Center
- Conferences & Workshops
- Especially for Youth Programs
- Evening Classes
- Independent Study

# BYU Conference Center

Spencer E. Hansen, Manager
2255 CONF
(801) 422-7700

The BYU Conference Center is located east of the Marriott Center and adjacent to the Harman Continuing Education Building. The primary host facility for conference guests on campus, it is especially equipped to provide a favorable learning environment for guests participating in conferences, workshops, training seminars, and other educational programs. University units may sponsor or cosponsor conference center events. When certain qualifications are met, off-campus professional, government, corporate, civic, religious, family, or community organizations may also schedule events. The center is not available to promote a product or service or for other entrepreneurial efforts.

Those interested in scheduling the center are invited to contact the BYU Conference Center.

- BYU Conference Center
- BYU Salt Lake Center
- Conferences & Workshops
- Especially for Youth Programs
- Evening Classes
- Independent Study

# BYU Salt Lake Center

Scott L. Howell, Director
345 West North Temple Street
3 Triad Center, Suite 300
Salt Lake City, UT 84180-1203
Telephone: (801) 933-9400
Internet: http://slc.byu.edu

The BYU Salt Lake Center, a department within the Division of Continuing Education, extends the Provo campus into the Salt Lake Valley and surrounding areas in offering 150 undergraduate university courses each semester. Most courses are conveniently held during the afternoon and evening hours to accommodate the schedules of 1,200 full- and part-time students who attend each semester. Students register for BYU Salt Lake Center classes using the university's online registration system.

Students not admitted to Brigham Young University are welcome to take classes at the BYU Salt Lake Center if they have earned a high school diploma (or passed the GED), are willing to abide by the Church Educational System Honor Code and the BYU Dress and Grooming Standards, receive an ecclesiastical endorsement, and are cleared for enrollment at the center.

Students formally admitted to BYU's Bachelor of General Studies (BGS) program may complete university core (religion and general education) and required emphasis courses at the Salt Lake Center without further clearance. For admission and program details see the Bachelor of General Studies section in this catalog.

The EMPA (Executive Master of Public Administration), and EMBA (Executive Master of Business Administration) programs are also offered at the center, enabling students to pursue graduate degrees by continuing to work during the day. For admission and program details see the Graduate Catalog.

Class schedules for each semester or term are listed in the BYU class schedule, at http://slc.byu.edu, and in the university's online registration system.

- BYU Conference Center
- BYU Salt Lake Center
- Conferences & Workshops
- Especially for Youth Programs
- Evening Classes
- Independent Study

# Especially for Youth Programs

J. D. Hucks, Director
206 HCEB
(801) 422-3817

Especially for Youth programs are offered by this department, both on the BYU campus and at a number of locations nationwide. Each year we serve more than 35,000 participants who come from virtually every state and province in the United States and Canada and from several foreign countries.

We also offer nearly 200 Adult Religion Classes, which feature an LDS Institute curriculum for approximately 15,000 adult participants throughout the United States and Canada.

# Evening Classes

Steven W. Taggart, Director
211 HCEB
(801) 422-2872

The Department of Evening Classes supports academic departments and colleges by offering courses into the evening hours for university students. As a nondegree-seeking, part-time university program it also enrolls students from the community who are 21 years of age or older. Tuition rates for courses in Evening Classes are the same as during the day.

All courses taught through Evening Classes are listed online in the university's official class schedule at http://classschedule.byu.edu or at eveningclasses.byu.edu.

- BYU Conference Center
- BYU Salt Lake Center
- Conferences & Workshops
- Especially for Youth Programs
- Evening Classes
- Independent Study

# Independent Study

John Taylor, Director
128 MORC
(801) 422-2868
http://is.byu.edu

Independent Study is a distance education program of BYU intended to serve students anytime, anywhere. Through Independent Study, BYU offers 200 university-level credit online courses, providing a practical and flexible solution for students with scheduling constraints. Our flexible solution assists working students, armed forces personnel, teachers, and others who may need courses that accomodate their individual schedules. The courses are available online and require Internet access. Students have the option to purchase a printed course readings packet.

Up to 36 semester hours of work completed through BYU Independent Study can be applied toward a bachelor's degree from BYU. Many students wanting to complete a degree they started at BYU can take Independent Study courses to fulfill the course/credit requirements of the Bachelors of General Studies (BGS) program, which can be found at http://bgs.byu.edu.

BYU Independent Study also offers 200 high school-level courses, more than 20 middle school courses, and 50 free courses for personal development, remediation, and enrichment.

Students may register for an Independent Study course at any time during the year and have up to one year to complete a course, although most do so in less time. The online catalog is accessible at http://is.byu.edu. A printed version of the catalog is also available without charge from the Department of Independent Study (120 MORC). A complete list of available courses, the current tuition and fees, and enrollment policies and procedures are found in the online and printed versions of the catalog.

**Division of Continuing Education Home**

**Bachelor of General Studies Program (BGS) Home**

**Major**

BGS in General Studies

Emphases

- American Studies
- English
- Family Life
- History
- Management
- Psychology

# Bachelor of General Studies Program (BGS)

Steven W. Taggart, Director
315 HCEB
(801) 422-4351, toll-free 888-298-3137

Brigham Young University's Bachelor of General Studies (BGS) Program offers former BYU students who are no longer able to attend BYU and have been away from the university for some time an opportunity to complete their bachelor's degree from home. Applicants must have already completed 30 credit hours (exam credit excluded) at the BYU campus in Provo as an admitted day student and must abide by the Church Educational System Honor Code and receive an annual ecclesiastical endorsement. This program is not available to current BYU students.

## Admission to Degree Program

Applicants complete the admission procedure through the Bachelor of General Studies Office and pay a fee of $35. The BGS program is open to former students who meet all of the following criteria:

- Have completed a minimum of 30 semester hours of BYU on-campus credit in Provo as an admitted day student (exam credit excluded).
- Have not completed any courses as a BYU day continuing student in the last two years or have already completed a minimum of 90 BYU credits (exam credits excluded).
- Have never completed a bachelor's or higher degree.
- Are in good standing (academic, financial, etc.) at all universities attended.
- Have a 2.0 or higher BYU and cumulative GPA. (If any academic disciplinary action—warning, probation, or suspension—has been taken against you, contact the BGS Office before proceeding with the application process.)
- Will abide by the Church Educational System Honor Code and receive an annual ecclesiastical endorsement.
- Have been approved by the BGS admissions committee.
- Have successfully completed the StDev 100 course (1-credit-hour Independent Study course taken **after provisional acceptance into program)**.

## The Discipline

The bachelor of general studies degree is designed to help former BYU students utilize their previously earned credit as much as possible. The BGS uses the same BYU curriculum offered on campus and requires the same general education, religious education, and campus residency as on-campus degrees. Up to 90 of the required 120 credit hours may be earned through Independent Study. The major is general studies, with an emphasis in one of six areas of study. The emphasis adds a measure of specialization and can be completed in one of the following areas: American studies, English, family life, history, management, or psychology. The History emphasis offers both History and Family History tracks.

Students may earn only one emphasis and do not have the option of creating custom-made areas of study. However, within the number of general electives available, students can utilize credit previously earned in a former major or choose to take courses in a particular concentration.

The BGS is a fully accredited bachelor's degree from Brigham Young University. Students pursue this program for a variety of reasons. Some desire a sense of accomplishment—to complete a degree they began years ago. Others are looking for career advancement or to eventually pursue a postgraduate degree.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

Major

BGS in General Studies

Emphases

American Studies

No learning outcomes were found for this program.

English

**BGS Learning Outcomes - Aims of a BYU Education**

Reflect on and describe how their coursework in the BGS program has contributed to the aims of a BYU education:
- Spiritually strengthening
- Character building
- Intellectually enlarging
- Preparing for lifelong learning and service.

**Interpretive and Communicative Skills**

English BGS graduates will develop and demonstrate critical reading strategies, professional writing expertise, and sophisticated analytical skills.

**Interpretive and Communicative Contexts**

English graduates will explore the development of literary traditions and genres as well as become familiar with the critical methodologies and scholarly conversations in the discipline; they will engage with these contexts in their written, oral, and visual work.

**Interpretive and Communicative Ethics**

English graduates will embrace literature as a source of wisdom, spiritual insight, and aesthetic pleasure; as a medium for encountering and reflecting upon the diversity of human experience; and as a guide for building relationships and discerning value.

Family Life

No learning outcomes were found for this program.

History

No learning outcomes were found for this program.

Management

No learning outcomes were found for this program.

Psychology

**1. BGS General Learning Outcome - Aims of a BYU Education**

Reflect on and describe how their coursework in the BGS program has contributed to the aims of a BYU education:
- Spiritually strengthening
- Character building
- Intellectually enlarging
- Preparing for lifelong learning and service.

Students should see the BGS office for help or information concerning the undergraduate programs.

## General Information

To earn a bachelor of general studies degree, students must complete the following requirements:

1. A minimum of 120 semester hours of earned credit, which breaks down as follows:

| | |
|---|---|
| StDev 100 Independent Study course | (1 hour) |
| University core | (30-70 hours) |
| Religious Education | (14 hours) |
| Emphasis requirements | (30 hours) |
| StDev 490 Independent Study course | (2 hours) |
| General electives | (3–43 hours) |

2. 30 hours of BYU campus residency
3. 40 credit hours of 300- or 400-level courses, including 15 hours in the emphasis.

The following policies also apply:

1. A minimum of 10 hours in the area of emphasis must be enrolled in and completed through BYU **after** formal admission to the BGS program.
2. Students must earn a minimum 2.0 BYU, cumulative, and emphasis grade point average (management emphasis requires 2.25).
3. All courses taken after admission to BGS must be BYU courses.
4. The program must be completed in eight years (or fewer).

BGS course and credit requirements can be filled in the following ways:

### Prior Courses and Credits Transferred into the Program

1. Credits earned previously through BYU.
2. Credits earned previously at accredited colleges and universities. All transfer credits must be completed at the time the application is submitted.

### Courses and Credits Earned After Admission to the Program

Once admitted to the BGS program, it is expected that any remaining course work will be completed through BYU. This can be done in the following ways:

1. Courses completed through BYU Independent Study.
2. Courses completed at the BYU Salt Lake Center.
3. Courses completed through BYU Evening Classes.
4. Courses completed at BYU during spring and summer terms.

**Division of Continuing Education Home**

**Bachelor of General Studies Program (BGS) Home**

**Major**

BGS in General Studies

Emphases

- American Studies
- English
- Family Life
- History
- Management
- Psychology

# BGS in General Studies: American Studies Emphasis (33 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Complete the following prerequisite course:

STDEV 100 : Essential College Skills. (1:1:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Developing essential college skills. Aims of BYU, values and goals, sound thinking skills. Learning styles and adjustment to college courses. College requirements and planning.

**Course Outcomes**

- 1. Articulate their educational values and goals and how they align with the purposes of a BYU education.
- 2. Analyze the effectiveness of their own planning/scheduling system and be able to demonstrate that they understand sound time management and goal setting principles.
- 3. Add new study and test preparation (study) skills to their existing repertoire.

2. Complete the following core courses:

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

HIST 220 : The United States Through 1877. (3:3:0)

OFFERED: Independent study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Discovery, colonization, American Revolution, estabishment of the Constitution, foreign affairs, westward expansion, slavery, sectionalism, Civil War, and reconstruction.

**Course Outcomes**

There are no course outcomes available

HIST 221 : The United States Since 1877. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Industrialization, immigration, urbanization, political and social movements, and foreign policy.

**Course Outcomes**

There are no course outcomes available

POLI 110 : American Government and Politics. (3:3:0)

OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Origin and development of federal Constitution; national, state, and local governments and politics.

**Course Outcomes**

There are no course outcomes available

3. Complete 18 hours from the following:

A HTG 100 : American Heritage. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Synthesis of American constitutional and economic principles, and patterns of historical development.

**Course Outcomes**

- Understand the religious, historical, political and economic origins of the Constitution
- Learn how the Constitution works;
- Apply their knowledge of the Constitution to analyze major historical, political and economic issues
- Become better informed, more active citizens

ENGL 293 : American Literary History. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251; or concurrent enrollment.

DESCRIPTION: Development of ideas, movements, genres, and styles in American literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 336 : The American Novel. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 293 & ENGL 295; or ENGL 294 & ENGL 295; Engl 291. (Engl 292 may also be a prerequisite option.)

DESCRIPTION: Representative novels of the American tradition from the late eighteenth century to the present.

**Course Outcomes**

- Analyze selected American novels in order to create a foundation for the further study of literature.
- Explain the general formal and historical development of the American novel and define a coherent approach to the study of American novels.
- Form a research strategy appropriate to the study of American novels, independently locate relevant digital and print sources, and draw upon these sources to develop a focused and effective written argument about an American novel(s).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 361 : American Literature 1800 - 1865. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1800 to 1865.

**Course Outcomes**

There are no course outcomes available

ENGL 362 : American Literature 1865 - 1914. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1865 to 1914.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1865 to 1914.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 363 : American Literature 1914 - 1960. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1914 to 1960.

**Course Outcomes**

- Read critically and analyze major and selected minor texts and literary trends from the period of 1914 to 1960.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

GEOG 250 : United States and Canada. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Analysis of the natural environment, historical development, cultural patterns, economic systems, and political structures of geographic regions.

**Course Outcomes**

There are no course outcomes available

HIST 317 : The Family and the Law in American History. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HIST 217

DESCRIPTION: The interaction of families with law and government as illustrated in original American sources; individual family histories reconstructed in the broader perspective of history.

**Course Outcomes**

There are no course outcomes available

HIST 378 : American Family History. (3:3:0)

DESCRIPTION: History of American families from colonial period to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major intellectual, economic, religious, social, cultural, and political developments affecting changes in American families of various races, classes, and regions from 1607 to the present.
- Students will be able to analyze an important historical question in the history of American families
- Students will be able to research, analyze, and integrate primary and secondary sources into a coherent and well-written argument.
- Students will be able to isolate the theses and supporting arguments of secondary sources on the history of American families.

MUSIC 204 : Introduction to Jazz. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Non-music major status.

DESCRIPTION: Fostering an understanding and appreciation of jazz music within the context of American history and culture.

NOTE: For non-music majors.

**Course Outcomes**

There are no course outcomes available

POLI 316 : American Political Parties. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Electoral and policy-making roles of American political parties today and their future in American politics.

**Course Outcomes**

There are no course outcomes available

POLI 321 : The Media in American Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: News media's role in processes of American politics, including electoral process, legislative process, and public policy-making.

**Course Outcomes**

There are no course outcomes available

REL C 341 : Joseph Smith and the Restoration, 1805-1845. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Life and ministry of the Prophet Joseph Smith, coming forth of the Book of Mormon, organization of the church, foundational revelations, building the Kirtland Temple, Missouri persecutions, establishment of Nauvoo, and events leading to the Martyrdom.

**Course Outcomes**

There are no course outcomes available

REL C 342 : Pioneers and Persecution, 1846-1899. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Exodus from Nauvoo, the experience of Mormon Pioneers crossing the plains, establishing Zion in the Great Basin, plural marriage and government persecution, the Manifesto, and events leading to Utah statehood.

**Course Outcomes**

There are no course outcomes available

: Honors Pioneers and Persecution, 1846-1899.

**Course Outcomes**

REL C 343 : The Global Church, 1900 to the Present. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: The Church in the twentieth and twenty-first centuries, international expansion, significant developments of Church programs and structure, the Church during wartime, the world-wide spread of temples.

**Course Outcomes**

There are no course outcomes available

: Honors The Global Church, 1900 to the Present.

**Course Outcomes**

BYU undergraduate campus courses (including Salt Lake Center classes) from the approved American studies list may also be used to satisfy emphasis electives.

4. Complete the following capstone course:

STDEV 490 : Bachelor of General Studies Capstone. (2:2:0)

OFFERED: Independent Study only.

PREREQUISITE: STDEV 100; completion of all other BGS program requirements.

DESCRIPTION: Culminating course required for bachelor of general studies degree: analyze and evaluate BGS experience in light of the "Aims of a BYU Education" and summarize this experience in a reflective paper, integrate material learned in emphasis by completing a scholarly essay, and demonstrate accomplishment of learning outcomes.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

**Division of Continuing Education Home**

**Bachelor of General Studies Program (BGS) Home**

**Major**

BGS in General Studies

Emphases

- American Studies
- English
- Family Life
- History
- Management
- Psychology

# BGS in General Studies: English Emphasis (33 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Complete the following prerequisite course:

STDEV 100 : Essential College Skills. (1:1:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Developing essential college skills. Aims of BYU, values and goals, sound thinking skills. Learning styles and adjustment to college courses. College requirements and planning.

**Course Outcomes**

- 1. Articulate their educational values and goals and how they align with the purposes of a BYU education.
- 2. Analyze the effectiveness of their own planning/scheduling system and be able to demonstrate that they understand sound time management and goal setting principles.
- 3. Add new study and test preparation (study) skills to their existing repertoire.

2. Complete the following core courses:

ENGL 251 : Introduction to English Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Introduction to the discipline of English studies, including the fundamental concepts and practice of literary analysis and critical theory.
NOTE: Engl 251 fulfills the GE Letters requirement only for English majors and minors. Other students will not receive GE Letters credit for this course.

**Course Outcomes**

There are no course outcomes available

**And** complete two courses from the following:

ENGL 291 : British Literary History 1. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in early English literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 292 : British Literary History 2. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in later English literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 293 : American Literary History. (3:3:0)

OFFERED: Independent Study also.
WHEN: Fall; Winter; Spring Contact Department; Summer Contact Department

TAUGHT:
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in American literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

**And** complete one course from the following:

ENGL 312 : Persuasive Writing. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Expository and persuasive writing focusing on practical reasons for evaluating audiences, generating and structuring an argument, and making stylistic decisions. Library research paper.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Create an appropriate ethos in both writing and speaking.
- Analyze the parts of an argument; evaluate them in terms of the intended audience; and generate a reasonable argument for a specific audience.Anticipate and effectively respond to audience objections and counterarguments.

ENGL 314 : Writing About Literature. (3:3:0)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Writing about the functions, meanings, qualities, and contexts of literature for specialist and nonspecialist audiences using selected critical theories. Research paper.
NOTE: Primarily for majors in literary studies. Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Use writing to enhance their understanding of and appreciation for literature.
- Analyze and discuss (in writing and speech) literary texts clearly and cogently, develop and defend literary interpretations, and relate individual texts to their historical and cultural contexts. Apply critical theories to produce distinctive readingsof literary texts.
- Effectively evaluate and comment on the writing of others to facilitate revision.

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.

- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

3. Complete 15 hours from the following:

ELANG 322 : Modern American Usage. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: ELang 223 or Ling 201 or concurrent enrollment.
DESCRIPTION: Current conventions and effective use of American English.

**Course Outcomes**

- Students will be able to identify and use multiple approaches to evaluating English usage.
- Students will be able to identify and use the most appropriate tools for each approach.
- Students will be able to evaluate the validity of prescriptive rules by using these approaches and tools.

ELANG 350 : Basic Editing Skills. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: ELANG 223 & ELANG 322 & ELANG 325
DESCRIPTION: Editing theory and practice, emphasizing copy editing and basic line editing.

**Course Outcomes**

- Students demonstrate copy editing skills by using these skills to improve sample manuscripts in terms of punctuation, spelling, usage, and sentence clarity.
- Students apply style and usage requirements with flexibility, customized to specific contexts and circumstances.
- Students deploy empirical methods to investigate patterns of style and usage and make editorial decisions.

ENGL 218R : Creative Writing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Introductory instructions in the writing of poetry, the short story, and the essay.

**Course Outcomes**

- Demonstrate effort and discipline in their creative work as well as a knowledge of various creative genres and their conventions.
- Read literary models analytically, with an eye to authorial intention and technique and be able to articulate the same.
- Use correct grammar, punctuation, and an appropriate style in their writing.
- Write a successful poem, short story, or essay using literary models and following explicit instructions from the teacher.
- Revise intelligently, edit carefully, and share one's work with others in the class.

ENGL 317R : Writing Creative Nonfiction. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 218R; or instructor's consent.
DESCRIPTION: Creations of style and technique in prose nonfiction; discipline and practice of the writer.

**Course Outcomes**

- Demonstrate effort and discipline in crafting creative nonfiction and display a knowledge of its conventions.
- Read creative nonfiction models analytically, with an eye to authorial intention and technique and be able to articulate the same.
- Use correct grammar, punctuation, and an appropriate style in creative nonfiction.
- Write a variety of essays using literary models and following explicit instructions from the teacher.
- Revise intelligently, edit carefully, and share one's work with others in the class.

ENGL 319R : Writing Poetry. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 218R; or instructor's consent.
DESCRIPTION: Creation of style and technique in poetry; discipline and practice of the poet.

**Course Outcomes**

- Demonstrate effort and discipline in crafting poetry and display a knowledge of its conventions.
- Read poetry models analytically, with an eye to authorial intention and technique and be able to articulate the same.
- Use correct grammar, punctuation, and an appropriate style in poetry.
- Write a variety of poems using literary models and following explicit instructions from the teacher.
- Revise intelligently, edit carefully, and share one's work with others in the class.

ENGL 320R : Writing for Children and Adolescents. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 218R

DESCRIPTION: Theory and practice of writing prose and verse for youth readership. Specific attention to requirements of picture books, middle-grade novels, and young adult stories.

**Course Outcomes**

- Demonstrate effort and discipline in crafting prose and verse for a young readership and display a knowledge of relevant conventions.
- Read models for picture books, middle-grade novels, and young adult stories analytically, with an eye to authorial intention and technique and be able to articulate the same.
- Use correct grammar, punctuation, and an appropriate style in genres for younger readers.
- Write a variety of pieces for younger readers using literary models and following explicit instructions from the teacher.
- Revise intelligently, edit carefully, and share one's work with others in the class.

ENGL 336 : The American Novel. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 293 & ENGL 295; or ENGL 294 & ENGL 295; Engl 291. (Engl 292 may also be a prerequisite option.)

DESCRIPTION: Representative novels of the American tradition from the late eighteenth century to the present.

**Course Outcomes**

- Analyze selected American novels in order to create a foundation for the further study of literature.
- Explain the general formal and historical development of the American novel and define a coherent approach to the study of American novels.
- Form a research strategy appropriate to the study of American novels, independently locate relevant digital and print sources, and draw upon these sources to develop a focused and effective written argument about an American novel(s).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 338 : Literary Studies of the Bible. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295

DESCRIPTION: Scholarly engagement with the aesthetic forms and cultural context of Biblical texts.

**Course Outcomes**

There are no course outcomes available

ENGL 361 : American Literature 1800 - 1865. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1800 to 1865.

**Course Outcomes**

There are no course outcomes available

ENGL 362 : American Literature 1865 - 1914. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1865 to 1914.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1865 to 1914.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 363 : American Literature 1914 - 1960. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1914 to 1960.

**Course Outcomes**

- Read critically and analyze major and selected minor texts and literary trends from the period of 1914 to 1960.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these

to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 366 : Studies in Poetry. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Topics vary.

**Course Outcomes**

There are no course outcomes available

ENGL 374 : British Literature 1789 - 1832: The Romantic Period. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Poetry, prose, and drama from Britain's Romantic period.

**Course Outcomes**

There are no course outcomes available

ENGL 382 : Shakespeare. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 291 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Intensive reading, discussion, and (in some sections) viewing of plays from the comedy, tragedy, romance, and history genres.
NOTE: For English majors and minors.

**Course Outcomes**

There are no course outcomes available

ENGL 385 : British Literature 1603 - 1660: The Late Renaissance. (3:3:0)

WHEN TAUGHT: Winter Contact Department; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Drama, poetry, and prose of the late Renaissance.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze Britain's drama, poetry, and prose written between 1603 and 1660.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 395R : Studies in Literature. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Topics vary.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the material studied in the class.
- Identify, locate, read critically, and analyze major and selected minor texts and associated with the literature of the class theme.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

(section 1)

ENGL 420 : Literature for Adolescents. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 295; or instructor permission.
DESCRIPTION: Wide range of literature written for or read by teenagers.
NOTE: Required before student teaching.

**Course Outcomes**

- Students will become familiar with a broad range of Young Adult books, authors, and genre.
- Students will become familiar with a broad range of Young Adult books, authors, and genre.
- Students will learn how to select appropriate quality YA books for classroom, school, and personal use.
- Students will demonstrate an in-depth knowledge of at least one YA author and his/her work.

BYU 300- or 400-level campus courses (including Salt Lake Center classes) in English may also be used to fill emphasis electives. Only one additional general education Advanced Written and Oral Communication course (Engl 311, 312, 313, 314, 315, or 316) may be used to satisfy emphasis requirements.

4. Complete the following as the last course in the emphasis:

ENGL 495 : The Senior Course. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 382; or ENGL 383; or ENGL 384R; senior status.

DESCRIPTION: In-depth study of a limited area of literature, language, or criticism. Content varies; requires research and writing.

NOTE: Engl 381 is also a valid prerequisite choice. See the Humanities Advisement Center to obtain a permission-to-add code.

**Course Outcomes**

There are no course outcomes available

5. Complete the following capstone course:

STDEV 490 : Bachelor of General Studies Capstone. (2:2:0)

OFFERED: Independent Study only.

PREREQUISITE: STDEV 100; completion of all other BGS program requirements.

DESCRIPTION: Culminating course required for bachelor of general studies degree: analyze and evaluate BGS experience in light of the "Aims of a BYU Education" and summarize this experience in a reflective paper, integrate material learned in emphasis by completing a scholarly essay, and demonstrate accomplishment of learning outcomes.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

**Division of Continuing Education Home**

**Bachelor of General Studies Program (BGS) Home**

**Major**

BGS in General Studies

Emphases

- American Studies
- English
- Family Life
- History
- Management
- Psychology

# BGS in General Studies: Family Life Emphasis (33 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Complete the following prerequisite course:

STDEV 100 : Essential College Skills. (1:1:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Developing essential college skills. Aims of BYU, values and goals, sound thinking skills. Learning styles and adjustment to college courses. College requirements and planning.

**Course Outcomes**

- 1. Articulate their educational values and goals and how they align with the purposes of a BYU education.
- 2. Analyze the effectiveness of their own planning/scheduling system and be able to demonstrate that they understand sound time management and goal setting principles.
- 3. Add new study and test preparation (study) skills to their existing repertoire.

2. Complete the following core courses:

SFL 100 : Strengthening Marriage and Family: Proclamation Principles and Scholarship. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Understanding, applying, and sharing principles of successful marriage and family life from the LDS proclamation on the family, using sacred and scholarly perspectives.

**Course Outcomes**

- Critically understand your testimony of the principles of the Restored Gospel pertaining to marriage, home and family.Synthesize and be able to apply principles from revealed truth and supportive scholarship to strengthen marriage, home, and family life.Be able to confidently share and defend principles of successful marriage, home and family life using support from sacred and scholarly sources.
- Demonstrate improvement in writing skills, speaking, and critical thinking skills to be more effective advocates for marriage, home, and family in a variety of settings.

SFL 160 : Introduction to Family Processes. (3:3:0)

OFFERED: Honors also; Independent Study also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Ways of strengthening family life by understanding such family processes as generations, emotions, communication, and rituals.

**Course Outcomes**

- Critically examine the main theoretical frameworks used in the family sciences.Demonstrate understanding of basic terms, concepts, and ideas used to describe family systems.Apply family systems ideas and concepts to your own family (past and future) in order to learn how they might improve your own family well-being.
- Identify and discuss how researchers uniquely study families and family systems.

SFL 210 : Human Development. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Growth and development of the child from conception through adolescence; influences of family, peers, and schools.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Comprehend the dynamic and complex interaction among the domains of human development (e.g., biological, cognitive, emotional, social, etc.)Critically apply information learned in class to your own life.Provide knowledge and skills that will benefit the lives of the children for whom you will have stewardship in this life.Acquire a broad base of knowledge of human development.Be conversant with the major human development theories as well as their strengths and weaknesses.

Improve your writing and critical thinking skills.
- Understand the research methodology utilized in the study of human development.

3. Complete 15 hours from the following:

SFL 331 : Infant Development in the Family. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.

DESCRIPTION: Conception, prenatal development, pregnancy. Physical, cognitive, and social development of the first twenty-four months. Implications for guidance and care in the family.

**Course Outcomes**

There are no course outcomes available

SFL 333 : (SFL-Soc 318) Adolescent Development in the Family and Other Social Contexts. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.

DESCRIPTION: Examining the developmental and social contexts of adolescents with emphasis on the importance of the family. Other contexts include peers, religion, community, schools, and cross-cultural issues.

**Course Outcomes**

- Critically examine and discuss selected topics in adolescent development, as well as being able to apply the information and skills learned in this class to your own life.Identify and discuss the major theories of adolescent development, as well as the various research methods used in the study of adolescent development.Understand the important developmental changes that young people experience during this period and during their transition to adulthood.Discuss why at-risk issues are so pronounced during this period and understand prevention and intervention measures that can be taken by families to help them cope with this transition.
- Synthesize (both in thought and writing) information on adolescent development, and apply this information to “real” adolescents with whom you come into contact.

SFL 334 : Adult Development and Aging in the Family. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 160

DESCRIPTION: Adjustments to physical, emotional, social, and economic changes. Needs arising from changes in family relationships, living arrangements, and employment; retirement planning.

**Course Outcomes**

- Interact with older adults (parents, grandparents, neighbors, ward members, research participants, clients, etc.) in an informed (accurate knowledge of relevant issues) and sensitive (aware of “life course” perspective) manner.Apply complex interactions of gerontology concepts to real-life situations, including current issues in local, national, and world communities.Understand and articulate basic age-related biological, psychological, and sociological processes and learn how to access and evaluate information about those age-related experiences.Synthesize course concepts through observing, serving, and interacting with older adults in the community.

SFL 335 : Family Adaptation and Resiliency. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Understanding family resiliency and building family strengths in normative transitions (birth, death, job) and nonnormative transitions (divorce, disability, remarriage, poverty, violence). Developing familial, social, religious, and instrumental resources to adapt positively to these transitions.

**Course Outcomes**

- Articulate the main conceptual frameworks which help us understand how families cope with stress.Demonstrate how a wide range of life events influence families both positively and negatively.Demonstrate what factors contribute to whether families respond positively or negatively to life events and transitions.Understand and apply how gospel principles regarding the family, charity, faith and trials interconnect with scholarly research on family stress.
- Demonstrate improvement in course content writing skills.

SFL 351 : Socialization Across Childhood. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.

DESCRIPTION: Processes and sequences of social development across childhood.

**Course Outcomes**

There are no course outcomes available

SFL 354 : Cross-Cultural Family and Human Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 101 & SFL 290; SFL 160 or SFL 210 or concurrent enrollment.

DESCRIPTION: Comparative study of familial, social, and other factors in development.

**Course Outcomes**

- Critically evaluate the importance of considering gender as an important contextual factor for understanding human development and relationships.Develop awareness of one's own cultural and gender-based values and beliefs.Recognize and explicate biases inherent in the perspective of the dominant U.S. culture.Engage in class (and out-of-class) discussions about class topicsBe better positioned as a citizen of the world, in terms of valuing diversity and being able to analyze world cultures for how they might benefit (or cost) individual and family development.

SFL 355 : Language Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Philosophical, social, intellectual, and emotional contexts of language acquisition and usage.

**Course Outcomes**

There are no course outcomes available

BYU 300- or 400-level campus courses in the School of Family Life (including Salt Lake Center classes) may also be used to fill this requirement.

4. Complete six hours from the following elective courses:

SFL 110 : Food Preparation in the Home. (2:1:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Principles of cooking and skill development in food preparation techniques. Lab required.

NOTE: Fee.

**Course Outcomes**

- Understand food preparation principles and techniques and apply them while mixing, cooking, and baking food products for home use.Identify and prevent food borne illness and safety hazards with appropriate food handling and preparation techniques.Understand and apply knowledge of nutrition to food preparation.Develop confidence in selecting and following recipes.Demonstrate proper use of equipment for baking and cooking.

SFL 223 : Preparation for Marriage. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Factors related to quality relationships, mate selection, and the transition into marriage.

**Course Outcomes**

- Understand the Lord's "divine design" (Proc. ¶ 7) for marriage relationships (e.g., the nature of the marriage covenant, equal partnership, stewardships of husbands & wives, etc).Increase awareness of marriage as a social institution.Become sensitized to the modern threats to marriage.Increase understanding of the LDS doctrines of marriage, including prophetic counsel on dating, courtship, intimacy, weddings, finances, divorce, and other aspects of the marital stewardship.Increase awareness of the factors that social science research has shown to contribute to the formation and maintenance of healthy and stable marriages.Enhance spiritual awareness and academic skills in order to help them weigh scholarly and contemporary ideas about marriage relationships and use both faith and scholarship.Critically explicate your awareness of marriage as a social institution.Identify and be sensitive to modern cultural threats to marriage.Be able to grasp and understand the LDS doctrines of marriage, including prophetic counsel on dating, courtship, intimacy, weddings, finances, divorce, and other aspects of the marital stewardship.Increase your awareness of the factors that social science research has shown to contribute to the formation and maintenance of healthy and stable marriages.Enhance your spiritual awareness and academic skills in order to help you critically weigh scholarly and contemporary ideas about marriage relationships and use both faith and scholarship to "hold fast to that which is good" (1Thess. 5:21).

SFL 224 : Marriage Enhancement. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Enhancing marital communication skills, conflict resolution styles, intimacy, stress management, and developing a shared relationship vision using social science theories and research findings.

NOTE: Married, engaged, and couples seriously dating are encouraged to enroll together.

**Course Outcomes**

- Set and achieve marital goals in line with one's marital visionBuild virtues of commitment, love, friendship, respect, fairness, generosity, and positivity in their marriageUnderstand themselves, their partner, and their relationship more completelyExpress themselves more clearly and listen more carefully to their partnerDeal more effectively with conflict, disagreements, and relationship issuesUnderstand how family-of-origin dynamics influence their marital behaviorIdentify how children potentially can influence marriage across the marital life cycleRelate sexually in a more fulfilling wayStrengthen marriage as the years pass

SFL 240 : Parenting and Child Guidance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Theories and skills related to quality parent-child relationships.

**Course Outcomes**

- Critically examine theories of overall parenting styles and the impact of these styles upon optimal parenting.Critically examine parenting practices within the overall parenting styles and the impact of

these practices upon optimal parenting.Identify effective parenting practices in the context of various life stages.Understand parenting principles that may heighten professional and/or parental potential.
- Synthesize in writing an analysis of parenting styles and practices of your family of origin and how you may modify those styles and practices with the principles obtained in this class.Examine and write in depth a specific area of interest related to parenting styles and practices.

SFL 260 : Family Finance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Introduction to time value of money, budgeting, saving, credit, taxes, housing, insurance, and investing emphasizing practical application in the home.

**Course Outcomes**

- Identify areas of financial risk in your personal lives.Differentiate between a good financial decision and a poor financial decision.Use financial calculators or financial equations for time value of money to classify various financial products to determine the most appropriate product for their family given their current financial situation.Generate a family budget and evaluate home and automobile purchasing and financing options.Analyze and plan for present and future needs by understanding investing option available.

Any courses not used in requirement 3 above.

5. Complete the following capstone course:

STDEV 490 : Bachelor of General Studies Capstone. (2:2:0)

OFFERED: Independent Study only.

PREREQUISITE: STDEV 100; completion of all other BGS program requirements.

DESCRIPTION: Culminating course required for bachelor of general studies degree: analyze and evaluate BGS experience in light of the "Aims of a BYU Education" and summarize this experience in a reflective paper, integrate material learned in emphasis by completing a scholarly essay, and demonstrate accomplishment of learning outcomes.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

**Division of Continuing Education Home**

**Bachelor of General Studies Program (BGS) Home**

**Major**

BGS in General Studies

Emphases

- American Studies
- English
- Family Life
- History
- Management
- Psychology

# BGS in General Studies: History Emphasis (33 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Complete the following prerequisite course:

STDEV 100 : Essential College Skills. (1:1:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Developing essential college skills. Aims of BYU, values and goals, sound thinking skills. Learning styles and adjustment to college courses. College requirements and planning.

**Course Outcomes**

- 1. Articulate their educational values and goals and how they align with the purposes of a BYU education.
- 2. Analyze the effectiveness of their own planning/scheduling system and be able to demonstrate that they understand sound time management and goal setting principles.
- 3. Add new study and test preparation (study) skills to their existing repertoire.

2. Complete the following core courses:

HIST 201 : World Civilization to 1500. (3:3:0)

OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: World civilization from Greek antiquity to Renaissance; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development
- Be able to identify major societies of the pre-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles
- Gain an appreciation of influential cultural works produced in a variety of pre-modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (pre-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

HIST 202 : World Civilization from 1500. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: World civilization from Renaissance to present; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development.
- Be able to identify major societies of the post-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles.
- Gain an appreciation of influential cultural works produced in a variety of modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.

- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (post-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

: Honors World Civilization from 1500.

**Course Outcomes**

HIST 220 : The United States Through 1877. (3:3:0)

OFFERED: Independent study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Discovery, colonization, American Revolution, estabishment of the Constitution, foreign affairs, westward expansion, slavery, sectionalism, Civil War, and reconstruction.

**Course Outcomes**

There are no course outcomes available

HIST 221 : The United States Since 1877. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Industrialization, immigration, urbanization, political and social movements, and foreign policy.

**Course Outcomes**

There are no course outcomes available

3. Complete one of the following tracks:
   a. History:
      Complete 18 hours from the following:

HIST 252 : Modern Latin America. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: National period (1810 to present): independence, institutional development, culture, and inter-American relations.

**Course Outcomes**

- Students will be exposed to the major economic, political, and cultural shifts that shaped the "modern" Latin American state in the nineteenth and twentieth century, as well as its variants, notably the cult of caudillo rule and its twentieth century offshoots
- Students will become conversant with major theoretical arguments and approaches to Latin American history in the contemporary era.
- Students will gain oral proficiency in discussing historiographical and thematic issues in modern Latin America during weekly discussion.
- Students will either broaden their understanding of literature on one topic in Latin American history by way of an intensive literature survey or deepen their knowledge on a particular topic in Latin American history by way of an original research paper.
- Students will make connections between cultural and polotico-economic issues by way of a wide variety of course readings that expose students to literature, as well as traditional historical themes.

HIST 302 : The Italian Renaissance. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.
DESCRIPTION: Major political, social, and cultural events in Italy from 1200 to 1530, emphasizing concept of the Renaissance in modern historiography.

**Course Outcomes**

- Students will understand and be able to analyze the major political, economic, social, and religious developments in Italian Renaissance history
- Students will be able to trace the historiographical evolution of the Italian Renaissance and analyze historical questions within this historiographical context
- Students will refine and improve historical research, writing and analytical skills

HIST 304 : The Expansion of Europe, 1400-1800. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.
DESCRIPTION: Early voyages of discovery and the actions of Europeans in the wider world from about 1400 to 1800.

**Course Outcomes**

There are no course outcomes available

HIST 317 : The Family and the Law in American History. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: HIST 217
DESCRIPTION: The interaction of families with law and government as illustrated in original American sources; individual family histories reconstructed in the broader perspective of history.

**Course Outcomes**

There are no course outcomes available

HIST 319 : The Family in Europe. (3:3:0)
WHEN TAUGHT: Fall Even Yrs.
DESCRIPTION: Nature and development of marriage and family life and structure from the ancient to modern era.
NOTE: Independent Study also.

**Course Outcomes**

- Students will be able to understand and explain major trends in European family life, relationships, and law between 1100 and the present
- Students will be able to analyze and synthesize historiography of family history
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another.
- Students will interpret important shifts or trends in the experience of family functions and relationships and their connections with the law. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends.
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate historical experiences and historiographic interpretations

HIST 340 : Traditional China. (3:3:0)
WHEN TAUGHT: Fall Odd Yrs.
DESCRIPTION: From a loose federation of Neolithic societies, Chinese civilization emerges as East Asia's dominant political and cultural force; developments to ca. 1500.

**Course Outcomes**

- Students will be able to explain and analyze the major social, political, economic, intellectual and cultural developments in the history of Early China (ca. 5000 BC–220 AD
- Students will demonstrate a basic geographical knowledge of China, including significant geological features and major historical cities Moreover, they will be able to discuss how geographical and environmental realities have impacted historical development.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve.

HIST 341 : China Since 1200. (3:3:0)
WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Economic and political foundations of modernity during high Imperial China; challenge of new order from the West; rise of Chinese nationalism, revolution, and development to the present.

**Course Outcomes**

There are no course outcomes available

HIST 378 : American Family History. (3:3:0)
DESCRIPTION: History of American families from colonial period to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major intellectual, economic, religious, social, cultural, and political developments affecting changes in American families of various races, classes, and regions from 1607 to the present.
- Students will be able to analyze an important historical question in the history of American families
- Students will be able to research, analyze, and integrate primary and secondary sources into a coherent and well-written argument.
- Students will be able to isolate the theses and supporting arguments of secondary sources on the history of American families.

b. Family History:
   i. Complete 6 hours from the following:

HIST 252 : Modern Latin America. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: National period (1810 to present): independence, institutional development, culture, and inter-American relations.

**Course Outcomes**

- Students will be exposed to the major economic, political, and cultural shifts that shaped the "modern" Latin American state in the nineteenth and twentieth century, as well as its variants, notably the cult of caudillo rule and its twentieth century offshoots
- Students will become conversant with major theoretical arguments and approaches to Latin American history in the contemporary era.
- Students will gain oral proficiency in discussing historiographical and thematic issues in modern Latin America during weekly discussion.
- Students will either broaden their understanding of literature on one topic in Latin American history by way of an intensive literature survey or deepen their knowledge on a particular topic in Latin American history by way of an original research paper.
- Students will make connections between cultural and polotico-economic issues by way of a wide variety of course readings that expose students to literature, as well as traditional historical themes.

HIST 302 : The Italian Renaissance. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Major political, social, and cultural events in Italy from 1200 to 1530, emphasizing concept of the Renaissance in modern historiography.

**Course Outcomes**

- Students will understand and be able to analyze the major political, economic, social, and religious developments in Italian Renaissance history
- Students will be able to trace the historiographical evolution of the Italian Renaissance and analyze historical questions within this historiographical context
- Students will refine and improve historical research, writing and analytical skills

HIST 304 : The Expansion of Europe, 1400-1800. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Early voyages of discovery and the actions of Europeans in the wider world from about 1400 to 1800.

**Course Outcomes**

There are no course outcomes available

HIST 317 : The Family and the Law in American History. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HIST 217

DESCRIPTION: The interaction of families with law and government as illustrated in original American sources; individual family histories reconstructed in the broader perspective of history.

**Course Outcomes**

There are no course outcomes available

HIST 319 : The Family in Europe. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Nature and development of marriage and family life and structure from the ancient to modern era.

NOTE: Independent Study also.

**Course Outcomes**

- Students will be able to understand and explain major trends in European family life, relationships, and law between 1100 and the present
- Students will be able to analyze and synthesize historiography of family history
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another.
- Students will interpret important shifts or trends in the experience of family functions and relationships and their connections with the law. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends.
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate historical experiences and historiographic interpretations

HIST 340 : Traditional China. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: From a loose federation of Neolithic societies, Chinese civilization emerges as East Asia's dominant political and cultural force; developments to ca. 1500.

**Course Outcomes**

- Students will be able to explain and analyze the major social, political, economic, intellectual and cultural developments in the history of Early China (ca. 5000 BC–220 AD
- Students will demonstrate a basic geographical knowledge of China, including significant geological features and major historical cities Moreover, they will be able to discuss how geographical and environmental realities have impacted historical development.

Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve.

HIST 341 : China Since 1200. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Economic and political foundations of modernity during high Imperial China; challenge of new order from the West; rise of Chinese nationalism, revolution, and development to the present.

**Course Outcomes**

There are no course outcomes available

HIST 378 : American Family History. (3:3:0)

DESCRIPTION: History of American families from colonial period to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major intellectual, economic, religious, social, cultural, and political developments affecting changes in American families of various races, classes, and regions from 1607 to the present.
- Students will be able to analyze an important historical question in the history of American families
- Students will be able to research, analyze, and integrate primary and secondary sources into a coherent and well-written argument.
- Students will be able to isolate the theses and supporting arguments of secondary sources on the history of American families.

ii. Complete 12 hours from the following:

HIST 282 : Colonial US Family, Local and Social History Research. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in colonial American studies.

**Course Outcomes**

There are no course outcomes available

HIST 317 : The Family and the Law in American History. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HIST 217

DESCRIPTION: The interaction of families with law and government as illustrated in original American sources; individual family histories reconstructed in the broader perspective of history.

**Course Outcomes**

There are no course outcomes available

HIST 350 : British Family, Local and Social History Research. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methods for reconstruction of individual families and development of demographic and family history studies in England, Scotland, and Wales.

**Course Outcomes**

- Students will be able to explain and use fundamental genealogical (and some historical) resources and methodologies for English and Welsh research since 1700
- Students will evaluate, analyze, and corroborate genealogical information from both original and compiled sources. Students will know and use established citation standards.
- Students will explain how various pieces of information are combined in order to trace the same individual over various records and across the lifespan
- Students demonstrate how evidence is used to prove the links between generations

HIST 351 : Germanic Family, Local, and Social History Research. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in Germanic areas of Europe.

**Course Outcomes**

There are no course outcomes available

HIST 353 : Southern European and Latin American Family, Local, and Social History Research. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: HIST 217

DESCRIPTION: Records, geo-historical background, paleography, and methods for reconstruction of individual families; development of demographic and family history studies which may include Portugal, Spain, France, and Italy and their colonies in the Americas.

**Course Outcomes**

There are no course outcomes available

HIST 421 : English Language Handwriting and Documents. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Interpretation of handwriting within historical contexts in vernacular scripts in the British Isles, sixteenth through eighteenth centuries, in sources useful in family, local, and social history research.

**Course Outcomes**

- Students will learn the most common scripts (hands) and documents in use in Britain and its colonies between 1500 and 1850.
- Students will read, transcribe, and where necessary, translate documents
- Students will demonstrate transcription techniques and methodologies
- Students will analyze and explain the cultural, historical, and legal context for documents, the scripts used in them, and the coverage and availability

HIST 481R : Directed Research in Family History. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Student research directed by faculty member on family history topic of mutual interest.

**Course Outcomes**

- Students will identify and clearly articulate a substantive family history research problem.
- Students will produce a written report, project or portfolio demonstrating knowledge of the studied material.

HIST 496R : Academic Internship: Family, Local, and Social History. (1-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Work-study involving family, local, and/or social history at one or more archives, libraries, publishers, data providers, or research organizations on the international, national, state, or local level, under supervision of a professional genealogist, historian, archivist, or librarian.

**Course Outcomes**

There are no course outcomes available

4. Complete the following capstone course:

STDEV 490 : Bachelor of General Studies Capstone. (2:2:0)

OFFERED: Independent Study only.

PREREQUISITE: STDEV 100; completion of all other BGS program requirements.

DESCRIPTION: Culminating course required for bachelor of general studies degree: analyze and evaluate BGS experience in light of the "Aims of a BYU Education" and summarize this experience in a reflective paper, integrate material learned in emphasis by completing a scholarly essay, and demonstrate accomplishment of learning outcomes.

**Course Outcomes**

There are no course outcomes available

**Note 1:** Other BYU undergraduate courses (including Salt Lake Center classes) in history may also be used to fill emphasis electives in either track.

**Note 2:** In the Family History track, Hist 317 can be used to meet *either* requirement "i" or "ii"; it cannot be double-counted.

*Hours include courses that may fulfill university core requirements.

**Division of Continuing Education Home**

**Bachelor of General Studies Program (BGS) Home**

**Major**

BGS in General Studies

Emphases

- American Studies
- English
- Family Life
- History
- Management
- Psychology

# BGS in General Studies: Management Emphasis (34 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Complete the following prerequisite course:

STDEV 100 : Essential College Skills. (1:1:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Developing essential college skills. Aims of BYU, values and goals, sound thinking skills. Learning styles and adjustment to college courses. College requirements and planning.

**Course Outcomes**

- 1. Articulate their educational values and goals and how they align with the purposes of a BYU education.
- 2. Analyze the effectiveness of their own planning/scheduling system and be able to demonstrate that they understand sound time management and goal setting principles.
- 3. Add new study and test preparation (study) skills to their existing repertoire.

2. Complete the following pre-core courses:

Either:

IS 100 : Computer Spreadsheet Skills. (.5:0:1)

WHEN TAUGHT: Spring; Summer
DESCRIPTION: Basic computer skills, focusing on spreadsheet and database programs. No technical background necessary.

**Course Outcomes**

- Students will be able to construct an Excel Spreadsheet with appropriate formulas, functions, labels, charts, media inserts, hyperlinks, and data base functions – and output the report.

IS 102 : Business Analysis Using Spreadsheets. (.5:1:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: IS 100.
DESCRIPTION: Basic computer skills focusing on features in MS Excel such as Scenario Manager, Solver, Pivot Tables, and Macros to solve complex business problems.

**Course Outcomes**

- Build robust spreadsheet models of business problems to make rational, data-driven managerial recommendations effectively solving those problems.
- Manipulate spreadsheet models of business problems to examine the robustness of proposed solutions to those problems.
- Implement macro programming techniques for automating spreadsheets to create flexible and powerful spreadsheet models of business problems.

Or:

IS 110 : Spreadsheet Skills and Business Analysis. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic spreadsheet skills focusing on features in MS Excel such as basic functions, logic and reference functions, statistical functions, what-if analysis, and charting to solve complex business problems. No technical background is necessary.

**Course Outcomes**

There are no course outcomes available

3. Then complete the following core 1 courses:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

4. Next complete the following core 2 courses:

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

BUS M 390 : Ethics for Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Premanagement and Management 1 cores and full acceptance into the Marriott School upper-division major.

DESCRIPTION: Analyzing ethical dilemmas and understanding ethical theories as they apply to decision making in management.

**Course Outcomes**

There are no course outcomes available

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Acc 200.

DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.

DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.

NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

ORG B 320 : Organizational Effectiveness. (3:Arr:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

NOTE: Taught online.

**Course Outcomes**

There are no course outcomes available

5. Then complete two courses from the following:

ACC 310 : Principles of Accounting 2. (3:3:0)

OFFERED: Available on BYU campus only.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ACC 200

DESCRIPTION: Additional issues in financial and managerial accounting. Review of issues related to balance sheet accounts, performance evaluation and capital budgeting.

**Course Outcomes**

- Construct and interpret both a balance sheet and income statement that include elements more advanced than the basic items introduced in Acc 200.
- Construct and interpret a statement of cash flows.
- Apply the financial accounting rules that exist in the following areas:a. Revenue recognition (including SAB 101)b. Inventoryc. Long-term assets (including impairment)d. Bondse. Leases (including the financial ratio impact of operating leases)f. Stockholders' equity (including accumulated other comprehensive income)g. Investment securities (including use of the market adjustment account)
- Employ the time value of money in a financial accounting context.
- Apply managerial accounting concepts in the following areas:a. Use the concepts of financial leverage and operating leverage to assess a company's riskiness.b. Perform cost-volume-profit analysis using regresssion to identify the fixed and variable components of a mixed cost and in multiple-product settings.c. Track product costs through a manufacturing process (including use of process costing).d. identify problems through the use of cost variance analysis.
- Construct and use simple Excel spreadsheets in a variety of business settings.
- Independently manage time and workload for a variety of tasks.

BUS M 430 : Introduction to International Business. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Complexities confronting U.S. firms and their management in international environments.

Emphasizes functional and planning areas, including organization, market research, financial analysis.

**Course Outcomes**

There are no course outcomes available

FIN 453 : Money, Banking, and Business. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Major status.

DESCRIPTION: Economic analysis of effects of money, banking, and financial institutions on business decisions and aggregate economic activity.

**Course Outcomes**

There are no course outcomes available

ORG B 327 : Human Resource Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Functions of human resource management: employee selection, wage and salary administration, training and development, employee relations, and human resource planning.

**Course Outcomes**

- Discuss the purpose, roles, frameworks, and activities of HRM within various types of organizations.
- Explain important strategies and methods of effective recruitment, selection, and retention.
- Discuss the primary purposes, criteria, approaches, advantages and disadvantages, issues, and evaluation of performance management.

ORG B 347 : Managerial Leadership Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Principles and practices needed to serve as effective leaders in families, church, community, and work settings -- planning, decision making, self-awareness, effective human influence, and community building.

**Course Outcomes**

There are no course outcomes available

6. Complete the following capstone course:

STDEV 490 : Bachelor of General Studies Capstone. (2:2:0)

OFFERED: Independent Study only.

PREREQUISITE: STDEV 100; completion of all other BGS program requirements.

DESCRIPTION: Culminating course required for bachelor of general studies degree: analyze and evaluate BGS experience in light of the "Aims of a BYU Education" and summarize this experience in a reflective paper, integrate material learned in emphasis by completing a scholarly essay, and demonstrate accomplishment of learning outcomes.

**Course Outcomes**

There are no course outcomes available

**Note:** Emphasis requirements must be filled with credit less than 15 years old.

*Hours include courses that may fulfill university core requirements.

**Division of Continuing Education Home**

**Bachelor of General Studies Program (BGS) Home**

**Major**

BGS in General Studies

Emphases

- American Studies
- English
- Family Life
- History
- Management
- Psychology

# BGS in General Studies: Psychology Emphasis (33 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Complete the following prerequisite course:

STDEV 100 : Essential College Skills. (1:1:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Developing essential college skills. Aims of BYU, values and goals, sound thinking skills. Learning styles and adjustment to college courses. College requirements and planning.

**Course Outcomes**

- 1. Articulate their educational values and goals and how they align with the purposes of a BYU education.
- 2. Analyze the effectiveness of their own planning/scheduling system and be able to demonstrate that they understand sound time management and goal setting principles.
- 3. Add new study and test preparation (study) skills to their existing repertoire.

2. Complete the following core courses:

PSYCH 111 : Introduction to Psychological Science. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic course in modern scientific psychology.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Objective: Apply psychological principles to personal and social issues and problems.Measurement:Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper.
- Objective: Demonstrate a broad knowledge of the basic theoretical perspectives that guide psychological inquiry.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Pyychology 111 sections.
- Objective: Understand the basic research methods used in psychology, including classical and current experiments.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper, participation as a subject in actual psychological research.

PSYCH 210 : A History of Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 111
RECOMMENDED: May be taken concurrently with Psych 301.
DESCRIPTION: Overview of psychological thinking from Ancient Greece to the present. Emphasizes a critical stance toward the assumptions and implications of major psychological theories.
NOTE: This course contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

There are no course outcomes available

PSYCH 308 : Psychological Statistics. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 210 & MATH 110
DESCRIPTION: Descriptive and inferential statistical analysis and hypothesis testing applied to psychological research data.
NOTE: Psych 307 must be taken prior to or concurrently with Psych 308. Stat 121 will not substitute for this course. Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will be able to recognize and understand basic statistical notation, formulae, and concepts.Measurement: Multiple choice and short answer exams

- Students will be able to accurately speak and write about statistical formulae, concepts, analyses, and results.Measurement: Short essays.
- Students will be able to correctly select and use basic statistical formulae and appropriately interpret the results.Measurement: Multiple choice tests, short essays.

PSYCH 350 : (Psych-Soc) Introduction to Social Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Conformity and obedience; socialization, norms, roles; attitudes, leadership, group processes.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will be able toidentify the unique contribution of social psychology to social science, situating the discipline within the larger domain of psychology and contrasting it with related disciplines, such as sociology.Measurement: Multiple choice tests, short essays.
- Students will be able to understand the use of surveys, laboratory and field experiments in conducting social psychological research, and understand the ethical principles of informed consent, deception and debriefing when conducting research with human participants.Measurement: Multiple choice tests, short essays.
- Students will be able to identify substantive areas of social psychological inquiry, including the self, person perception, attitudes and persuasion, group processes, stereotyping and prejudice, interpersonal attraction, helping behavior and aggression.Measurement: Multiple choice tests, short essays.
- Students will be able to identify and explain the contributions of major thinkers and contributors of classic and contemporary theory and research in social psychology, such as Leon Festinger and Stanley Milgram.Measurement: Multiple choice tests, short essays.
- Students will be able to identify how social psychological theory and research have been applied to domains outside the discipline, such as in health settings and the law.Measurement: Multiple choice tests, short essays.

PSYCH 381 : Behavioral Neurobiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or NEURO 205; or instructor's consent. (Neuro 205 will substitute for Psych 310.)
DESCRIPTION: Basic physiological, anatomical, and chemical foundations of psychology.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will develop their understanding of how the brain influences one's experience of the world and one's behavior in it.Measurement: In-class quizzes and/or exams on assigned textbook reading, lectures, and class discussions and written reports and/or in-class presentations of self-selected articles from the scientific literature.
- Students will identify scientific methods, especially those of cognitive neuroscience, that are valuable in behavioral neurobiology.Measurement: In-class quizzes and/or exams on assigned textbook reading, lectures, and class discussions and written reports and/or in-class presentations of self-selected articles from the scientific literature.
- Students will extend concepts and research findings to diseases, trauma, drug usage, hormones, and genes.Measurement: In-class quizzes and/or exams on assigned textbook reading, lectures, and class discussions and written reports and/or in-class presentations of self-selected articles from the scientific literature.

**And** complete one course from the following:

PSYCH 320 : Developmental Psychology: Childhood. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.
DESCRIPTION: Physical, mental, emotional, and social development of the child.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will describe current theories and research in human development from pre-natal development through late childhood, demonstrating an understanding of developmental processes that lead to normative development, including perceptual, cognitive, biological, genetic, and social domains, as well as factors that lead to psychopathology and mental illness.Measurement:Multiple choice tests, quizzes.
- Students will assess and critique a key issue in a group format presented to the class.Measurement:Assessment of presentation.
- Students will assess critical issues in early childhood development, integrating current research studies on topics in developmental psychology.Measurement:APA style paper.

PSYCH 342 : Abnormal Psychology. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Dynamics of maladjustment; major psychological disorders and therapeutic procedures. Fieldwork required.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and describe the major forms of psychological disorders and the major theories regarding the classification, etiology, and treatment of psychological disorders,and current data relevant to such theories.Measurement: Multiple choice, short answer and essay exams; short writing assignments.

- Students will engage in service learning by serving persons diagnosed with psychological disorders.Measurement: Participation assessment/field work report
- Students will critically examine key concepts and theories in abnormal psychology.Measurement: Essay exams, short writing assignments, in-class debates
- Students will examine and critique a topic in abnormal psychology using the current research literature.Measurement: APA style paper

3. Complete 11 hours from the following (including any courses not used for core above):

ANTHR 101 : Social/Cultural Anthropology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Aspects of society and culture: kinship, beliefs, economy, and political order among peoples worldwide. Methods and perspectives used in social/cultural anthropology.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Come to understand culture as a way of interpreting experience, and realize that culture informs both social life and individual psychology, shaping and coloring how people perceive and act in the world.Grasp the social scientific principles and reasoning involved in ethnography, and recognize the value, limitations, and ethical implications of this way of making sense of social conduct.Acquire an informed awareness of other cultural worlds—an appreciation of other ways of being human—of believing, behaving, and belonging, including their kinship organization and ritual, economic, and political practices.— Learn to see personal beliefs, values, attitudes, and conduct—including kinship organization and ritual, economic and political practices—from the perspective of people with different ideas about the way the world works.Develop an increased ability to write effectively.

PSYCH 306 : Psychology of Gender. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Biological and social contributions to sex role development, sexual self-concept, and complementarity of sex roles.

NOTE: Contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

There are no course outcomes available

PSYCH 330 : Organizational Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Personal, interactional, and structural aspects of organizations; motivation, decision making, problem-solving communication, leadership, organizational structure, change.

NOTE: Org B 321 will not substitute for this course.

**Course Outcomes**

- Students will demonstrate a basic understanding of the major areas of organizational and industrial psychology, including human resources; leadership development; employee training, motivation, and satisfaction; group dynamics, organizational climate; and team-building.Measurement:Multiple choice tests, short essays.
- Students will learn to apply organizational theory to specific organizational situations.Measurement:Writing assignment.
- Students will acquire skill in collaborative teamwork, time management, self-motivation, and project planning.Measurement:Evaluation of cooperative class assignments.

PSYCH 338 : Sport Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Application of psychological principles to sporting activities.

**Course Outcomes**

- Students will demonstrate a basic understanding of the current status of the discipline of sport psychology and of the psychological theories that inform it, including behavioral principles and applications, social psychology, personality psychology, assessment, special athletic populations, coaching, and exercise psychology.Measurement: In-class exams on assigned textbook reading.
- Students will demonstrate familiarity with selected sport- psychology journals.Measurement: Author a paper that combines a literature review with application to a sport-performance environment.
- Students will identify and discuss current events related to sport psychology.Measurement: In-class reports and discussion of video clips or other media reports relevant to sport psychology.

PSYCH 341 : Personality. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Individual patterns of behavior, thought, and emotion; personality theories and their associated strategies of research, assessments, and personality change.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and distinguish the major personality theories of psychology.Measurement:Multiple choice/Short essay.
- Students will identify and give examples of contemporary research or applications of these theories.Measurement:Multiple choice/Short essay.
- Students will identify the theoretical assumptions that underlie these personality theories.Measurement:Multiple choice.
- Students will articulate some of the practical and religious implications of these theories.Measurement:Essay assignments.

PSYCH 358 : Leadership Development. (3:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Principles and practices of successful leadership: decision making, communications, planning, team building, motivation, and interpersonal skills.

**Course Outcomes**

There are no course outcomes available

PSYCH 361 : Principles of Learning. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Principles of learning; representative experiments.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will develop their understanding of and facility with the concepts by which behavior analysis makes sense of selected learning phenomena.Measurement: In-class quizzes, both individual- and team-based, on assigned textbook and other reading.
- Students will connect the concepts to the behavior of a virtual laboratory rat.Measurement: Individual- and team-based written reports and in-class presentations of the results of virtual experiments. Team-based manuscripts in multiple drafts both peer- and instructor- reviewed.
- Students will apply the concepts to human behavior, including one's own.Measurement: Out-of-class team-based application activities summarized in written reports. Essay exams that emphasize applications to real-life phenomena.

PSYCH 365 : Motivation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Determinants of motivation, relationship of motives to emotion, cognition, personality, and action. Implications for understanding self and others.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will compare and contrast a wide range of theories and research findings within the subdiscipline of the psychology of motivation.Measurement: In-class quizzes, both individual- and team-based, on assigned textbook and other reading.
- Students will categorize and apply theories and concepts to specific fictional characters and settings in film.Measurement: Out-of-class application activities that focus on four films shown in class and that require application of specific concepts to the characters, plots, and themes of the films.
- Students will analyze connections between the subject matter and one's own experience of motivation.Measurement: Individual essays and essay exams that focus on the personal application of concepts to one's experience.

BYU undergraduate campus courses (including Salt Lake Center classes) in psychology may be used to fill emphasis electives.

4. Complete the following capstone course:

STDEV 490 : Bachelor of General Studies Capstone. (2:2:0)

OFFERED: Independent Study only.

PREREQUISITE: STDEV 100; completion of all other BGS program requirements.

DESCRIPTION: Culminating course required for bachelor of general studies degree: analyze and evaluate BGS experience in light of the "Aims of a BYU Education" and summarize this experience in a reflective paper, integrate material learned in emphasis by completing a scholarly essay, and demonstrate accomplishment of learning outcomes.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

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| Humanities | Paula Landon |
| International and Area Studies | Anna Peterson |
| Life Sciences | Shauna Anderson Young |
| Marriott School of Management | Brent Wilson |
| McKay School of Education | C. Jay Oliver |
| Nursing | Mark E. White |
| Physical and Mathematical Sciences | Shane Jorgenson |
| University | Karen Evans |

## Research Centers and Institutes

| | |
|---|---|
| Advanced Combustion Engineering Research Center | Thomas H. Fletcher |
| Monte L. Bean Life Science Museum | |
| Director | Larry St. Clair |
| Associate Director | Leigh Johnson |
| Assistant Director | Marta Jean Adair |
| Cancer Research Center | Daniel L. Simmons |
| Center for Christian Values in Literature | Jesse S. Crisler |
| Associate Director | Daniel Muhlestein |
| Ballard Center for Economic Self-Reliance | Todd Manwaring |
| Center for the Improvement of Teacher Education and Schooling | Steven Baugh |
| Center for Service and Learning | Casey Peterson |
| Center for Statistical Research | Dennis L. Eggett |
| Center for Teaching and Learning | Nancy Wentworth |
| Communications Research Center | Mark Callister |
| Comprehensive Clinic | Dean Barley |
| Computer-Aided Engineering, Design, and Manufacturing Center | J. Brent Smith |

| | |
|---|---|
| Family Studies Center | Randal Day |
| Human Performance Research Center | Matthew K. Seeley |
| International Center for Law and Religion Studies | W. Cole Durham, Jr. |
| National Middle East Language Resource Center | R. Kirk Belnap |
| Neal A. Maxwell Institute for Religious Scholarship | M. Gerald Bradford |
| Museum of Art | Mark A. Magleby |
| Museum of Paleontology | Rodney Scheetz |
| Museum of Peoples and Cultures | Paul R. Stavast |
| Office of Digital Humanities | Jarom McDonald |
| Charles Redd Center for Western Studies | Brian Q. Cannon |
| Religious Studies Center | Brent Top, Director; Dana M. Pike, Assoc. Director |
| Rollins Center for Entrepreneurship and Technology | Stephen W. Liddle |
| Kay and Yvonne Whitmore Global Management Center | Ervin Black |
| Wheatley Institution | Richard N. Williams |

## Other Areas of Service

| | |
|---|---|
| Academic Support | Scott D. Hosford |
| Benefits | Douglas J. Lee |
| Bookstore | Roger L. Reynolds |
| Counseling and Career Center | Steven A. Smith |
| Dining Services | Dean A. Wright |
| Employee Relations | R. Scott Elkins |
| Employment Services — Staff and Administrative | Marden Clark |
| Faculty Center | David A. Whetten |
| Faculty Relations | Thomas E. Patterson |
| Honor Code Office | Larry Neal |
| Intercollegiate Athletics | Thomas A. Holmoe |
| International Student Services | Samuel D. Brown |
| Multicultural Student Services | Ann Marie Lambert |
| OIT Support Services | Christine Oakes |
| Payroll Manager | Shannon J. Reid |
| Planning and Architecture | |
| Publications and Graphics | Jeff McClellan |
| Residence Life | Julie L. Franklin |
| Student Health Services | Rulon J. Barlow |
| University Accessibility Center | Michael Brooks |
| University Police | Larry A. Stott |
| Women's Services and Resources | LaNae Valentine |

# Brigham Young University Faculty

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Aanderud, Zachary Thomas
- **COLLEGE:** Life Sciences
- **DEPARTMENT:** Plant and Wildlife Sciences
- **RANK:** Assistant Professor
- **DEGREES:** BS, Brigham Young University, 1997
  MS, University of California—Davis, 2003
  PhD, University of California—Davis, 2006

Abraham, Heidi L.
- **COLLEGE:** David O. McKay School of Education
- **DEPARTMENT:** Counseling Psychology and Special Education
- **RANK:** Associate Clinical Professor
- **DEGREES:** BS, Brigham Young University, 2000
  MS, Brigham Young University, 2004

Adair, Marta Jean
- **COLLEGE:** Life Sciences
- **DEPARTMENT:** Biology
- **RANK:** Associate Teaching Professor
- **DEGREES:** BS, Brigham Young University, 1981
  MS, Brigham Young University, 1990

Adams, Byron
- **COLLEGE:** Life Sciences
- **DEPARTMENT:** Biology
- **RANK:** Associate Professor
- **DEGREES:** BS, Brigham Young University, 1993
  PhD, University of Nebraska, 1998

Adams, Edward Eugene
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** Communications
- **RANK:** Professor
- **DEGREES:** AAS, Ricks College, 1982
  BS, University of Phoenix, 1986
  MA, Brigham Young University, 1991
  PhD, Ohio University, Athens, 1993

Adams, Michael
- **COLLEGE:** Student Life
- **DEPARTMENT:** Counseling and Career Center
- **RANK:** Associate Clinical Professor
- **DEGREES:** BA, Brigham Young University, 1998
  MS, Indiana State University, 2001
  PhD, Indiana State University, 2005

Adams, Paul S.
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** Visual Arts
- **RANK:** Associate Professor
- **DEGREES:** BFA, Brigham Young University, 1992
  MFA, Utah State University, 1996

Adams, R. Brent
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BUS, University of Utah, 1982
MFA, University of Utah, 1992

Agle, Brad
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1986
PhD, University of Washington, 1993

Alba, Orlando
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Católica Madre y Maestra, 1972
MA, University of Puerto Rico, 1978
PhD, Univ. Nacional de Educación a Distancia, Madrid, Spain, 1988

Albrecht, Conan C.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1997
MAcc, Brigham Young University, 1997
PhD, University of Arizona, 2000

Albrecht, W. Steve
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
MBA, University of Wisconsin, Madison, 1973
PhD, University of Wisconsin, Madison, 1975

Alder, Jonathan K.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 2001
PhD, Johns Hopkins University, 2007

Alford, Kenneth L.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1979
MA, University of Southern California, 1982
MA, University of Illinois Urbana-Champaign, 1988
PhD, George Mason University, 2000

Allen, Gove N.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MAcc, Brigham Young University, 1994
PhD, University of Minnesota, 2001

Allen, Kawika
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Assistant Professor
**DEGREES:** BA, University of Utah, 1999
MS, University of Missouri, 2005
PhD, Duke University, 2011

Allen, Phil S.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor

**DEGREES:** BS, Brigham Young University, 1983
MS, Brigham Young University, 1985
PhD, University of Minnesota, 1990

Allred, David D.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
MS, Princeton University, 1973
PhD, Princeton University, 1977

Alvord, Scott M.
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Weber State University, 1998
MA, University of Minnesota, 2003
PhD, University of Minnesota, 2006

Ames, Daniel P.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1996
MS, Utah State University, 1998
PhD, Utah State University, 2002

Ancell, Matthew
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, University of California, Irvine, 2001
PhD, University of California, Irvine, 2007

Andersen, Bethanne P.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** BFA, Brigham Young University, 1976
MFA, Brigham Young University, 1979

Andersen, Darlene
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Research Associate
**DEGREES:** BA, Brigham Young University, 1965
MS, University of Utah, 1992
PhD, Utah State University, 2002

Anderson, Bonnie Brinton
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1995
MAcc, Brigham Young University, 1995
MPhil, Carnegie Mellon University, 2001
PhD, Carnegie Mellon University, 2001

Anderson, Gregory S.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Assistant Professor
**DEGREES:** BS, Weber State College, 1989
MBA, University of Colorado-Colorado Springs, 2002
PhD, Indiana State University, 2010

Anderson, Joshua L.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
**DEGREES:** PhD, University of Utah, 2006

Anderson, Neil J.

**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1979
MA, Brigham Young University, 1981
PhD, University of Texas, Austin, 1989

Anderson, Peggy Hammond

**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor
**DEGREES:** AS, Brigham Young University, 1983
BS, Brigham Young University, 1999
MS, Brigham Young University, 2001

Anderson, Richard Paul

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BA, Arizona State University, 1968
MM, Northwestern University, 1970
DMA, University of Colorado, Boulder, 1986

Anderson, Stewart

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Westminster College, 2004
MA, Binghamton University, 2007
PhD, Binghamton University, 2011

Anderson, Travis T.

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1985
BFA, Brigham Young University, 1985
MA, Loyola University of Chicago, 1989
PhD, Loyola University of Chicago, 1992

Anderson, Val Jo

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** AS, Snow College, 1980
BS, Utah State University, 1982
MS, Utah State University, 1985
PhD, Texas A&M University, 1988

Andrus, Merritt Brooks

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
PhD, University of Utah, 1991

Archibald, James K.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, University of Washington, 1983
PhD, University of Washington, 1987

Argyle, Morris D.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1990
PhD, University of California, Berkeley, 2003

Arroyo, Juan Alberto

**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology

**RANK:** Assistant Professor
**DEGREES:** BS, University of Puerto Rico, 1991
PhD, Southern Illinois University School of Medicine, 2003

Asay, Devin N.
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities Research Center
**RANK:** Associate Research Fellow
**DEGREES:** BA, Brigham Young University, 1980
MA, Ohio State University, Columbus, 1987

Ashbaker, Betty Y.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1972
MS, Utah State University, 1974
PhD, Brigham Young University, 1982

Ashworth, Julia D.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Teaching Professor
**DEGREES:** BA, Brigham Young University, 1996
MA, New York University, 2002

Asplund, Christian T.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Brigham Young University, 1988
MA, Mills College, 1993
DMA, University of Washington, 1998

Asplund, Matthew Chas
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992
PhD, University of California, Berkeley, 1998

Auman, Karen
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, San Jose State University, 2005
PhD, New York University, 2013

Austin, Daniel E.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1998
PhD, California Institute of Technology, 2003

Austin, Edwin G.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1978
MA, Brigham Young University, 1980

Babidge, Darrell
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Assistant Professor
**DEGREES:** BA, Royal Northern College of Music, 1997
Professional Studies Degree, Manhattan School of Music, 2001

Bahr, Damon L.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor

**DEGREES:** BS, Brigham Young University, 1979
MEd, Utah State University, 1982
EdD, Brigham Young University, 1988

Bahr, Howard M.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1962
MS, University of Texas, Austin, 1964
PhD, University of Texas, Austin, 1965

Bahr, Stephen J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1968
MS, Brigham Young University, 1969
PhD, Washington State University, 1972

Bailey, Bruce
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2001
PhD, University of Kansas, 2005

Bailey, Russ
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2004
PhD, Brigham Young University, 2010

Baker, Roger C.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Birkbeck College, London, 1968
PhD, Birkbeck College, London, 1971

Baker, Sherry Pack
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1984
MS, University of Utah, 1988
PhD, University of Utah, 1994

Bakker, Lennard Frank
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, University of Victoria, Canada, 1991
MS, University of Victoria, Canada, 1993
PhD, Queens University, Canada, 1997

Baldwin, Scott
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 2001
MS, University of Memphis, 2003
PhD, University of Memphis, 2006

Ball, Nicholas
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Assistant Professor
**DEGREES:** BS, Idaho State University, 1999
MBA, Idaho State University, 2000
PhD, University of Minnesota, 2005

Ball, Terry Briggs

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1979
MA, Brigham Young University, 1990
PhD, Brigham Young University, 1992

Balling, Richard Jack
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1978
BS, University of Utah, 1978
MS, University of California, Berkeley, 1979
PhD, University of California, Berkeley, 1982

Balser, Nathan
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1998
MFA, University of Utah, 2000

Bangerter, Neal K.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Associate Professor
**DEGREES:** BS, University of California, Berkeley, 1995
MS, Stanford University, 2001
PhD, Stanford University, 2004

Barber, Brad
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Teaching Professor
**DEGREES:** BA, Brigham Young University, 2001
MFA, University of Southern California, 2005

Barber, Michael J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2008
MA, Princeton University, 2011
PhD, Princeton University, 2014

Barker, Joseph Cory
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Teaching Professor
**DEGREES:** BS, Brigham Young University, 1982
PhD, Brigham Young University, 1994

Barnes, Lauren A.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2008
MS, Brigham Young University, 2010
PhD, Brigham Young University

Barnes, Michael D.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Professor
**DEGREES:** AS, Ricks College, 1986
BS, Brigham Young University, 1989
MS, Brigham Young University, 1990
PhD, Southern Illinois University, Carbondale, 1993

Barney, Daniel Theron
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Assistant Professor

**DEGREES:** BFA, Brigham Young University, 1994
MA, Brigham Young University, 2004
PhD, University of Columbia, 2009

Barney, David C.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BS, Weber State University, 1989
MEd, Utah State University, 1995
EdD, Florida State University, 2002

Barrett, Robert T.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** BFA, University of Utah, 1973
MA, University of Iowa, 1975
MFA, University of Iowa, 1976

Barrett, Wayne Walton
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1968
MS, New York University, 1975
PhD, New York University, 1975

Barrett, William A.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1974
PhD, University of Utah, 1978

Barrick, John A.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MAcc, Brigham Young University, 1991
PhD, University of Nebraska, Lincoln, 1998

Barrow, Jeffery Richard
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1990
PhD, University of Utah, 1999

Barson, Brent
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1997
MFA, Art Center College of Design, 2003

Barton, Garold C.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** BFA, Brigham Young University, 1989
MFA, Ohio State University, 1994

Bateman, Blair Earl
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1991
MA, Brigham Young University, 1995
PhD, University of Minnesota, 2002

Baugh, Alexander L.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine

**RANK:** Professor
**DEGREES:** BS, Utah State University, 1981
MA, Brigham Young University, 1986
PhD, Brigham Young University, 1996

Baugh, Dawna
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Utah State University, 1985
EdD, Brigham Young University, 1997

Baugh, Steven Clare
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1969
MEd, Brigham Young University, 1970
EdD, Brigham Young University, 1978

Baxter, Larry Lin
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1983
PhD, Brigham Young University, 1989

Bay, Stephen M.
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1993
BA, University of Utah, 1997
MA, University of Illinois, Urbana-Champaign, 2000
PhD, University of Illinois, Urbana-Champaign, 2004

Bean, Roy A.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MS, Brigham Young University, 1995
PhD, Brigham Young University, 1997

Beard, Randal W.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1991
MS, Rensselaer Polytechnic Institute, 1993
MS, Rensselaer Polytechnic Institute, 1994
PhD, Rensselaer Polytechnic Institute, 1995

Beckstrand, Renea L.
**COLLEGE:** Nursing
**RANK:** Professor
**DEGREES:** AS, Ricks College, 1979
AS, Brigham Young University, 1981
BS, Brigham Young University, 1983
MS, Brigham Young University, 1987
PhD, University of Utah, 2001

Bednar, Jeffrey
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2007
MAcc, Brigham Young University, 2007
PhD, University of Michigan, 2013

Beecher, Mark
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center

**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1993
MSW, University of Utah, 1995
PhD, Brigham Young University, 1998

Beesley, Celeste E.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** AB, Princeton University, 2002
MA, University of California, San Diego, 2007
PhD, University of California, San Diego, 2013

Bekker, Matthew F.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Pennsylvania State University, 1996
PhD, University of Iowa, 2002

Belk, Mark C.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** AS, Ricks College, 1983
BS, Brigham Young University, 1985
MS, Brigham Young University, 1987
PhD, University of Georgia, 1992

Belknap, Monte L.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, University of Cincinnati Conservatory of Music, 1991
MM, University of Cincinnati Conservatory of Music, 1994

Bell, John David
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1982
PhD, University of California, San Diego, 1987

Bell, Teresa R.
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1992
PhD, University of Arizona, 2001

Belnap, Daniel Lee
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1996
MA, Brigham Young University, 1999
MA, University of Chicago, 2002
PhD, University of Chicago, 2007

Belnap, Robert Kirk
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1983
MA, Brigham Young University, 1986
PhD, University of Pennsylvania, 1991

Benfell, V. Stanley
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1987

MA, New York University, 1990
PhD, New York University, 1994

Bennett, Richard Edmond
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1972
MA, Brigham Young University, 1975
PhD, Wayne State University, 1984

Bennion, John Serge
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Utah State University, 1977
MA, Brigham Young University, 1981
PhD, University of Houston, 1989

Bennion, Lynne
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, Purdue University, 1983
PhD, Purdue University, 1986

Berges, Bradford K.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
PhD, University of Pennsylvania, 2005

Bergeson, Scott D.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
PhD, University of Wisconsin, Madison, 1995

Berrett, Candace
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2005
MS, The Ohio State University, 2007
PhD, The Ohio State University, 2010

Berrett, Marilyn
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1979
MA, Brigham Young University, 1984

Berrondo, Manuel
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, University of Mexico, 1966
PhD, University of Uppsala, Sweden, 1969

Beutler, Ivan Felix
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1969
MS, Purdue University, Lafayette, 1972
PhD, Purdue University, Lafayette, 1974

Bickmore, Barry R.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor

**DEGREES:** BS, Brigham Young University, 1994
PhD, Virginia Polytechnic Institute, 1999

Bigelow, Anny Claudine
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Brigham Young University, 1991
MM, Brigham Young University, 1994
DMA, University of Maryland, 2002

Bigler, Erin David
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
PhD, Brigham Young University, 1975

Bikman, Benjamin Thomas
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MS, Brigham Young University, 2005
PhD, East Carolina University, 2008

Billeter, Darron
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Northwestern University, 1998
MS, Carnegie Mellon University, 2004
PhD, Carnegie Mellon University, 2004

Bingham, Jennie
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2006
PhD, Brigham Young University, 2011

Bingham, John B.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1998
MS, University of Utah, 2000
PhD, Texas A&M University, 2005

Birmingham, Wendy Ann
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2006
MS, University of Utah, 2009
PhD, University of Utah, 2011

Black, Ervin L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1981
MBA, Brigham Young University, 1984
PhD, University of Washington, 1995

Black, Susan E
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1966
MA, California State College, San Bernardino, 1975
EdD, Brigham Young University, 1978

Blad, Kent Dean

**COLLEGE:** Nursing
**RANK:** Teaching Professor
**DEGREES:** AA, Snow College, 1983
BS, University of Utah, 1987
MS, Brigham Young University, 1999
DNP, University of Utah, 2010

Blades, Natalie Jean

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Assistant Professor
**DEGREES:** AB, Wellesley College, 1997
MSE, Johns Hopkins University, 2002
PhD, Johns Hopkins University, 2003

Blair, Nancy

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Associate Clinical Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Brigham Young University, 1995
AuD, University of Florida, 2005

Blotter, Jonathan D.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1991
MS, Utah State University, 1993
PhD, Virginia Polytechnic Institute and State University, 1996

Blumell, Lincoln H.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Assistant Professor
**DEGREES:** BA, University of Calgary, 2001
MA, University of Calgary, 2003
MSt, University of Oxford, 2004
PhD, University of Toronto, 2009

Boardman, Alan J.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Brigham Young University, 1997
PhD, University of Utah, 2011

Boberg, Marc "Dewey", LTC

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Military Science
**RANK:** Professor
**DEGREES:** BS, U.S. Military Academy, West Point, 1992
MS, Troy University, 2004

Boch, Rachael

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Assistant Professor
**DEGREES:** BS, Utah State University, 1997
MA, University of Arizona, 2002
PhD, University of Arizona, 2004

Bond, Michael Gregg

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 1998
MBA, Indiana University, 2003

Boone, David Flake

**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine

**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1978
MA, Brigham Young University, 1981
EdD, Brigham Young University, 1992

Booth, Gary M.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** AS, College of Eastern Utah, 1961
BS, Utah State University, 1963
MS, Utah State University, 1966
PhD, University of California, Riverside, 1969

Boothe, Randall Wayne
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University—Hawaii, 1975
MM, Brigham Young University, 1979

Borup, Michael Brett
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Humboldt State University, 1980
MS, Utah State University, 1983
PhD, Clemson University, 1985

Boswell, Grant Maurice
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1976
MA, University of Southern California, 1982
PhD, University of Southern California, 1986

Bott, Shayla
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Assistant Professor
**DEGREES:** BFA, University of Utah, 2004
MFA, University of Utah, 2006

Bourgerie, Dana Scott
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, University of Minnesota, Minneapolis, 1982
MA, Ohio State University, Columbus, 1987
PhD, Ohio State University, Columbus, 1990

Bowden, Anton
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1996
PhD, University of Utah, 2003

Bowen, Donna Lee
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1968
MA, University of Chicago, 1972
PhD, University of Chicago, 1981

Bowman, W. Jerry
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1978
MSE, University of Central Florida, 1982
PHD, Air Force Institute of Technology, 1987

Bown, Jennifer Marks

**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1991
MA, Ohio State University, 1993
MEd, Ohio State University, 1999
PhD, Ohio State University, 2004

Boyer, Brian H.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1996
PhD, University of Michigan, 2004

Boyle, Kristoffer D.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2001
MA, Brigham Young University, 2005
PhD, Texas Tech University, 2008

Bradford, Angela

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MS, Auburn University, 2005
PhD, Auburn University, 2012

Bradford, Scott C.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
MPA, Princeton University, 1991
PhD, Harvard University, 1998

Brau, James C.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BS, United States Military Academy, West Point, 1991
PhD, Florida State University, 1999

Breakwell, Donald P.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, Purdue University, 1988
PhD, Purdue University, 1992

Breinholt, Stephanie Ann Foster

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1994
MFA, Brigham Young University, 1999

Brewer, Cindy Patey

**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1991
PhD, University of Utah, 1998

Bridgewater, Laura Clarke

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Associate Professor

**DEGREES:** BS, Brigham Young University, 1989
PhD, George Washington University, 1995

Brinkerhoff, Val W.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1980
MFA, Utah State University, 1987

Brinton, Bonnie
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1975
MA, San Jose State University, 1977
PhD, University of Utah, 1981

Britt, Brooks Bradley
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, Brigham Young University, 1987
PhD, University of Calgary, 1993

Bronson, Robert Todd
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1996
PhD, Brigham Young University, 2003

Brooks, Kent Richmond
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1979
MEd, Brigham Young University, 1981
PhD, Brigham Young University, 1988

Broomhead, G Paul
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Brigham Young University, 1987
MM, Brigham Young University, 1990
PhD, University of Washington, 1999

Brough, Ronald Paul
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, North Texas State University, 1981
MM, North Texas State University, 1983
DA, University of Northern Colorado, 1997

Brown, Bruce Leonard
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1965
MS, Brigham Young University, 1968
PhD, McGill University, 1969

Brown, Adam R.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2004
MA, University of California, San Diego, 2006
PhD, University of California, San Diego, 2008

Brown, David C.
**COLLEGE:** Fine Arts and Communications

**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Indiana University, Bloomington, 1975
MM, University of Toledo, 1997

Brown, Graham
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Assistant Professor
**DEGREES:** BFA, University of Utah, 2006
MFA, University of Maryland, College Park, 2013

Brown, Kendall W.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1973
MA, Duke University, 1975
PhD, Duke University, 1979

Brown, Lora Beth
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics and Food Science
**RANK:** Professor
**DEGREES:** BS, Iowa State University, 1965
MS, Cornell University, 1967
EdD, Brigham Young University, 1982

Brown, Michael D.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Colorado State University, 1998
PhD, Colorado State University, 1999

Brown, N. Anthony
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BA, Southern Methodist University, 1998
MA, Bryn Mawr College, 2002
PhD, Bryn Mawr College, 2004

Brown, Ralph B.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BA, Utah State University, 1986
MS, Utah State University, 1988
PhD, University of Missouri, Columbia, 1992

Brubaker, Pamela J.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2000
MA, Brigham Young University, 2002
PhD, The Pennsylvania State University, 2012

Bryce, David J.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MAcc, Brigham Young University, 1991
MBA, Brigham Young University, 1991
PhD, University of Pennsylvania, 2003

Buckley, Jay Harry
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994

MA, Brigham Young University, 1996
PhD, University of Nebraska, 2001

Budd, Cassy
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
MA, Utah State University, 2002

Buehler, Fidalis
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Assistant Professor
**DEGREES:** BFA, University of Hawaii, Manoa, 2004
MFA, Brigham Young University, 2007

Bullough, Robert V.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1971
MEd, University of Utah, 1973
PhD, Ohio State University, 1976

Bundy, Bradley C.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2004
MS, Stanford University, 2006
PhD, Stanford University, 2009

Burlingame, Gary Michael
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, Andrews University, 1978
MS, University of Utah, 1981
PhD, University of Utah, 1983

Burnett, Sandra H.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Associate Professor
**DEGREES:** BA, Utah State University, 1992
MS, Utah State University, 1993
PhD, University of Kentucky, 2000

Burr, Kevin Lester
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** AS, Brigham Young University, 1982
BS, University of Nevada, Las Vegas, 1988
MEd, University of Nevada, Las Vegas, 1990
EdD, Oklahoma State University, 1997

Burt, Scott R.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 2004
PhD, University of California at Berkeley, 2008

Burton, F. Greg
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BA, Utah State University, 1984
MAcc, Utah State University, 1987
PhD, University of South Carolina, Columbia, 1994

Burton, Gideon Omer
**COLLEGE:** Humanities

**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1989
MA, University of Southern California, 1991
PhD, University of Southern California, 1994
MPW, University of Southern California, 1995

Burton, Gregory F.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1975
MS, Brigham Young University, 1982
PhD, Medical College of Virginia, 1989

Burton, Robert Preece
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1969
PhD, University of Utah, 1973

Busath, David Don
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1974
MD, University of Utah, 1978

Busby, Dean
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1986
MS, Brigham Young University, 1988
PhD, Brigham Young University, 1990

Bush, Charles D.
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities Research Center
**RANK:** Senior Research Fellow
**DEGREES:** BA, Brigham Young University, 1973
MA, Brigham Young University, 1974

Bush, Michael Douglas
**COLLEGE:** Humanities
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1972
MBA, University of Missouri, 1976
PhD, Ohio State University, 1983

Buskirk, Allen Rowdon
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
PhD, Harvard University, 2004

Butler, Mark H.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1986
MS, Brigham Young University, 1990
PhD, Texas Tech University, 1996

Butler, Richard John
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1972
PhD, University of Chicago, 1979

Buxton, Michael

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Associate Clinical Professor
**DEGREES:** BS, Brigham Young University, 1985
MS, University of Georgia, 1989
PhD, University of Georgia, 1993

Bybee, Seth M.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2004
PhD, University of Florida, 2008

Call, Michael Josiah

**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2000
MA, Yale University, 2002
MPhil, Yale University, 2004
PhD, Yale University, 2006

Call, Robert Steven

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Utah State University, 1971
MM, Utah State University, 1975
PhD, University of Utah, 2000

Call, Vaughn R. A.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1970
MS, Brigham Young University, 1974
PhD, Washington State University, 1977

Callahan, Loy Clark

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1995
MA, West Texas A&M University, 1995
PhD, University of Oklahoma, 2002

Callister, Mark Alden

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1988
BA, Brigham Young University, 1988
MBA, Brigham Young University, 1991
PhD, University of Arizona-Tucson, 1997

Campbell, Branton J.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MA, University of California, Santa Barbara, 1995
PhD, University of California, Santa Barbara, 1999

Campbell, Jeffery Lynn

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** AA, Ricks College, 1977
BS, Brigham Young University, 1984
MBA, University of Phoenix, 1990

PhD, University of Idaho, 1999

Campbell, Joel Jay
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1987
MA, Ohio State University, 2000

Cannon, Brian Q.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1984
MA, University of Utah, 1986
PhD, University of Wisconsin, 1992

Cannon, James W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1967
PhD, University of Utah, 1969

Capt, Brian Charles
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1993

Cardon, David Alan
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Stanford University, 1993
PhD, Stanford University, 1996

Cardon, James Harold
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, Princeton University, 1995
PhD, Princeton University, 1996

Carling, Gregory T.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2005
MS, Brigham Young University, 2007
PhD, University of Utah, 2012

Carlos, Chad
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MA, Brigham Young University, 2003
MS, Johnson Graduate School of Management, 2011

Carpenter, Bruce N.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, University of Wisconsin, Madison, 1977
PhD, University of Wisconsin, Madison, 1980

Carroll, Jason S.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor

**DEGREES:** BS, Brigham Young University, 1996
MS, Brigham Young University, 1998
PhD, University of Minnesota, 2001

Carter, Edward L.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1996
MS, Northwestern University, 1999
JD, Brigham Young University, 2003
LLM, University of Edinburgh School of Law, 2009

Carter, K Codell
**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1963
MA, University of Utah, 1964
PhD, Cornell University, 1968

Carter, Karen
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1995
MA, Brigham Young Univeristy, 2000
PhD, Georgetown University, 2006

Castle, Steven L.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University 1995
PhD, The Scripps Research Institute, 2000

Cattani, Kara
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Florida State University, 2000
PhD, Florida State University, 2003

Cavallini, Adriane
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2006
PhD, Brigham Young University, 2011

Chadwick, Jeffrey R.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BA, Weber State College, 1978
MA, Brigham Young University, 1984
PhD, University of Utah, 1992

Chahal, Jasbir S.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** MA, Punjab University, India 1970
PhD, Johns Hopkins University, 1979

Channell, Ron W.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1977
MS, Brigham Young University, 1979
PhD, University of Utah, 1983

Chapman, Don William

**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1987
MA, Brigham Young University, 1990
PhD, University of Toronto, 1995

Chapman, Ronald K.

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1975
PhD, Brigham Young University, 1983

Charles, Steven K.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Massachusetts Institute of Technology, 2004
PhD, Harvard-MIT, 2008

Cherrington, David J.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1966
DBA, Indiana University, Bloomington, 1970
MBA, Indiana University, Bloomington, 1970

Chesnel, Karine

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Assistant Professor
**DEGREES:** MS, Ecole Normale Superieure, 1999
PhD, Joseph Fourier University, France, 2002

Child, Curtis

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2002
MPA, Indiana University at Bloomington, 2004
PhD, Indiana University at Bloomington, 2011

Choate, Mark Irvan

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Yale University, 1995
MA, Yale University, 1996
MPhil, Yale University, 1998
PhD, Yale University, 2002

Choi, Dong Sull

**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Korea University, 1965
MA, Brigham Young University, 1984
PhD, Brigham Young University, 1990

Chow, Shue-Sum

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, University of Canterbury, New Zealand, 1979
PhD, Australian National University, Australia, 1983

Christensen, Brian D.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor

**DEGREES:** BFA, Brigham Young University, 1990
MFA, Washington University, 1993

Christensen, Clark G.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1966
PhD, California Institute of Technology, 1972

Christensen, Glenn L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994
MBA, Brigham Young University, 1997
PhD, Pennsylvania State University, 2002

Christensen, Kip
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 1982
PhD, Colorado State University, 1991

Christensen, Matthew B.
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1988
MA, Ohio State University, Columbus, 1990
PhD, Ohio State University, Columbus, 1994

Christensen, Merrill J.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
PhD, Massachusetts Institute of Technology, 1982

Christensen, Ray
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1984
JD, Harvard University, 1987
MA, Harvard University, 1990
PhD, Harvard University, 1992

Christensen, Ryan G.
**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, Stanford University, 2006
PhD, Stanford University, 2008

Christensen, Theodore (Ted) E.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, San Jose State University, 1989
MS, Brigham Young University, 1991
PhD, University of Georgia, 1995

Christensen, William F.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1995
PhD, Iowa State University, 1999

Christenson, Allen J.

**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
DDS, University of California, Los Angeles, 1984
MA, University of Texas, Austin, 1996
PhD, University of Texas, Austin, 1998

Christiansen, Eric H.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
ScM, Brown University, 1981
PhD, Arizona State University, 1981

Christiansen, Nancy Lee
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1978
MA, Brigham Young University, 1983
PhD, University of California, Los Angeles, 1994

Christianson, Frank Quinn
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994
MA, Brigham Young University, 1996
PhD, Brown University, 2005

Christofferson, Jay P.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 1992
PhD, Colorado State University, 1996

Clark, Gregory
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1972
MA, Brigham Young University, 1977
PhD, Rensselaer Polytechnic Institute, 1985

Clark, John Edward
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1976
MA, Brigham Young University, 1979
PhD, University of Michigan, 1994

Clark, Shawn
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Research Associate Professor
**DEGREES:** BS, Brigham Young University, 1979
MS, Brigham Young University, 1982
**DEGREES:** PhD, Ohio State, 1987

Clay, Michael J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MCRP, Iowa State University, 2001
PhD, University of California, Davis, 2005

Clayton, April Diane
**COLLEGE:** Fine Arts and Communications

**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, University of Cincinnati, 1995
MM, University of Cincinnati, 1996
DMA, The Juilliard School, 2001

Clement, Christian Rolf
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Assistant Professor
**DEGREES:** BA, Hamburg College of Music and Dance, 1998
BA, University of Hamburg, 1999
MA, University of Hamburg, 2001
PhD, University of Utah, 2005

Clement, Mark Joel
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1985
MS, Brigham Young University, 1989
PhD, Oregon State University, 1994

Clifford, Ray T.
**COLLEGE:** Humanities
**DEPARTMENT:** Center for Language Studies
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1968
MA, Brigham Young University, 1970
PhD, University of Minnesota, 1977

Cole, Eugene Charles
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Professor
**DEGREES:** BA, Adelphi University, 1968
MSPH, University of North Carolina, 1979
DRPH, University of North Carolina, 1983

Coleman, Craig Eliot
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1985
MS, Brigham Young University, 1987
PhD, Pennsylvania State University, 1992

Colson, Robert
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Assistant Professor
**DEGREES:** BA, University of Utah, 2003
MA, University of California, Irvine, 2004
PhD, University of California, Irvine, 2010

Colton, John S
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, University of California, Berkeley, 1997
PhD, University of California, Berkeley, 2000

Colton, Mark Bryan
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, University of Utah, 1997
MS, University of Utah, 2001
PhD, University of Utah, 2006

Comer, David John
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering

**RANK:** Professor
**DEGREES:** BS, San Jose State University, 1961
MS, University of California, Berkeley, 1962
PhD, Washington State University, 1966

Condie, Scott
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
PhD, Cornell University, 2007

Conklin, Hoku
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BA, BYU-Hawaii, 2005
PhD, Brigham Young University, 2011

Conner, Gregory
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BA, Humboldt State University, 1987
MS, University of Utah, 1989
PhD, University of Utah, 1992

Coombs, Dawan Lynn
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2004
Masters of Education, University of Utah, 2008
PhD, University of Georgia, 2012

Cook, Alonzo D.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1989
MS, Brigham Young University, 1991
PhD, Massachusetts Institute of Technology, 1996

Cook, R Don
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Brigham Young University, 1980
MM, Brigham Young University, 1982
DMA, University of Kansas, 1987

Cooper, Glen M.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1988
MA, Columbia University, 1995
MPhil, Columbia University, 1997
PhD, Columbia University, 1999

Cooper, Scott
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, Duke University, 1996
PhD, Duke University, 1999

Cope, Rachel
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2001
MA, Brigham Young University, 2003

PhD, Syracuse University, 2009

Corbett, Cheryl
**COLLEGE:** Nursing, College of
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1989
MS, Brigham Young University, 1996

Corey, Douglas L.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1999
MA, Brigham Young University, 2001
MA, University of Michigan, 2004
PhD, University of Michigan, 2007

Cottrell, David M.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1984
BS, Brigham Young University, 1985
MHA, Brigham Young University, 1985
PhD, Ohio State University, 1992

Cowan, Richard O.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Occidental College, 1958
MA, Stanford University, 1959
PhD, Stanford University, 1961

Cox, Jon
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2001
PhD, Brigham Young University, 2008

Cox, Shirley E Nissen
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Social Work
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1962
MSW, Howard University, 1967
DSW, University of Utah, 1986

Cox, Troy L.
**COLLEGE:** Humanities
**DEPARTMENT:** Center for Language Studies
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1994
MA, Brigham Young University, 1996
PhD, Brigham Young University, 2013

Coyne, Sarah Marie
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BSc, Utah State University, 2001
PhD, University of Central Lancashire, 2004

Crandall, David P.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1986
MPhil, Oxford University, England, 1989
DPhil, Oxford University, England, 1993

Crandell, Jill N.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History

**RANK:** Assistant Teaching Professor
**DEGREES:** BA, Brigham Young University, 1981
MA, Brigham Young University, 2010

Crane, D Russell
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** AA, Chabot College, 1973
BA, California State University at Hayward, 1975
MS, Brigham Young University, 1978
PhD, Brigham Young University, 1979

Cressman, Dale L.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, Brigham Young University, 1989
PhD, University of Utah, 2003

Crisler, Jesse S.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Trinity University, 1969
PhD, University of South Carolina, Columbia, 1973

Crockett, Julie
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, University of Denver, 2002
MS, University of California, San Diego, 2004
PhD, University of California, San Diego, 2007

Crookston, Benjamin T.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MPH, Brigham Young University, 2006
PhD, University of Utah, 2009

Crookston, R. Kent
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1968
MS, University of Minnesota, St. Paul, 1970
PhD, University of Minnesota, St. Paul, 1972

Cropper, Corry L.
**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1993
MA, University of Illinois, Urbana, 1995
PhD, University of Illinois, Urbana, 1998

Crowe, Christopher E.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1976
MEd, Arizona State University, 1980
EdD, Arizona State University, 1986

Culatta, Barbara
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Professor
**DEGREES:** MA, University of Pittsburgh, 1970
PhD, University of Pittsburgh, 1975

Cutchins, Dennis Ray

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1992
PhD, Florida State University, 1997

Cutler, Edward Smith

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1992
PhD, University of California, San Diego, 1997

Cutri, Christopher

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1995
MFA, Art Center College of Design, 1997

Cutri, Ramona

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BA, University of California, Los Angeles, 1988
PhD, University of California, Los Angeles, 1997

Dabczynski, Andrew H.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Eastman School of Music, 1976
MA, University of Connecticut, 1978
PhD, University of Michigan, Ann Arbor, 1994

Dahl, David B.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1997
MS, Brigham Young University, 1998
PhD, University of Wisconsin-Madison, 2004

Dahlin, Eric

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2003
PhD, University of Minnesota, 2010

Dallon, John Carlile

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1989
MS, University of Utah, 1991
PhD, University of Utah, 1996

Damron, Julie Ann

**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1991
MAT, School of International Training, 1993
PhD, Purdue University, 2000

Daniels, Lee A.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management

**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1981
MA, Sophia University, 1991

Davidson, Lance
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
MS, Brigham Young University, 2002
PhD, Queens University, Canada, 2007

Davies, Mark Edward
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1986
MA, Brigham Young University, 1989
PhD, University of Texas, Austin, 1992

Davies, John J.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Assistant Professor
**DEGREES:** BA, University of Alberta, 1997
MA, Brigham Young University, 2002
PhD, University of Alabama, 2004

Davies, Randy
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Assistant Professor
**DEGREES:** BS, University of Alberta, 1984
BEd, University of Alberta, 1985
PhD, Brigham Young University, 2002

Davis, James A.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1978
MA, California State University, Fullerton, 1987
PhD, Arizona State University, 1993

Davis, Mary Feller
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2008
MS, Vanderbilt University, 2013
PhD, Vanderbilt University, 2013

Davis, Richard
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1975
MA, Brigham Young University, 1979
MA, Syracuse University, 1983
PhD, Syracuse University, 1986

Davis, Robert Clinton
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1989
PhD, University of Utah, 1996

Davis, Ryan W.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** BA, Arizona State University, 2005
MA, Princeton University, 2007

MA, Harvard University, 2012
PhD, Princeton University, 2011

Davis, Timothy M.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1996
MA, University of Colorado, Boulder, 1999
MPhil, Columbia University, 2002
PhD, Columbia University, 2008

Day, Randal D.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1973
MS, Brigham Young University, 1974
MS, University of Wisconsin, Madison, 1975
PhD, Brigham Young University, 1979

de la Cruz, Karen
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, California State University, 1987
MS, University of Phoenix, 2001

de Schweinitz, Rebecca L.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, University of Virginia, 1997
PhD, University of Virginia, 2004

DeRosia, Eric
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
PhD, University of Michigan Business School, 2003

DeTienne, Kristen B.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Professor
**DEGREES:** BA, California State University, Long Beach, 1987
MA, University of Southern California, 1990
PhD, University of Southern California, 1991

Dean, Deborah Marquiss
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1988
MEd, City University, Bellevue, WA, 1994
EdD, Seattle Pacific University, 1999

Dean, Douglas L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Associate Professor
**DEGREES:** BS, University of Utah, 1987
MA, Brigham Young University, 1989
PhD, University of Arizona, 1995

Dearden, David V.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1983
PhD, California Institute of Technology, 1989

Dewey, Dan
**COLLEGE:** Humanities

**DEPARTMENT:** Linguistics and English Language
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1993
MA, Brigham Young University, 1997
PhD, Carnegie Mellon University, 2002

Diede, Mike Todd
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Indiana State University, 1996
PhD, University of Arizona, 2005

Diether, Karl
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1998
PhD, University of Chicago, 2004

Dollahite, David C.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1983
MS, Brigham Young University, 1985
PhD, University of Minnesota, St Paul, 1988

Dorais, Michael John
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Research Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, University of Oregon, 1983
PhD, University of Georgia, 1987

Dorff, Michael John
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1986
MS, University of New Hampshire, 1992
PhD, University of Kentucky, Lexington, 1997

Dorius, Guy L.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Teaching Professor
**DEGREES:** BS, University of Utah, 1984
MEd, Brigham Young University, 1986
PhD, Brigham Young University, 1994

Dotson, Jeff
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Professor
**DEGREES:** BS, Southern Utah University, 2002
MBA, University of Utah, 2003
M.Stat, University of Utah, 2005
PhD, The Ohio State University, 2009

Doud, Darrin M.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1993
MS, University of Illinois, Urbana-Champaign, 1999
PhD, University of Illinois, Urbana-Champaign, 1999

Drake, Michael S.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy

**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MAcc, Brigham Young University, 2003
PhD, Texas A&M University, 2009

Draper, Bryon Kay
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University—Hawaii, 1990
MFA, Brigham Young University, 1995

Draper, David
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1982
MA, Brigham Young University, 1984
EdD, Northern Illinois University, 1988

Draper, Roni Jo
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Professor
**DEGREES:** BS, University of Nevada, Reno, 1991
MS, University of Nevada, Reno, 1995
PhD, University of Nevada, Reno, 2000

Draper, Thomas William
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
MS, Brigham Young University, 1973
PhD, Emory University, 1976

Dromey, Christopher
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, State University of New York, Buffalo, 1990
PhD, University of Colorado, Boulder, 1995

Duerden, Mathew David
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MS, Brigham Young University, 2006
PhD, Texas A&M University, 2009

Duerden, Richard Y.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1979
MA, Brigham Young University, 1981
PhD, University of Chicago, 1989

Dufur, Mikaela J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994
MA, Ohio State University, Columbus, 1996
PhD, Ohio State University, Columbus, 2000

Dulaney, Shannon
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Assistant Professor
**DEGREES:** BA, California State University, Fullerton, 1994
MEd, Southern Utah University, 2000

EdD, Utah State University, 2010

Duncan, Dean W.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1987
MA, University of Southern California, 1991
PhD, Glasgow University, 1999

Duncan, Stephen Farr

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1980
MS, Brigham Young University, 1985
PhD, Purdue University, 1988

Dunn, Michael L.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics and Food Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1987
MS, Brigham Young University, 1989
PhD, Cornell University, 1996

Dunn, Robert E.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MM, Brigham Young University, 1989
PhD, Northwestern University, 1994

Durfee, Dallin S.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
PhD, Massachusetts Institute of Technology, 1999

Durham, Thomas L.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, University of Utah, 1974
MM, University of Utah, 1975
PhD, University of Iowa, 1978

Durrant, Jeffrey Olani

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1995
MS, Brigham Young University, 1996
PhD, University of Hawaii, Manoa, 2001

Dursteler, Eric R.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1988
MA, Brigham Young University, 1992
MA, Brown University, 1994
PhD, Brown University, 2000

Dyches, Tina Taylor

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, Utah State University, 1990
EdD, Illinois State University, 1995

Dyer, Jeffrey H.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1982
MBA, Brigham Young University, 1984
PhD, University of California, Los Angeles, 1993

Dyer, Justin
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2004
PhD, University of Illinois—Champaign Urbana, 2009

Dyer, W. Gibb
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
MBA, Brigham Young University, 1979
PhD, Massachusetts Institute of Technology, 1984

Eastley, Aaron
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1997
MA, Brigham Young University, 1998
PhD, University of California, San Diego, 2003

Easton-Flake, Amy
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2001
MA, Brigham Young University, 2003
PhD, Brandeis University, 2011

Eddington, David S.
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1986
MA, Brigham Young University, 1989
PhD, University of Texas, Austin, 1993

Eden, Lacey M.
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 2002
MS, Brigham Young University, 2009

Edmunds, Debra
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** CNE, Salt Lake Community College, 1997
AS, Salt Lake Community College, 2001
BSN, Brigham Young University, 2003
MSN, University of Utah, 2007

Edwards, Jeff Glen
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
PhD, University of Utah, 2003

Egbert, Parris
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1986
MS, University of Illinois, Urbana, 1990

PhD, University of Illinois, Urbana, 1992

Eggett, Dennis Lee
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Research Associate Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, Brigham Young University, 1983
PhD, North Carolina State University, 1987

Eggington, William Gregory
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Professor
**DEGREES:** BA, Brigham Young University—Hawaii, 1975
MA, University of Southern California, 1981
PhD, University of Southern California, 1985

Eide, Eric Raymond
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1988
MS, Brigham Young University, 1989
PhD, University of California, Santa Barbara, 1993

Ekstrom, Joseph Jones
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, Brigham Young University, 1976
PhD, Brigham Young University, 1991

Elder, Ryan S.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 2004
PhD, University of Michigan, 2011

Eliason, Eric Alden
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, University of Texas, Austin, 1994
PhD, University of Texas, Austin, 1998

Elzinga, Dirk Allen
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1992
MA, University of Utah, 1993
PhD, University of Arizona, 1999

Embley, David W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1970
MS, University of Utah, 1972
PhD, University of Illinois, 1976

Emmett, Chad F.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Associate Professor
**DEGREES:** BA, Utah State University, 1979
MA, Brigham Young University, 1983
PhD, University of Chicago, 1991

Engler, David
**COLLEGE:** Physical and Mathematical Sciences

**DEPARTMENT:** Statistics
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1997
MS, Brigham Young University, 2002
AM, Harvard University, 2006
PhD, Harvard University, 2007

Erickson, David L.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Associate Professor
**DEGREES:** BS, University of Lethridge, 1999
PhD, University of Calgary, 2003

Erickson, Lance D.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2001
PhD, University of North Carolina, Chapel Hill, 2005

Erickson, Lynnette B.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1978
MA, Brigham Young University, 1987
PhD, Arizona State University, 1996

Erickson, Robert G.
**COLLEGE:** Humanities
**DEPARTMENT:** Center for Language Studies
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1971
MA, Middlebury College, 1975
PhD, Brigham Young University, 2000

Erickson, Robert Gammell
**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1971
MA, Middlebury College, 1975
PhD, Brigham Young University, 2000

Esplin, Emron Lee
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2000
MA, Brigham Young University, 2003
PhD, Michigan State University, 2008

Esplin, Marlene Hansen
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2001
MA, Brigham Young University, 2003
PhD, Michigan State University, 2012

Esplin, Scott Clair
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BS, Southern Utah University, 1997
MEd, Brigham Young University, 2001
PhD, Brigham Young University, 2006

Ess, Daniel H.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Professor

**DEGREES:** BS, Brigham Young University, 2000
**DEGREES:** PhD, University of California, Los Angeles, 2007

Evans, Norman W.
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1979
MA, Brigham Young University, 1981
EdD, University of Southern California, 2001

Evans, Richard Paul
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Assistant Professor
**DEGREES:** PhD, Medical College of Virginia, 1983
BS, Brigham Young University, 1995

Evans, Richard W.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, Brigham Young University, 2001
MS, The University of Texas, Austin, 2005
PhD, The University of Texas, Austin, 2008

Everett, Daniel
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Assistant Professor
**DEGREES:** BFA, Brigham Young University, 2006
MFA, School of the Art Institute of Chicago, 2009

Everett, Peter H.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1996
MFA, Pratt Institute, 2000

Facer, Rex L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1991
MPA, Brigham Young University, 1993
PhD, University of Georgia, 2002

Fails, Willis Clark
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1975
MA, Brigham Young University, 1977
PhD, University of Texas, Austin, 1984

Farahnakian, Mary
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Professor
**DEGREES:** BA, University of Tehran, Iran, 1971
PhD, Brigham Young University, 1977

Farnsworth, Brad W.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Instructor
**DEGREES:** BS, Brigham Young University, 1979
MAcc, Brigham Young University, 1979

Farnsworth, Clifton B.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology

**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2000
PhD, University of Utah, 2008

Farnsworth, Paul B.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
PhD, University of Wisconsin, Madison, 1981

Faulconer, James E.
**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1972
MA, Pennsylvania State University, 1975
PhD, Pennsylvania State University, 1977

Fearnley, Lawrence
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, University of London, 1953
PhD, University of Utah, 1959

Feinauer, Erika
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** MEd, Harvard Graduate School of Education, 1999
EdD, Harvard Graduate School of Education, 2006

Feland, Jeffrey Brent
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MSPT, Texas Woman's University, 1995
PhD, Brigham Young University, 1999

Felin, Teppo
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1997
MBA, Brigham Young University, 1999
PhD, University of Utah, 2005

Fellingham, Gilbert W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** BA, Occidental College, 1971
MS, Brigham Young University, 1977
MS, Brigham Young University, 1978
MS, University of Washington, 1988
PhD, University of Washington, 1990

Ferrin, Scott Ellis
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1980
JD, Brigham Young University, 1984
MEd, Harvard Graduate School of Education, 1989
EdD, Harvard Graduate School of Education, 1996

Finlayson, Cynthia S.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Associate Professor
**DEGREES:** BA, George Washington University, 1974

MA, George Washington University, 1984
PhD, University of Iowa, 1998

Fischer, Lane
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1979
MA, Brigham Yound University, 1982
PhD, University of Minnesota, 1991

Fisher, Todd
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1998
MS, Brigham Young University, 1999
PhD, Northwestern University, 2004

Fitzgibbon, Vanessa Clare
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Assistant Professor
**DEGREES:** MA, Brigham Young University, 1995
PhD, University of Wisconsin, Madison, 2006

Fletcher, Thomas Harvey
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1979
MS, Brigham Young University, 1980
PhD, Brigham Young University, 1983

Flom, Ross
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, University of Minnesota, Minneapolis, 1992
MEd, Idaho State University, 1993
PhD, University of Minnesota, Minneapolis, 1999

Flood, Christopher M.
**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2005
MA, Brigham Young University, 2007
CPhil, University of California, Los Angeles, 2011
PhD, University of California, Los Angeles, 2013

Fluhman, John Spencer
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, University of Wisconsin, Madison, 2000
PhD, University of Wisconsin, Madison, 2006

Fonseca, Fernando S.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1987
MS, Brigham Young University, 1988
PhD, University of Illinois, Urbana, 1997

Forcade, Rodney W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, University of Chicago, 1961
MS, University of Chicago, 1963
PhD, University of Washington, 1971

Forste, Renata
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1984
MS, Brigham Young University, 1986
PhD, University of Chicago, 1992

Forsyth, Donald W.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1971
MA, Brigham Young University, 1972
PhD, University of Pennsylvania, 1979

Foster, Jr., S. Thomas
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1984
MBA, University of Missouri, 1989
PhD, University of Missouri, Columbia, 1993

Frandsen, Brigham R.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2004
PhD, Massachusetts Institute of Technology, 2010

Franke, Kevin William
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Utah State University, 2004
MBA, University of Washington, 2005
PhD, Brigham Young University, 2011

Franklin, Joseph Clark
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2007
MA, Ohio University, 2009
PhD, Texas Tech, 2012

Freeborn, Donna Susan
**COLLEGE:** Nursing
**RANK:** Assistant Professor
**DEGREES:** AS, Brigham Young University, 1974
BS, Chapman University, 1983
MS, University of California, Los Angeles, 1994
PhD, Oregon Health and Science University, 2008

Freeman, Patti Ann
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1988
MS, Western Illinois University, 1990
PhD, Indiana University, Bloomington, 1993

Freeman, Robert C.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1985
JD, Western State University, 1989

Fry, Earl Howard
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor

**DEGREES:** BA, Brigham Young University, 1971
MA, Brigham Young University, 1972
PhD, University of California, Los Angeles, 1976

Fry, Richard Eldon
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1989
MFA, University of Illinois, Urbana-Champaign, 1994

Fujiki, Martin
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Professor
**DEGREES:** BS, University of Idaho, 1972
MS, University of Utah, 1974
PhD, University of Utah, 1980

Fullmer, Susan
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics and Food Science
**RANK:** Teaching Professor
**DEGREES:** BA, University of Utah, 1986
MS, University of Utah, 1989
PhD, Brigham Young University, 2004

Fullwood, David
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BSc, University of York, 1987
MS, University of Utah, 1989
PhD, University of London, 1992
MS, Brigham Young University, 2005

Furr, Nathan
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, Brigham Young University, 2000
MBA, Brigham Young University, 2004

Gabrielsen, Terisa
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, University of Utah, 2009
PhD, University of Utah, 2012

Galbraith, Richard C.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
MS, Northwestern University, 1973
PhD, Northwestern University, 1975

Gantt, Edwin Elray
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992
MA, Duquesne University, 1994
PhD, Duquesne University, 1998

Garcia, Ignacio Molina
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Texas A&I University, 1976
MA, University of Arizona, 1989

PhD, University of Arizona, 1995

Garcia, Mara Lucy
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1992
PhD, University of Kentucky, Lexington, 1997

Gardner, Dee
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1983
TESOL Graduate Certificate, Brigham Young University, 1993
MA, Brigham Young University, 1994
PhD, Northern Arizona University, 1999

Gardner, John
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
MBA, Brigham Young University, 2003
PhD, Ohio State University, 2012

Gardner, Marvin K.
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Teaching Professor
**DEGREES:** BA, Brigham Young University, 1976
MA, Brigham Young University, 1977

Gardner, Robert L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Accountancy, School of
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1969
MBA, University of Utah, 1975
BS, University of Utah, 1976
PhD, University of Texas, Austin, 1979

Gaskill, Alonzo L.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BA, Idaho State University, 1991
MA, University of Notre Dame, 1995
PhD, Trinity Theological Seminary, Liverpool, 2000

Gaskin, James E.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2008
MISM, Brigham Young University, 2008
PhD, Case Western Reserve University, 2012

Geary, Bradley Dale
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1995
MS, Washington State University, 1997
PhD, Washington State University, 1999

Gee, Kent L.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 2001
MS, Brigham Young University, 2002
PhD, Pennsylvania State University, 2005

Geo-JaJa, MacLeans A.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Professor
**DEGREES:** BSc, Morehead State University, 1976
MSc, Indiana State University, 1980
PhD, University of Utah, 1986

George, Andrew R.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** MS, Brigham Young University, 2006
PhD, University of Stuttgart, 2011

George, James David
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1984
MA, Brigham Young University, 1986
PhD, Arizona State University, 1995

Gessel, Van
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1972
MA, Columbia University, 1975
PhD, Columbia University, 1979

Gibb, Gordon
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Professor
**DEGREES:** BS, Eastern Montana College, 1976
MEd, Brigham Young University, 1988
PhD, University of Utah, 1994

Gibbons, Andrew S.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1969
PhD, Brigham Young University, 1974

Gibbs, Benjamin G.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MS, Brigham Young University, 2005
PhD, Ohio State University, 2009

Gibbs, Richard W. II
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, University of Minnesota-Twin Cities, 2000
PhD, University of Minnesota-Twin Cities, 2007

Gill, Richard
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
PhD, Colorado State University, 1998

Gillett, Eric A.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1991

MFA, University of Utah, 2003

Giovannetti, Geralyn

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, University of Western Ontario, 1978
MM, University of Western Ontario, 1980
DMA, University of Michigan, 1990

Giraud-Carrier, Christophe Gerard

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MS, Brigham Young University, 1993
PhD, Brigham Young University, 1994

Glasgow, Scott Alan

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1988
PhD, University of Arizona, 1993

Gleave, Robert L.

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1975
MEd, Brigham Young University, 1976
PhD, Brigham Young University, 1981

Glover, Steven M.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Accountancy, School of
**RANK:** Professor
**DEGREES:** AA, Brigham Young University—Idaho, 1983
BA, University of Washington, 1987
PhD, University of Washington, 1994

Goates, Steven R.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1976
MS, University of Michigan, Ann Arbor, 1977
PhD, University of Michigan, Ann Arbor, 1981

Godfrey, Paul C.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1983
MBA, University of Washington, 1989
PhD, University of Washington, 1994

Golightly, Thomas

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Associate Clinical Professor
**DEGREES:** BA, University of Arizona, 2000
MS, Brigham Young University, 2002
PhD, Brigham Young University, 2007

Goodliffe, Jay

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** SB, Massachuesetts Institute of Technology, 1992
MA, University of Rochester, 1996
PhD, University of Rochester, 1998

Goodman, Michael A.

**COLLEGE:** Religious Education

**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BA, University of Oregon, 1989
MS, Western Oregon State College, 1995
PhD, Brigham Young University, 2004

Goodrich, Michael A.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1995
PhD, Brigham Young University, 1996

Gorrell, Steven E.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1988
MS, Virginia Tech, 1990
PhD, Iowa State University, 2001

Graham, Charles R.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, University of Illinois, 1997
PhD, Indiana University, 2002

Graham, Daniel W.
**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Professor
**DEGREES:** BA, Davidson College, 1970
MA, Brigham Young University, 1975
PhD, University of Texas, Austin, 1980

Graham, Mark Allen
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** BFA, University of Utah, 1978
MBA, New York University, 1986
PhD, Columbia University, 2001

Grandy, David A.
**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1973
MA, Indiana University, Bloomington, 1990
PhD, Indiana University, Bloomington, 1994

Grant, Christopher P
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, Brigham Young University, 1988
PhD, University of Utah, 1991

Graves, Steven William
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1969
PhM, Yale University, 1972
PhD, Yale University, 1978

Greathead, Simon
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Teaching Professor

**DEGREES:** BS, Brigham Young University, 2003
MBA, University of Reading Henley Business School, 2009

Grey, Matthew J.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2003
MA, Andrews University, 2005
MSt, University of Oxford, 2006
PhD, University of North Carolina at Chapel Hill, 2011

Grierson, Sirpa T.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BEd, University of British Columbia, 1974
MLIS, Brigham Young University, 1992
PhD, University of Southern Mississippi, 1996

Griffin, Tyler J.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Assistant Teaching Professor
**DEGREES:** BA, Utah State University, 1998
MS, Utah State University, 2001
PhD, Utah State University, 2007

Griffitts, Joel Shelby
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Associate Professor
**DEGREES:** BS, Stanford University, 1999
PhD, University of California, San Diego, 2004

Grimshaw, Jeremy
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, University of Utah, 1998
MA, Eastman School of Music, 2002
PhD, Eastman School of Music, 2005

Grimshaw, Scott D.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** BS, Southern Utah State College, 1983
MS, Texas A&M University, 1985
PhD, Texas A&M University, 1989

Griner, Derek
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2002
PhD, Brigham Young University, 2008

Grose, Julianne H.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 1994
PhD, University of Utah, 2003

Gubler, Joshua R.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, University of Utah, 2005
PhD, University of Michigan, 2011

Guthrie, William Spencer
**COLLEGE:** Ira A. Fulton College of Engineering and Technology

**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1998
MS, Texas A&M University, 1999
PhD, Texas A&M University, 2002

Hadfield, Leslie
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Utah State University, 2002
MA, Ohio University, 2005
PhD, Michigan State University, 2010

Hager, Ronald Lee
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MS, Brigham Young University, 1994
PhD, Arizona State University, 1997

Hague, Daryl Robert
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
JD, University of Washington, 1990
MA, Brigham Young University, 1996
PhD, State University of New York, Binghamton, 2002

Hall, Cougar P.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1998
MS, University of Utah, 2003
PhD, University of Utah, 2009

Hall-Kenyon, Kendra Maria
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1996
MA, Columbia University, 2002
PhD, Columbia University, 2002

Hall, Rosalind Beth
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Royal Academy of Music, 1977
MM, Brigham Young University, 1992

Hall, William Max
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2001
MA, Brigham Young University, 2003
PhD, University of California Santa Barbara, 2010

Hallam, Pamela
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1979
MS, Brigham Young University, 1990
EdD, University of Utah, 2006

Hallen, Cynthia Leah
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language

**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1980
TESOL Graduate Certificate, Brigham Young University, 1981
MA, Brigham Young University, 1982
PhD, University of Arizona, 1991

Halverson, Denise M.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1989
MS, Brigham Young University, 1994
PhD, University of Tennessee, Knoxville, 1999

Hamblin, William James
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1978
MA, University of Michigan, Ann Arbor, 1984
PhD, University of Michigan, Ann Arbor, 1985

Hancock, Chad
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1998
PhD, University of Missouri, Columbia, 2005

Hancock, Ralph C.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MA, Harvard University, 1980
PhD, Harvard University, 1983

Handley, George Browning
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Professor
**DEGREES:** BA, Stanford University, 1989
MA, University of California, Berkeley, 1991
PhD, University of California, Berkeley, 1995

Hansen, Blake
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Assistant Professor
**DEGREES:** BA, University of Utah, 2004
MS, University of Utah, 2007
PhD, University of Kansas, 2010

Hansen, Derek L.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
PhD, University of Michigan, 2007

Hansen, H Eric
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BA, Peabody Conservatory of Music, 1988
MA, Peabody Conservatory of Music, 1989

Hansen, Jaron C.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1997
PhD, Purdue University, 2002

Hansen, Kristina

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2001
PhD, Brigham Young University, 2012

Hansen, Kristine
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1973
MA, Brigham Young University, 1981
PhD, University of Texas, Austin, 1987

Hansen, Marc DH
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1997
PhD, Stanford, 2002

Hansen, Mark H.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1990
MBA, Brigham Young University, 1990
PhD, Texas A&M University, 1996

Hansen, Neil C.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1994
PhD, University of Minnesota, 1998

Hanson, Carl Lee
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Brigham Young University, 1991
PhD, Southern Illinois University, Carbondale, 1994

Hariguchi, Jennifer
**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, University of Virginia, 1997
PhD, University of Chicago, 2010

Harb, John N.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1983
MS, University of Illinois, Chicago, 1985
PhD, University of Illinois, Urbana, 1988

Hardin, Perry J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1982
MA, Brigham Young University, 1984
PhD, University of Utah, 1989

Hardy, Jeffrey
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2001

MA, Brigham Young University, 2006
PhD, Princeton University, 2011

Hardy, Sam A.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
MA, University of Nebraska, Lincoln, 2002
PhD, University of Nebraska, Lincoln, 2005

Harker, Alan Reed
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1976
PhD, University of Utah, 1982

Harker, Brian Cameron
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1994
MPhil, Columbia University, 1995
PhD, Columbia University, 1997

Harline, Craig E.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1980
MA, Rutgers University, 1984
PhD, Rutgers Unviersity, 1986

Harper, James M.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, Brigham Young University, 1976
PhD, University of Minnesota, Minneapolis, 1979

Harreld, Donald James
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, University of Minnesota, Minneapolis, 1983
MA, University of Minnesota, Minneapolis, 1996
PhD, University of Minnesota, Minneapolis, 2000

Harrell, Charles
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1976
MS, University of Utah, 1982
PhD, University of Denmark, 1988

Harris, Amy
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, American University, 2000
PhD, University of California, Berkeley, 2006

Harris, Bradley Dean
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Teaching Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 2007

Harris, Richard Wood

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Professor
**DEGREES:** BS, North Dakota State University, 1973
MS, University of Wisconsin, 1974
PhD, Purdue University, West Lafayette, 1978

Harris, Ron
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, University of Oregon, 1982
MS, University of Alaska, Fairbanks, 1985
PhD, University of London, 1989

Harrison, Roger G.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1986
PhD, University of Utah, 1993

Hart, Craig H.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 1982
PhD, Purdue University, 1987

Hart, David Kay
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1973
MA, University of Washington, 1975
PhD, University of Washington, 1979

Hart, David W.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1989
MPA, Brigham Young University, 1991
PhD, State University of New York, Albany, 1997

Hart, Grant W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1977
PhD, University of Maryland, College Park, 1983

Hart, Gus L. W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, University of California, Davis, 1997
PhD, University of California, Davis, 1999

Haslam, Gerald Myron
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1972
MA, University of Utah, 1974
PhD, Brigham Young University, 1981

Hatch, Nile W.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1988

MS, Brigham Young University, 1989
PhD, University of California, Berkeley, 1995

Hauglid, Brian Michael
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1984
MA, University of Utah, 1991
PhD, University of Utah, 1998

Hawkins, Aaron R.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, California Institute of Technology, 1994
MS, University of California, Santa Barbara, 1996
PhD, University of California, Santa Barbara, 1998

Hawkins, Alan J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1979
MOB, Brigham Young University, 1984
PhD, Pennsylvania State University, 1990

Hawkins, Darren Greg
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA/BS, University of Utah, 1990
MA, University of Wisconsin, Madison, 1991
PhD, University of Wisconsin, Madison, 1996

Hawkins, John P.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1970
AM, University of Chicago, 1972
PhD, University of Chicago, 1978

Hawkins, Kirk A.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1993
MA, Brigham Young University, 1995
MA, Duke University, 1998
PhD, Duke University, 2003

Hawks, Val D.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** AS, Snow College, 1978
BS, Brigham Young University, 1980
MS, Lehigh University, 1986
PhD, Gonzaga University, 2005

Haws, J.B.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Assistant Professor
**DEGREES:** BS, Weber State University, 1997
MA, Brigham Young University, 2003
PhD, University of Utah, 2010

Heaston, Sondra
**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor
**DEGREES:** AD, Weber State University, 1987
BS, Weber State University, 1989

MS, Brigham Young University, 2005

Heath, Melissa Ann
- **COLLEGE:** David O. McKay School of Education
- **DEPARTMENT:** Counseling Psychology and Special Education
- **RANK:** Associate Professor
- **DEGREES:** BS, Brigham Young University, 1975
  PhD, Texas A&M University, 1996

Heaton, Hal B.
- **COLLEGE:** Marriott School of Management
- **DEPARTMENT:** Finance
- **RANK:** Professor
- **DEGREES:** BS, Brigham Young University, 1975
  MBA, Brigham Young University, 1977
  MA, Stanford University, 1981
  PhD, Stanford University, 1983

Heaton, Matthew Joseph
- **COLLEGE:** Physical and Mathematical Sciences
- **DEPARTMENT:** Statistics
- **RANK:** Assistant Professor
- **DEGREES:** BS, Brigham Young University, 2006
  MS, Brigham Young University, 2007
  PhD, Duke University, 2011

Heaton, Tim Braley
- **COLLEGE:** Family, Home, and Social Sciences
- **DEPARTMENT:** Sociology
- **RANK:** Professor
- **DEGREES:** BS, Brigham Young University, 1974
  MS, Brigham Young University, 1975
  PhD, University of Wisconsin, Madison, 1979

Hecker, William C.
- **COLLEGE:** Ira A. Fulton College of Engineering and Technology
- **DEPARTMENT:** Chemical Engineering
- **RANK:** Associate Professor
- **DEGREES:** BS, Brigham Young University, 1974
  MS, Brigham Young University, 1975
  PhD, University of California, Berkeley, 1982

Hedengren, Paul
- **COLLEGE:** Humanities
- **DEPARTMENT:** Philosophy
- **RANK:** Emeritus
- **DEGREES:** BA, Brown University, 1971
  MA, Brown University, 1974
  PhD, University of Toronto, 1983

Hedges, Andrew H.
- **COLLEGE:** Religious Education
- **DEPARTMENT:** Church History and Doctrine
- **RANK:** Associate Professor
- **DEGREES:** BA, Weber State University, 1986
  MA, Brigham Young University, 1991
  PhD, University of Illinois, Urbana-Champaign, 1996

Hedges, Dawson W.
- **COLLEGE:** Family, Home, and Social Sciences
- **DEPARTMENT:** Psychology
- **RANK:** Professor
- **DEGREES:** BS, Weber State College, 1984
  MD, University of Utah, 1988

Hegstrom, Valerie
- **COLLEGE:** Humanities
- **DEPARTMENT:** Spanish and Portuguese
- **RANK:** Associate Professor
- **DEGREES:** BA, Brigham Young University, 1982
  MA, Brigham Young University, 1986
  MA, University of Kansas, 1988
  PhD, University of Kansas, 1992

Heiner, Barta Lee

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1971
MFA, American Conservatory Theatre, 1977

Heiner, Steven W.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Emeritus
**DEGREES:** BS, University of Utah, 1955
MS, University of Utah, 1962
EdD, University of Utah, 1969

Heise, Barbara A.
**COLLEGE:** Nursing
**RANK:** Associate Professor
**DEGREES:** AS, Missouri Southern State College, 1983
BS, Missouri Southern State College, 1986
MS, State University of New York, 1989
PhD, University of Virginia, 2007

Helps, C Richard
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BS, Witwatersrand, South Africa, 1978
MS, Witwatersrand, South Africa, 1986

Hendengren, John D.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
MS, Brigham Young University, 2002
PhD, University of Texas at Austin, 2005

Hendrickson, Scott
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1979
MA, Brigham Young University, 1984

Hendron, Michael Greg
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1996
MBA, University of Virginia, 2000

Heninger, William G.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1989
MAcc, Brigham Young University, 1989
PhD, University of Georgia, 1997

Henrichsen, Lynn E.
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1973
TESL Graduate Certificate, Brigham Young University, 1974
MA, Brigham Young University, 1975
EdD, University of Hawaii, Manoa, 1987

Hess, Bret C.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young Iniversity, 1982
PhD, Iowa State University, 1988

Hickman, Trenton L

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994
MA, Brigham Young University, 1996
PhD, State University of New York, Stony Brook, 2000

Hicks, Michael D.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Brigham Young University, 1980
MM, University of Illinois, Urbana-Champaign, 1981
DMA, University of Illinois, Urbana-Champaign, 1984

Higley, James Dee

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, University of Wisconsin, Madison, 1983
PhD, University of Wisconsin, Madison, 1985

Hill, Brian Jack

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
PhD, Clemson University, 1994

Hill, Edward Jeffrey

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MOB, Brigham Young University, 1984
PhD, Utah State University, 1995

Hill, Ned C.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1969
MS, Cornell University, 1971
PhD, Cornell University, 1976

Hilton, III, John L.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2000
MEd, Harvard University, 2004
PhD, Brigham Young University, 2010

Hilton, Sterling Clint

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
MS, Brigham Young University, 1990
MA, Brigham Young University, 1990
PhD, John Hopkins University, 1996

Himes, Deborah

**COLLEGE:** Nursing
**RANK:** Instructor
**DEGREES:** BS, Brigham Young University, 1991
MS, University of Utah, 1996

Hinckley, Jaren Smith

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor

**DEGREES:** BM, University of Utah, 1993
MM, Indiana University, 1995
DM, Florida State University, 2002

Hintz, Eric G.B.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Case Western Reserve University, 1988
BS, Case Western Reserve University, 1988
PhD, Brigham Young University, 1995

Hirschmann, Eric W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
PhD, University of California, Santa Barbara, 1996

Hite, Julie Melville
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MOB, Brigham Young University, 1995
PhD, University of Utah, 1999

Hite, Steven Jeffrey
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 1982
EdD, Harvard University, 1985

Hobson, L. Scott
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1983
MAcc, Brigham Young University, 1983

Hodson, Christopher G.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Utah State University, 1998
MA, Utah State University, 1999
PhD, Northwestern University, 2004

Hoffmann, John P.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BS, James Madison University, 1984
MS, American University, 1985
PhD, State University of New York, Albany, 1991
MPH, Emory University, 1994

Hogan, Cynthia
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Assistant Professor
**DEGREES:** AA, Reedley Community College, 1985
BA, California Institute of the Arts, 1988
MFA, Hollins University, 2011

Holden, Scott L.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, University of Michigan, 1992
MM, The Juilliard School, 1995
DMA, Manhattan School of Music, 2002

Holladay, Seth R.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Instructor
**DEGREES:** BS, Brigham Young University, 2004
MS, Brigham Young University, 2007

Hollingshaus, Wade James
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, University of Washington, 2001
PhD, University of Minnesota, 2008

Holman, Curt W.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Associate Professor
**DEGREES:** MA, Brigham Young University, 1996

Holman, Thomas B.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BA, Utah State University, 1970
MEd, Brigham Young University, 1976
PhD, Brigham Young University, 1981

Holmes, Andrew L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Associate Professor
**DEGREES:** BA, Texas A&M University, 1986
MS, Texas A&M University, 1988
PhD, University of Houston, 1992

Holmes, Erin Kramer
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1998
MS, University of Delaware, 2001
PhD, University of Texas, Austin, 2006

Holt-Lunstad, Julianne
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1998
PhD, University of Utah, 2001

Holzapfel, Richard Neitzel
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1978
MA, University of California, Irvine, 1990
PhD, University of California, Irvine, 1993

Homer, Eric
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2006
MS, Brigham Young University, 2006
PhD, Massachusetts Institute of Technology, 2010

Honey, David Brian
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, University of California, Berkeley, 1980

MA, University of California, Berkeley, 1984
PhD, University of California, Berkeley, 1988

Hong, Joseph, CPT
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Military Science
**RANK:** Assistant Professor
**DEGREES:** BA, Stony Brook University, 2003

Hopkin, Shon D.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1997
MA, Brigham Young University, 2001
PhD, University of Texas, Austin, 2011

Hopkins, Bryan Gene
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** AAS, Ricks College, 1988
BS, Brigham Young University, 1990
MS, Brigham Young University, 1991
PhD, Kansas State University, 1995

Hopkins, Jon Tyson
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Indiana State University, 1997
PhD, Indiana State University, 2000

Hopkins, Ramona O.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** AS, Brigham Young University, 1975
BS, Westminster College, 1988
MS, University of Utah, 1992
PhD, University of Utah, 1996

Horrocks, Jamie
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2000
MA, Brigham Young University, 2002
PhD, Indiana University, 2010

Hosford, Scott D.
**COLLEGE:** Student Life
**DEPARTMENT:** Academic Support Office
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2000
MS, Brigham Young University, 2002
PhD, The University of Texas at Austin, 2007

Hoskisson, Joaquina V.
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1971
MA, Brigham Young University, 1974

Hoskisson, Paul Y.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1969
MA, Brigham Young University, 1972
PhD, Brandeis University, 1985

Hotchkiss, Rollin H.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1976
MS, Utah State University, 1979
PhD, University of Minnesota, 1989

Howard, Luke Benjamin
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BMusEd, Sydney Conservatorium of Music, 1990
MA, Brigham Young University, 1994
PhD, University of Michigan, 1997

Howe, Susan
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1971
MA, University of Utah, 1978
PhD, University of Denver, 1989

Howell, Bryan Franklin
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1987
MFA, University of Texas, Austin, 2003

Howell, Larry L.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1987
MS, Purdue University, 1991
PhD, Purdue University, 1993

Huang, Jiamin
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Associate Professor
**DEGREES:** BFA, Beijing Dance Academy, China, 1984
MA, Brigham Young University, 1998

Hudson, Robert James
**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2004
MA, Brigham Young University, 2005
PhD, University of California, Los Angeles, 2008

Hughes, John R.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Professor
**DEGREES:** Nieman Fellow, Harvard University
Honorary Doctor of Laws, Colby College, Maine
Honorary Doctor of Humanities, Southern Utah University
Honorary Doctor of Humane Letters, Salt Lake Community College

Hughes, Dean
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Senior Lecturer
**DEGREES:** BA, Weber State College, 1967
MA, University of Washington, 1968
PhD, University of Washington, 1972

Hull, Kerry M.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor

**DEGREES:** BA, Utah State University
MS, Georgetown University
PhD, The University of Texas at Austin

Humpherys, Jeffrey C.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1995
MA, Indiana University, 1997
PhD, Indiana University, 2002

Humphries, Stephen P.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BSc, University of Wales, 1974
MSc, University of Wales, 1978
PhD, University of Wales, 1983

Hunsaker, Stacie
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** AS, Ricks College, 1992
BS, University of Phoenix, 1998
MS, Utah Valley University, 2013

Hunter, Iain
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1996
MEd, Brigham Young University, 1997
PhD, Oregon State University, 2001

Huntington, Ray Lynn
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1972
MA, Brigham Young University, 1977
PhD, Brigham Young University, 1994

Huntsman, Eric D.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, University of Pennsylvania, 1992
PhD, University of Pennsylvania, 1997

Hutchings, Brad L.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1984
MS, University of Utah, 1987
PhD, University of Utah, 1992

Hutchings, D Mark
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1977
MRECM, University of Denver, 1992
PhD, Texas A&M University, 2002

Hyer, Eric A.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1979
MA, Columbia University, 1981
M.Phil, Columbia University, 1983

PhD, Columbia University, 1990

Hyldahl, Robert

**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 2003
MS, University of Massachusetts, Amherst, 2008
PhD, University of Massachusetts, Amherst, 2011

Israelsen, Craig L.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1983
MS, Utah State University, 1984
PhD, Brigham Young University, 1990

Iverson, Brian D.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2002
MS, Purdue University, 2004
PhD, Purdue University, 2008

Jackson, Aaron Paul

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1985
MA, Brigham Young University, 1989
PhD, University of Missouri, Columbia, 1993

Jackson, Brian David

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 2001
MA, Brigham Young University, 2003
PhD, University of Arizona, 2007

Jackson, Kent P.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1974
MA, University of Michigan, 1976
PhD, University of Michigan, 1980

Jacobson, Cardell K.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1966
MA, University of North Carolina, Chapel Hill, 1969
PhD, University of North Carolina, Chapel Hill, 1971

Jacoby, Wade

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1987
PhD, Massachusetts Institute of Technology, 1995

James, Michelle Stott

**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BA, Weber State College, 1978
MA, University of Utah, 1981
PhD, University of Utah, 1987

James, Spencer

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2006
MS, Brigham Young University, 2008
PhD, Pennsylvania State University, 2012

Janetski, Joel C.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Emeritus
**DEGREES:** BA, Brigham Young University, 1965
MA, University of Utah, 1977
PhD, University of Utah, 1983

Jarvis, Sabrina

**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** ADN, Cochise College, 1976
BS, Grandview College, 1985
MS, Brigham Young University, 1990
DNP, University of Utah, 2010

Jarvis, Tyler J.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1989
MS, Brigham Young University, 1990
MA, Princeton University, 1992
PhD, Princeton University, 1994

Jefferies, Laura

**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1998
PhD, Utah State University, 2011

Jeffs, Brian Dean

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
MS, Brigham Young University, 1982
PhD, University of Southern California, 1989

Jellen, Eric Nathan

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, University of Minnesota, 1988
PhD, University of Minnesota, 1992

Jenkins, Jeffrey L.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2009
MISM, Brigham Young University, 2009
PhD, University of Arizona, 2013

Jenkins, Paul M.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
MS, Brigham Young University, 2002
PhD, University of Wisconsin, Madison, 2006

Jensen, Alexander C.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2009
MS, Purdue University, 2011
PhD, Purdue University, 2013

Jensen, Amy Petersen
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1998
PhD, University of Illinois, Urbana Champaign, 2004

Jensen, Brian
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Brigham Young University, 1998
PhD, University of Michigan, 2004
MS, University of Michigan, 2004

Jensen, Bryant T.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BA, Arizona State University, 2003
MA, Arizona State University, 2006
PhD, Arizona State University, 2009

Jensen, Charles Gregory
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 1982
PhD, Purdue University, 1993

Jensen, Dallas
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Associate Clinical Professor
**DEGREES:** BA, Brigham Young University, 2000
MA, The Ohio State University, 2002
PhD, Brigham Young University, 2006

Jensen, David A.
**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1996
MA, University of California, Los Angeles, 1998
PhD, University of California, Los Angeles, 2005

Jensen, David W.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Massachusetts Institute of Technology, 1981
PhD, Massachusetts Institute of Technology, 1986

Jensen, Heather Belnap
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994
MA, Brigham Young University, 1997
PhD, University of Kansas, 2007

Jensen, Jamie L.
**COLLEGE:** Life Sciences

**DEPARTMENT:** Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2003
PhD, Arizona State University, 2008

Jensen, Michael Allen
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Brigham Young University, 1991
PhD, University of California, Los Angeles, 1994

Jensen, Robert J.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1997
MOB, Brigham Young University, 2000
PhD, Wharton School, University of Pennsylvania, 2006

Jensen, Ryan R.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Professor
**DEGREES:** AS, Ricks College, 1992
BS, Brigham Young University, 1996
MS, Brigham Young University, 1997
PhD, University of Florida, 2000

Jeppesen, Seth
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Assistant Professor
**DEGREES:** BA, Utah State University, 2006
MA, UC Santa Barbara, 2009
PhD, UC Santa Barbara, 2013

Johns, Andrew L.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, University of California, Santa Barbara, 1995
PhD, University of California, Santa Barbara, 2000

Johnson, Aaron Wayne
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1995
MSPT, University of Alabama, Birmingham, 1997
PhD, Brigham Young University, 2007

Johnson, David J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1972
MA, University of Utah, 1981
PhD, University of Utah, 1986

Johnson, F Brent
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1966
MS, Brigham Young University, 1967
PhD, Brigham Young University, 1970

Johnson, Jerald B.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology

**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1995
PhD, University of Vermont, 2000

Johnson, Kate R.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Assistant Professor
**DEGREES:** BA, Miami University, Ohio, 2002
MEd, University of Pittsburgh, 2004
PhD, Michigan State University, 2013

Johnson, Kimberly
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1992
MA, Johns Hopkins University, 1995
MFA, University of Iowa, 1997
PhD, University of California, Berkeley, 2003

Johnson, Lee N.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Utah State University, 1996
PhD, Kansas State University, 1998

Johnson, Leigh A.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1991
PhD, Washington State University, 1996

Johnson, Mark J.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1979
MA, University of Illinois, Urbana, 1983
MFA, Princeton University, 1984
PhD, Princeton University, 1986

Johnson, Robert L.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Research Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MS, Brigham Young University, 1993
**DEGREES:** PhD, Brigham Young University, 2008

Johnson, Stanley A.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Teaching Professor
**DEGREES:** BS, Brigham Young University, 1975
MS, Brigham Young University, 1979
EdD, Brigham Young University, 1987

Johnson, Steven M.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1994
PhD, Yale University, 2004

Johnson, Steven P.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BA, California State University, Fullerton, 1976
MA, California State University, Fullerton, 1979

PhD, California State University, Los Angeles, 1989

Johnston, James D.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Associate Professor
**DEGREES:** BS, Weber State University, 1998
MSPH, University of Utah, 2000
PhD, University of Utah, 2010

Johnston, N Paul

**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics and Food Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1966
MS, Oregon State University, 1967
MBA, University of Utah, 1969
PhD, Oregon State University, 1971

Jolley, Greg V.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 1995
MLA, Kansas State University, 1999

Jolley, Von Dale

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1970
MS, Iowa State University, 1974
PhD, Iowa State University, 1976

Joner, Michael Deloss

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Research Professor
**DEGREES:** AA, Clark College, 1975
BS, Brigham Young University, 1979
MS, Brigham Young University, 1981

Jones, Matthew R.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1988
MS, University of Illinois, Urbana, 1990
PhD, University of Illinois, Urbana, 1993

Jones, Megan Sanborn

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1995
MA, Brigham Young University, 1997
PhD, University of Minnesota, Twin Cities, 2004

Jones, Michael D.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1995
MS, Brigham Young University, 1997
PhD, University of Utah, 2001

Jones, Norman L.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, University of Texas, Austin, 1988
PhD, University of Texas, Austin, 1990

Jones, Stephen Morrill

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BMu, Brigham Young University, 1983
MMu, University of Cincinnati, 1986
DMA, University of Cincinnati, 1989

Jones, Steven R.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2003
MS, Brigham Young University, 2005
PhD, University of Maryland, 2010

Jorgensen, Bruce W.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1966
MA, Cornell University, 1969
PhD, Cornell University, 1978

Judd, Allan M.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1973
MS, Brigham Young University, 1978
PhD, West Virginia University, 1982

Judd, Daniel K.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BS, Southern Utah State University, 1980
MS, Brigham Young University, 1985
PhD, Brigham Young University, 1987

Judd, Frank F.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1993
MA, Brigham Young University, 1995
MA, University of North Carolina, Chapel Hill, 1997
PhD, University of North Carolina, Chapel Hill, 2003

Jungheim, David M., Mr.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Military Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2001
**DEGREES:** MBA, Brigham Young University, 2013

Kaiser, David Allen
**COLLEGE:** Student Life
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1984
MS, University of Florida, 1986
EdD, University of Florida, 1994

Karpowitz, Christopher
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994
MA, Brigham Young University, 1996
Certificate of Graduate Studies, Duke University, 1998
MA, Princeton University, 2000
PhD, Princeton University, 2006

Katseanes, Kory Lynn

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** AA, Ricks College, 1974
BA, University of Utah, 1976
MA, University of Utah, 1979

Kauwe, John
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2001
PhD, Washington University, St. Louis, 2007

Kearl, J R
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BA, Utah State University, 1971
PhD, Massachusetts Institute of Technology, 1975
PD, Harvard University, 1978

Keith, Jeffrey Davis
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
MS, University of Wisconsin, Madison, 1980
PhD, University of Wisconsin, Madison, 1982

Keith, Mark J.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MISM, Brigham Young University, 2004
PhD, Arizona State University, 2009

Kellems, Ryan
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2004
MEd, Washburn University, 2007
PhD, University of Kansas, 2010

Kelling, Hans-Wilhelm
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Professor
**DEGREES:** Abitur, Gymnasium in Bremen, 1952
BA, Brigham Young University, 1958
MA, Stanford University, 1960
PhD, Stanford University, 1967

Kelly, Lincoln Kevin
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Teaching Professor
**DEGREES:** BFA, Art Center Collage of Design, Pasadena, 1977

Kelly, Michael Ray
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1978
MA, Ohio State University, 1990
PhD, Ohio State University, 1996

Kerry, Paul
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor

**DEGREES:** BA, Brigham Young University, 1989
MA, Bowling Green State University, 1991
MA, University of Chicago, 1995
DPhil, University of Oxford, 1998

Kimball, Richard Ian
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1993
MA, Purdue University, West Lafayette, 1995
PhD, Purdue University, West Lafayette, 1999

Kimball, Wilford (Will) Wayne
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Brigham Young University, 1994
MM, Duquesne University, 1997
DMA, Arizona State University, 2001

Kirwan, C. Brock
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 2001
MA, Johns Hopkins University, 2004
PhD, Johns Hopkins University, 2006

Klein, Ilona
**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Associate Professor
**DEGREES:** Dottore in Lingue e Letterature Straniere Moderne, Universita La Sapienza, Rome, Italy, 1981
MA, University of Wisconsin, Madison, 1982
PhD, University of Wisconsin, Madison, 1986

Knapp, Nieves Perez
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Teaching Professor
**DEGREES:** BA, University of Oviedo, Spain, 1986
BA, University of Oviedo, Spain, 1990
MA, Brigham Young University, 1995
PhD, University of Oviedo, Spain, 2003

Knapp, Stan J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
MS, Brigham Young University, 1989
PhD, Florida State University, 1996

Knestel, Andrea
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BA, Utah State University, 1999
MA, Syracuse University, 2008
MS, Syracuse University, 2008
PhD, Syracuse University, 2010

Knotts, Thomas Allen
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 2001
PhD, University of Wisconsin, Madison, 2006

Knutson, Charles Douglas
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor

**DEGREES:** BS, Brigham Young University, 1988
MS, Brigham Young University, 1994
PhD, Oregon State University, 1998

Kohl, James
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** BSN, University of San Diego, 1989
MS, University of Maryland, Baltimore, 1996

Koide, Roger T.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BA, Pamona College, 1980
PhD, University of California, Berkeley, 1984

Kooyman, David Lee
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** AA, Ottumwa Heights College, 1974
BS, California State Polytechnic University, Pomona, 1982
MS, California State Polytechnic University, Pomona, 1986
PhD, Ohio University, Athens, 1993

Korth, Byran B.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Brigham Young University, 1995
PhD, Auburn University, 2000

Kowallis, Bart J.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
MS, University of Wisconsin, Madison, 1979
PhD, University of Wisconsin, Madison, 1981

Kraczek, Michael S.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1999
MFA, Yale University, 2010

Kramer, Nathaniel Todd
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** PhD, University of California, Los Angeles, 2005

Krause, James Remington
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2003
MA, Brigham Young University, 2005
PhD, Vanderbilt University, 2010

Kryscynski, David
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BSE, University of Michigan, 2003
PhD, Emory University, 2011

Kunz, Justin
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Assistant Professor
**DEGREES:** BFA, Brigham Young University, 1999

MFA, Laguna College of Art and Design, 2011

Kuttler, Kenneth L.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, Brigham Young University, 1976
PhD, University of Texas, Austin, 1981

Lamb, John D.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
PhD, Brigham Young University, 1978

Lambert, Michael J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1967
MS, University of Utah, 1968
PhD, University of Utah, 1971

Lambert, Nathaniel
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2005
PhD, Florida State University, 2010

Lambson, Val Eugene
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1979
MA, University of Rochester, 1982
PhD, University of Rochester, 1983

Lang, William E.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BA, Carleton College, 1974
MS, Yale University, 1975
PhD, Harvard University, 1978

Laraway, David Phillip
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, Brigham Young University, 1994
MA, Cornell University, 1997
PhD, Cornell University, 1998

Largey, Dennis L.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BS, Brigham Young University—Hawaii, 1972
MA, Brigham Young University, 1976
EdD, Brigham Young University, 1981

Larsen, Darl
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Professor
**DEGREES:** BA, University of California, Santa Barbara, 1990
MA, Brigham Young University, 1993
PhD, Northern Illinois University, 2000

Larsen, Kirk W.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, Harvard University, 1994
PhD, Harvard University, 2000

Larsen, Lance Eric
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, Brigham Young University, 1987
PhD, University of Houston, 1993

Larsen, Randy T.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2004
MS, Brigham Young University, 2006
PhD, Utah State University, 2008

Larson, Erik Matthew
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2006
MA, University of California, Davis, 2008
PhD, University of California, Davis, 2012

Larson, Jeff
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2002
MS, Wharton School of Business, 2005
PhD, Wharton School of Business, 2006

Larson, Jeffry Hale
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
MS, Brigham Young University, 1974
PhD, Texas Tech University, 1980

Larson, Jerry W.
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Utah State University, 1969
MA, Brigham Young University, 1974
PhD, University of Minnesota, Minneapolis, 1977

Larson, Melissa P.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1998
MAcc, Brigham Young University, 1998

Larson, Michael J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2002
MS, University of Florida, 2004
PhD, University of Florida, 2008

Lassetter, Jane H.
**COLLEGE:** Nursing
**RANK:** Associate Professor
**DEGREES:** AS, Brigham Young University, 1981

BS, Brigham Young University, 1998
MS, Brigham Young University, 2001
PhD, Oregon Health and Science University, 2008

Lawlor, Gary
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1984
PhD, Stanford University, 1988

Lawrence, Alma Keith
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1977
MA, Brigham Young University, 1980
PhD, University of Southern California, 1987

Lawson, Francesca Sborgi
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1977
MA, University of California, Los Angeles, 1980
PhD, University of Washington, 1988

Lawson, John S.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** AA, Los Angeles Valley College, 1967
BS, Brigham Young University, 1969
MS, Brigham Young University, 1971
MS, Rutgers College, 1976
PhD, Polytechnic Institute of New York, 1984

LeBras, Yvon Roger
**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Professor
**DEGREES:** BA, University of Rennes, France, 1970
MA, Brigham Young University, 1972
MA, University of Rennes, France, 1972
PhD, Laval University, Canada, 1992

Leatham, Keith R.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Associate Professor
**DEGREES:** AS, Brigham Young University—Idaho, 1989
BS, Utah State University, 1992
MS, Utah State University, 1998
PhD, University of Georgia, 2002

Leavitt, Lisa
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Associate Clinical Professor
**DEGREES:** BS, University of Utah, 1999
MS, Brigham Young University, 2001
PhD, Brigham Young University, 2005

Leavitt, Teresa
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 1998
MA, University of Phoenix, 2000
PhD, University of Nevada, 2008

LeBaron, Curtis
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy

**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1989
MA, University of Utah, 1993
PhD, University of Texas, Austin, 1998

LeCheminant, James
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2001
PhD, University of Kansas, 2005

Lee, Chien-Ti
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Taipei Municipal University, 2002
MS, National Chengchi University, 2005
PhD, Utah State University, 2010

Lee, Dah Jye
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, National Taiwan University of Science and Technology, 1984
MS, Texas Tech University, 1987
PhD, Texas Tech University, 1990
MBA, Shenandoah University, 1999

Lee, Daryl
**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, Yale University, 1993
PhD, Yale University, 1999

Lee, Milton L.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1971
PhD, Indiana University, 1975

Lefgren, Lars John
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1996
PhD, University of Chicago, 2001

Leishman, Timothy W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
PhD, Pennsylvania State University, 2000

Leman, Peter Daniel
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, University of Idaho, 2003
MA, Univeristy of California, Irvine, 2006
PhD, University of California, Irvine, 2011

Lephart, Edwin D.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1979
MS, Brigham Young University, 1982
PhD, University of Texas Southwestern Medical Center, Dallas, 1989

Lewis, Ben

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2008
MAcc, Brigham Young University, 2008
PhD, Cornell University, 2014

Lewis, Randy

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1989
PhD, Massachusetts Institute of Technology, 1995

Li, Xian-Jin

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Hunan Normal University, China, 1982
MS, Academia Sinica, Beijing, China, 1985
PhD, Purdue University, 1993

Liddle, Stephen W.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1989
PhD, Brigham Young University, 1995

Lignell, David O.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 2001
PhD, University of Utah, 2008

Liljenquist, Katie

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BA, Arizona State University, 2000
MA, Northwestern University, 2004
PhD, Northwestern University, 2007

Limb, Gordon Earl

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Social Work
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MSW, University of Utah, 1997
PhD, University of Califonia, Berkeley, 2000

Lindeman, Steve

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Indiana University, Bloomington, 1977
MA, Queens College, City University of New York, 1983
PhD, Rutgers University, New Brunswick, 1995

Lindorf, Ron S.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1982
MA, Brigham Young University, 1991

Lindsay, Gordon B.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
MS, University of Utah, 1980

PhD, Ohio State University, 1984

Linford, Matthew R.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Stanford University, 1996
PhD, Stanford University, 1996

Livingstone, John Peter
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BSc, University of Alberta, Canada, 1974
MEd, University of Regina, Canada, 1981
EdD, Brigham Young University, 1986

Livingstone, Lindsay A.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2003
MA, University of California, Los Angeles, 2004
PhD, The Graduate Center, the City University of New York, 2013

Lockhart, Barbara D.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BS, Michigan State University, 1964
MA, Michigan State University, 1967
EdD, Brigham Young University, 1971

Lockwood, Gayle G.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Teaching Professor
**DEGREES:** BM, Brigham Young University, 1968
MM, University of Utah, 1971

Long, David G.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, Brigham Young University, 1983
PhD, University of Southern California, 1989

Lonsdale, Deryle
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Associate Professor
**DEGREES:** BSc, University of Alberta, Canada, 1981
MS, Carnegie Mellon University, 1992
PhD, Carnegie Mellon University, 1997

Loosli, Kelly T.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1996

Losser, Janet L.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Utah State University, 1989
MEd, Brigham Young University, 1997
PhD, University of Georgia, 2004

Lowe, Laurence M.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor

**DEGREES:** BM, San Francisco Conservatory of Music, 1980
MM, Eastman School of Music, 1981

Lu, Kening
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Sichuan University, China, 1982
MS, Sichuan University, China, 1985
PhD, Michigan State University, 1988

Ludlow, Jared W.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, University of California, Berkeley, 1994
PhD, University of California, Berkeley, 2000

Luke, Steven
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MS, University of Illinois, Urbana-Champaign, 2008
PhD, University of Illinois, Urbana-Champaign, 2011

Lund, Christopher C.
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1967
MA, University of Texas, Austin, 1970
PhD, University of Texas, Austin, 1974

Lundberg, Grant H.
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, University of Kansas, 1994
PhD, University of Kansas, 1999

Lundberg, Karen
**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor
**DEGREES:** AS, Brigham Young University, 1979
BS, University of Utah, 2005
MS, University of Utah, 2007

Lundberg, Neil R.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1995
MS, Brigham Young University, 1997
PhD, Indiana University, 2006

Lundwall, Rebecca A.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1987
MEd, Brigham Young University, 1990
MS, Rice University, 2011
PhD, Rice University, 2013

Lunt, Barry Mark
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
MS, Brigham Young University, 1979
PhD, Utah State University, 1993

Luthy, Beth

**COLLEGE:** Nursing
**RANK:** Assistant Professor
**DEGREES:** ADN, Utah Valley State College, 2000
BS, Brigham Young University, 2003
MS, Brigham Young University, 2005
DNP, Rush University, 2008

Mabey, Linda

**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** BSN, Idaho State University, 1978
MS, University of Utah, 1988
DNP, University of Utah, 2009

Macedone, Jeffrey

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1999
PhD, Brigham Young University, 2004

Macfarlane, Roger T.

**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, University of Michigan, Ann Arbor, 1987
PhD, University of Michigan, Ann Arbor, 1991

Macintosh, Janelle

**COLLEGE:** Nursing
**RANK:** Assistant Professor
**DEGREES:** BSN, Radford University, 2001
PhD, University of Utah, 2011

Mack, Gary Wayne

**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BS, University of California, Davis, 1977
MA, University of California, Davis, 1981
PhD, John A. Burns School of Medicine, 1984

MacKay, Michael H.

**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Assistant Professor
**DEGREES:** BA, Weber State University, 2003
MA, University of York, 2005
PhD, University of York, 2009

Madden, Patrick

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BS, University of Notre Dame, 1993
MA, Brigham Young University, 1999
PhD, Ohio University, 2004

Madsen, Grant C.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, University of Virginia, 1995
PhD, University of Chicago, 2011

Madsen, Peter Micah

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 2001

PhD, University of California, Berkeley, 2006

Magleby, David B.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1973
MA, University of California, Berkeley, 1974
PhD, University of California, Berkeley, 1980

Magleby, Spencer P.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** MS, Brigham Young University, 1983
BS, Brigham Young University, 1983
PhD, University of Wisconsin, Madison, 1988

Magnusson, Brianna

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University
MPH, Virginia Commonwealth University
PhD, Virginia Commonwealth University

Manning, Alan D.

**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1984
PhD, Louisiana State University, Baton Rouge, 1988

Manscill, Craig Kent

**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BS, Weber State College, 1978
MS, Brigham Young University, 1980
PhD, Brigham Young University, 1987

Marchant, Michelle

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1991
MS, Utah State University, 1996
PhD, Utah State University, 2000

Marett, Kevin M.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Social Work
**RANK:** Teaching Professor
**DEGREES:** BS, Brigham Young University, 1982
MSW, University of Utah, 1985
PhD, Purdue University, 1989

Marsh, W. Jeffrey

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Teaching Professor
**DEGREES:** BA, University of Utah, 1981
MEd, Brigham Young University, 1984
PhD, Brigham Young University, 1989

Martinez, Tony Ramon

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, University of California, Los Angeles, 1983
PhD, University of California, Los Angeles, 1986

Martinsen, Rob

**COLLEGE:** Humanities

**DEPARTMENT:** Spanish and Portuguese
**RANK:** Assistant Professor
**DEGREES:** BA, Arizona State University, 1999
MA, Northern Arizona University, 2003
PhD, University of Texas, Austin, 2007

Mason, Matthew E.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1995
MA, University of Maryland, 1997
PhD, University of Maryland, 2002

Mason, Nicholas
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1993
MA, Brigham Young University, 1995
PhD, State University of New York, Stony Brook, 1999

Masters, Tamara
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 1983
MBA, University of Utah, 1988
PhD, University of Utah, 2012

Matheson, Kenneth W.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Social Work
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1967
MSW, University of Utah, 1970
DSW, University of Utah, 1976

Matthews, Kristin L.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1995
MA, University of Wisconsin, Madison, 1997
PhD, University of Wisconsin, Madison, 2004

Mattson, Christopher A.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2001
PhD, Rensselaer Polytechnic Institute, 2003

Maughan, Peter Jeff
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Brigham Young University, 1991
PhD, Virginia Polytechnic Institute and State University, 1994

Mayes, Clifford Thomas
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Professor
**DEGREES:** BA, University of Arizona, 1977
MA, University of Oregon, 1979
MA, University of Arizona, 1981
PsyD, Southern California University for Professional Studies, 1992
PhD, University of Utah, 1997

Maynes, Daniel
**COLLEGE:** Ira A. Fulton College of Engineering and Technology

**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1992
MS, Utah State University, 1993
PhD, University of Utah, 1997

Mazzeo, Brian A.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Massachusetts Institute of Technology, 2005
PhD, University of Cambridge, 2008

McBride, John Henry
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, University of Arkansas, 1978
MS, University of Arkansas, 1980
PhD, Cornell University, 1987

McCarthy, Jay
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Assistant Professor
**DEGREES:** BS, University of Massachusetts, Lowell,
PhD, Brown University,

McCleary, William
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1982
PhD, University of California, Berkley, 1990

McClendon, Richard J.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Economic Self-Reliance Center
**RANK:** Research Associate Professor
**DEGREES:** BS, Brigham Young University, 1987
MEd, Brigham Young University, 1989
PhD, Brigham Young University, 2000

McDonald, James B.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1964
MS, Utah State University, 1966
PhD, Purdue University, 1970

McFarland, Robert B.
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, Brigham Young University, 1995
PhD, University of California, Berkeley, 2000

McInelly, Brett Chan
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Weber State College, 1992
MA, Brigham Young University, 1995
PhD, University of Cincinnati, 2000

McKay, Steven M.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Utah State University, 1983
MS, Utah State University, 1985
PhD, Colorado State University, 1990

McKell, Eric K.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1997

McKinlay, Douglas R.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1968
MA, Brigham Young University, 1969

McLain, Timothy Wayne
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, Brigham Young University, 1987
PhD, Stanford University, 1995

McMillan, Brock
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** BS, Utah State University, ????
MS, Kansas State University, ????
PhD, Kansas State University, ????

McMurray, Joseph C.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2004
PhD, University of Rochester, 2010

McPherson, David Leonard
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1966
MS, George Washington University, 1969
PhD, University of Washington, 1972

McQueen, Grant R.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1981
MBA, Brigham Young University, 1984
PhD, University of Washington, 1989

Mecham, R. Quinn
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1997
MA, Stanford University, 1999
PhD, Stanford University, 2006

Melby, Alan K.
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1973
MA, Brigham Young University, 1974
PhD, Brigham Young University, 1976

Mercer, Eric G.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, University of Utah, 1996

MS, University of Utah, 1999
PhD, University of Utah, 2002

Meredith, Robert Alan
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1969
MA, Brigham Young University, 1974
PhD, Ohio State University, Columbus, 1976

Merrell, Duane B.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Teaching Professor
**DEGREES:** AS, College of Eastern Utah, 1980
BS, Utah State University, 1985
MA, Utah State University, 1988

Merrill, Byron R.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Teaching Professor
**DEGREES:** BA, Brigham Young University, 1972
JD, University of California, Davis, 1975

Merrill, Craig B.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1989
MA, University of Pennsylvania, 1992
PhD, University of Pennsylvania, 1994

Merrill, Katreena
**COLLEGE:** Nursing
**RANK:** Assistant Professor
**DEGREES:** AS, Brigham Young University, 1983
BS, Brigham Young University, 1985
PhD, University of Utah, 2010

Merrill, Ray Martell
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1986
MS, Brigham Young University, 1989
PhD, Arizona State University, 1994
MPH, Harvard University, 1995

Meservy, Rayman D.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1977
MAcc, Brigham Young University, 1977
PhD, University of Minnesota, 1985

Meservy, Thomas O.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
MISM, Brigham Young University, 2001
PhD, University of Arizona, 2007

Michaelis, David J.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2005
**DEGREES:** PhD, University of Wisconson—Madison, 2009

Migenes, Victor
**COLLEGE:** Physical and Mathematical Sciences

**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** PhD, University of Pennsylvania, Philadelphia, 1989

Miles, Leslie
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** AD, Brigham Young University, 1983
BS, Brigham Young University, 1999
MS, University of Utah, 2004
DNP, Rush University, 2012

Miles, Michael Paul
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Professor
**DEGREES:** BS, University of Idaho, 1989
MS, Ohio State University, Columbus, 1991
PhD, Ecole des Mines de Paris, 1995

Miller, A Woodruff
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BES, Brigham Young University, 1969
MS, Stanford University, 1970
ENG, Stanford University, 1972
PhD, Stanford University, 1975

Miller, Aaron
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
JD, Brigham Young University, 2006
MPA, Brigham Young University, 2006

Miller, J. Scott
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1982
MA, Princeton University, 1986
PhD, Princeton University, 1988

Miller, Jr., Harold L.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, Arizona State University, 1970
PhD, Harvard University, 1975

Miller, Kevin R.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MA, University of Phoenix, 1995
PhD, Arizona State University, 2001

Miller, Richard B.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, Brigham Young University, 1984
PhD, University of Southern California, 1989

Miller, Shawn William
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Columbia University, 1992

PhD, Columbia University, 1997

Mills, Debra Ann
**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor
**DEGREES:** AS, Ricks College, 1974
BS, Brigham Young University, 1982
MS, Brigham Young University, 1989

Minert, Roger P.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MA, Ohio State University, 1987
PhD, Ohio State University, 1991

Mitchell, Ulrike H.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Assistant Professor
**DEGREES:** BA, University of Heidelberg, Germany, 1984
BS, Krankengymnastikschule Hessisch Lichtenau, Germany, 1987
MS, University of St. Augustine for Health Sciences, 2000
PhD, Brigham Young University, 2005

Mitton, Todd
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1990
MBA, Brigham Young University, 1993
PhD, Massachusetts Institute of Technology, 2000

Money, R. Bruce
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1983
MBA, Harvard Business School, 1988
PhD, University of California, Irvine, 1995

Monroe, Eula Ewing
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Professor
**DEGREES:** BS, Western Kentucky University, 1960
MA, Western Kentucky University, 1964
EdD, George Peabody College for Teachers of Vanderbilt University, 1980

Monson, Clark
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1985
MS, Brigham Young University, 1996
PhD, University of Hawaii, 2004

Monson, Joseph Quin
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1996
MA, Brigham Young University, 1996
MA, Ohio State University, 1999
PhD, Ohio State University, 2004

Montgomery, Cherice
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Assistant Professor
**DEGREES:** BA, Wichita State University, 1992
MEd, Wichita State University, 2002

Moody, Joseph Ward

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, University of Michigan, Ann Arbor, 1984
PhD, University of Michigan, Ann Arbor, 1986

Moody, Richard A.
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1984
MS, Kansas State University, 1991
PsyD, Central Michigan University, 1996

Morgan, Barbara E.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1999
MEd, Brigham Young University, 2002
PhD, Utah State University, 2007

Morgan, David C.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** MID, Rhode Island School of Design, 1995

Morgan, David E.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1985
MFA, National Theatre Conserv, 1990

Morrell, Barbara
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1982
MEd, Brigham Young University, 1985
PhD, Brigham Young University, 1997

Morris, Shad
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1998
MA/MOB, Brigham Young University, 2000
PhD, Cornell University, 2006

Morris, Thomas H.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, University of Wisconsin, Madison, 1983
PhD, University of Wisconsin, Madison, 1986

Morrison, Timothy G.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1977
MEd, Brigham Young University, 1979
PhD, University of Illinois, 1986

Morse, Bryan Stuart
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MA, Brigham Young University, 1990

PhD, University of North Carolina, Chapel Hill, 1995

Mower, Gordon

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Assistant Professor
**DEGREES:** BA, University of Utah, 1988
MA, University of Utah, 1994
PhD, University of Utah, 2007

Muhlestein, Daniel K.

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1984
MA, Brigham Young University, 1987
PhD, Rice University, 1992

Muhlestein, Kerry

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MA, Brigham Young University, 1997
PhD, University of California, Los Angeles, 2003

Mundy, Ryan D., Mr.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Military Science
**RANK:** Assistant Professor
**DEGREES:** BA, Southern Utah University, 2004

Musil, Pamela S.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1978
MA, Brigham Young University, 1985

Myrer, Joseph William

**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BPE, University of Calgary, Canada, 1974
MA, University of Windsor, 1977
PhD, Brigham Young University, 1983

Nadauld, Taylor

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2002
PhD, Ohio State University, 2009

Neff, Lynette

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Adjunct Instructor
**DEGREES:** BS, Southern Utah University, 1971
MEd, Brigham Young University, 1992

Neiger, Brad Lee

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1983
MS, Brigham Young University, 1984
PhD, University of Utah, 1991

Neilsen, David W

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992

MS, Brigham Young University, 1995
PhD, University of Texas, Austin, 1999

Nelson, Brent Edwin
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1981
MS, University of Utah, 1983
PhD, University of Utah, 1984

Nelson, Charles Riley
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1980
MS, Utah State University, 1984
PhD, Brigham Young University, 1986

Nelson, David A.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1995
PhD, University of Minnesota, 1999

Nelson, Everett James
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1989
MS, Brigham Young University, 1990
PhD, Brigham Young University, 1994

Nelson, George D.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MFA, University of Washington, 1979

Nelson, Larry J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1996
PhD, University of Maryland, College Park, 2000

Nelson, Ray
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1975
MA, University of California, Berkeley, 1978
MS, University of California, Berkeley, 1978
PhD, University of California, Berkeley, 1981

Nelson, Stephen Tracy
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1984
MS, Brigham Young University, 1987
PhD, University of California, Los Angeles, 1991

Nelson, Tracy W.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Ohio State University, 1991
MS, Ohio State University, 1993
PhD, Ohio State University, 1998

Newberry, Melissa

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, Ohio State University, 2006
PhD, Ohio State University, 2008

Newell, Lloyd
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1980
MA, Brigham Young University, 1985
PhD, Brigham Young University, 1999

Ng, Yiu-Kai Dennis
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, Brigham Young University, 1984
PhD, Kansas State University, 1991

Nielsen, Brent Lynn
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
PhD, Oregon State University, 1985

Nielsen, Dianne Lindley
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1977
PhD, Brigham Young University, 2001

Nielsen, Pace
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
PhD, University of California, Berkeley, 2006

Nielsen, Perpetua Lynne
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Associate Teaching Professor
**DEGREES:** BS, University of Philippines, 1973
MS, Brigham Young University, 1984

Nielsen, Stevan Lars
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1976
PhD, University of Washington, 1984

Nielson, Daniel L.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1988
PhD, University of California, San Diego, 1997

Nielson, Jennifer Burrows
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1988
MS, University of California, San Diego, 1992
PhD, University of California, San Diego, 1997

Nielson, Rex P.
**COLLEGE:** Humanities

**DEPARTMENT:** Spanish and Portuguese
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, Brown University, 2004
AM, Brown University, 2007
PhD, Brown University, 2010

Nielson, Troy
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
PhD, University of Utah, 1998

Nissen, Shawn L.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994
MA, Ohio State University, 1998
PhD, Ohio State University, 2003

Noble, Cinzia D.
**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Teaching Professor
**DEGREES:** BA, Brigham Young University, 1978
Dott in Lettere Classiche, G. D'Annunzio, Italy, 1979

Nokes, Jeffery D.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1991
MEd, Utah State University, 1996
PHD, University of Utah, 2005

Nordin, Gregory P.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1984
MS, University of California, Los Angeles, 1986
PhD, University of Southern California, 1992

Norman, Judith L.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Social Work
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1970
BS, Portland State University, 1972
MSW, University of Utah, 1978
DSW, University of Utah, 1990

Novilla, Maria Lelinneth Lagman Beloy
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Associate Professor
**DEGREES:** BS, University of the Philippines, 1986
MD, University of the City of Manila, College of Medicine, 1991
MPH, University of Utah, 1999

Nuckolls, Charles W.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Professor
**DEGREES:** AB, University of Chicago, 1979
MA, University of Wisconsin-Madison, 1980
PhD, University of Chicago, 1987

Nuckolls, Janis
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Associate Professor

**DEGREES:** BA, University of Wisconsin-Madison, 1981
AM, University of Chicago, 1983
PhD, University of Chicago, 1990

Nuttall, Craig
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** AS, Utah Valley State College, 2006
BS, Brigham Young University, 2008
MS, Brigham Young University, 2011

Nyland, Nora Kay
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, Brigham Young University, 1981
PhD, Kansas State University, 1989

O'Neill, Kim L.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Professor
**DEGREES:** BSc, University Of Ulster, Northern Ireland, 1980
DPhil, University of Ulster, Northern Ireland, 1986

Oaks, Dallin Dixon
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1984
MA, University of Utah, 1986
PhD, Purdue University, 1990

Ogden, D. Kelly
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BA, Weber State College, 1971
MEd, Brigham Young University, 1974
MA, Institute of Holy Land Studies, Jerusalem, 1978
PhD, University of Utah, 1982

Ogden, Joseph
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1995
MBA, Brigham Young University, 2001

Ogletree, Mark D.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
MA, Northern Arizona University, 1994
PhD, Utah State University, 2000

Olivier, Marc Louis
**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1991
MA, University of Washington, 1993
PhD, University of Washington, 1999

Olsen, Dan Reed
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1976
MS, Brigham Young University, 1978
PhD, University of Pennsylvania, 1981

Olson, Camille Fronk

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BA, Utah State University, 1976
MA, Brigham Young University, 1986
PhD, Brigham Young University, 1996

Olson, Terrance D.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1967
MS, Brigham Young University, 1969
PhD, Florida State University, 1973

Oscarson, Christopher

**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1997
MA, Brigham Young University, 2000
PhD, University of California, Berkeley, 2006

Ostenson, Jonathan

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1997
MEd, University of Utah, 2005
PhD, University of Utah, 2010

Ostler, Craig James

**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MEd, Brigham Young University, 1979
PhD, Brigham Young University, 1995

Ostraff, Joseph Evan

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** BFA, Brigham Young University, 1982
MFA, University of Washington, 1984

Otterstrom, Samuel M.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Brigham Young University, 1994
PhD, Louisiana State University A&M, 1997

Ouyang, Tiancheng

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** MS, Nankai University, China, 1981
PhD, University of Minnesota, Minneapolis, 1989

Owens, Bradley

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2002
MPA, Brigham Young University, 2004
MOB, University of Washington, 2007
PhD, University of Washington, 2009

Packard, Dennis J.

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy

**RANK:** Professor
**DEGREES:** AA, Miracosta College, 1966
BA, Stanford University, 1968
PhD, Stanford University, 1974

Page, Jeremy
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Assistant Professor
**DEGREES:** BS, U.S. Air Force Academy, 2002
MPP, Harvard University, 2004
PhD, University of Texas at Austin, 2011

Page, Randy M.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1979
MHE, Brigham Young University, 1980
PhD, Southern Illinois University, 1982

Palmer, Sheri Patten
**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor
**DEGREES:** AS, Brigham Young University, 1983
BS, Brigham Young University, 1985
MS, Idaho State University, 1990

Parcell, Allen C.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Iowa State University, 1995
PhD, Ball State University, 1998

Parker, Todd B.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Teaching Professor
**DEGREES:** BS, Weber State College, 1974
MEd, Brigham Young University, 1978
EdD, Brigham Young University, 1985

Parkin, Jeff
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Associate Teaching Professor
**DEGREES:** BFA, University of Southern California, 1990
BFA, University of Southern California, 1990
MFA, University of Southern California, 1991

Parkinson, Alan Roger
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
MS, University of Illinois, Urbana, 1979
PhD, University of Illinois, Urbana, 1982
MBA, Brigham Young University, 2003

Parkinson, Dilworth B.
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1975
MA, University of Michigan, Ann Arbor, 1976
PhD, University of Michigan, Ann Arbor, 1982

Parry, Donald W.
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1985

MA, Brigham Young University, 1986
PhD, University of Utah, 1992

Parry, Joseph Douglas
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, Brigham Young University, 1987
PhD, University of Utah, 1995

Patterson, James E.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Brigham Young University, 1998
PhD, University of Illinois, Urbana-Champaign, 2004

Patterson, Kelly D.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1982
MA, Brigham Young University, 1984
PhD, Columbia University, 1989

Paul, Danette
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
MA, Brigham Young University, 1989
PhD, Pennsylvania State University, 1996

Paulsen, David L.
**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Emeritus
**DEGREES:** AS, Snow College, 1957
BS, Brigham Young University, 1961
JD, University of Chicago, 1964
PhD, University of Michigan, Ann Arbor, 1975

Peacock, Martha Moffitt
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1978
MA, Ohio State University, Columbus, 1985
PhD, Ohio State University, Columbus, 1989

Peatross, Justin Bruce
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1988
MS, University of Rochester, 1990
PhD, University of Rochester, 1993

Peck, Steven L.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, University of North Carolina, Chapel Hill, 1988
PhD, North Carolina State University, 1997

Pedersen, Tyler R.
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, University of Florida, 1998

PhD, University of Florida, 2000

Peek, Cecilia M.
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
MA, University of California, Berkeley, 1991
PhD, University of California, Berkeley, 2000

Peer, Larry H.
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1963
MA, Brigham Young University, 1965
PhD, University of Maryland, College Park, 1969

Peery-Fox, Irene
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, The Juilliard School, 1969
MS, The Juilliard School, 1972
DMA, Peabody Conservatory of Music, Johns Hopkins University, 1987

Pennington, Todd R.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MS, University of Utah, 1995
PhD, Virginia Polytechnic Inst. and State University, 1998

Penry, David Aaron
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Associate Professor
**DEGREES:** MS, Case Western Reserve University, 1992
BSE, Case Western Reserve University, 1992
MBA, Ohio State University, 1994
MA, Princeton University, 2002
PhD, Princeton University, 2006

Perry, Dennis R.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1979
MA, Brigham Young University, 1981
PhD, University of Wisconsin, Madison, 1986

Perry, Lee T.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1974
MA, Brigham Young University, 1977
PhD, Yale University, 1982

Petersen, Steven L.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Brigham Young University, 1997
PhD, Oregon State Unversity, 2004

Petersen, Zina Nibley
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
MA, Catholic University of America, 1990

PhD, Catholic University of America, 1997

Peterson, Blake E.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Professor
**DEGREES:** BA, Utah State University, 1986
MS, Washington State University, 1990
PhD, Washington State University, 1993

Peterson, Bryan G.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Research Professor
**DEGREES:** BS, Brigham Young University, 1978
PhD, Brigham Young University, 1983

Peterson, Daniel C.
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
PhD, University of California, Los Angeles, 1990

Peterson, Donald L.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Brigham Young University, 1976
MA, Brigham Young University, 1983
DMA, Arizona State University, 1986

Peterson, Mark Arlen
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1971
MA, Harvard University, 1973
PhD, Harvard University, 1987

Peterson, Matt Anders
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1987
BS, Utah State University, 1987
PhD, University of Arizona, 1992

Phillips, Kerk Layne
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1986
MA, University of Rochester, 1990
PhD, University of Rochester, 1991

Phillips, Kristie J. R.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
MS, Brigham Young University, 2002
PhD, Vanderbilt University, 2005

Pike, Dana M.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
PhD, University of Pennsylvania, 1990

Pike, Oscar A.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics and Food Science
**RANK:** Professor

**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 1982
PhD, Purdue University, 1986

Pinegar, J. Michael
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1973
MBA, University of Utah, 1979
PhD, University of Utah, 1982

Pinnegar, Stefinee E.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** MA, Brigham Young University, 1978
PhD, University of Arizona, 1989

Pitt, William G.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1983
PhD, University of Wisconsin, Madison, 1987

Pixton, Paul B.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1965
MA, University of Utah, 1967
PhD, University of Iowa, 1972

Platt, Brennan
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Associate Professor
**DEGREES:** BS, Arizona State University, 2001
MA, University of Minnesota, 2005
PhD, University of Minnesota, 2006

Plewe, Brandon
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1992
MA, State University of New York, Buffalo, 1995
PhD, State University of New York, Buffalo, 1997

Plowman, Kenneth Dean
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1977
MPA, George Washington University, 1981
PhD, University of Maryland, 1995

Poole, Brian D.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
PhD, Pennsylvania State University, 2004

Pope, Clive Arden
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
PhD, Iowa State University, 1981
MS, Iowa State University, 1981

Pope, Jaren C.
**COLLEGE:** Family, Home, and Social Sciences

**DEPARTMENT:** Economics
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 2001
PhD, North Carolina State University, 2006

Pope, Jeremy
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1997
MA, Stanford University, 2002
PhD, Stanford University, 2004

Pope, Rulon Dean
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
PhD, University of California, Berkeley, 1976

Porter, Chris L.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Purdue University, West Lafayette, 1992
PhD, Purdue University, West Lafayette, 1996

Porter, James Paul
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1976
MS, Brigham Young University, 1978
PhD, University of California, San Francisco, 1982

Prater, Mary Anne
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Professor
**DEGREES:** BM, University of Utah, 1975
MS, University of Utah, 1982
PhD, Utah State University, 1987

Pratt, Dale Joseph
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1990
PhD, Cornell University, 1994

Pratt, Ryan
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 2004
PhD, Duke University, 2012

Prawitt, Douglas F.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1988
MAcc, Brigham Young University, 1988
PhD, University of Arizona, 1993

Preece, Jessica R.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2003
MA, University of California, Los Angeles, 2006
PhD, University of California, Los Angeles, 2010

Preece, Julie

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1985
MEd, Brigham Young University, 1988
PhD, Brigham Young University, 1994

Price, John C.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Professor
**DEGREES:** BS/BA, Utah State University, 2001
PhD, Pennyslvania State University, 2005

Price, Joseph

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 2003
PhD, Cornell University, 2007

Price, Joshua L.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
PhD, University of Wisconsin, 2008

Prince, John T.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
PhD, University of Texas, Austin, 2008

Prohosky, Caroline

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1972
MA, University of California, Los Angeles, 1980

Properzi, Mauro

**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
MTS, Harvard Divinity School, 2002
M.Phil, Cambridge University, 2004
PhD, Durham University, 2010

Prusak, Keven A.

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1986
MEd, Utah State University, 1990
PhD, Arizona State University, 2000

Pulfer, Adrian H.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1988

Pulsipher, Jenny Hale

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, Brigham Young University, 1989
PhD, Brandeis University, 1999

Purcell, Jessica

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1998
MS, University of Michigan, 1999
PhD, Stanford University, 2004

Purves, Mark Richard
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2001
MA, University of Virginia, 2004
PhD, University of Virginia, 2007

Quackenbush, Louis Howard
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1965
MA, Brigham Young University, 1967
PhD, University of Illinois, Urbana, 1970

Radebaugh, Jani
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Brigham Young University, 1999
PhD, University of Arizona, 2005

Rader, Russell Ben
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
MS, Brigham Young University, 1982
PhD, Colorado State University, 1987

Randall, E. Vance
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Professor
**DEGREES:** BS, Brigham Young Univesity, 1975
MEd, Brigham Young University, 1978
PhD, Cornell University, 1989

Randle, Quint Bryce
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1984
MA, Pepperdine University, 1995
PhD, Michigan State University, 2001

Ransom, Michael R
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MA, Princeton University, 1980
PhD, Princeton University, 1983

Rash, Phillip
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Associate Clinical Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1996
PhD, Brigham Young University, 2004

Rasmussen, Ryan
**COLLEGE:** Nursing

**RANK:** Assistant Teaching Professor
**DEGREES:** AS, Utah Valley State College, 2001
BSN, Utah Valley University, 2008
MS, Brigham Young University, 2011

Ravert, Patricia (Patty) Kay
**COLLEGE:** Nursing
**RANK:** Professor
**DEGREES:** AS, Brigham Young University, 1974
BS, Brigham Young University, 1975
MS, Brigham Young University, 1994
PhD, University of Utah, 2004

Ray, Gaye
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** AS, Brigham Young University, 1981
BSN, Brigham Young University, 1982
MSN, Georgia State University, 2008
Certificate, University of Albany, 2011
Graduate Certificate, University of Missouri, Columbia, 2012

Reber, Jeffrey S.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1999
PhD, Brigham Young University, 2000

Red, Walter Edward
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS/MA, Rice University, 1965
PhD, Arizona State University, 1972

Reed, Shelly Jensen
**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1984
MSN, University of Utah, 1992
DNP, Case Western Reserve University, 2009

Rees, Lawrence B.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1976
MS, University of Maryland, College Park, 1979
PhD, University of Maryland, College Park, 1983

Reese, C Shane
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1995
PhD, Texas A&M University, 1999

Reich, Diane Thueson
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Utah State University, 1994
MM, Indiana University, 1997
DM, Indiana University, 2003

Reynolds, Linda Ann
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** AA, Ricks College, 1977
BA, Brigham Young University, 1981

MFA, University of Utah, 1993

Reynolds, Paul R.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2001
PhD, University of Cincinnati, 2004

Rhees, Reuben Ward
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1967
PhD, Colorado State University, 1971

Rhoads, Gary K.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Professor
**DEGREES:** BS, Idaho State University, 1978
MBA, Idaho State University, 1982
PhD, Texas Tech University, 1988

Rice, L. Maureen
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1977
MA, Brigham Young University, 1980
PhD, Brigham Young University, 1997

Rice, Michael
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Louisiana Tech University, 1987
PhD, Georgia Institute of Technology, 1991

Rich, Peter Jacob
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 2002
PhD, University of Georgia, 2007

Richards, A Legrand
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1975
MEd, Harvard University, 1976
PhD, Brigham Young University, 1982

Richards, Mary Stovall
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1973
MA, University of Chicago, 1976
PhD, University of Chicago, 1983

Richards, P Scott
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
MA, Brigham Young University, 1983
PhD, University of Minnesota, 1988

Richards, Paul William
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Associate Professor

**DEGREES:** BS, Brigham Young University, 2000
MS, University of California, San Diego, 2003
PhD, University of California, San Diego, 2004

Richards, Rickelle
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics and Food Science
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 2001
MPH, Tulane University School of Public Health & Tropical Medicine, 2003
PhD, RD, University of Minnesota, 2007

Richardson, Matthew O.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1987
MEd, Brigham Young University, 1990
EdD, Brigham Young University, 1996

Richardson, Michael J.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1995
MS, University of Utah, 2003
PhD, Brigham Young University, 2009

Ricks, Stephen David
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1974
MA, Brigham Young University, 1976
PhD, University of California, Berkeley, 1982

Ricks, Steven Leon
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Brigham Young University, 1993
MM, University of Illinois, Urbana, 1995
C.A.MS, King's College London, 2000
PhD, University of Utah, 2001

Ridge, Bob
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1987
PhD, University of Minnesota, 1993

Ridge, Perry G.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2005
MS, University of Nebraska-Lincoln, 2008
PhD, Brigham Young University, 2013

Ridge, Sarah Traeger
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Assistant Professor
**DEGREES:** BS, Skidmore College, 1998
MS, University of Delaware, 2004
PhD, University of Delaware, 2010

Riep, Steven L.
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Associate Professor
**DEGREES:** BA, University of California, Berkeley, 1987
MA, University of California, Los Angeles, 1991

PhD, University of California, Los Angeles, 2001

Ringger, Eric Karl
- **COLLEGE:** Physical and Mathematical Sciences
- **DEPARTMENT:** Computer Science
- **RANK:** Associate Professor
- **DEGREES:** BS, Brigham Young University, 1992
  MS, University of Rochester, 1994
  PhD, University of Rochester, 2000

Ritter, Scott M.
- **COLLEGE:** Physical and Mathematical Sciences
- **DEPARTMENT:** Geological Sciences
- **RANK:** Professor
- **DEGREES:** BS, Brigham Young University, 1981
  MS, Brigham Young University, 1983
  PhD, University of Wisconsin, 1986

Roberts, Brian R.
- **COLLEGE:** Humanities
- **DEPARTMENT:** English
- **RANK:** Assistant Professor
- **DEGREES:** BA, Brigham Young University, 2001
  MA, Brigham Young University, 2003
  PhD, University of Virginia, 2008

Roberts, Norman
- **COLLEGE:** Student Life
- **DEPARTMENT:** Counseling and Career Center
- **RANK:** Clinical Professor
- **DEGREES:** BA, Brigham Young University, 1973
  MS, University of Utah, 1981
  PhD, Brigham Young University, 1994

Robinson, Clyde Clark
- **COLLEGE:** Family, Home, and Social Sciences
- **DEPARTMENT:** School of Family Life
- **RANK:** Associate Professor
- **DEGREES:** BS, Brigham Young University, 1972
  MS, Brigham Young University, 1975
  PhD, University of North Carolina, Greensboro, 1982

Robinson, Lee Ann
- **COLLEGE:** David O. McKay School of Education
- **DEPARTMENT:** Communication Disorders
- **RANK:** Associate Clinical Professor
- **DEGREES:** BS, Brigham Young University, 1992
  MS, Brigham Young University, 1994

Robinson, Thomas Eugene
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** Communications
- **RANK:** Professor
- **DEGREES:** BS, Northern Arizona University, 1988
  MA, University of Nevada, Las Vegas, 1992
  PhD, University of Southern Mississippi, 1996

Robinson, Todd Fergus
- **COLLEGE:** Life Sciences
- **DEPARTMENT:** Plant and Wildlife Sciences
- **RANK:** Associate Professor
- **DEGREES:** BS, Brigham Young University, 1986
  MS, Brigham Young University, 1988
  PhD, Cornell University, 1996

Robison, Richard A.
- **COLLEGE:** Life Sciences
- **DEPARTMENT:** Microbiology and Molecular Biology
- **RANK:** Professor
- **DEGREES:** BS, Brigham Young University, 1978
  MS, Brigham Young University, 1980
  PhD, Brigham Young University, 1988

Robison, Shani Michelle
- **COLLEGE:** Fine Arts and Communications

**DEPARTMENT:** Dance
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1995
MA, Brigham Young University, 1999

Roby, Jini L.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Social Work
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
MSW, Brigham Young University, 1984
MS, Brigham Young University, 1984
JD, Brigham Young University, 1990

Rodham, Kenneth J.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Teaching Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Brigham Young University, 1992
PhD, Brigham Young University, 1995

Roeder, Beverly L.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BA, Wittenberg University, 1978
DVM, Ohio State University, 1982
MS, Kansas State University, 1986
PhD, Pennsylvania State University, 1990

Rogers, Duke S.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BS, Texas A&M University, 1976
MS, Texas A&M University, 1979
PhD, University of California, Berkeley, 1986

Rollins, Kyle
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1982
PhD, University of California, Berkeley, 1987

Romney, Marshall B.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
MA, Brigham Young University, 1972
PhD, University of Texas, Austin, 1977

Root, Richard, Mr.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Military Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1988
MA, University of Oklahoma, 2005

Roper, Paul Ross
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1976
MS, Brigham Young University, 1979

Roper, Susanne Olsen
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1975
MS, Brigham Young University, 1981

PhD, University of Georgia, 1992

Rosborough, Alessandro A.

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1996
MA, University of Utah, 2001
PhD, University of Nevada, Las Vegas, 2010

Rosenberg, John R.

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1979
MA, Brigham Young University, 1981
PhD, Cornell University, 1985

Roundy, Bruce A.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** BA, University of Nevada, Reno, 1973
MS, University of Nevada, Reno, 1977
PhD, Utah State University, 1984

Roundy, Robin O.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
MS, Brigham Young University, 1980
PhD, Stanford University, 1984

Rowan, Jamin

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1999
MA, University of Southampton, 2001
MA, Boston College, 2002
PhD, Boston College, 2008

Rowe, Dale C.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** BEng, University of Kent, 2003
PhD, University of Kent, 2010

Rudy, Jill Terry

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
MA, Brigham Young University, 1990
PhD, Indiana University, Bloomington, 1997

Rugh, Jacob S.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
MPA, Princeton University, 2008
URP, Princeton University, 2008
PhD, Princeton University, 2012

Rugh, Susan Sessions

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1974
MA, University of Chicago, 1986
PhD, University of Chicago, 1993

Rupper, Summer

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 2000
MS, University of Washington, 2003
PhD, University of Washington, Seattle, 2007

Russell, Thomas Blair

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Teaching Professor
**DEGREES:** BA, Brigham Young University, 1988

Ryskamp, George Richard

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1974
JD, Brigham Young University, 1979

Saito, Mitsuru

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, University of Virginia, 1983
PhD, Purdue University, West Lafayette, 1988

Salazar, Ben

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2005
PhD, University of Denver, 2013

Saltmarsh, Ronald M.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1987
MBA, Brigham Young University, 1989

Sampson, Scott E.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1988
MBA, University of Virginia, 1991
PhD, University of Virginia, 1993

Sandberg, Jonathan G.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Brigham Young University, 1995
PhD, Kansas State University, 1998

Sanders, Scott R.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2002
MPA, Cornell University, 2006
MS, Cornell University, 2007
PhD, Cornell University, 2013

Sansom, Rebecca L.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Boston University, 2001

MS, Harvard University, 2005
MS, Southern Utah University, 2013

Savage, Paul Bennett
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1988
PhD, University of Wisconsin, Madison, 1993

Saville, Kirt
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Brigham Young University, 1976
MM, North Texas State University, 1983
EdD, Utah State University, 1991

Scanlon, Rory Rahn
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1980
MFA, University of Illinois, Urbana-Champaign, 1984

Schaalje, G Bruce
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** AA, Ricks College, 1975
BS, Brigham Young University, 1977
MS, Brigham Young University, 1979
MS, University of Washington, 1981
PhD, North Carolina State University, 1988

Schonlau, Robert
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
MBA, Brigham Young University, 2004
MSBA, University of Washington, 2008
PhD, University of Washington, 2010

Schultz, Grant George
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1995
PhD, Texas A&M University, 2003

Schultz, Stephen Marshall
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1994
PhD, Georgia Institute of Technology, 1999

Scott, Del T.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1970
MS, Brigham Young University, 1973
PhD, Pennsylvania State University, 1977

Scott, Michael A.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2005
MS, Brigham Young University, 2006

MS, University of Texas at Austin, 2008
PhD, University of Texas at Austin, 2011

Scoville, Spencer Dan
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, Georgetown University, 2005
PhD, University of Michigan, 2012

Seamons, Kent Eldon
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1986
PhD, University of Illinois, Urbana, 1996

Seawright, Kristie
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1977
BS, University of Utah, 1987
MBA, University of Utah, 1989
PhD, University of Utah, 1994

Sederberg, Thomas W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1975
MS, Brigham Young University, 1977
PhD, Purdue University, Lafayette, 1983

Sederholm, Carl
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** AA, Long Beach City College, 1994
BA, University of California, Los Angeles, 1996
PhD, University of Utah, 2002

Seeley, Matthew Kirk
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 2000
MS, Utah State University, 2002
PhD, University of Kentucky, 2006

Seely, David R.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1981
MA, Brigham Young University, 1982
AM, University of Michigan, Ann Arbor, 1985
PhD, University of Michigan, Ann Arbor, 1990

Seipel, Michael M O
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Social Work
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1974
MSW, University of Utah, 1976
PhD, Cornell University, 1982

Selfridge, Richard H.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, California State University, Sacramento, 1978
MS, University of California, Davis, 1980

PhD, University of California, Davis, 1984

Selway, Joel Sawat

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, University of Michigan, 2006
PhD, University of Michigan, 2009

Seppi, Kevin Darrell

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, Santa Clara University, 1987
PhD, University of Texas, Austin, 1990

Sevy, Eric T.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MA, Columbia University, 1995
PHM, Columbia University, 1998
PhD, Columbia University, 1999

Sherman, Jr., Alvin Franklin

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, Brigham Young University, 1987
PhD, University of Virginia, 1990

Shiozawa, Dennis Kenji

**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BA, Weber State College, 1972
MS, Brigham Young University, 1974
PhD, University of Minnesota, St. Paul, 1978

Shirts, Randall Brent

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1973
AM, Harvard University, 1978
PhD, Harvard University, 1979

Showalter, Mark H.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1986
PhD, Massachusetts Institute of Technology, 1991

Shumway, J. Matthew

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1984
MS, Brigham Young University, 1987
PhD, Indiana University, 1991

Shumway, Jeffrey L.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1976
MA, Juilliard School of Music, 1977
DM, Indiana University East, 1982

Shumway, Jeffrey Merrill

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University—Hawaii, 1992
MA, Brigham Young University, 1994
PhD, University of Arizona, 1999

Shumway, Steven LeRoy
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1987
MS, Utah State University, 1993
PhD, Utah State University, 1999

Siebach, James L.
**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Emeritus
**DEGREES:** BA, Brigham Young University, 1982
PhD, University of Texas, Austin, 1994

Siebert, Daniel K.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1989
MS, Brigham Young University, 1993
PhD, University of California, San Diego, 2000

Siegfried, Brandie R.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1988
MA, Brigham Young University, 1990
PhD, Brandeis University, 1993
MA, Brandeis University, 1993

Silcox, Roy W.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, North Carolina State University, 1984
PhD, North Carolina State University, 1986

Sillito-Walker, Sheli
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1995
MOB, Brigham Young University, 2000

Silva, Chris E.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Assistant Professor
**DEGREES:** BS, Boston University, 1996
MS, University of Utah, 2000
MPA, Brigham Young University, 2004
PhD, Indiana University-Bloomington, 2010

Simmons, Daniel L.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
MS, Brigham Young University, 1980
PhD, University of Wisconsin, Madison, 1986

Sims, David
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics

**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
PhD, Massachusetts Institute of Technology, 2004

Sites, Jr., Jack W.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BS, Austin Peay State University, 1973
MS, Austin Peay State University, 1975
PhD, Texas A & M University, 1980

Skabelund, Aaron
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1995
MA, Stanford University, 1997
MPhil, Columbia University, 2002
PhD, Columbia University, 2004

Skaggs, Paul Tharlie
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1980
MFA, Rochester Institute of Technology, 2001

Skinner, Andrew C.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BS, University of Colorado, 1975
MAR, Iliff School of Theology, 1978
MTh, Harvard University, 1980
PhD, University of Denver, 1986

Skinner, Malcolm R.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1996

Skousen, Royal
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1969
MA, University of Illinois, Urbana, 1971
PhD, University of Illinois, Urbana, 1972

Slade, Barrett A.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1983
MS, Brigham Young University, 1989
PhD, University of Georgia, 1997

Slife, Brent D.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BA, William Jewell College, 1976
MS, Purdue University, 1977
PhD, Purdue University, 1981

Sloan, Chantel D.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University-Hawaii, 2004
PhD, Dartmouth College, 2009

Smalley, Daniel E.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Massachusetts Institute of Technology, 2006
MEng, Massachusetts Institute of Technology, 2006
MS, Massachusetts Institute of Technology, 2008
PhD, Massachusetts Institute of Technology, 2013

Smead, Robert N.

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1981
MA, Brigham Young University, 1983
PhD, University of Texas, Austin, 1988

Smemoe, Wendy Baker

**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1991
MA, Brigham Young University, 1995
PhD, University of Illinois, Urbana, 2002

Smith, Barbara M.

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Clinical Professor
**DEGREES:** BS, Brigham Young University, 1978
MEd, Brigham Young University, 1982

Smith, Charles Raymond

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Brigham Young University, 1975
MM, Indiana University, Bloomington, 1976
DM, Indiana University, Bloomington, 1982

Smith, Christian B.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Brigham Young University, 1991
MM, Brigham Young University, 1993
DMA, University of Michigan, 2006

Smith, Laura Catharine

**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BA, Queen's University, Kingston (Canada), 1994
BEd, Queens University, Kingston (Canada), 1995
MA, University of Calgary, 1997
MA, University of Wisconsin, Madison, 2000
PhD, University of Wisconsin, Madison, 2004

Smith, Leigh K.

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** AS, Brigham Young University, 1975
BS, Brigham Young University, 1989
MA, Brigham Young University, 1995
PhD, University of Utah, 2002

Smith, Melvin Ray

**COLLEGE:** Humanities
**DEPARTMENT:** Humanities Research Center
**RANK:** Senior Research Fellow
**DEGREES:** BA, Brigham Young University, 1975

Smith, Stacey Janel

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2007
PhD, Brigham Young University, 2012

Smith, Steven
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1981
MEd, Brigham Young University, 1983
PhD, University of Minnesota, 1988

Smith, Steven D.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MAcc, Brigham Young University, 1999
MS, Cornell University, 2004
PhD, Cornell University, 2005

Smith, Thomas
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, University of Alaska, Fairbanks, 1987
PhD, Brigham Young University, 1992

Smith, Timothy B.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1991
MS, Utah State University, 1993
MA, Rhodes University, South Africa, 1995
MA, Utah State University, 1996
PhD, Utah State University, 1997

Smith, William V.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1973
PhD, University of Utah, 1978

Snell, Quinn O.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1992
MS, Utah State University, 1993
PhD, Iowa State University, 1997

Snow, Daniel C.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1996
MBA, Brigham Young University, 1998
PhD, University of California at Berkeley, 2004

Snyder, Phillip A.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1977
MA, Brigham Young University, 1980
PhD, University of North Carolina, Chapel Hill, 1988

Solovieva, Raissa V.
**COLLEGE:** Humanities

**DEPARTMENT:** German and Russian
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Tomsk State University, Russia, 1971
MA, Novosibirsk State University, Russia, 1982
PhD, Kharkov State University, Ukraine, 1987

Sommerfeldt, Scott D.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BM, Brigham Young University, 1983
MS, Brigham Young University, 1986
PhD, Pennsylvania State University, 1989

Sondrup, Steven P.
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1968
MA, Harvard University, 1969
PhD, Harvard University, 1974

Soper, Kerry David
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** BFA, Utah State University, 1992
MA, Emory University, 1994
PhD, Emory University, 1998

Sorensen, Carl D.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
PhD, Massachusetts Institute of Technology, 1985

Sorensen, Rodger D.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1972
MA, Brigham Young University, 1974
PhD, University of Texas, Dallas, 1999

South, Mikle
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Professor
**DEGREES:** BA, Yale University, 1994
MS, University of Utah, 2001
PhD, University of Utah, 2005

Spangler, Diane Louise
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BA, Pomona College, 1989
MS, University of Oregon, 1991
PhD, University of Oregon, 1994

Spencer, David Eugene
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1971
MS, Texas A&M University, 1973
PhD, Texas A&M University, 1974

Spencer, Ross Loren
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1974

MS, University of Wisconsin, Madison, 1976
PhD, University of Wisconsin, Madison, 1979

Spencer, Thomas Robert
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2000
MA, University of North Carolina, Chapel Hill, 2003
PhD, University of North Carolina, Chapel Hill, 2008

Sperry, Kip
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
MLS, Brigham Young University, 1974

Spilker, Brian C.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1987
MAcc, Brigham Young University, 1987
PhD, University of Texas, Austin, 1993

Sprenger, Anca Mitroi
**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Associate Professor
**DEGREES:** BA, University of Bucharest, Romania, 1984
DEA, University of Paris, 1991
PhD, University of Southern California, 1997

Sprenger, Scott M.
**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Professor
**DEGREES:** BA, University of Washington, 1983
MA, Johns Hopkins University, 1990
PhD, Emory University, 1995

St. Clair, Sam
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1998
MS, Brigham Young University, 1999
PhD, Pennsylvania State University, 2004

St Clair, Larry Lee
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, Brigham Young University, 1975
PhD, University of Colorado, 1984

Staheli, Ronald J.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1972
MM, University of Southern California, 1973
DMA, University of Southern California, 1977

Stallings, Gregory C.
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1989
MA, Brigham Young University, 1993
PhD, University of California, Irvine, 1999

Stanford, Charlotte A.

**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1993
MA, University of Connecticut, 1996
PhD, Pennsylvania State University, 2003

Stark, Michael Robert
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Idaho State University, 1994
PhD, University of California, Irvine, 1998

Steed, Katie Edna
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Clinical Professor
**DEGREES:** BS, Brigham Young University, 2000
MS, Brigham Young University, 2004

Steele, Frost M.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics and Food Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1985
MS, Brigham Young University, 1987
PhD, Purdue University, 1990

Steffen, Patrick R.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, University of Miami, 1996
PhD, University of Miami, 1998

Steffensen, Scott C.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, University of Utah, 1980
PhD, University of Utah, 1987

Stephens, Denise
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, New Mexico State University, 1999
PhD, New Mexico State University, 2002

Stevens, Mikel Ross
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** AS, Snow College, 1975
BS, Brigham Young University, 1977
MS, Brigham Young University, 1983
PhD, University of Arkansas, 1993

Stewart, Bryan W.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Assistant Professor
**DEGREES:** BS, Utah State University, 2002
MA, University of Notre Dame, 2003
PhD, University of South Carolina, 2013

Stewart, Dave N.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor

**DEGREES:** BA, Brigham Young University, 1977
MAcc, Brigham Young University, 1977
PhD, University of Florida, 1980

Stewart, John Ryan
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1999
MS, Utah State University, 2001
PhD, Iowa State University, 2005

Stice, Earl K.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
MAcc, Brigham Young University, 1982
MS, Cornell University, 1986
PhD, Cornell University, 1988

Stice, James D.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1984
MAcc, Brigham Young University, 1984
PhD, University of Washington, 1988

Stiles, Kendall Wayne
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1982
MA, Brigham Young University, 1983
PD, Johns Hopkins University, 1987

Stirling, Wynn Clair
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1969
MS, University of Utah, 1971
PhD, Stanford University, 1983

Stock, David Michael
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2003
MA, Brigham Young University, 2005
PhD, Univeristy of Wisconsin-Madison, 2012

Stocks, Kevin D.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
MAcc, Brigham Young University, 1978
PhD, Oklahoma State University, 1981

Stokes, Harold T.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
PhD, University of Utah, 1977

Stoneman, Jack Chris
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, Columbia University, 2001

PhD, Columbia University, 2006

Stratford, Edward P.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2000
MA, University of Chicago, 2002
PhD, University of Chicago, 2010

Strathearn, Gaye
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1991
MA, Brigham Young University, 1992
PhD, Claremont Graduate University, 2004

Strong-Krause, Diane
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1975
MA, Brigham Young University, 1977
PhD, Brigham Young University, 2001

Sudweeks, Bryan Lorin
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1980
MBA, Brigham Young University, 1982
PhD, George Washington University, 1987

Sudweeks, Richard R.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1965
MA, Brigham Young University, 1973
PhD, University of Illinois, 1978

Sudweeks, Sterling N.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992
PhD, University of Utah, 1997

Suli, Arminda
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
PhD, University of Utah, 2007

Summers, Scott L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
MAcc, Brigham Young University, 1990
PhD, Texas A&M University, 1995

Swain, Monte R.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1987
MAcc, Brigham Young University, 1987
PhD, Michigan State University, 1991

Sweat, Anthony R.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine

**RANK:** Assistant Teaching Professor
**DEGREES:** BFA, University of Utah, 1999
MEd, Utah State University, 2005
PhD, Utah State University, 2011

Swensen, James R.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, Brigham Young University, 2000
PhD, Arizona State University, 2009

Swenson, Eric Lewis
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1987
PhD, Brigham Young University, 1993

Swenson, Michael J.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MBA, University of Utah, 1981
PhD, University of Oregon, 1989

Swenson, Sharon L.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Professor
**DEGREES:** BA, University of Utah, 1968
MA, University of Utah, 1974
PhD, University of Utah, 1993

Swift, Charles
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1983
MA, Brigham Young University, 1987
PhD, Brigham Young University, 2003

Talbot, John
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1990
MA, Boston University, 1993
PhD, Boston University, 2001

Taniguchi, Stacy Tooru
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Associate Professor
**DEGREES:** BA, University of Alaska, Anchorage, 1975
MS, University of Utah, 1981
PhD, Brigham Young University, 2004

Tanner, Amy
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Assistant Teaching Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, Brigham Young University, 2005
PhD, University of Michigan, 2010

Tanner, John S.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1974

PhD, University of California, Berkeley, 1980

Tanner, Mark W.
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Assistant Professor
**DEGREES:** BA, University of Utah, 1982
MA, University of Southern California, 1985
PhD, University of Pennsylvania, 1991

Tass, Shannon Neeley
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
MS, Brigham Young University, 2003
MA, Rice University, 2008
PhD, Rice University, 2008

Tayler, William B.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 2002
MAcc, Brigham Young University, 2002
MS, Cornell University, 2006
PhD, Cornell University, 2007

Taylor, Sunny Belliston
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Assistant Professor
**DEGREES:** BFA, Brigham Young University, 2005
MFA, Ohio State University, 2007

Teng, Chia-Chi
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BS, National Tsing Hua University, 1985
MS, University of Washington, 1993
PhD, University of Washington, 2007

Terry, Richard Ellis
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1972
MS, Purdue University, 1974
PhD, Purdue University, 1976

Terry, Ronald E.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Professor
**DEGREES:** BS, Oregon State University, 1971
PhD, Brigham Young University, 1976

Tessem, Jeffrey S.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001/td>
PhD, University of Colorado Health Science Center, 2007

Teuscher, Dawn
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1994
MS, University of Utah, 2000
PhD, University of Missouri, 2008

Tew, Kevin B.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology

**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
**DEGREES:** MS, Brigham Young University, 2006
PhD, University of Utah, 2012

Thacker, Evan L.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
SM, Harvard, 2005
PhD, University of Washington, 2011

Thackeray, Rosemary
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1991
MPH, University of Utah, 1996
PhD, University of Utah, 2000

Thevenin, Benjamin
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2006
MA, Florida State University, 2008
PhD, University of Colorado, Boulder, 2012

Thompson, Chantal P
**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Teaching Professor
**DEGREES:** BA, Brigham Young University, 1970
MA, Brigham Young University, 1972

Thompson, Gregory Lynn
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1999
MA, Brigham Young University, 2001
PhD, University of Arizona, 2006

Thompson, Jeffery A.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MBA, Brigham Young University, 1995
PhD, University of Minnesota, 1999

Thompson, Michael P.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1974
MA, Rensselaer Polytechnic Institute, 1978
PhD, Rensselaer Polytechnic Institute, 1985

Thomsen, Steven Riley
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1982
MA, Ball State University, 1984
PhD, University of Georgia, 1994

Thomson, David M.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999

MS, Brigham Young University, 2001
PhD, East Carolina University, 2005

Thomson, Scott L.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2000
PhD, Purdue University, 2004

Thorley, Steven
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1979
MBA, Brigham Young University, 1982
PhD, University of Washington, 1991

Thorne, Melvin Jay
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Teaching Professor
**DEGREES:** BA, Brigham Young University, 1976
MA, University of Kansas, 1980
PhD, University of Kansas, 1986

Thorne-Murphy, Leslee
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1993
PhD, Brandeis University, 2001

Thornock, Neil S.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Brigham Young University, 2001
MM, Brigham Young University, 2003
DM, Indiana University, 2006

Thorp, Malcolm R.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1964
MA, Brigham Young University, 1967
PhD, University of Wisconsin, Madison, 1972

Threlfall, Timothy Allan
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Professor
**DEGREES:** BFA, University of Idaho, 1983
MFA, University of Washington, 1987

Thursby, Jacqueline Schuster
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Idaho State University, 1985
MS, Utah State University, 1991
PhD, Bowling Green State University, 1994

Thygerson, Alton Luie
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Emeritus
**DEGREES:** BS, Brigham Young University, 1962
MHEd, Brigham Young University, 1965
EdD, Brigham Young University, 1969

Thygerson, Steven M.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1998
MSPH, University of Utah, 2001
PhD, Colorado State University 2006

Timmons, Jeff, CPT
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Military Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2005

Tingey, David G.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Research Professor
**DEGREES:** BS, Brigham Young University, 1983
MS, Brigham Young University, 1989

Tolley, Harold Dennis
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1970
PhD, University of North Carolina, Chapel Hill, 1974

Top, Brent LaMar
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1976
MEd, Brigham Young University, 1980
PhD, Brigham Young University, 1984

Toronto, James A.
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1975
MEd, Brigham Young University, 1980
MA, Harvard University, 1984
PhD, Harvard University, 1992

Transtrum, Mark K.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2006
MS, Cornell University, 2010
PhD, Cornell University, 2011

Tree, Dale R.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, Purdue University, 1988
PhD, University of Wisconsin, 1992

Truscott, Tadd
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 2003
PhD, Massachusetts Institute of Technology, 2009

Tucker, Larry A.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
MS, Brigham Young University, 1979
PhD, Southern Illinois University, 1981

Tunnell, Michael O.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1973
MEd, Utah State University, 1978
EdD, Brigham Young University, 1986

Turley, Jeffrey Scott
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** MA, Brigham Young University, 1984
PhD, University of California, Berkeley, 1992

Turley, R. Steven
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
PhD, Massachusetts Institute of Technology, 1984

Turley, Ty W.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2005
MSc, London School of Economics and Political Science, 2007
MA, University of Chicago, 2009
PhD, University of Chicago, 2013

Tuttle, Stephen B.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1999
MFA, University of Utah, 2002
PhD, University of Utah, 2006

Udall, Joshua
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1995
MS, University of Idaho, 1997
PhD, University of Wisconsin, 2003

Ulberg, Ronald Stanley
**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1976
AS, Weber State University, 1989
BS, University of Phoenix, 1992
MN, University of Phoenix, 2000

Underwood, Grant Revon
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MA, Brigham Young University, 1981
PhD, University of California, Los Angeles, 1988

Unlandt, Nicolaas Gerard Wilhelmus
**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Associate Professor
**DEGREES:** BA, University of Amsterdam, 1983
MA, University of Amsterdam, 1985
PhD, University of Amsterdam, 1993

Valentine, Julie
**COLLEGE:** Nursing

**RANK:** Assistant Teaching Professor
**DEGREES:** BSN, University of Arizona, 1984
MS, University of Utah, 2009

Van Huele, Jean-François S.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brussels Free University, Belgium, 1979
PhD, Brussels Free University, Belgium, 1987

Vance, Anthony O.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MISM, Brigham Young University, 2004
PhD, Georgia State University, 2008
PhD, Université Paris, Dauphine, 2008

Vanfleet, Richard R.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, University of Illinois, 1994
PhD, University of Illinois, 1997

Vehrs, Pat Roy
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Northern Illinois University, 1984
MS, Northern Illinois University, 1986
PhD, Brigham Young University, 1991

Ventura, Dan Aaron
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1995
PhD, Brigham Young University, 1998

Villamizar, Vianey
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, Universidad Central de Venezuela, 1977
MS, Universidad Central de Venezuela, 1983
PhD, Rensselaer Polytechnic Institute, 1987

Vincent, Lawrence Paul
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1973
MM, Northern Arizona University, 1978
DMA, University of Michigan, Ann Arbor, 1981

Vorkink, Keith P.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1994
MS, University of Rochester, 1996
PhD, University of Rochester, 1999

Wadsworth, Lori L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Associate Professor
**DEGREES:** AS, West Valley College, 1980

BS, Brigham Young University, 1982
MPA, Brigham Young University, 1995
PhD, University of Utah, 2003

Wakamatsu, Kori
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, California State University, Long Beach, 2007

Wakefield, B. Lee
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MA, Brigham Young University, 1982

Wakefield, Robert I.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1980
MA, Brigham Young University, 1990
PhD, University of Maryland, 1997

Walker, Laura Padilla
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Central Michigan University, 1999
MA, University of Nebraska, Lincoln, 2001
PhD, University of Nebraska, Lincoln, 2005

Wallin, Cynthia
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1989
MBA, Brigham Young University, 1994
PhD, Arizona State University, 2006

Walters, Lawrence C.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1981
PhD, University of Pennsylvania, 1987

Walz, J Robert
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1982

Wang, Shu Pei
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Associate Teaching Professor
**DEGREES:** BA, National Tsing Hua University, 1992
MA, Brigham Young University, 2002
PhD, Brigham Young University, 2007

Ward, Carol J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Associate Professor
**DEGREES:** BA, North Texas State University, 1973
MA, North Texas State University, 1976
PhD, University of Chicago, 1992

Ward, Evan
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor

**DEGREES:** BA, Brigham Young University, 1995
MA, University of Georgia, 1997
PhD, University of Georgia, 2000

Ward, Peter Joseph
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1997
MBA, University of Utah, 2003
PhD, University of Utah, 2007

Ware, Michael J.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
PhD, Brigham Young University, 2001

Warnick, J Paul
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1983
MA, Brigham Young University, 1989
PhD, Ohio State University, 1996

Warnick, Karl F.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1994
PhD, Brigham Young University, 1997

Warnick, Sean C.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Arizona State University, 1993
MS, Massachusetts Institute of Technology, 1995
PhD, Massachusetts Institute of Technology, 2003

Warren, Jared S.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1996
MA, University of Kansas, 1999
PhD, University of Kansas, 2003

Watabe, Masakazu
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1972
MA, Brigham Young University, 1973
PhD, University of Southern California, 1978

Watt, Richard K.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
PhD, University of Wisconsin-Madison, 1998

Wayment, Thomas Arvel
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BA, University of California, Riverside, 1994
MA, Claremont Graduate School, 1998
PhD, Claremont Graduate School, 2000

Weatherford, Douglas J.
**COLLEGE:** Humanities

**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1988
PhD, Pennsylvania State University, 1997

Webb, Brent W.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, Brigham Young University, 1982
PhD, Purdue University, 1986

Webb, Bruce Lee
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Senior Scientist
**DEGREES:** BS, Brigham Young University, 1972
MS, Brigham Young University, 1978

Webb, Scott
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Teaching Professor
**DEGREES:** BA, College of Idaho, 1994
MS, Air Force Institute of Technology, 1999
PhD, Michigan State University, 2011

Weidman, Justin E.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** MS, Brigham Young University, 2010
PhD, Virginia Tech, 2012

Wells, Aaron
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 1999
MEd, University of Nebraska, 2002
PhD, Brigham Young University, 2010

Wentworth, Nancy
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1971
MA, University of Utah, 1972
PhD, University of Utah, 1993

West, Colleen N.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1982
MA, Brigham Young University, 1985

West, Joshua H.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Assistant Professor
**DEGREES:** BA, Utah State University, 2005
MPH, San Diego State University, 2005
PhD, University of California, San Diego/San Diego State University, 2008

West, Richard E.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Assistant Professor
**DEGREES:** AA, Ricks College, 1998
BA, Utah State University, 2002
MS, Brigham Young University, 2005
PhD, University of Georgia, 2009

Westover, Paul A.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, Brigham Young University, 2002
PhD, Indiana University, 2008

Wheeler, Dean Richard
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Associate Professor
**DEGREES:** PhD, University of California, Berkeley, 2002

Whetten, David A.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1970
MS, Brigham Young University, 1971
PhD, Cornell University, 1974

Whipple, Clint
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
PhD, University of California, San Diego, 2006

Whitchurch, David M.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1977
MEd, Brigham Young University, 1982
PhD, Brigham Young University, 1991

Whiting, Erin
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1997
MS, Brigham Young University, 1999
PhD, University of Missouri, Columbia, 2006

Whiting, Michael F.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
PhD, Cornell University, 1994

Whitlark, David B.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1978
MBA, Cornell University, 1985
PhD, University of Virginia, 1989

Whitt, Karen J.
**COLLEGE:** Nursing
**RANK:** Assistant Professor
**DEGREES:** AS, Brigham Young University, 1984
BS, George Mason University, 2001
MS, George Mason University, 2002
PhD, George Mason University, 2008

Wickman, Matthew Farr
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, New York University, 1994

PhD, University of California, Los Angeles, 2000

Widmer, Mark Alan
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1988
MA, Brigham Young University, 1990
PhD, University of Utah, 1993

Wilcox, Bradley Ray
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1985
MEd, Brigham Young University, 1990
PhD, University of Wyoming, 1994

Wilcox, Edward R.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Research Associate Professor
**DEGREES:** BA, University of California, Davis, 1977
PhD, University of California, Davis, 1982

Wilcox, Miranda
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1999
MMS, University of Notre Dame, 2002
PhD, University of Notre Dame, 2006

Wilde, Doran Kenneth
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1978
MS, Oregon State University, 1994
PhD, Oregon State University, 1995

Wilding, Wade Vincent
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
PhD, Rice University, 1985

Wilkins, Alan
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1972
MBA, Brigham Young University, 1974
PhD, Stanford University, 1979

Wilkinson, Carol
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BEd, Durham University, England, 1976
MS, Brigham Young University, 1981
EdD, Brigham Young University, 1983

Wilks, T. Jeffrey
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1995
MS, Cornell University, 1999
PhD, Cornell University, 2000

Willardson, Barry Matthew
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry

**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1984
PhD, Purdue University, 1990

Williams, D. Pauline
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 1992
MPA, Brigham Young University, 1998
PhD, Utah State University, 2011

Williams, David Dwayne
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1976
MA, Western Michigan University, 1978
PhD, University of Colorado, Boulder, 1981

Williams, Frederick Granger
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1965
MA, University of Wisconsin, Madison, 1967
PhD, University of Wisconsin, Madison, 1971

Williams, Geoffrey Lynn
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, University of London, 1973
BA, University of London, 1975
PhD, University of London, 1978

Williams, Gustavious Paul
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1987
PhD, Northwestern University, 1994

Williams, Mary
**COLLEGE:** Nursing
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1971
MS, University of Utah, 1980
PhD, University of Arizona, 1991

Williams, Richard Nephi
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, Purdue University, 1978
PhD, Purdue University, 1981

Williams, Steven R
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 1983
PhD, University of Wisconsin, Madison, 1989

Willoughby, Brian
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2004
MS, University of Minnesota, 2006
PhD, University of Minnesota, 2009

Willson, Heather

**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1996
MA, Arizona State University, 2002
PhD, University of California, Los Angeles, 2008

Wilson, Christopher E.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1999
MA, Brigham Young University, 2009
PhD, University of Florida, 2014

Wilson, Eric

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1990
MS, Utah State University, 1994
PhD, Montana State University, 2000

Wilson, Keith J.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1976
MA, Brigham Young University, 1981
PhD, University of Utah, 1995

Wilson, Sven Eric

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1989
MA, University of Chicago, 1992
PhD, University of Chicago, 1997

Wimmer, Jennifer J.

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1995
MA, Brigham Young University, 2004
PhD, University of Nevada, Las Vegas, 2010

Wing, Debra

**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** AS, Stevens Henagar College, 1981
ASN, Weber State University, 1994
BSN, Weber State University, 1996
MSNED, Westminster College, 2010

Winters, Blaine

**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 1992
ADN, Salt Lake Community College, 1995
BS, University of Utah, 1999
MS, University of Utah, 2001
DNP, University of Utah, 2008

Wirthlin, Michael Joseph

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1992
PhD, Brigham Young University, 1997

Wisco, Jonathan Jayme

**COLLEGE:** Life Sciences

**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, University of Washington, 1994
PhD, Boston University School of Medicine, 2003

Witesman, Eva
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Assistant Professor
**DEGREES:** BUS, University of Utah, 2000
MPA, Indiana University, Bloomington, 2004
PhD, Indiana University, Bloomington, 2008

Wong, Cynthia
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BA, Brigham Young University—Hawaii, 2001
M.M.F.T., University of Southern California, 2005
Ed.D., University of Southern California, 2008

Wood, David A.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2005
MA, Brigham Young University, 2005
PhD, Indiana University, 2009

Wood, Steven Glen
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Teaching Professor
**DEGREES:** BS, Brigham Young University, 1973
MS, Brigham Young University, 1975
PhD, Brigham Young University, 1983

Woodbury, Dixon John
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1980
PhD, University of California, Irvine, 1986

Woodfield, Brian F.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, Brigham Young University, 1988
PhD, University of California, Berkeley, 1995

Woodfield, Scott N.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1975
MS, Brigham Young University, 1978
PhD, Purdue University, Lafayette, 1980

Woodger, Mary Jane
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MEd, Utah State University, 1992
EdD, Brigham Young University, 1997

Woods, Alexander G.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Assistant Professor
**DEGREES:** BA, University of Arizona, 2005
MM, Yale University, 2008

Woods, Fred E.

**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
MA, Brigham Young University, 1985
PhD, University of Utah, 1991

Woodward, Ryan J.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** AA, Ricks College, 1995
BFA, Brigham Young University, 2003
MFA, The Academy of Art University, 2006

Woodworth, Warner P.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1967
MS, Brigham Young University, 1969
MA, University of Michigan, Ann Arbor, 1970
PhD, University of Michigan, Ann Arbor, 1974

Woolley, Adam T.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1992
PhD, University of California, Berkeley, 1997

Woolstenhulme, Loreen Allphin

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MS, Brigham Young University, 1992
PhD, University of Utah, 1996

Worsham, Ronald G.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1985
MAcc, Brigham Young University, 1985
PhD, University of Florida, 1994

Worthen, Vaughn Eugene

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** AS, Ricks College, 1980
BS, Brigham Young University, 1983
MEd, Brigham Young University, 1985
PhD, University of Kansas, 1993

Wright, Colbrin

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 2001
PhD, Florida State University, 2007

Wright, David Grant

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1970
MA, University of Wisconsin, Madison, 1972
PhD, University of Wisconsin, Madison, 1973

Wright, Dennis Albert

**COLLEGE:** Religious Education

**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BS, University of Idaho, 1968
MS, Brigham Young University, 1973
PhD, Arizona State University, 1978

Wright, Geoffrey A.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
MA, Chapman University, 2003
PhD, Brigham Young University, 2008

Wright, Mark A.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Assistant Professor
**DEGREES:** BA, University of California, Los Angeles, 2003
MA, University of California, Riverside, 2004
PhD, University of California, Riverside, 2008

Yamada, Marc
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1997
MA, Brigham Young University, 2000
PhD, University of California, Berkely, 2006

Yamawaki, Niwako
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, University of Utah, 1995
MS, University of Utah, 1998
PhD, University of Utah, 2002

Yanchar, Stephen C.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Associate Professor
**DEGREES:** BS, Cleveland State University, 1991
MS, Brigham Young University, 1995
PhD, Brigham Young University, 1997

Yorgason, Jeremy B.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1997
MS, Kansas State University, 2000
PhD, Virginia Polytechnic Institute and State University, 2003

York, Neil Longley
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1973
MA, Brigham Young University, 1975
PhD, University of California, Santa Barbara, 1978

Young, Bruce Wilson
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1975
MA, Columbia University, 1976
AM, Harvard University, 1978
PhD, Harvard University, 1983

Young, Ellie L.
**COLLEGE:** David O. McKay School of Education

**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1986
MEd, Brigham Young University, 1987
Spec, Brigham Young University, 1988
PhD, University of South Florida, 2001

Young, Janet R.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1974
MA, Brigham Young University, 1989
PhD, University of Oklahoma, 1996

Young, K Richard
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1969
MS, University of Utah, 1971
PhD, University of Utah, 1973

Young, Shauna Christine Anderson
**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Professor
**DEGREES:** AS, Ricks College, 1965
BS, Brigham Young University, 1967
MS, University of Utah, 1973
PhD, University of Washington, 1984

Young, Terrell A.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Professor
**DEGREES:** BS, Kansas State University, 1975
MEd, Utah State University, 1981
EdD, Brigham Young University, 1988

Young, Tyler, CPT
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Military Science
**RANK:** Assistant Professor
**DEGREES:** BA, Southern Utah University, 2005

Zabriskie, Ramon B.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1989
MA, Brigham Young University, 1993
PhD, Indiana University, Bloomington, 2000

Zanandrea, Maria Luiza Betioli
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1983
MA, Brigham Young University, 1984
EdD, Brigham Young University, 1992

Zappala, Daniel Mark Alexander
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Stanford University, 1990
PhD, University of Southern California, 1997

Zimbelman, Mark F.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Accountancy, School of
**RANK:** Professor

**DEGREES:** BS, Brigham Young University, 1984
PhD, University of Arizona, 1996

Zundel, William

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1985
MS, University of Houston, 2001

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# Using the Catalog

## Course Numbering System

A course's level of instruction is shown by the number assigned to it:

| Course Number | Type of Course |
|---|---|
| 1 to 99 | Preparatory and remedial (noncredit) |
| 100 to 299 | Lower-division |
| 300 to 499 | Upper-division |
| 500 to 599 | Advanced undergraduate or graduate |
| 600 to 799 | Graduate |

## Credit-Hour Designations

One semester hour of credit generally includes a minimum of one hour of instruction per week in a semester or two hours of instruction per week in a term (e.g., generally a three-hour class will meet at least three hours per week for a semester). The three-number code that appears in parentheses immediately after each course title has the following significance:

| | |
|---|---|
| First number | Semester hours of credit |
| Second number | Class hours of lecture, recitation, or seminar meeting per week |
| Third number | Laboratory hours required per week or hours of field study or individual research per week, beyond the hours shown in the second number |

## Abbreviations and Symbols

### Course Listings

The following abbreviations and symbols are used in the course listings:

| | |
|---|---|
| A,B | Indicate parts of a course to be taken in separate enrollments. |
| Arr. | Credit, class, or laboratory hours arranged |
| ea. | Credit-hour designation applies to each registration |
| M | Majors-only course |
| R | Designates a course that may be repeated for credit. Two R courses with the same number on a transcript are treated as two independent courses. An R course cannot be repeated to raise the grade received; all grades will be counted because it is assumed that the subject matter varies from time to time. |

### When Courses Are Offered

The following words or phrases are used on some courses to indicate when the course will be taught:

| | |
|---|---|
| Fall | Fall semester |
| Winter | Winter semester |
| Spring-Summer | Includes spring term, summer term, and semester-length offerings |
| Even Fall, Even Winter, etc. | Course taught on even-numbered years in semester/term indicated |
| Odd Fall, Odd Winter, etc. | Course taught on odd-numbered years in semester/term indicated |
| First term | Course taught on the term(first half of semester) as indicated |
| Second term | Course taught on the term (second half of semester) as indicated |
| On demand | Course may be taught if enough students are interested and an instructor is available |

### Subject Areas and Abbreviations

| Subject Area | Abbreviation |
|---|---|
| Accountancy, School of | Acc |
| Aerospace Studies | Aeros |
| American Heritage | A Htg |
| American Studies | Am St |
| Ancient Near Eastern Studies | ANES |
| Anthropology | Anthr |
| Biology | Bio |

| | |
|---|---|
| Business Management | Bus M |
| Chemical Engineering | Ch En |
| Chemistry and Biochemistry | Chem |
| Civil and Environmental Engineering | CE En |
| Classical Civilization | Cl Cv |
| Classics | Clscs |
| Communication Disorders | ComD |
| Communications | Comms |
| Comparative Literature | CmLit |
| Computer Science | C S |
| Computer Science Animation | CSAnm |
| Counseling Psychology and Special Education | CPSE |
| Dance | Dance |
| Digital Humanities and Technology | DigHT |
| Economics | Econ |
| Educational Leadership and Foundations | EdLF |
| Electrical and Computer Engineering | EC En |
| Engineering and Technology Education | Eng T |
| English | Engl |
| Exercise Sciences | ExSc |
| Family, Home, and Social Science College Course | FHSS |
| Family Life, School of | SFL |
| Finance | Fin |
| Fine Arts | FnArt |
| First-Year Experience | Univ |
| Geography | Geog |
| Geological Sciences | Geol |
| Health/Physical Education | HEPE |
| Health Science | Hlth |
| History | Hist |
| Honors Program | Honrs |
| Humanities College Course | HColl |
| Information Systems | IS |
| Instructional Psychology and Technology | IP&T |
| Interdisciplinary Humanities | IHum |
| International and Area Studies | IAS |
| Asian Studies | Asian |
| European Studies | Europ |
| International Relations | IR |
| Latin American Studies | Lt Am |
| Middle East Studies/Arabic | MESA |
| Languages | |
| Afrikaans | Afrik |
| Arabic | Arab |
| Bulgarian | Bulgn |
| Cantonese | Cant |
| Chinese | Chin |
| Czech | Czech |
| Danish | Dansh |
| Dutch | Dutch |
| Estonian | Eston |
| Finnish | Finn |
| French | Fren |
| German | Germ |
| Greek | Greek |
| Hebrew | Heb |
| Hungarian | Hung |
| Icelandic | Iclnd |
| Italian | Ital |
| Japanese | Japan |
| Korean | Korea |
| Latin | Latin |
| Latvian | Latvi |
| Lithuanian | Lithu |
| Near Eastern Languages | Ne Lg |
| Norwegian | Norwe |
| Polish | Polsh |
| Portuguese | Port |
| Romanian | Rom |
| Russian | Russ |
| Scandinavian | Scand |
| Serbo-Croatian | SrbCr |
| Slovenian | Sln |
| Spanish | Span |
| Swedish | Swed |
| Ukrainian | Ukrai |
| Welsh | Welsh |
| Language Studies, Center for | FLang |
| Law School | Law |
| Life Sciences | LfSci |
| Linguistics | Ling |

| | |
|---|---|
| American Sign Language | ASL |
| English as a Second Language | ESL |
| English Language | ELang |
| Linguistic Computing | LingC |
| Managerial Economics | ManEc |
| Mathematics | Math |
| Mathematics Education | MthEd |
| Mechanical Engineering | Me En |
| Microbiology and Molecular Biology | MMBio |
| Military Science | Mil S |
| Music | Music |
| Neuroscience Center | Neuro |
| Nursing | Nurs |
| Nutrition, Dietetics, and Food Science | NDFS |
| Organizational Leadership and Strategy | Org B |
| Management Communication | M Com |
| Philosophy | Phil |
| Physical Science | Phy S |
| Physics and Astronomy | Phscs |
| Physiology and Developmental Biology | PDBio |
| Plant and Wildlife Sciences | PWS |
| Political Science | Poli |
| Psychology | Psych |
| Public Management, Romney Institute of | P Mgt |
| Recreation Management | RecM |
| Religious Education | |
| Ancient Scripture | Rel A |
| Church History and Doctrine | Rel C |
| Religious Education | Rel E |
| Social Work, School of | Soc W |
| Sociology | Soc |
| Statistics | Stat |
| Student Activities Classes | StAc |
| Student Development | StDev |
| Teacher Education | |
| Early Childhood Education | ECE |
| Elementary Education | El Ed |
| Physical Education Teacher Education | PETE |
| Secondary Education | Sc Ed |
| Teaching English Language Learners | TELL |
| Technology, School of | Tech |
| Construction Management | CM |
| Facility and Property Management | FPM |
| Industrial Design | InDes |
| Information Technology | IT |
| Manufacturing Engineering Technology | Mfg |
| Technology and Engineering Education | TEE |
| Theatre and Media Arts | TMA |
| Visual Arts | |
| Art History and Curatorial Studies | ArtHC |
| Visual Arts Animation | VAAnm |
| Visual Arts Core | VA |
| Visual Arts Design | VADes |
| Visual Arts Education | VAEdu |
| Visual Arts Graphic Design | VAGD |
| Visual Arts Illustration | VAIll |
| Visual Arts Photography | VAPho |
| Visual Arts Studio | VAStu |
| Women's Studies | WS |
| Writing | Wrtg |

# Search the Catalog

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Search



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# Academic Standards

Academic Support Office, 2500 WSC, (801) 422-2723

A student's academic standing at BYU is determined according to the grades that the student earns **only at BYU. Academic standing is based on a minimum of 6 credit hours as a day-continuing student. Students enrolled for fewer than 6 credit hours in a fall, winter, or spring-summer will have their credits combined with those of their next enrollment until at least 6 credits of graded hours have been accumulated, at which point the academic standing is calculated.** The following outline shows the conditions and expectations according to the student's academic standing. For further information, students are encouraged to check their current academic standing by selecting Student Academic Record, then selecting Current Academic Standing in AIM.

| ACADEMIC STANDING | UNDER THESE CONDITIONS | EXPECTATIONS |
|---|---|---|
| GOOD | When the most recent GPA* and BYU cumulative GPA are 2.0 or above and the student has NOT been on academic probation. | The student continues to maintain a 2.0 or higher fall, winter, or spring-summer and BYU cumulative GPA. |
| PREVIOUS | The same as good academic standing but indicates a student has previously been on academic probation, CAP, suspension, or dismissal. | The student continues to maintain a 2.0 or higher fall, winter, or spring-summer and BYU cumulative GPA. However, the student goes directly to academic probation if the student has a GPA* below 2.0. |
| WARNING<br><br>Includes a registration block. | When the most recent GPA* is below 2.0 and the student was in good academic standing<br><br>OR<br><br>When the most recent GPA* is 2.0 or higher but the BYU cumulative GPA is below 2.0 and the student was on academic warning. | The student is blocked from registrations beyond the subsequent fall, winter, or spring-summer until the student **EITHER** submits a completed Academic Improvement Plan to the Academic Support Office by the appropriate deadline **OR** the student earns at least a 2.0 GPA for the subsequent enrollment (in 6 credits or more) and has at least a 2.0 BYU cumulative GPA. Students with less than a 2.0 BYU cumulative GPA must submit an Academic Improvement Plan during each fall, winter, or spring-summer in which they are enrolled. |
| PROBATION<br><br>Includes a registration block. | When the most recent GPA* is below 2.0 and the student was on academic warning<br><br>OR<br><br>When the most recent GPA* is below 2.0 and the student was on "previous" academic standing<br><br>OR<br><br>When the most recent GPA* is 2.0 or higher but the BYU cumulative GPA is below 2.0 and the student was on academic probation. | The student is blocked from registrations beyond the subsequent fall, winter, or spring-summer until the student **EITHER** submits a completed Academic Improvement Plan to the Academic Support Office by the appropriate deadline **OR** the student earns at least a 2.0 GPA for the subsequent enrollment (in 6 credits or more) and has at least a 2.0 BYU cumulative GPA. Students with less than a 2.0 BYU cumulative GPA must submit an Academic Improvement Plan during each fall, winter, or spring-summer in which they are enrolled.<br><br>Students on probation who earn less than a 2.0 GPA for a fall, winter, or spring-summer are academically suspended or dismissed if they have previously earned a suspension status. |
| CONTINUED ACADEMIC PROBATION<br><br>(CAP)<br><br>Includes a registration block. | When a student is returning to BYU from academic suspension or dismissal<br><br>OR<br><br>When the most recent GPA* is 2.0 or higher but the BYU cumulative GPA is below 2.0 and the student was on CAP. | The student is blocked from registration until the student:<br><br>1. Completes an Academic Improvement Plan (AIP) and a Graduation Plan.<br>2. Has the AIP signed by either the supervisor of the student's college advisement center or an assigned faculty member in the student's major.<br>3. Has the graduation plan signed by the supervisor of the student's college advisement center and by an assigned faculty member in the student's major.<br>4. Submits the completed forms to an advisor from the Academic Support Office and completes an Academic Contract with the advisor.<br><br>Students remain on CAP until both their cumulative BYU GPA and fall, winter, or spring-summer GPA are 2.0 or higher in 6 credits or more. Students on CAP who earn less than a 2.0 GPA for a fall, winter, or spring-summer are academically suspended or dismissed.<br><br>Students on CAP taking more than one enrollment to raise their cumulative BYU GPA to 2.0 or above will need to complete an AIP for each enrollment on |

| | | |
|---|---|---|
| | | CAP and visit with an Academic Support advisor. |
| SUSPENSION | When the most recent semester/term GPA is below 2.0 and the student was on academic probation or CAP<br><br>OR<br><br>When a student fails to comply with the conditions prescribed by the Academic Standards Committee. | 1. The student is expected to drop his or her enrollments in day, evening, or extension classes (except Independent Study).<br>2. The student may not enroll in BYU day, evening, or extension classes (except Independent Study) for a minimum of 12 months. During this time the student is expected to resolve all problems leading to the student's academic suspension. After 12 or more months, the student is eligible to return. If the student completes any college-level work while on suspension, the student must receive an overall GPA of 3.2 or higher in that course work to be allowed readmission. The student should contact the Admissions Office, D-155 ASB, (801) 422-2507, for details and pertinent information about deadlines and expectations for readmission. Students who have been academically suspended must submit applications for readmission by published admission deadlines, which may be before the 12 months have passed.<br><br>A student with extenuating circumstances—who has appropriate support and justification—may appeal the 12-month period out of BYU through the Academic Standards Committee. If students are planning to petition their time away from the university, they should not drop their classes and should continue to attend their classes until after the petition has been reviewed. If the petition is denied, the university will drop their classes for them. The student should contact the Academic Support Office, 2500 WSC, (801) 422-2723, for assistance. No other appeals will be considered. |
| DISMISSAL | When a student is academically suspended a second time.<br><br>OR<br><br>When a student fails to comply with the conditions prescribed by the Academic Standards Committee. | An academically dismissed student may not enroll in day, evening, or extension classes (except Independent Study). After three years a student is eligible to enroll in evening or extension classes. A student may seek an exception to be readmitted as a degree-seeking student after two or more years by petitioning the Academic Standards Committee. In addition to petitioning, dismissed students must apply for readmission by the published admission deadlines. Students on dismissal will be required to complete certain criteria in order to be considered for readmission to BYU such as the number of credit hours to take while on dismissal. For specific information, please contact the Academic Support Office. |

**Note:** College advisement centers (CACs) may also set registration blocks on students not progressing toward timely graduation. In such cases, students must also meet with their CAC to have this block removed.

***** Fall, Winter, or Spring-Summer

**Advisement Resources**

- Undergraduate Majors
- Undergraduate Minors
- Limited Enrollment Programs

# Advisement Resources

*BYU undergraduates should develop competence in at least one area of concentration. Competence generally demands study in depth. Such in-depth study helps prepare students for their life's work; it also teaches them that genuine understanding for any subject requires exploring it fully. Students normally acquire such depth from their major and minor fields.* (The Aims of a BYU Education)

In addition to completing the university core, each student must choose a specialized area of study—a major. Requirements vary considerably from major to major, but all majors share in common a sequential development from introductory foundation courses to those that expect increasingly greater depth and sophistication. As the aims indicate, "By the time they graduate, students should grasp their discipline's essential knowledge and skills . . . , and many should have participated in scholarly or creative activities that let them demonstrate their mastery." Within this sequential development, prerequisites—whether within or outside the major department—help prepare students for subsequent, more focused work in the major. Some majors also require allied course work in related fields outside the major proper.

## Aptitudes, Interests, and Objectives

Success in a major depends upon the right combination of interests, skills, effort, and aptitudes. Students who choose a major only because of its job possibilities and fail to consider their own interests and aptitudes will probably be disappointed. Some majors, particularly those in professional programs (e.g., accounting) lead directly to employment in a particular field; others (e.g., philosophy) provide a rich liberal arts preparation for subsequent graduate study or professional programs (e.g., law) but may not track as directly into employment in the field of the major. Liberal arts majors do open up a great variety of employment opportunities, but students majoring in such fields need to be more conscious of exploring such opportunities over the course of the major.

## Flexibility and Adaptability

The only things that can be counted on in the future are change and a continued knowledge explosion. Some futurists have estimated that today's high school graduates will be in five to seven different careers during their lifetime. Flexibility and adaptability, learning how to learn, and learning to think carefully and critically are the aims of a strong liberal arts education.

For some careers a degree in a particular major is not required. Employers respond favorably to applicants who have developed analytical skills, who have the ability to reason abstractly, and who have learned to communicate precisely and effectively.

## Choosing a Major

Although some students may change their major several times before arriving at a "good fit," bouncing from major to major can prove to be costly in both time and money. Careful and thoughtful consideration before choosing a major will reduce the time to graduation and help make the most of the time at BYU. Major requirements and course descriptions can be found by using the QuickSearch feature at the top of this page or by using the list of majors. Students may find some combination of the following action steps useful in selecting a major:

1. **Review catalog information pertaining to undergraduate majors.** A list of majors can be found in this section of the catalog or check each department.
2. **Meet as often as needed with an open major advisor in the University Advisement Center (UAC).** Open major advisors are available to help students choose a major or career path. Contact them at 2500 WSC, (801) 422-3826, or e-mail to university_advisement@byu.edu. You can also access their Web page at http://universityadvisement.byu.edu/.
3. **Choose university core requirements carefully.** Once a major is chosen, the college advisement center for your major can help in the selection of classes that both satisfy university core requirements and expose students to the core subject matter of a major or career: core.byu.edu.
4. **Enroll in a career exploration course or career workshop.** Student Development (StDev) 117, Career Exploration, is a 2-credit course designed to help students choose a major and a career path. Juniors and seniors may want to take StDev 317, Career Strategies, a 2-credit hour course designed to help upper-division students focus on career placement and take final steps into the workforce.
5. **Visit the Career and Academic Success Center (CASC).** The Career and Academic Success Center (2590 WSC) has hundreds of printed and electronic resources designed to help students educate themselves about majors and career options so that they can make informed decisions. Type-Focus, a Web-based self-assessment and career exploration program, is available in the Career Center. This tool, along with several others, are also available on the Web at http://casc.byu.edu/.
6. **Complete a career interest inventory.** The Career and Academic Success Center (CASC) (2590 WSC) administers career interest inventories that help students match their interests with a major or career. There is a small fee for some of these tests and others are free.
7. **Learn, firsthand, about potential careers.** Part-time work, summer employment, internships, and volunteer work provide useful opportunities for students to collect information about what a specific career entails and to make contacts that will

help them further their career goals. In addition, students might ask relatives or friends doing the kind of work they are interested in if they can be their "shadow" for a day, or perhaps longer. Alternatively, students might interview individuals in these positions, asking them about their work, the associated academic prerequisites, and so forth.

8. **Take introductory or seminar courses for majors/careers being considered.** BYU offers seminar courses for pre-medicine, pre-dentistry, pre-optometry, pre-law, and many of the engineering majors. There are other introductory courses such as Orientation to the Psychology Major (Psych 101), Historian's Craft (Hist 200), that may be helpful. Information on these courses is available through college advisement centers.

9. **Pursue multiple options.** When trying to choose between two majors, take courses that will fill major and minor requirements for both. When deciding which of the two will be the major, the other choice can possibly become a minor.

10. **Seek advice from the faculty.** Faculty members who teach and mentor in a particular major understand the purposes of the major program, its array of courses, and the opportunities available to those who complete it. Students should identify an appropriate member of the faculty and ask for assistance, which will often require an appointment.

11. **Make a firm commitment.** Pursuing a major with a firm commitment to go beyond its requirements will bring satisfaction and ensure future opportunities. Tentative or half-hearted completion of minimum requirements of any major will lead only to discouragement and detachment. Students are encouraged to choose carefully, trust their choice, and diligently pursue their studies in the major.

12. **Learn about deadlines, prerequisites, and application requirements for limited-enrollment programs.** Some majors have limited enrollment and only accept students by application. Limited-enrollment programs are identified with an asterisk (*) in the list of majors referred to in step 1. Students should become familiar with the prerequisite courses required for limited-enrollment majors several semesters before they plan to apply. When applying to limited-enrollment programs, students should have a backup plan in case they are not accepted. Advisors in the University Advisement Center (2500 WSC) can help develop alternative academic plans for reaching a given career objective.

## Choosing a Minor

A minor offers students the opportunity to increase their breadth of expertise by exploring an area of study in depth but not to the same degree as in a major. Some majors require students to complete a minor from a specified set of options, but for most students a minor is optional. Students who elect to complete a minor often choose fields related to the major. Others may choose a minor in an area in which they have expertise or interest. In most cases, the minor would be chosen from a different department than the major.

Courses used to satisfy the requirements of a student's major may also be used to satisfy the requirements of a minor, unless the minor's requirements place restrictions on the double counting of courses. A list of minors can be found at: http://registrar.byu.edu/catalog/2014-2015ucatPDF/Advisement/MinorList.php.

## Academic Advisement

The university provides a number of resources to assist students with careful and thoughtful academic and career planning while at BYU. It is expected that students will partner with the university by taking full advantage of these available resources and opportunities to enhance their chances of a successful academic experience.

The university is committed to providing students with access to academic advisors who will:

- Stay abreast of major and university requirements, and the corresponding academic resources
- Assist students by making appropriate recommendations for registration
- Help students in their pursuit of an appropriate major and career
- Aid students in planning an education program consistent with their academic progress
- Offer friendly, attentive, informative service, listening to the student's situation before offering a solution

Students will be successful as they:

- Prepare for and keep appointments with their college advisement center (CAC) advisor; preferably at least once a calendar year
- Establish and follow an academic plan for graduation
- Use university resources such as MyMAP, Major Academic Plans (MAPs), Academic Information Management (AIM), and the progress report
- Become familiar with their basic academic program and requirements
- Review personal academic progress each semester

The key components to advisement are:

- MyMAP (available on MyBYU through the BYU homepage; your net ID and PIN are necessary for access)
- Major MAPs (available on the web at: http://registrar.byu.edu/advisement/map.php and at college and university advisement centers)

### AIM

The Academic Information Management (AIM) system provides students with easy access to information on their academic progress and other vital information. In AIM, students can change their addresses and phone numbers, access their class schedules, determine course availabilities and instructor schedules, monitor their progress reports, look at their grades and BYU credit, make PIN changes, check on transfer and AP credit, and conduct personal registration procedures.

#### MyMAP

BYU offers students a helpful academic planning system (MyMAP) that enables them to plan their academic progress towards graduation. MyMAP is an online tool students may use to plan specific courses to fill University Core, major, minor, and elective requirements, and organize those courses into semesters/terms. In addition, students may register from these courses using the Register tab. Easy access to course descriptions can be found on any MyMAP tab by simply clicking on the course title. As a student fully utilizes MyMAP, they will find that they have important information at their fingertips. Students may access MyMAP under the school section of MyBYU. To learn more about MyMAP go to http://mymap.byu.edu.

### Progress Reports

Progress Reports were created to provide students with accurate academic progress information. Students can access their progress report in the AIM system (through *MyMAP*). In the new MyMAP feature in AIM, students can actually use their progress report (on the *Plan* tab) as a tool to plan their academic course of study.

### Major Academic Plan (MAP)

This supplement to the BYU Undergraduate Catalog is also a valuable academic resource for students as they plan and prepare their academic schedules. The MAP includes information regarding university core and major requirements, semester-by-semester recommendations for course selection, and course availability. Please see the following Web site for more information: http://registrar.byu.edu/advisement/map.php.

## College Advisement Centers (CACs)

A CAC exists in each academic college. At these centers, students receive personal assistance in meeting their educational goals as quickly as possible. Students should contact their advisement centers at least once a calendar year.

**David O. McKay School of Education,** 350 MCKB, Provo, UT 84602-5096, (801) 422-3426, email: ess@byu.edu

**Ira A. Fulton College of Engineering and Technology,** 242 CB, Provo, UT 84602-4101, (801) 422-4325, email: engineering_advisement@byu.edu

**College of Family, Home, and Social Sciences,** 1041 JFSB, Provo, UT 84602-5535, (801) 422-3541, email: fhssadvisement@byu.edu

**College of Fine Arts and Communications,** D-444 HFAC, Provo, UT 84602-6333, (801) 422-3777, email: cfacadvise@byu.edu

**College of Humanities,** 1175 JFSB, Provo, UT 84602-6120, (801) 422-4789, email: humanities-advisement@email.byu.edu

**International and Area Studies,** 273 HRCB, Provo, UT 84602-4526, (801) 422-3548, email: kennedy_advisement@byu.edu

**College of Life Sciences**, 380 WIDB, Provo, UT 84602-5189, (801) 422-3042, email: lifesciences@byu.edu

**Marriott School of Management,** 460 TNRB, Provo, UT 84602-3113, (801) 422-4285, email: management@byu.edu

**College of Nursing,** 551 SWKT, Provo, UT 84602-5544, (801) 422-4173, email: nursing_advisement@byu.edu

**College of Physical and Mathematical Sciences,** N-181 ESC, Provo, UT 84602-5096, (801) 422-2674, email: cpmsadvisement@byu.edu

## University Advisement Center

2500 WSC
(801) 422-3826
E-mail: university_advisement@byu.edu
Web: http://universityadvisement.byu.edu/

The University Advisement Center provides academic advising and career counseling to students seeking information on how to choose majors or careers. **Services include:** general academic advisement, advisement on how to choose a major or career, graduate school advisement, career interest testing, and information and referral to appropriate university resources. The center serves as the college advisement center for open major students but all students are welcome to use its services and resources for assistance in making informed and appropriate decisions about majors or careers. Advisement to special populations, including Summer Visiting Students, international students, enriched environment students, and students in transition, is also provided.

## Honors Advisement Center

102A MSRB
(801) 422-5497
E-mail: honors@byu.edu
Web: http://www.byu.edu/honors/

Honors education is open to all students who choose to participate. Students who intend to graduate with University Honors should consult with an advisor in the Honors Advisement Center (102A Maeser Building) for assistance with choosing honors courses and understanding honors graduation requirements.

## Preprofessional Advisement Center

3328 WSC
(801) 422-3044
E-mail: health_professions@byu.edu or prelaw@byu.edu
Web: http://ppa.byu.edu/

The Preprofessional Advisement Center serves students preparing to apply to professional graduate programs, specifically law, health (medical, dental, etc.), and graduate management (MBA, MPA, etc.). For those students who are interested in such professional graduate programs, the center offers individual counseling, admissions advice, and student development courses to help students explore these fields and prepare for the study and practice of the student's chosen field. The center is open to students from any major.

## Academic Support Office

2500 WSC
(801) 422-2723
E-mail: academic_support@byu.edu
Web: http://aso.byu.edu/

The Academic Support Office (ASO) provides academic advisement for students who are experiencing difficulty with their studies and are on academic warning, probation, or continued academic probation (CAP). The ASO also offers these students help in working through challenges and overcoming obstacles to successful academic performance. Information about the university's academic standards, a student's academic standing, or help with learning problems is available for those students not currently on good or previous academic standing. (See also Academic Standards in this catalog.)

## Additional Advisement Resources: Counseling and Career Center

The Counseling and Career Center offers advisement services to students who need help becoming a successful student, choosing a major or career, or considering options for graduate school. Services include the following: (1) general academic advisement, (2) academic standing advisement for students on academic warning, probation, or suspension, (3) advisement on study and learning skills, (4) advisement on choosing a major or a career, (5) graduate school advisement, and (6) workshops on career and learning skills.

### Workshops

2590 WSC
(801) 422-2689
E-mail: workshops@byu.edu
Web: http://casc.byu.edu/

Fifty-minute workshops designed to assist students with personal development and study skills are offered each day that BYU classes are in session. Topics include time management, communication, testing preparation, listening, and note taking. Printed self-help materials used in the workshops are also available.

### Courses for Credit

2510 WSC
(801) 422-4007
Web: http://casc.byu.edu/student-development-classes

Students in various areas of student development can receive credit for courses dealing with college study skills, life planning and decision making, career exploration, and job seeking listed under Student Development (StDev) in the class schedule. See also the Student Development section of this catalog for course numbers and descriptions.

### Career and Academic Success Center

2590 WSC
(801) 422-2689
E-mail: clic@byu.edu
Web: http://casc.byu.edu/

The Career and Academic Success Center (CASC) is a resource area designed to assist students with a variety of career and/or learning concerns. Printed and electronic resources are available to help students make informed decisions about majors, careers, and graduate school options. In addition, the CASC offers workshops, materials, and assistance to students who desire to improve their learning skills so that they can be more successful academically.

### Testing Services

2590 WSC
(801) 422-2689
E-mail: careertests@byu.edu
Web: http://casc.byu.edu/career-assessments

Printed and electronic inventories are available to assess career interests, abilities, and values so that students can more accurately determine suitable career options for themselves. After completing an inventory a student will meet with an advisor who will interpret the results and guide the student toward additional resources so that they can research careers. Although modest fees are charged for most tests, there are no-fee assessments available.

### Career Services

2410 WSC
(801) 422-3000
Fax: (801) 422-3444
E-mail: byucareerservices@byu.edu
Web: http://ucs.byu.edu/

The University Career Services (UCS) assists BYU students and alumni from all colleges, departments, majors, and class standings with job and internship preparation and searches. Students who register at http://byu.experience.com gain access to such services as advisement on job and internship search strategies, on-campus interviews with recruiters, and information about specific job and internship opportunities submitted by employers from business, education, and government. A system (eRecruiting.com) is available that allows students to register, research employers search job postings, submit résumés to employers, schedule interviews, and check interview schedules.

**Advisement Resources**

- Undergraduate Majors
- Undergraduate Minors
- Limited Enrollment Programs

# Undergraduate Majors

| Academic Programs and Degrees Offered | Departments/Schools/Centers | Colleges/Schools/ Divisions/Centers |
|---|---|---|
| *Programs marked with an asterisk are limited-enrollment programs with special admission requirements that must be met before a student is admitted. See an appropriate advisement center for more information.* | | |
| | | |
| Accounting*—BS | School of Accountancy | Marriott School of Management |
| Acting*—BFA | Theatre and Media Arts | Fine Arts and Communications |
| Actuarial Science—BS | Statistics | Physical and Mathematical Sciences |
| American Studies—BA | American Studies Program | Humanities |
| Ancient Near Eastern Studies—BA | International and Area Studies | David M. Kennedy Center for International Studies |
| Animation*—BFA | Visual Arts<br>Theatre and Media Arts<br>Computer Science | Fine Arts and Communications; College of Physical and Mathematical Sciences |
| Anthropology—BA | Anthropology | Family, Home, and Social Sciences |
| Emphases: Archaeology<br>Sociocultural | | |
| Anthropology (sociocultural double major)—BA | Anthropology | Family, Home, and Social Sciences |
| Arabic Language (2nd major program)—BA | Asian and Near Eastern Languages | Humanities |
| Art Education (K–12)*—BA | Visual Arts | Fine Arts and Communications |
| Art History and Curatorial Studies—BA | Visual Arts | Fine Arts and Communications |
| Asian Studies—BA | International and Area Studies | David M. Kennedy Center for International Studies |
| Emphases: China Studies<br>Japan Studies<br>Korea Studies | | |
| Athletic Training—BS | Exercise Sciences | Life Sciences |
| | | |
| Biochemistry—BS | Chemistry and Biochemistry | Physical and Mathematical Sciences |
| Bioinformatics—BS | Biology | Life Sciences |
| Biological Science Education—BS | Biology | Life Sciences |
| Biology—BS | Biology | Life Sciences |
| Biophysics—BS | Physiology and Developmental Biology | Life Sciences |
| | | |
| Chemical Engineering—BS | Chemical Engineering | Ira A. Fulton College of Engineering and Technology |
| Chemistry—BA | Chemistry and Biochemistry | Physical and Mathematical Sciences |
| Chemistry—BS | Chemistry and Biochemistry | Physical and Mathematical Sciences |
| Chemistry Education—BS | Chemistry and Biochemistry | Physical and Mathematical Sciences |
| Chinese—BA | Asian and Near Eastern Languages | Humanities |
| Civil Engineering—BS | Civil and Environmental Engineering | Ira A Fulton College of Engineering and Technology |
| Classical Studies—BA | Humanities, Classics, and Comparative Literature | Humanities |
| Emphases: Classical Civilization<br>Classics<br>Greek<br>Latin | | |
| Commercial Music*—BM | School of Music | Fine Arts and Communications |
| Communication Disorders*—BS | Communication Disorders | David O. McKay School of Education |
| Communications*—BA | Communications | Fine Arts and Communications |
| Emphases: Advertising*<br>Journalism*<br>Public Relations* | | |
| Comparative Literature—BA | Humanities, Classics, and Comparative Literature | Humanities |
| Computer Engineering—BS | Electrical and Computer Engineering | Ira A. Fulton College of Engineering and Technology |
| Computer Science—BS | Computer Science | Physical and Mathematical Sciences |
| Optional emphases: Animation*<br>Bioinformatics | | |
| | | |

| | | |
|---|---|---|
| Conservation Biology—BS | Biology | Life Sciences |
| Construction and Facilities Management—BS<br>Emphases: Construction Management, Facilities Management | School of Technology | Ira A. Fulton College of Engineering and Technology |
| | | |
| Dance*—BA | Dance | Fine Arts and Communications |
| Dance Education*—BA | Dance | Fine Arts and Communications |
| Dietetics*—BS | Nutrition, Dietetics, and Food Science | Life Sciences |
| | | |
| Early Childhood Education—BS | Teacher Education | David O.McKay School of Education |
| Earth and Space Science Education—BS | Geological Sciences | Physical and Mathematical Sciences |
| Economics—BA | Economics | Family, Home, and Social Sciences |
| Economics—BS | Economics | Family, Home, and Social Sciences |
| Electrical Engineering—BS | Electrical and Computer Engineering | Ira A. Fulton College of Engineering and Technology |
| Elementary Education—BS | Teacher Education | David O. McKay School of Education |
| English—BA | English | Humanities |
| English Language—BA | Linguistics and English Language | Humanities |
| English Teaching*—BA | English | Humanities |
| Environmental Science—BS | Plant and Wildlife Sciences | Life Sciences |
| European Studies—BA | International and Area Studies | David M. Kennedy Center for International Studies |
| Exercise and Wellness—BS | Exercise Sciences | Life Sciences |
| Exercise Science—BS | Exercise Sciences | Life Sciences |
| | | |
| Family and Consumer Sciences Education—BS | School of Family Life | Family, Home, and Social Sciences |
| Family History–Genealogy—BA | History | Family, Home, and Social Sciences |
| Family Life—BS<br>Emphases: Family Studies, Human Development | School of Family Life | Family, Home, and Social Sciences |
| Finance*—BS | Finance | Marriott School of Management |
| Food Science—BS | Nutrition, Dietetics, and Food Science | Life Sciences |
| French— BA | French and Italian | Humanities |
| French Studies (secondary major program)—BA | French and Italian | Humanities |
| French Teaching—BA | French and Italian | Humanities |
| | | |
| General Studies*—BGS<br>Emphases: American Studies*, English*, Family Life*, History*, Management*, Psychology* | Bachelor of General Studies | Division of Continuing Education |
| Genetics and Biotechnology—BS | Plant and Wildlife Sciences | Life Sciences |
| Geography—BS<br>Emphases: Environmental Studies, Geographic Information Systems, Geospatial Intelligence, Global Studies, Tourism Studies, Urban & Regional Planning | Geography | Family, Home, and Social Sciences |
| Geology—BS<br>Optional emphasis: Environmental Geology | Geological Sciences | Physical and Mathematical Sciences |
| German—BA<br>Emphases: Linguistics, Literature/Film/Culture | German and Russian | Humanities |
| German Studies (secondary major program)—BA | German and Russian | Humanities |
| German Teaching—BA | German and Russian | Humanities |
| Graphic Design*—BFA | Visual Arts | Fine Arts and Communications |
| | | |
| History—BA | History | Family, Home, and Social Sciences |
| History Teaching—BA | History | Family, Home, and Social Sciences |
| | | |
| Illustration*—BFA | Visual Arts | Fine Arts and Communications |
| Industrial Design*—BFA | School of Technology | Ira A. Fulton College of Engineering and Technology |
| Information Systems*—BS | Information Systems | Marriott School of Management |
| Information Technology—BS | School of Technology | Ira A. Fulton College of Engineering and Technology |
| Interdisciplinary Humanities—BA | Humanities, Classics, and Comparative Literature | Humanities |
| International Relations—BA | International and Area Studies | David M. Kennedy Center for |

| | | |
|---|---|---|
| | | International Studies |
| Italian—BA | French and Italian | Humanities |
| Italian Studies (secondary major program)—BA | French and Italian | Humanities |
| | | |
| Japanese—BA | Asian and Near Eastern Languages | Humanities |
| | | |
| Korean—BA | Asian and Near Eastern Languages | Humanities |
| | | |
| Landscape Management—BS | Plant and Wildlife Sciences | Life Sciences |
| Latin American Studies—BA | International and Area Studies | David M. Kennedy Center for International Studies |
| Latin Teaching—BA | Humanities, Classics, and Comparative Literature | Humanities |
| Linguistics—BA | Linguistics and English Language | Humanities |
| | | |
| Management*—BS<br>Emphases: General Business*<br>Entrepreneurship*<br>Global Supply Chain Management*<br>Marketing Management*<br>Orgnztnl Behavior/HR Mgt*<br>Strategy* | Marriott School of Management | Marriott School of Management |
| Manufacturing Engineering Technology—BS | School of Technology | Ira A. Fulton College of Engineering and Technology |
| Mathematics—BS<br>Emphasis: Applied and Computational Mathematics | Mathematics | Physical and Mathematical Sciences |
| Mathematics Education—BS | Mathematics Education | Physical and Mathematical Sciences |
| Mechanical Engineering*—BS | Mechanical Engineering | Ira A. Fulton College of Engineering and Technology |
| Media Arts Studies*—BA | Theatre and Media Arts | Fine Arts and Communications |
| Medical Laboratory Science*—BS | Microbiology and Molecular Biology | Life Sciences |
| Microbiology—BS | Microbiology and Molecular Biology | Life Sciences |
| Middle East Studies/Arabic—BA | International and Area Studies | |
| Molecular Biology—BS | Microbiology and Molecular Biology | Life Sciences |
| Music*—BA | School of Music | Fine Arts and Communications |
| Music Composition*—BM | School of Music | Fine Arts and Communications |
| Music Dance Theatre*—BFA | Music Dance Theatre Program | Fine Arts and Communications |
| Music Education*—BM<br>Emphases: K–12 Choral*<br>K–12 Instrumental*<br>Elementary Music Specialist* | School of Music | Fine Arts and Communications |
| Music Performance*—BM<br>Emphases: Brass*<br>Combined Piano and Organ*<br>Organ*<br>Percussion*<br>Piano*<br>String*<br>Vocal*<br>Woodwind* | School of Music | Fine Arts and Communications |
| | | |
| Neuroscience—BS | Neuroscience Center | Life Sciences; Family, Home, and Social Sciences |
| Nursing*—BS | Nursing | Nursing |
| Nutritional Science—BS | Nutrition, Dietetics, and Food Science | Life Sciences |
| | | |
| Philosophy—BA | Philosophy | Humanities |
| Photography*—BFA | Visual Arts | Fine Arts and Communications |
| Physical Education Teaching/Coaching (K–12)—BS | Teacher Education | David O. McKay School of Education |
| Physical Science, Teaching—BS | Physical Science Program | Physical and Mathematical Sciences |
| Physics—BS | Physics and Astronomy | Physical and Mathematical Sciences |
| Physics, Applied—BS | Physics and Astronomy | Physical and Mathematical Sciences |
| Physics-Astronomy—BS | Physics and Astronomy | Physical and Mathematical Sciences |
| Physics Teaching—BS | Physics and Astronomy | Physical and Mathematical Sciences |
| Physiology and Developmental Biology—BS | Physiology and Developmental Biology | Life Sciences |
| Political Science—BA | Political Science | Family, Home, and Social Sciences |
| Portuguese—BA | Spanish and Portuguese | Humanities |
| Portuguese Studies (secondary major program)—BA | Spanish and Portuguese | Humanities |
| Psychology—BS | Psychology | Family, Home, and Social Sciences |
| Public Health—BS<br>Emphases: Environmental/Occupational Health<br>Epidemiology | Health Science | Life Sciences |

| | | | |
|---|---|---|---|
| | Health Promotion<br>Health Science | | |
| | | | |
| Recreation Management—BS | | Recreation Management | Marriott School of Management |
| Emphases: | Experience Industry Management*<br>Therapeutic Recreation* | | |
| Russian—BA | | German and Russian | Humanities |
| | | | |
| Social Science, Teaching—BS | | History | Family, Home, and Social Sciences |
| Sociology—BS | | Sociology | Family, Home, and Social Sciences |
| Spanish—BA | | Spanish and Portuguese | Humanities |
| Spanish Studies (secondary major program)—BA | | Spanish and Portuguese | Humanities |
| Spanish Teaching*—BA | | Spanish and Portuguese | Humanities |
| Spanish Translation*—BA | | Spanish and Portuguese | Humanities |
| Special Education*—BS | | Counseling Psychology and Special Education | David O. McKay School of Education |
| Emphases: | Mild/Moderate Disabilities*<br>Severe Disabilities* | | |
| Statistics—BS | | Statistics | Physical and Mathematical Sciences |
| Emphases: | Applied Statistics & Analytics<br>Biostatistics<br>Statistical Science | | |
| Studio Arts*—BFA | | Visual Arts | Fine Arts and Communications |
| | | | |
| Technology and Engineering Education*—BS | | School of Technology | Ira A. Fulton College of Engineering and Technology |
| Theatre Arts Education K-12—BA | | Theatre and Media Arts | Fine Arts and Communications |
| Theatre Arts Studies—BA | | Theatre and Media Arts | Fine Arts and Communications |
| | | | |
| Visual Arts*—BA | | Visual Arts | Fine Arts and Communications |
| Emphases: | Graphic Design*<br>Illustration*<br>Photography*<br>Studio Arts* | | |
| | | | |
| Wildlife and Wildlands Conservation—BS | | Plant and Wildlife Sciences | Life Sciences |

**Advisement Resources**

- Undergraduate Majors
- Undergraduate Minors
- Limited Enrollment Programs

# Undergraduate Minors

| Minors Offered | Departments/Schools/Centers | Colleges/Schools/ Divisions/Centers |
|---|---|---|
| *Programs marked with an asterisk are limited-enrollment programs with special admission requirements that must be met before a student is admitted. See an appropriate advisement center for more information.* | | |
| Actuarial Science | Statistics | Physical and Mathematical Sciences |
| Advertising Design* | Visual Arts | Fine Arts and Communications |
| Aerospace Studies | Aerospace Studies (Air Force ROTC) | Marriott School of Management |
| African Studies | International and Area Studies | David M. Kennedy Center for International Studies |
| Ancient Near Eastern Studies | International and Area Studies | David M. Kennedy Center for International Studies |
| Anthropology | Anthropology | Family, Home, and Social Sciences |
| Arabic | Asian and Near Eastern Languages | Humanities |
| Art Education* | Visual Arts | Fine Arts and Communications |
| Art History and Curatorial Studies | Visual Arts | Fine Arts and Communications |
| Asian Studies | International and Area Studies | David M. Kennedy Center for International Studies |
| Astronomy | Physics and Astronomy | Physical and Mathematical Sciences |
| | | |
| Ballroom Dance | Dance | Fine Arts and Communications |
| Biblical Hebrew | Asian and Near Eastern Languages | Humanities |
| | | |
| Chemistry | Chemistry and Biochemistry | Physical and Mathematical Sciences |
| Chemistry Education | Chemistry and Biochemistry | Physical and Mathematical Sciences |
| Chinese | Asian and Near Eastern Languages | Humanities |
| Chinese Teaching | Asian and Near Eastern Languages | Humanities |
| Civic Engagement Leadership | | Family, Home, and Social Sciences |
| Classical Studies<br>Options: Greek, Latin | Humanities, Classics, and Comparative Literature | Humanities |
| Communication Disorders | Communication Disorders | David O. McKay School of Education |
| Communications | Communications | Fine Arts and Communications |
| Computer Science | Computer Science | Physical and Mathematical Sciences |
| Computer Science Teaching | Computer Science | Physical and Mathematical Sciences |
| Contemporary Dance | Dance | Fine Arts and Communications |
| | | |
| Digital Humanities and Technology | Digital Humanities and Technology Program | Humanities |
| Dual-Language Immersion K-12 Teaching | Teacher Education | David O. McKay School of Education |
| | | |
| Economics | Economics | Family, Home, and Social Sciences |
| Editing | Linguistics and English Language | Humanities |
| English | English | Humanities |
| English Teaching | English | Humanities |
| Environmental Science | Plant and Wildlife Sciences | Life Sciences |
| European Studies | International and Area Studies | David M. Kennedy Center for International Studies |
| | | |
| Family History—Genealogy | History | Family, Home, and Social Sciences |
| Family Life | School of Family Life | Family, Home, and Social Sciences |
| French | French and Italian | Humanities |
| French Teaching | French and Italian | Humanities |
| | | |
| Geographic Information Systems | Geography | Family, Home, and Social Sciences |
| Geography Teaching | Geography | Family, Home, and Social Sciences |
| Geology | Geological Sciences | Physical and Mathematical Sciences |
| Geology Teaching | Geological Sciences | Physical and Mathematical Sciences |
| German | German and Russian | Humanities |

| | | |
|---|---|---|
| German Teaching | German and Russian | Humanities |
| Gerontology | School of Family Life | Family, Home, and Social Sciences |
| Global Business and Literacy | Marriott School of Management | Marriott School of Management |
| Global Studies | Geography | Family, Home, and Social Sciences |
| | | |
| History | History | Family, Home, and Social Sciences |
| History Teaching | History | Family, Home, and Social Sciences |
| Humanities | Humanities, Classics, and Comparative Literature | Humanities |
| | | |
| Information Technology | School of Technology | Ira A. Fulton College of Engineering and Technology |
| International Development | International and Area Studies | David M. Kennedy Center for International Studies |
| International Strategy and Diplomacy | Political Science | Family, Home, and Social Sciences |
| Italian | French and Italian | Humanities |
| | | |
| Japanese | Asian and Near Eastern Languages | Humanities |
| Japanese Teaching | Asian and Near Eastern Languages | Humanities |
| | | |
| Korean | Asian and Near Eastern Languages | Humanities |
| | | |
| Landscape Management | Plant and Wildlife Sciences | Life Sciences |
| Latin American Studies | International and Area Studies | David M. Kennedy Center for International Studies |
| Latin Teaching | Humanities, Classics, and Comparative Literature | Humanities |
| Legal Studies | Political Science | Family, Home, and Social Sciences |
| Linguistics | Linguistics and English Language | Humanities |
| Logic | Philosophy | Humanities |
| | | |
| Management | Marriott School of Management | Marriott School of Management |
| Manufacturing | School of Technology | Ira A. Fulton College of Engineering and Technology |
| Mathematics | Mathematics | Physical and Mathematical Sciences |
| Mathematics Education | Mathematics Education | Physical and Mathematical Sciences |
| Media Arts Studies* | Theatre and Media Arts | Fine Arts and Communications |
| Microbiology | Microbiology and Molecular Biology | Life Sciences |
| Middle East Studies | International and Area Studies | David M. Kennedy Center for International Studies |
| Military Science | Military Science (Army ROTC) | Marriott School of Management |
| Modern Hebrew | Asian and Near Eastern Languages | Humanities |
| Molecular Biology | Microbiology and Molecular Biology | Life Sciences |
| Music | School of Music | Fine Arts and Communications |
| | | |
| Native American Studies | History | Family, Home, and Social Sciences |
| Nonprofit Management | Recreation Management | Marriott School of Management |
| Nutrition | Nutrition, Dietetics, and Food Science | Life Sciences |
| | | |
| Philosophy | Philosophy | Humanities |
| Physical Education Teaching/Coaching | Teacher Education | David O. McKay School of Education |
| Physics | Physics and Astronomy | Physical and Mathematical Sciences |
| Physics Teaching | Physics and Astronomy | Physical and Mathematical Sciences |
| Political Science | Political Science | Family, Home, and Social Sciences |
| Political Science Teaching | Political Science | Family, Home, and Social Sciences |
| Political Strategy | Political Science | Family, Home, and Social Sciences |
| Portuguese | Spanish and Portuguese | Humanities |
| Portuguese Teaching | Spanish and Portuguese | Humanities |
| Psychology | Psychology | Family, Home, and Social Sciences |
| Psychology Teaching | Psychology | Family, Home, and Social Sciences |
| | | |
| Russian | German and Russian | Humanities |
| Russian Teaching | German and Russian | Humanities |
| | | |
| Scandinavian Studies | Humanities, Classics, and Comparative Literature | Humanities |
| School Health Education | Health Science | Life Sciences |
| Sociology | Sociology | Family, Home, and Social Sciences |
| Spanish | Spanish and Portuguese | Humanities |
| Spanish Teaching | Spanish and Portuguese | Humanities |
| Statistics | Statistics | Physical and Mathematical Sciences |
| Strategy | Marriott School of Management | Marriott School of Management |
| | | |
| TESOL | Linguistics and English Language | Humanities |
| TESOL K–12 | Teacher Education | David O. McKay School of Education |

| | | |
|---|---|---|
| Theatre Arts Studies | Theatre and Media Arts | Fine Arts and Communications |
| Theoretical and Applied Ethics | Philosophy | Humanities |
| Travel and Tourism Studies | Geography | Family, Home, and Social Sciences |
| | | |
| Urban & Regional Planning | Geography | Family, Home, and Social Sciences |
| | | |
| Visual Arts | Visual Arts | Fine Arts and Communications |
| | | |
| Western American Studies | American Studies | Humanities |
| Women's Studies | Women's Studies Program | Humanities |
| World Dance | Dance | Fine Arts and Communications |
| Writing and Rhetoric | English | Humanities |

**Advisement Resources**

- Undergraduate Majors
- Undergraduate Minors
- Limited Enrollment Programs

# Limited Enrollment Programs

Some university programs host only limited enrollments due to resource constraints. These programs are granted Limited Enrollment Program status, and generally require application for student admission to the program. The table below lists all Limited Enrollment Programs at the university, and summarizes the maximum number of student participants and their acceptance rates.

## David O. McKay School of Education

| | % of Applicants Admitted | | | | Max # of Participants | Application Deadlines |
|---|---|---|---|---|---|---|
| | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | | |
| BS Communication Disorders | The first applications to the program will be received May 2013. | | | 100% | 400 | January 1<br>May 1<br>September 1 |
| BS Special Education: Mild/Moderate<br>BS Special Education: Severe | 96% | 96% | 95% | 97% | 128 | January 15 |

## Ira A. Fulton College of Engineering and Technology

| | % of Applicants Admitted | | | | Max # of Participants | Application Deadlines |
|---|---|---|---|---|---|---|
| | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | | |
| BS Construction Management | 94% | 93% | 96% | 100% | 220 | April 1<br>August 1<br>December 1 |
| BS Facility & Property Management | 78% | 92% | 74% | 100% | 60 | April 1<br>August 1<br>December 1 |
| BFA Industrial Design: Professional | 65% | 71% | 47% | 50% | 60 | April 25 |
| BFA Industrial Design | 85% | 100% | 54% | 50% | 40 | August 1 |
| BS Mechanical Engineering | 71% | 72% | 74% | 80% | 640 | February 1<br>July 1<br>October 1 |

## College of Fine Arts and Communications

| | % of Applicants Admitted | | | | Max # of Participants | Application Deadlines |
|---|---|---|---|---|---|---|
| | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | | |
| BFA Acting | 7% | 12% | 21% | 16% | 32 | April<br>December |
| BA Media Arts Studies | 59% | 59% | 60% | | 240 | March<br>November |
| Media Arts Studies (minor) | | | | | | March<br>November |
| BFA Animation | 15% | 31% | 25% | 28% | 100 | June |
| BA Art Education | 77% | 77% | 81% | 85% | 100 | March<br>November |
| Art Education (minor) | 33% | 0% | 33% | 33% | 120 | March<br>November |
| BFA Photography | 38% | 42% | 66% | 68% | 120 | March<br>November |
| BFA Graphic Design | 30% | 31% | 28% | 25% | 120 | March<br>November |
| BFA Illustration | 43% | 30% | 44% | 41% | 120 | March<br>November |
| BFA 2D Studio Arts | 42% | 35% | 61% | 61% | 200 | March<br>November |
| BFA 3D Studio Arts | 83% | 78% | 86% | 88% | 40 | March<br>November |
| BA Music | BA students must first be admitted to a BM degree below and meet certain academic criteria. | | | | | |
| BM Commercial Music | Program started Fall 2013. | | 12% | 12% | | January 15 |
| BM Music Composition | 31% | 45% | 75% | 38% | | December 1<br>January 15 |
| BM Music Education: K-12 Choral | 31% | 30% | 0% | 36% | | Winter or<br>Summer |
| BM Music Education: K-12 Instrumental | | | | | | Winter or |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 31% | 30% | 7% | 65% | 650 | Summer |
| BM Music Education: Elementary Music | 31% | 50% | 15% | 36% | | Winter or Summer |
| BM Performance: Brass | 31% | 33% | 54% | 52% | | January 15 |
| BM Performance: Combined Piano/Organ | 31% | No Applicants | No Applicants | No Applicants | | January 15 |
| BM Performance: Organ | 31% | 100% | 83% | 83% | | January 15 |
| BM Performance: Percussion | 31% | 50% | 83% | 77% | | January 15 |
| BM Performance: Piano | 31% | 56% | 39% | 38% | | January 15 |
| BM Performance: String | 31% | 38% | 43% | 31% | | December 1 January 15 |
| BM Performance: Vocal | 31% | 26% | 29% | 13% | | December 1 |
| BM Performance: Woodwind | 31% | 62% | 46% | 53% | | January 15 |
| BFA Music Dance Theatre | 16% | 22% | 17% | 22% | 65 | November 15 |
| BA Dance | 68% | 78% | 62% | 84% | 180 | February October |
| BA Dance Education (K-12) | 75% | 79% | 50% | 69% | 48 | February October |
| BA Communications-Advertising emphasis | 72% | 80% | 77% | 71% | 200 | September January |
| BA Communications-Journalism | 87% | 99% | 100% | 100% | 150 | September January |
| BA Communications-Public Relations | 81% | 85% | 86% | 82% | 160 | September January |

## College of Humanities

| | % of Applicants Admitted | | | | Max # of Participants | Application Deadlines |
|---|---|---|---|---|---|---|
| | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | | |
| BA English Teaching | 98% | 92% | 93% | 90% | 160 | January 15 September 15 |
| BA Spanish Teaching | 81% | 94% | 77% | 89% | 50 | February 28 October 31 |
| BA Spanish Translation | 59% | 100% | 69% | 69% | 25 | February |

## College of Life Sciences

| | % of Applicants Admitted | | | | Max # of Participants | Application Deadlines |
|---|---|---|---|---|---|---|
| | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | | |
| BS Medical Laboratory Science | 100% | 100% | 100% | 98% | 70 | March 1 October 1 |
| BS Dietetics | 65% | 79% | 77% | 84% | 80 | February 15 |

## Marriott School of Management

| | % of Applicants Admitted | | | | Max # of Participants | Application Deadlines |
|---|---|---|---|---|---|---|
| | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | | |
| BS Accounting | 74% | 81% | 87% | 85% | 265 | Last business day of June |
| BS Finance | Program started Fall 2012. | | 94% | 85% | 175 | Last business day of June |
| BS Information Systems | 74% | 91% | 87% | 83% | 120 | Last business day of June |
| BS Business Management | 69% | 83% | 85% | 69% | 290 | Last business day of June October 31 |
| BS Recreation Mngmnt: Experience Industry Mngmnt | The first applications to the program will be received June 2014. | | | | 90 | Last business day of June October 31 |
| BS Recreation Mngmnt: Therapeutic Recreation | The first applications to the program will be received June 2014. | | | | 45 | Last business day of June October 31 |

## College of Nursing

| | % of Applicants Admitted | | | | Max # of Participants | Application Deadlines |
|---|---|---|---|---|---|---|
| | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | | |
| BS Nursing | 50% | 65% | 49% | 48% | 390 | April September |

## College of Physical and Mathematical Sciences

| | % of Applicants Admitted | | | | Max # of Participants | Application Deadlines |
|---|---|---|---|---|---|---|
| | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| BS Computer Science Animation Emphasis | 40% | 90% | 50% | 47% | 40 | April 15<br>October 15 |

# The University Core: General and Religious Education

## "The BYU Baccalaureate: The Ideal of Integration"

Many people, when they think of university education, think primarily of the major—a bachelor's degree in, for example, economics or art history or chemistry or engineering. But a baccalaureate is much more than a major and much more than job-based training in a particular field. Although your diploma states your major, something greater has been earned and conferred—a *university* baccalaureate.

There are three formal components to the baccalaureate at Brigham Young University: religious education, general education, and education in a major. Of these, the first two constitute the *university core.* In accordance with *The Aims of a BYU Education*—which invites each student and every member of the university community to wholeness—each of the three components complements the others. They are not partitioned off from one another; none claims preeminence; together they comprise a whole, a harmony.

The idea of the complementary nature of GE, religious education, and education in the major is emphasized in the new mosaics options for GE. The mosaics give students the opportunity of choosing a group of GE requirements built around a theme that complements a student's major course of study. See Mosaics for more information.

Skills and depth are developed over time as the student progresses in both the core and the major; breadth, unfolding partly from historical perspective, ought to characterize the major as well as the core. The relationship between core and major will vary in any given year according to the competing demands upon the student's attention. However, students should strive to develop their programs in such a way that a lively interrelationship between the university core and the major, in which each nourishes and informs the other, is pursued over their entire undergraduate experience.

The major and the core blend into each other. It is here that open electives play their particular role. Without prolonging time at the university, each student enjoys the latitude—and, for some, ample latitude—to design an individual educational experience. Electives enrich; choices that students make about electives define what is unique about their education. Having found a core science course engaging, for example, a student might take cognate courses to explore the subject more deeply.

Having completed the 14-hour religion requirement, students are not barred from taking further religion courses. Majoring in a technical field, students might enlarge their experience of the liberal arts beyond what the core requires. A humanities major might choose to complete an applied minor in computing skills or to construct an unofficial "mini-minor" of courses that open up a particular opportunity for employment or further education at a professional school.

Students are encouraged to acquire skills in both foreign language and mathematics, even though only one of these is required by the core. Additional curricular and extracurricular opportunities in the Honors Program are open to all students at whatever level they might wish to be involved.

## Why a University Core?

*All students at BYU should be taught the truths of the gospel of Jesus Christ. Any education is inadequate which does not emphasize that His is the only name given under heaven whereby mankind can be saved....*

*Because the gospel encourages the pursuit of all truth, students at BYU should receive a broad university education. The arts, letters, and sciences provide the core of such an education, which will help students think clearly, communicate effectively, understand important ideas in their own cultural tradition as well as that of others, and establish clear standards of intellectual integrity.* (BYU Mission Statement)

Most graduates, five years after completing their degrees, are not employed directly in the areas of their majors, and studies show that those who do best in the long term are those whose breadth of education, rather than specialized training, has given them versatility. A university provides marketable skills; it bestows credentials necessary to some future goal; its graduates, statistically, make more money. But students who enroll at the university seeking only these things—or worse, students who graduate having sought only these things—cheat themselves of the best the university has to offer.

Students benefit most who desire to savor and to ponder, to recognize (in whatever eventual major) the hidden likenesses among the subjects they study, to aim at integration and wholeness. Students benefit most who take the university with them: changed by their experience, they have developed educated habits of mind; they have deepened their faith; they have learned to integrate the sacred and the secular; and they have learned that the craving for knowledge is not fully capable of satisfaction within a lifetime. Students benefit most who become lifelong learners, engaged in service to their fellow human beings.

That it integrates sacred and secular education is the hallmark of a BYU baccalaureate. All disciplines at BYU are "bathed in the light and color of the restored gospel" (Aims, "Spiritually Strengthening"). Religion courses—both Doctrinal Foundation and electives—are not intended as only a devotional supplement to the educational enterprise of the university. At once rigorous and inspiring, they engage the mind and the heart in an ever deeper understanding of the gospel of Jesus Christ through close and meticulous study of the scriptures and the teachings of the living prophets.

General education joins with religious education to make *university* education different from specialized vocational training. It builds a foundation for intellectual development; it increases our understanding of civilization—of humankind's most valuable knowledge and achievements in the arts, letters, and sciences. General education teaches us the importance of critical thinking, an awareness of the past, aesthetic sensibility, and moral judgment. These, together with the training provided in verbal and quantitative skills and in manipulating symbolic systems, help prepare us for a lifetime of learning, effective communication, responsible action, forming and judging arguments, and appreciating and creating the good and the beautiful.

## Administration of the University Core

The university core is administered collaboratively by the deans of Undergraduate Education and Religious Education under the direction of the academic vice president. Religious Education is responsible for the Doctrinal Foundation and Religion Electives components and the courses that meet these requirements; Undergraduate Education is responsible for the general education components. The success of the core depends upon dedicated faculty from throughout the university. The Faculty General Education Council, chaired by the associate dean of Undergraduate Education—General Education, reviews and approves all courses meeting general education requirements within the university core.

## Who Must Complete University Core Requirements?

All students who receive undergraduate degrees from BYU are required to complete the new core requirements as outlined below. Exceptions to this policy are explained in the Graduation Requirements Policy.

## Description of the University Core

The new university core comprises five categories titled Doctrinal Foundation; The Individual and Society; Skills; Arts, Letters, and Sciences; and Core Enrichment: Electives.

Consult the University Core/General Education Courses section of the current class schedule for an up-to-date list of approved courses. The current class schedule is available online at http://core.byu.edu

## Doctrinal Foundation and Religion Electives

Religious Education administers and offers courses in ancient and modern scripture, Church history and doctrine, and related subjects. Together these help students toward an ever deeper understanding of "the doctrines, the covenants, the ordinances, the standard works, and the history of the restored gospel" (Aims, "Intellectually Enlarging").

Because The Church of Jesus Christ of Latter-day Saints maintains that regular gospel study is a necessary part of the university experience, religion courses are provided so that students may progress in their religious understanding and convictions simultaneously with their educational progress in secular fields. As such, religion courses are not meant to be a mere devotional supplement but an integral part of the university curriculum that conforms to university standards and expectations. Therefore, while students are enrolled at BYU, they are required to take religion courses from BYU.

### Doctrinal Foundation

The heart of the university core's religion component is the doctrinal foundation based upon careful, informed, and reflective study of sacred scripture and doctrines of The Church of Jesus Christ of Latter-day Saints.

While enrolled at BYU, all students must complete the Doctrinal Foundation requirement of the university core as outlined in the chart below. Note that the requirement is different for transfer students. Since the religion requirement is determined by the number of transfer hours, if is important for each student to refer to their official personal progress report or consult with a university advisement center to determine their official status and their corresponding religion requirement for graduation.

All new freshmen are encouraged to complete the Book of Mormon requirement (Rel A 121/H *and* 122/H) during their first year at the university. **All students who have completed an LDS mission and have not previously completed these courses must enroll in Book of Mormon sections designated for returned missionaries.**

Students who are **not LDS** are strongly encouraged to enroll in Rel C 100, Introduction to Mormonism, during their first semester in residence. This course is designed to be informational, to introduce students to the culture, scriptures, and distinctive doctrines of The Church of Jesus Christ of Latter-day Saints, and to prepare them for subsequent religion classes. Rel C 100 may be used to fill either the New Testament or Doctrine and Covenants Doctrinal Foundation requirement.

### Religion Electives

In addition to fulfilling the Doctrinal Foundation requirement, all students are required to take a specified number of BYU religion course hours as outlined in the chart below. Fulfilling these hours can be accomplished by taking BYU Doctrinal Foundation courses and/or BYU religion elective courses intended to enrich the Doctrinal Foundation with rigorous study from a variety of religious topics dealing with ancient scripture and Church history and doctrine. **Religion courses taken from LDS institutes of religion (including stake institutes) or Church Educational System schools (BYU–Idaho or BYU–Hawaii) will not fulfill the required number of BYU religion hours to be taken by each student. Only religion hours taken at the Provo campus will fulfill this requirement.**

Religion courses taken at the BYU Salt Lake Center and through the BYU Independent Study program are considered part of the BYU campus and will fulfill the required number of religion courses required of each student.

Because regular gospel study should be a continuous part of a student's university experience, it would be ideal to take one religion class each semester of enrollment. **To encourage this, no more than 4 hours of religion credit per semester (spring/summer counts as one semester) may be counted toward the required religion hours to be taken at BYU.**

No religion course numbered in the 500s and 600s may be applied toward undergraduate religion credit. Religion credit from non-LDS universities will not be counted toward fulfilling any part of the religion requirement.

| Total Hours Transferred to BYU | Total BYU Religion Hours to Take While Enrolled at BYU | Doctrinal Foundation Courses Required for Graduation** |
|---|---|---|
| 0–14.9 | 14 | Book of Mormon (Rel A 121/H and 122/H),<br><br>New Testament (Rel A 111 or 200 or 211/H or 212/H or 310 or 311),<br><br>Doctrine and Covenants |
| 15–29.9 | 12 | |
| 30–44.9 | 10 | |
| 45–59.9 | 8 | |

| | | |
|---|---|---|
| | | (Rel C 324/H or 325/H). |
| 60–74.9 | 6 | Book of Mormon<br>(Rel A 121/H and 122/H),<br><br>Doctrine and Covenants<br>(Rel C 324/H or 325/H). |
| 75–89.9 | 4* | |
| 90 or more | 2* | Book of Mormon<br>(Rel A 121/H and 122/H). |
| * More credits may be needed if the Doctrinal Foundation requirement has not been completed. There are no exceptions to the Book of Mormon requirement.<br>**These courses may be transferred from LDS institutes, BYU–Hawaii, or BYU–Idaho but must correspond with BYU courses (number/content and hours) and will not reduce the number of total BYU religion hours that must be taken while enrolled at BYU. | | |

## Individual and Society

The Individual and Society requirements inspire students to continue learning and serving throughout their lives. Students will actively participate in solving family, professional, religious, and social problems after leaving BYU. Under the Individual and Society category is the area of Citizenship which includes American Heritage and Global and Cultural Awareness.

American Heritage gives students an introduction to the political and economic foundations of the American democratic system and helps students appreciate the unique contribution of America to modern civilization. The Global and Cultural Awareness requirement ensures that students develop an "informed awareness of the peoples, cultures, languages, and nations of the world." Students understand important ideas in their own cultural tradition as well as others and are prepared to "go forth to serve."

## Skills

In our modern, complex society, the ability to communicate effectively is deemed a crucial skill. Under the Skills category are grouped the following requirements:

- under the heading Effective Communication is First-Year Writing, followed by Advanced Written and Oral Communication;
- Quantitative Reasoning; and
- Languages of Learning.

All these requirements convey information and understanding.

First-Year Writing teaches methods of library research, text or rhetorical analysis, and writing skills in different genres and styles. These essential skills will be used and expanded in all succeeding years of university work. Once students have identified an area for major study, the Advanced Written and Oral Communication requirement introduces them to the discourse and documentation style of their chosen discipline.

To function in a technological society, a basic knowledge of mathematics as a means of communication and problem solving is essential. Quantitative Reasoning requires all students to certify at a basic level of numeracy, either with an appropriately high score on the mathematics section of the ACT or SAT exams or by completion of a BYU course. Then, under the Languages of Learning requirement, students gain advanced symbolic language skills in mathematics, statistics, or a foreign language that broadly applies to a variety of disciplines. Students thus achieve an exposure to cultures and to the ways in which practitioners of the language structure their knowledge.

## Arts, Letters, and Sciences

The university's Mission Statement asserts that the "arts, letters, and sciences provide the core of [a broad university] education." These requirements build upon work in other categories of the core by developing "historical perspective" and "a lively appreciation of the artistic, literary, and intellectual achievements of human cultures" and by extending the student's understanding of "basic concepts of the . . . sciences," including "a recognition of the power and limitations of the scientific method" (*Aims,* "Intellectually Enlarging"). This category comprises a Civilization sequence, separate requirements in Arts and in Letters, and requirements in the Biological, Physical, and Social Sciences. The Civilization requirement provides a historical framework and a consideration of important works and themes. Through the Arts and Letters requirements, students deepen their appreciation of artistic and literary works and grow in their capacity to analyze, interpret, and draw justifiable implications from their reading and from their experience with the visual and performing arts.

The area of Scientific Principles and Reasoning contains three requirements: Biological Science, Physical Science, and Social Science. These requirements help develop an understanding of scientific reasoning and the scientific method and expose students to the excitement of discovery in these separate fields. Students will be able to evaluate scientific data to make rational decisions on science-related issues that will affect their lives and community.

## Core Enrichment: Electives

This element of the core is in two parts: Religion Electives, which are discussed above in conjunction with the Doctrinal Foundation; and Open Electives, which vary according to the number of credit hours required by the major and other factors. As mentioned, one of the changes in the new general education program implemented fall 2004 was a reduction in hours, aimed at freeing up space for further open electives. Thoughtful choice of electives allows students to design a unique and enriched educational experience. Some suggestions on how these electives might be used are given above under the heading "The BYU Baccalaureate: The Ideal of Integration."

### Selection and Timing of GE Classes

Each GE requirement is completed by taking one course or a combination of courses, chosen from the approved list in the table found in the current class schedule. Single-course options are most often designed for students whose major is not closely related to the requirement. On the other hand, combination-of-course options are often designed for majors related to the requirement, and may include courses a student might take to satisfy a major or minor requirement. Students should carefully consider which option best meets their educational needs, keeping in mind the aim of pursuing a lively interrelationship between the core and the major over the whole undergraduate experience.

Not all courses listed in the class schedule are appropriate for all students. For instance, some have prerequisites, some are upper-division courses, and some are designed primarily for certain majors. These courses are labeled in the university core table as either "has prerequisite" or "not for all students." Students should avoid registering for courses for which they are not academically prepared and should consult with the class instructor if they are unsure.

To gain approval to meet a GE requirement, a course is subjected to a rigorous evaluation. Such approval is not granted lightly, and students should ensure that the courses they select are, in fact, *approved* for GE credit. This information is updated each semester/term and published in the current class schedule.

Occasionally it is possible to complete more than one GE requirement with a single course. See the University Core for details; look especially at the Civilization 2 requirements for courses that double-count for Arts, Letters, or Global and Cultural Awareness. Most foreign languages double-count for Global and Cultural Awareness, a few for letters; see Languages of Learning under Skills. Students are encouraged to use such "double-counting" sparingly—the more GE courses a student takes, the greater the breadth and value of the overall educational experience. The individual college advisement center is a valuable resource concerning questions of course selection, timing, and planning.

**For First-Year Students.** Although the time to complete GE requirements varies according to the major, all new students are expected to complete the First-Year Writing requirement and take at least one course towards completing the American Heritage requirement during their first year. Students are also expected to take one religion course each semester, and complete their schedule by adding other general education and major-related courses. Those individuals beginning summer term are expected to enroll in a 3-credit hour mentored course.

To facilitate success in these courses, the University provides first-year students with a peer mentor. Mentored courses include First-Year Writing, American Heritage, and a number of other general education and major-related courses. These courses are available through the University registration system by envelope. Early registration for fall semester mentored courses may be completed through the Freshman Mentoring website.

In addition, students who need to fill the Quantitative Reasoning requirement (ACT math subscore below 22) should do so in their first year. It is also recommended that all new students begin work in the mathematics or foreign language options under Languages of Learning.

Students planning to satisfy the Scientific Principles and Reasoning: Biological Science or Physical Science requirements with the two-course options (PDBio 120 + MMBio 240; chemistry, geology, and physics combination options) should also complete these during their first two years, making some progress on them in their first year. Civilization courses are designed as sophomore-level courses, although some programs include them during the freshman year. Visit college advisement centers or department offices for advice on when to complete the other GE requirements.

## The University Core and the Honors Program

The Honors Program, which is open to all interested students, offers an array of enriched courses that simultaneously satisfy university core and honors graduation requirements. These courses take two forms: those offered through the Honors Program proper (designated Honrs), which explore disciplinary topics in creative and innovative ways; and honors sections of departmental courses (designated by /H or a title that begins with the abbreviation *Honors*). See the Honors Program section of this catalog for a fuller description. Additional information may be obtained from the Honors Advisement Center, 102A MSRB, (801) 422-5497, or by consulting the Honors Program Course Guide at honors.byu.edu.

## The University Core and Freshman Mentoring

New freshmen are expected to complete the First-Year Writing requirement and take at least one course towards the American Heritage requirement during their first year. To facilitate enrollment in these courses as well as success in them, the University provides every freshman with a peer mentor. Mentored courses include First-Year Writing, American Heritage, and a number of other general education and major-related courses. Mentored courses include both Honors and non-Honors options.

These courses are available through the university registration system by envelope. Early registration for fall semester mentored courses may be completed through the Freshman Mentoring website.

A brief description of the Freshman Mentoring program and how students are expected to engage with their peer mentor appears in the Undergraduate Education section of this catalog. Detailed information may also be obtained from the Freshman Mentoring website http://freshmanmentoring.byu.edu, by contacting Freshman Mentoring, 2014 JKHB, (801) 422-8176 or 1-877-890-5451, or by emailing freshmanmentoring@byu.edu.

## Ways to Complete GE Requirements Other Than by Course Work

In addition to completing approved courses, students may satisfy individual GE requirements within the university core by (1) transferring acceptable credit from other academic institutions, (2) receiving credit from selected Advanced Placement (AP) and International Baccalaureate (IB) examinations, (3) passing exemption or challenge examinations offered for some classes at the university, or (4) fulfilling a GE through a major.

**1. Transfer Credit.** The application of transfer credit to GE requirements is handled by the Transfer Evaluation Office, A-41 ASB, (801) 422-8522. Transfer Guides have been arranged with several junior and community colleges to facilitate the transfer process for students including those who have completed certain associate degrees. See Transfer Evaluation website for a list of Transfer Guides. The Transfer Evaluation Office can be contacted for up-to-date information regarding the status of agreements with other institutions not listed on their website.

**2. Advanced Placement and International Baccalaureate Credit.** The results of some Advanced Placement (AP) and International Baccalaureate (IB) exams may be used to meet certain GE requirements and to obtain general university credit. AP or IB credit posted to a transfer institution will be evaluated upon BYU's standards and not those of the transfer institution. The Admission Services Office can be contacted for details regarding credit hours and exemption from GE requirements for both AP and IB exams.

**Note: College Level Examination Program (CLEP).** BYU stopped giving credit for general exams in 2000. At this time BYU does not give credit for subject exams either. CLEP credit posted to another institution's transcript is reevaluated based on BYU's standards.

**3. Exemption and Challenge Examinations.** Some requirements can be accomplished by successfully completing an examination. Two types of examinations are available: the exemption exam and the challenge exam. The primary difference between an exemption exam and a challenge exam is that an exemption exam is used exclusively to fulfill a general education requirement. No academic credit or letter grade is posted to the transcript. The challenge exam, however, is not restricted to GE courses, and academic credit and a letter grade may be posted to the transcript if the student so choose. A student may only take an exemption or challenge exam for a single course only once during each semester or term. Students do not have to be enrolled in a course to take an exemption or challenge exam. However, some of the exams are given early enough each semester/term so that students who are enrolled and pass the exam may withdraw from the course. Students not enrolled in a course have an opportunity to take

the challenge or exemption exams offered at the Testing Center. See the chart under University Core, "Intro to the Undergraduate Degree" for the current semester for more information.

**4. GE-Major Overlap.** A GE requirement can be fulfilled because of the nature of a major's discipline. For example, an English major would automatically fulfill the Letters requirement because of the nature of the discipline. See the University Core for a list of majors that complete certain GE requirements and the link to the GE-Major Overlap page.

### How Do You Get Help with Specific Questions Concerning General Education?

The essential information concerning general education is found in this catalog or online at the University Core section of the current Class Schedule under "Introduction to the Undergraduate Degree" (http://core.byu.edu). Additional late-breaking information, plus advice about general education requirements can be obtained from the college advisement centers. The college advisement centers, together with the University Advisement Center, 2500 WSC, provide assistance with registration, graduation requirements, policies and procedures, fields of study, changes of major, and many other aspects of academic life. Students can access a progress report through MyMAP; this report will generate a personalized report that includes a list of GE requirements students have completed. (Log on to MyBYU; select "School" then "MyMAP"; then the tab, "Plan MyMAP"; click on the Progress Report link on the right-hand side of the page. Students can also type "Plan" in the Quick URL box in the MyBYU home page which will take them to the MyMAP page.)

## The University Core

The current University Core details are found at core.byu.edu.

- Education
- Engineering and Technology
- Family, Home, and Social Sciences
- Fine Arts and Communications
- Humanities
- Law School
- Life Sciences
- Management
- Nursing
- Physical and Mathematical Sciences
- Religious Education
- Undergraduate Education

**Departments, Programs**

- Communication Disorders
- Counseling Psychology and Special Education
- Educational Leadership and Foundations
- Instructional Psychology and Technology
- Teacher Education

# David O. McKay School of Education

301 MCKB
(801) 422-3694

**Dean:** Mary Anne Prater, Professor, Counseling Psychology and Special Education
**Associate Dean:** Tina Dyches, Professor, Counseling Psychology and Special Education
**Associate Dean:** Charles R. Graham, Associate Professor, Instructional Psychology and Technology

The five departments in the David O. McKay School of Education are:

Communication Disorders
Counseling Psychology and Special Education
Educational Leadership and Foundations
Instructional Psychology and Technology
Teacher Education

The principal purposes of the David O. McKay School of Education are:

1. Preparing teachers for public and private schools;
2. Providing graduate programs for the preparation of school principals, counselors, school psychologists, curriculum supervisors, speech-language pathologists, and master teachers;
3. Offering research-based graduate programs; and
4. Researching educational processes and issues.

## Education Student Services

Jay Oliver, Director
350 MCKB
(801) 422-3426

The McKay School of Education Student Services is designed to centrally locate a variety of programs for the purpose of better servicing students needs. Services provided include: academic advisement, scholarships, student teaching placement, and teacher licensing recommendation for the State of Utah.

### Academic Advisement

Our academic advisors assist undergraduate students majoring in elementary education, early childhood education, special education, physical education teaching/coaching, and communication disorders in the areas of general education, major program requirements, graduation requirements, and teacher licensure procedures.

All other secondary education teaching majors receive advisement in general education and major requirements from their respective college advisement centers. All teaching majors receive licensure advisement in Education Student Services.

### Scholarships

The McKay School of Education provides a variety of private scholarships, mentorships, and loans to students majoring in a teaching program and other McKay School majors or programs. An online application is available at http://education.byu.edu/ess.

### Student Teaching/Internship Placement

Our advisors coordinate the placement of student teachers and interns in local partnership schools and in schools selected for national and international programs. Students must make application and receive clearance for student teaching and internships by submitting a Student Teaching/Internship Application to 350 MCKB. Forms are available online at: http://education.byu.edu/ess.

### Teacher Licensing

Once students have completed all coursework leading to graduation and licensure, our advisors will recommend these students for licensure to the Utah State Office of Education. Licensing recommendations are initiated approximately four weeks after graduation.

The licensure of teachers is a function of the Utah State Office of Education (USOE). Requirements for Utah licensure are available in Education Student Services or online at http://education.byu.edu/ess. As licensure requirements are frequently updated, students should check with Education Student Services to stay informed. Although such modifications are not retroactive, they may still affect the uncompleted portion of a student's program.

Prior to graduation, students are responsible to take and pass the required Praxis II Content Test, to have the test score sent to BYU, to pay the state licensing fees, and to check that their fingerprint background clearance is still current. Students will also be responsible for any additional requirements imposed by the state prior to their graduation. To confirm the status of these requirements, contact Education Student Services, 350 MCKB, (801) 422-3426. Graduation and licensure cannot be processed until these requirements have been completed.

**Licensure in Other States.** Under reciprocity agreements, Utah licensure is accepted in those states where such agreements are in effect. Specific information is available in Education Student Services. Students who plan to license in another state should contact that state for requirements beyond those in Utah as early in their programs as possible.

## Majoring in a Teacher Education Licensure Program

Students wishing to declare a teaching major will do so at their respective college advisement center (see http://education.byu.edu/ess).

### Fingerprint Background Clearance

All teaching majors are required to be fingerprinted and pass an FBI background check before participating in required field experiences. A cleared fingerprint background check must be maintained throughout the teaching program in order for the student to be eligible for graduation and licensing. Fingerprinting can be done in Education Student Services, 350 MCKB. Allow from five to six weeks for fingerprints to be processed. FBI background clearance is valid for only three years. If clearance expires before graduation, candidates must repeat the fingerprinting and clearance process, including a new fee payment.

Failing to expunge a police record prior to the background check may result in a blocked registration while a panel reviews the charges. Candidates who cannot pass an FBI background check will be removed from the teacher education licensure program.

**Transfer Students.** Students who transfer to the David O. McKay School of Education from a two-year college, another university, or another college within BYU must meet the requirements for acceptance set forth above.

## McKay School Teacher Preparation Programs

The David O. McKay School of Education seeks students who attain high educational standards and who evidence aptitude for teaching. While in the program students must maintain established standards for personal conduct and interpersonal skills as outlined in the program. Students are encouraged to visit an advisor in Education Student Services, 350 MCKB, to discuss program changes.

**Early Childhood Education.** The early childhood education major prepares students to teach pre-kindergarten through third grade. This major provides a strong emphasis in early childhood development. Prior to beginning coursework, students are asked to complete an online program entrance form at http://mylink.byu.edu. Students should meet with an academic advisor, 120 MCKB, to plan their program and course schedules. This undergraduate major is open (no application is required) and students should formally declare this major at Education Student Services, 350 MCKB.

**Elementary Education.** The elementary education major prepares students to teach kindergarten through sixth grade. Prior to beginning coursework, students are asked to complete an online program entrance form at http://mylink.byu.edu. Students should meet with an academic advisor, 350 MCKB, to plan their program and course schedules. This undergraduate major is open (no application is required) and students should formally declare this major at Education Student Services, 350 MCKB.

**Special Education.** The special education major prepares students to teach kindergarten through twelfth grade students with disabilities. The program includes multiple practica in the schools, and spring/summer enrollment is required. In addition to core courses, majors select an area of emphasis in either mild/moderate or severe disabilities. This major has limited enrollment and requires prior entrance approval through the Department of Counseling Psychology and Special Education. Information can be found online at at http://education.byu.edu/cpse and applicants may apply online at http://mylink.byu.edu/dev/. As part of the application, successful completion of the "Special Education Exploratory Experience" is required for admission. In order not to prolong the time to graduation, students should submit their application before the final semester of the sophomore year. Students should meet with their academic advisor (350 MCKB) when extenuating circumstance require making alternate educational plans. This undergraduate major is a limited enrollment major (application is required). Students should formally declare the premajor at Education Student Services, 350 MCKB.

**Physical Education Teaching/Coaching.** The physical education teaching/coaching major prepares students to teach K-12 grades. Prior to beginning coursework, students are asked to complete an online program entrance form at http://mylink.byu.edu. Students should meet with an academic advisor, 350 MCKB, to plan their program and course schedules. This undergraduate major is open (no application is required) and students should formally declare this major at Education Student Services, 350 MCKB.

**Communication Disorders.** The communication disorders major is pre-professional and prepares students for graduate study in either speech-language pathology (requiring a master's degree) or audiology (requiring a doctor's degree). The major focuses on the nature and characteristics of normal and impaired human communication. This major has limited enrollment and requires prior entrance approval through the Department of Communication Disorders. Further information and the application may be found online at http://education.byu.edu/comd. This undergraduate major is a limited enrollment program (application is required) and students should formally declare the premajor at Education Student Services, 350 MCKB.

**Secondary Education Teaching.** Students planning a career to teach in secondary schools should declare their teaching major at the college advisement center responsible for their major. Questions related to student teaching, internships, or licensing should be addressed to Education Student Services, 350 MCKB. A secondary teaching major incorporates both a major and a professional education program leading to licensure. Students may begin their professional teaching program during their sophomore years. Students are encouraged to visit their major advisement center to plan their program.

**Student Teaching.** The culminating experience for students in teacher education is a student teaching assignment in a public school classroom under the supervision of mentor teachers and university supervisors. Students must plan their programs carefully to meet requirements for student teaching. A student teaching application must be submitted one semester prior to student teaching. The application is available online at: http://education.byu.edu/ess.

**Internships.** Internship appointments in a public school are available and may substitute for student teaching. Interns are employed contractually by their school district for a full year and are paid half salary and may receive benefits. Interested students should contact their major teaching supervisor or liaison. An internship application must be submitted one semester prior to the internship. The application is available online at: http://education.byu.edu/ess.

**David O. McKay School of Education Home**

**Communication Disorders Department Home**

**Majors**

- BS in Communication Disorders

**Minors**

- Minor in Communication Disorders

**Course Information**

- Communication Disorders Courses

**Faculty**

# Communication Disorders

Christopher Dromey, Chair
140 TLRB, (801) 422-4318

David O. McKay School of Education Student Services
120 MCKB, (801) 422-3426

## Admission to Degree Program

This is a limited-enrollment program requiring departmental approval for admission. Please see the information below regarding requirements for admission to this major. Additional information is available on the department's website: http://education.byu.edu/comd.

## The Discipline

The discipline of communication disorders contains two related fields, speech-language pathology and audiology. The field of speech-language pathology is focused on helping individuals develop their communication abilities or regain lost communication skills through rehabilitation services. The field serves persons with speech and language disorders such as stuttering, articulation problems, aphasia, voice disorders, language delay, and similar communication difficulties. Students develop a knowledge base about speech and language development, the anatomy and physiology of the speech mechanism, the neurology of perception and production of speech and language, the disorders that cause speech and language problems, and the intervention and remediation strategies for treating communication disorders. Professionals often work in public schools, hospitals, private or community clinics, or private practice.

Audiology is a profession that deals with the measurement of hearing and hearing impairment. Audiology includes the study of the nervous system and how we process auditory information, the testing and analysis of disorders of the auditory system, the use of hearing aids, cochlear implants, and other assistive listening devices to enhance hearing capabilities in individuals with hearing loss or other disorders of the auditory system. Professionals typically work with hearing aid manufacturers, in public schools, hospitals, private or community clinics, or in private practice.

## Career Opportunities

This is a preprofessional program leading to a graduate degree that is required for entrance into the profession.

## Program Acceptance Requirements

Students must be accepted into the Communication Disorders (ComD) major before they may take 300- or 400-level courses in the department. To apply, students must have completed the following three courses:

1. Stat 121
2. PDBio 220
3. ComD 133

Acceptance to the program is based on the grade point average (GPA) from these three courses. The minimum GPA required for admission to the program is determined by number of students admitted to the program (currently 100), and the minimum GPA will thus vary from year to year. Both the number of students admitted and the minimum GPA required for admission are subject to change. GPA data on previous years are available on the department website.

Only one repeat of each course is allowed for purposes of determining acceptance to the major. The application deadlines are January 1, May 1, and September 1. Application forms are available in the Education Student Services Center (120 MCKB), the ComD department office (136 TLRB), or on the department's web site at http://education.byu.edu/comd. These same program acceptance requirements must be followed to declare a minor in ComD.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Communication Disorders** (Program Outcomes)

**Minor in Communication Disorders**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Communication Disorders

For more information see the BYU 2014–2015 Graduate Catalog.

**David O. McKay School of Education Home**

**Communication Disorders Department Home**

**Majors**

- BS in Communication Disorders

**Minors**

- Minor in Communication Disorders

**Course Information**

- Communication Disorders Courses

**Faculty**

# BS in Communication Disorders (51 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental acceptance. Please see the college advisement center for information regarding requirements for application to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following pre-major courses:

COMD 133 : Introduction to Speech-Language Pathology and Audiology. (2:2:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of communication disorders, assessment strategies, and treatments.

**Course Outcomes**

- Demonstrate basic understanding of human communication and the systems involved.
- Demonstrate an initial understanding of the clinical applications of the fields of speech-language pathology and audiology.
- Demonstrate understanding of some basic concepts and terms associated with the practice of speech-language pathology and audiology.
- Demonstrate basic familiarity with a variety of communication disorders and the professions of speech-language pathology and audiology.

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

2. Apply for and be admitted to the major.
3. After admission to the major, complete the following:

ASL 101 : First-Year American Sign Language. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: First in a series of courses which focuses on acquiring basic ASL skills, both receptive and expressive. An introduction to the Deaf community and culture will be provided.

NOTE: Intended for students with little or no experience in ASL.

**Course Outcomes**

There are no course outcomes available

(Or any other foreign language 101 level or higher, taken at the university level.)

COMD 320 : Speech Anatomy. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: PDBIO 220

DESCRIPTION: Basic anatomy and physiology of speech mechanisms.

**Course Outcomes**

- Students will demonstrate competent knowledge of the basic elements of anatomy.
- Students will demonstrate competent knowledge of the anatomy and physiology of respiration.
- Students will demonstrate competent knowledge of the anatomy and physiology of phonation.
- Students will demonstrate competent knowledge of the anatomy of articulation and resonation.
- Students will demonstrate competent knowledge of the neuroanatomical and neurophysiological correlates of speech.

COMD 330 : Language Development. (3:3:1)

WHEN TAUGHT: Fall

DESCRIPTION: Overview of how children learn language, including its relationship to cognitive, neural, and social development; language development in bilingual, minority, and handicapped persons.

**Course Outcomes**

- Demonstrate knowledge of the major theories of language development (social interactionist, linguistic, emergentism).
- Define the major components of language (syntax, semantic, phonology, morphology, & pragmatics).
- Demonstrate knowledge of how cultural factors influence first and second language development.
- Demonstrate knowledge of the developmental sequence of pragmatic, semantic, syntactic, and morphologic language behaviors in production and comprehension modalities.
- Demonstrate knowledge of the development of literacy.

COMD 331 : Clinical Phonetics. (3:3:1)

WHEN TAUGHT: Fall

DESCRIPTION: Transcription and analysis of normal and disordered sound production.

**Course Outcomes**

- Students will demonstrate competent knowledge of the basic elements of phonetics.
- Students will demonstrate competent knowledge and performance of skills related to the production and transcription of vowel sounds in American English.
- Students will demonstrate competent knowledge and performance of skills related to the production and transcription of consonant sounds in American English.
- Students will demonstrate competent knowledge and performance of skills related to the production and transcription of the suprasegmental aspects of speech.
- Students will demonstrate competent knowledge and performance of skills related to the transcription of disordered speech and dialect variation.
- Students will demonstrate competent knowledge of the appropriate accommodations for culturally and linguistically diverse (CLD) populations of varying ages and differing levels of disability.

COMD 332 : Language Science. (3:3:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Morphology, syntax, and semantic roles in language of children and adults; uses both manual and computer-assisted methods.

**Course Outcomes**

- Discuss English sentence structure and its development in children using common descriptive terms.
- Examine a transcript of a client's language sample and evaluate evidence that the client can use various syntactic constructions.

COMD 334 : Hearing Science and Acoustics. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Hearing anatomy, physiology, and science.

**Course Outcomes**

- Demonstrate an understanding of the decibel and be able to convert among various reference systems.
- Demonstrate an understanding of basic acoustic concepts.
- Explain details of the anatomy and physiology of the auditory pathway.

COMD 350 : Language Impairment. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: COMD 330 & COMD 332

DESCRIPTION: Causes and characteristics of language impairment; techniques for diagnosis, assessment, and treatment of language disorders.

**Course Outcomes**

- Demonstrate knowledge of the linguistic, academic, and social problems associated with language impairment.
- Describe general models of child language impairment.
- Describe service delivery issues in the assessment of language impairment.
- Demonstrate knowledge of assessment procedures to perform the following tasks: screening, qualifying a child for intervention services, determining goals in intervention, predicting the need for future intervention, and measuring progress in intervention.
- Identify several approaches to the treatment of LI (e.g., focused stimulation).

COMD 351 : Disorders of Articulation and Phonology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: COMD 331

DESCRIPTION: Causes and characteristics of phonological disorders; techniques for diagnosis, assessment, and treatment.

**Course Outcomes**

- Demonstrate knowledge regarding the nature of speech sound disorders, including their etiologies, characteristics, anatomical/physiological, acoustic, psychological, developmental, linguistic, and cultural correlates.
- Demonstrate knowledge regarding the principles and methods of the assessment of speech sound disorders, using both formalized and non-formalized methods.
- Demonstrate knowledge regarding the principles and methods of speech sound disorders intervention.

COMD 421 : Speech Science. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: COMD 331 & COMD 334

DESCRIPTION: Laboratory investigation of scientific bases of normal and disordered speech perception and production; for audiologists and speech language pathologists.

**Course Outcomes**

- Demonstrate knowledge and competence in basic principles of speech production, including acoustic and physiological aspects and their measurement.
- Explain principles and methods of quantifying a variety of speech disorders, based on a sound grasp of the physiologic basis of normal function, with a goal of documenting treatment outcomes.
- Show understanding of the application of principles from the current research literature in measuring speech performance in preparation for participating in evidence-based practice.

COMD 430 : Medical Speech Pathology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 220 & COMD 320

DESCRIPTION: Genetic, gestational, and neurogenic factors related to communication disorders in children and adults; role of the speech-language pathologist in medical teams.

**Course Outcomes**

- Demonstrate preparation for graduate coursework in organic and neurologic communication and swallowing disorders.
- Describe the collaborative role of the SLP on professional teams in medical settings.
- Describe the causes and characteristics of TBI, fluency disorders, cerebral palsy, aphasia, voice disorders, motor speech disorders and swallowing disorders, and describe several treatment approaches used for those disorder areas by speech-language pathologists.

COMD 438 : Hearing Tests and Measures. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: COMD 334

DESCRIPTION: Theory and practice of auditory assessment.

**Course Outcomes**

- Become proficient in the administration of standard audiological testing in adults and older children.
- Demonstrate a theoretical and practical knowledge of hearing tests and measurements in the field of communicative disorders.
- Demonstrate an understanding of the role of hearing and hearing disorders to the broader area of communication disorders.

COMD 442 : Aural Rehabilitation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: COMD 438

DESCRIPTION: Basic principles of hearing assessment and aural rehabilitation in children from birth to eight years.

**Course Outcomes**

- Define aural rehabilitation and explain why the service is critical for those who have a hearing impairment.
- Discuss the psychosocial aspects of hearing loss, including the impact on the individual and the family.
- Describe the diagnostic procedures needed as part of a comprehensive AR program, including the diagnosis of hearing loss and rehabilitation by means of amplification, cochlear implants, and other assistive devices.

COMD 450 : Professional Practices. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: COMD 350
RECOMMENDED: ComD 351.
DESCRIPTION: Overview of issues related to clinical practice in public schools and other settings.

**Course Outcomes**

- Students will understand the importance of being positive representatives of BYU and the Church of Jesus Christ of Latter-day Saints and will behave in an ethical and professional manner when interacting with other professionals, clients, caregivers, faculty, staff, fellow students, etc
- Students will look for ways to apply professional behavior and leadership skills in their daily lives to improve their relationships with family, friends, fellow students, faculty, staff, ward members, etc
- Students will discover for themselves how their personal worthiness and commitment to the principles of the gospel of Jesus Christ will prepare them to be competent and confident professionals
- Students will demonstrate knowledge of contemporary professional issues through class discussion, class writings, role-plays, out-of-class writing assignments and other application activities
- Students will write an assessment report and will learn to value the editing process as a means to improve written communication

MATH 110 : College Algebra. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 97 or equivalent (see Independent Study).
DESCRIPTION: Functions, polynomials, theory of equations, exponential and logarithmic functions, matrices, systems of linear equations, permutations, combinations, binomial theorem.

**Course Outcomes**

- Graph functions using horizontal and vertical shiftsGraph functions using compressions and stretchesGraph functions using reflections about the x-axis or y-axisForm composite functions and find the domainDetermine the inverse of a function and graph an inverse function from the graph of a function
- This course prepares students to take courses in calculus, statistics, mathematics for elementary education majors, and other areas where algebra skills are required. Fluent skills in algebra are necessary for success in any area that uses mathematical analysis. The mastery of college algebra requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. College Algebra develops the concepts of graphing functions, polynomial and rational functions, exponential and logarithmic functions, conic sections, solving systems of equations, the binomial theorem, permutations, combinations, and probability. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information, visit the Math 110 Wiki page.
- Quadratic functionsPolynomial functionsRational functionsPolynomial and rational inequalitiesThe real zeros of a polynomial functionComplex zeros and the Fundamental Theorem of Algebra
- Exponential functionsLogarithmic functionsProperties of LogarithmsLogarithmic and exponential equationsCompound interestExponential growth and decay
- Graph parabolas, ellipses, and hyperbolasFind the equation of parabolas, ellipses, and hyperbolasDiscuss the equation of conic sections to find vertices, foci, asymptotes, and the directrixWork with conic sections that are not centered at the origin
- Solve systems of linear equations using substitution and eliminationSolve systems of non-linear equations using substitution and eliminationDecompose rational functions using partial fractions
- Find terms in a sequence using a formula and a recursive definitionFind a formula for terms in an arithmetic sequence and be able to add the terms of a finite arithmetic sequenceFind a formula for the terms in a geometric sequence and be able to find the sum of finite and infinite geometric seriesProve statements using mathematical induction
- Work with operations on sets such as union, intersection and complement and count the number of elements in a setCompute permutations and combinationsEvaluate binomial coefficients and expand binomials using the Binomial TheoremCompute probabilities of equally likely outcomes

(or equivalent)

*Hours include courses that may fulfill university core requirements.

## Show all Communication Disorders Courses

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- BS in Communication Disorders

**Minors**

- Minor in Communication Disorders

**Course Information**

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# Minor in Communication Disorders (16 hours)

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## Program Requirements

1. Complete the following course:

   COMD 133 : Introduction to Speech-Language Pathology and Audiology. (2:2:2)

   WHEN TAUGHT: Fall; Winter

   DESCRIPTION: Overview of communication disorders, assessment strategies, and treatments.

   **Course Outcomes**

   - Demonstrate basic understanding of human communication and the systems involved.
   - Demonstrate an initial understanding of the clinical applications of the fields of speech-language pathology and audiology.
   - Demonstrate understanding of some basic concepts and terms associated with the practice of speech-language pathology and audiology.
   - Demonstrate basic familiarity with a variety of communication disorders and the professions of speech-language pathology and audiology.

2. Complete an additional 14 hours of ComD courses.

## Show all Communication Disorders Courses

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# Communication Disorders (ComD)

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## Undergraduate Courses

### 100-Level Courses

COMD 133 : Introduction to Speech-Language Pathology and Audiology. (2:2:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of communication disorders, assessment strategies, and treatments.

**Course Outcomes**

- Demonstrate basic understanding of human communication and the systems involved.
- Demonstrate an initial understanding of the clinical applications of the fields of speech-language pathology and audiology.
- Demonstrate understanding of some basic concepts and terms associated with the practice of speech-language pathology and audiology.
- Demonstrate basic familiarity with a variety of communication disorders and the professions of speech-language pathology and audiology.

### 300-Level Courses

COMD 320 : Speech Anatomy. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: PDBIO 220

DESCRIPTION: Basic anatomy and physiology of speech mechanisms.

**Course Outcomes**

- Students will demonstrate competent knowledge of the basic elements of anatomy.
- Students will demonstrate competent knowledge of the anatomy and physiology of respiration.
- Students will demonstrate competent knowledge of the anatomy and physiology of phonation.
- Students will demonstrate competent knowledge of the anatomy of articulation and resonation.
- Students will demonstrate competent knowledge of the neuroanatomical and neurophysiological correlates of speech.

COMD 330 : Language Development. (3:3:1)

WHEN TAUGHT: Fall

DESCRIPTION: Overview of how children learn language, including its relationship to cognitive, neural, and social development; language development in bilingual, minority, and handicapped persons.

**Course Outcomes**

- Demonstrate knowledge of the major theories of language development (social interactionist, linguistic, emergentism).
- Define the major components of language (syntax, semantic, phonology, morphology, & pragmatics).
- Demonstrate knowledge of how cultural factors influence first and second language development.
- Demonstrate knowledge of the developmental sequence of pragmatic, semantic, syntactic, and morphologic language behaviors in production and comprehension modalities.
- Demonstrate knowledge of the development of literacy.

COMD 331 : Clinical Phonetics. (3:3:1)

WHEN TAUGHT: Fall

DESCRIPTION: Transcription and analysis of normal and disordered sound production.

**Course Outcomes**

- Students will demonstrate competent knowledge of the basic elements of phonetics.
- Students will demonstrate competent knowledge and performance of skills related to the production and transcription of vowel sounds in American English.
- Students will demonstrate competent knowledge and performance of skills related to the production and transcription of consonant sounds in American English.
- Students will demonstrate competent knowledge and performance of skills related to the production and transcription of the suprasegmental aspects of speech.
- Students will demonstrate competent knowledge and performance of skills related to the transcription of

disordered speech and dialect variation.
- Students will demonstrate competent knowledge of the appropriate accommodations for culturally and linguistically diverse (CLD) populations of varying ages and differing levels of disability.

COMD 332 : Language Science. (3:3:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Morphology, syntax, and semantic roles in language of children and adults; uses both manual and computer-assisted methods.

**Course Outcomes**

- Discuss English sentence structure and its development in children using common descriptive terms.
- Examine a transcript of a client's language sample and evaluate evidence that the client can use various syntactic constructions.

COMD 334 : Hearing Science and Acoustics. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Hearing anatomy, physiology, and science.

**Course Outcomes**

- Demonstrate an understanding of the decibel and be able to convert among various reference systems.
- Demonstrate an understanding of basic acoustic concepts.
- Explain details of the anatomy and physiology of the auditory pathway.

COMD 350 : Language Impairment. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: COMD 330 & COMD 332

DESCRIPTION: Causes and characteristics of language impairment; techniques for diagnosis, assessment, and treatment of language disorders.

**Course Outcomes**

- Demonstrate knowledge of the linguistic, academic, and social problems associated with language impairment.
- Describe general models of child language impairment.
- Describe service delivery issues in the assessment of language impairment.
- Demonstrate knowledge of assessment procedures to perform the following tasks: screening, qualifying a child for intervention services, determining goals in intervention, predicting the need for future intervention, and measuring progress in intervention.
- Identify several approaches to the treatment of LI (e.g., focused stimulation).

COMD 351 : Disorders of Articulation and Phonology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: COMD 331

DESCRIPTION: Causes and characteristics of phonological disorders; techniques for diagnosis, assessment, and treatment.

**Course Outcomes**

- Demonstrate knowledge regarding the nature of speech sound disorders, including their etiologies, characteristics, anatomical/physiological, acoustic, psychological, developmental, linguistic, and cultural correlates.
- Demonstrate knowledge regarding the principles and methods of the assessment of speech sound disorders, using both formalized and non-formalized methods.
- Demonstrate knowledge regarding the principles and methods of speech sound disorders intervention.

**400-Level Courses**

COMD 421 : Speech Science. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: COMD 331 & COMD 334

DESCRIPTION: Laboratory investigation of scientific bases of normal and disordered speech perception and production; for audiologists and speech language pathologists.

**Course Outcomes**

- Demonstrate knowledge and competence in basic principles of speech production, including acoustic and physiological aspects and their measurement.
- Explain principles and methods of quantifying a variety of speech disorders, based on a sound grasp of the physiologic basis of normal function, with a goal of documenting treatment outcomes.
- Show understanding of the application of principles from the current research literature in measuring speech performance in preparation for participating in evidence-based practice.

COMD 430 : Medical Speech Pathology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 220 & COMD 320

DESCRIPTION: Genetic, gestational, and neurogenic factors related to communication disorders in children and adults; role of the speech-language pathologist in medical teams.

**Course Outcomes**

- Demonstrate preparation for graduate coursework in organic and neurologic communication and swallowing disorders.
- Describe the collaborative role of the SLP on professional teams in medical settings.
- Describe the causes and characteristics of TBI, fluency disorders, cerebral palsy, aphasia, voice disorders, motor speech disorders and swallowing disorders, and describe several treatment approaches used for those disorder areas by speech-language pathologists.

COMD 438 : Hearing Tests and Measures. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: COMD 334

DESCRIPTION: Theory and practice of auditory assessment.

**Course Outcomes**

- Become proficient in the administration of standard audiological testing in adults and older children.
- Demonstrate a theoretical and practical knowledge of hearing tests and measurements in the field of communicative disorders.
- Demonstrate an understanding of the role of hearing and hearing disorders to the broader area of communication disorders.

COMD 442 : Aural Rehabilitation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: COMD 438

DESCRIPTION: Basic principles of hearing assessment and aural rehabilitation in children from birth to eight years.

**Course Outcomes**

- Define aural rehabilitation and explain why the service is critical for those who have a hearing impairment.
- Discuss the psychosocial aspects of hearing loss, including the impact on the individual and the family.
- Describe the diagnostic procedures needed as part of a comprehensive AR program, including the diagnosis of hearing loss and rehabilitation by means of amplification, cochlear implants, and other assistive devices.

COMD 450 : Professional Practices. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: COMD 350

RECOMMENDED: ComD 351.

DESCRIPTION: Overview of issues related to clinical practice in public schools and other settings.

**Course Outcomes**

- Students will understand the importance of being positive representatives of BYU and the Church of Jesus Christ of Latter-day Saints and will behave in an ethical and professional manner when interacting with other professionals, clients, caregivers, faculty, staff, fellow students, etc
- Students will look for ways to apply professional behavior and leadership skills in their daily lives to improve their relationships with family, friends, fellow students, faculty, staff, ward members, etc
- Students will discover for themselves how their personal worthiness and commitment to the principles of the gospel of Jesus Christ will prepare them to be competent and confident professionals
- Students will demonstrate knowledge of contemporary professional issues through class discussion, class writings, role-plays, out-of-class writing assignments and other application activities
- Students will write an assessment report and will learn to value the editing process as a means to improve written communication

COMD 493R : Readings. (.5-2:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Students will demonstrate an advanced level of knowledge in a chosen specialty area.
- Students will explain relationships between key concepts in a specialty area.

COMD 495R : Field Experience in Communication Disorders. (1-2:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ComD faculty sponsorship.

DESCRIPTION: Supervised experience in a clinical or educational service-delivery setting under the direction of a faculty member.

**Course Outcomes**

There are no course outcomes available

## 500-Level Graduate Courses (available to advanced undergraduates)

COMD 544 : Psychoacoustics. (2:2:1)

DESCRIPTION: Advanced studies in human psychoacoustics and hearing science.

**Course Outcomes**

No outcomes are available at this time.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Majors**

- BS in Communication Disorders

**Minors**

- Minor in Communication Disorders

**Course Information**

- Communication Disorders Courses

**Faculty**

# Communication Disorders Faculty

Show All
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## Professors

Brinton, Bonnie
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1975
MA, San Jose State University, 1977
PhD, University of Utah, 1981

Culatta, Barbara
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Professor
**DEGREES:** MA, University of Pittsburgh, 1970
PhD, University of Pittsburgh, 1975

Dromey, Christopher
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, State University of New York at Buffalo, 1990
PhD, University of Colorado at Boulder, 1995

Fujiki, Martin
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Professor
**DEGREES:** BS, University of Idaho, 1972
MS, University of Utah, 1974
PhD, University of Utah, 1980

Harris, Richard Wood
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Professor
**DEGREES:** BS, North Dakota State University, 1973
MS, University of Wisconsin, 1974
PhD, Purdue University, 1978

McPherson, David Leonard
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1966
MS, George Washington University, 1969
Ph.D., University of Washington, 1972

## Associate Professors

Channell, Ron W
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders

**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1977
MS, Brigham Young University, 1979
PhD, University of Utah, 1983

Nissen, Shawn L.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994
MA, Ohio State University, 1998
PhD, Ohio State University, 2003

## Associate Clinical Professors

Blair, Nancy
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Associate Clinical Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Brigham Young University, 1995
AuD, University of Florida, 2005

Robinson, Lee Ann
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Associate Clinical Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1994

## Assistant Professor

Tanner, Kristine M.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Communication Disorders
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1997
MS, Brigham Young University, 1999
PhD, University of Utah, 2005

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**Counseling Psychology and Special Education Department Home**

**Majors**

BS in Special Education:
Emphases:
- Mild/Moderate Disabilities Emphasis
- Severe Disabilities Emphasis

**Course Information**

- Counseling Psychology and Special Education Courses

**Faculty**

# Counseling Psychology and Special Education

Timothy B. Smith, Chair
340 MCKB, (801) 422-3857

David O. McKay School of Education Student Services
350 MCKB, (801) 422-3426

## Admission to Degree Program

Students must apply to the Counseling Psychology and Special Education Department for admission to the special education undergraduate degree. Information can be found online at http://education.byu.edu/cpse/bs/index.html and applicants may apply online at http://mylink.byu.edu/. See additional information below.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Special Education**
**Mild/Moderate Disabilities Emphasis** (Program Outcomes)
**Severe Disabilities Emphasis** (Program Outcomes)

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Special Education
EdS in School Psychology
PhD in Counseling Psychology

For more information see the BYU 2014–2015 Graduate Catalog.

## General Information

### Admission to BS Programs

Among other factors, the application review process involves consideration of the following:

1. Significant experience working with individuals who have disabilities (see Special Education Exploratory Experience Log and Summary Report in the online application).
2. Fingerprint background clearance. See Education Student Services (350 MCKB) for instructions.
3. Successful completion of technology skills assessment.

### Additional Licensing Requirements

It is the student's responsibility to be sure that the approved PRAXIS II test has been passed and that BYU has received the test scores, that the student's fingerprint background clearance is current, and that state licensing fees have been paid. Students will also be responsible for any additional requirements imposed by the state prior to their graduation. To confirm the status of these requirements, contact Education Student Services, 350 MCKB, (801) 422-3426. Graduation and Utah licensure cannot be processed until these requirements have been completed.

**David O. McKay School of Education Home**

**Counseling Psychology and Special Education Department Home**

**Majors**

BS in Special Education:
Emphases:
- Mild/Moderate Disabilities Emphasis
- Severe Disabilities Emphasis

**Course Information**

- Counseling Psychology and Special Education Courses

**Faculty**

# BS in Special Education: Mild/Moderate Disabilities Emphasis (70 hours)

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*This is a limited-enrollment program requiring departmental admissions approval. Please see Education Student Services (350 MCKB) for information regarding requirements for admission to this program.*

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

To complete this major, students will also be required to complete the TESOL K-12 minor. The courses the student will need to take in order to complete the minor are reflected in the requirements listed below.

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following with at least a B– grade prior to beginning the program:

CPSE 403 : Introduction to Special Education. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: FBI fingerprint background clearance.

DESCRIPTION: Understanding the characteristics of students with various exceptionalities, ranging from mild to moderate to severe disabilities. How student with specific disabilities learn; using basic strategies for meeting their educational needs.

**Course Outcomes**

- 1. Describe the ways in which people differ, learning characteristics and special learning needs.
- 2. Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act.
- 3. Articulate issues related to the identification of students with disabilities, referral and placement and the need to provide differing levels of support.
- 4. Articulate issues related to collaboration in special education. Identify the skills for effective collaboration.
- 5. Describe policies and programs for young children; define elements of the Child Find system.
- 6. Describe the steps in the Individualized Education Program (IEP) process.
- 7. Describe the characteristics, prevalence, and educational implications for students with specific learning disabilities, speech or language impairment, mental retardation, and emotional disturbance.
- 8. Describe the characteristics, prevalence, and educational implications for students with other health impairments, orthopedic impairment, visual impairments, autism, traumatic brain injury, deaf/blindness, and developmental delay.
- 9. Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- 10. Identify strategies for accommodating to meet individual student needs.
- 10. Demonstrate the ability to use assessment results to make instructional decisions.
- 11. Complete a 12-hour field experience involving volunteer service with four students with disabilities (2 at each site) and submit assignments regarding the experience.

CPSE 425 : Foundations in Language Arts Instruction for Students with Disabilities. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Foundations in analyzing and delivering research-based language arts instruction to students with disabilities, including second language learners with disabilities.

**Course Outcomes**

- Describe the components of oral language.
- Describe the process of oral language development.
- Describe common communication disorders in children.
- Explain the interplay between culture and language.
- Explain the interplay between language and learning.
- Describe listening comprehension and its effect on learning.
- Describe the demands of learning English as a second language.
- Explain the cognitive processes for changing from spoken to written language.
- Explain the 5 component skills for reading.
- Administer DIBELS©Benchmark assessments for K-1.

3. Complete the following core courses:

CPSE 410 : Applied Behavior Analysis in Education. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to special education program; FBI fingerprint background clearance.

DESCRIPTION: Strategies for educating individuals with or at-risk for disabilities. Prevention, early intervention, and treatment strategies.

**Course Outcomes**

- (Knowledge-based objectives)1. Describe the history of ABA.
- 2. Describe several approaches for explaining the occurrence of human behavior.
- 3. Describe the ethical and responsible use of ABA.
- 4. Describe the components of a Functional Behavior Assessment and Behavior Intervention Plan.
- 5. Describe the function and format of target replacement behaviors and behavior objectives.
- 6. Describe data collection and graphing procedures.
- 7. Describe a variety of single-subject designs, their elements, how they are used, and when they are used.
- 8. Describe the principles that underlie the selection of appropriate consequences and providing differential reinforcement.
- 9. Describe stimulus control, its various facets, and how it is used.
- 10. Describe the principle components of generalization procedures and provide appropriate rationale for training for generalization.
- 11. Effectively describe the elements of self-management and how it might be taught to children, youth, and adults.
- (Skill-based objectives)1. Use the Functional Behavior Assessment procedures to determine the function of an identified problem behavior.
- 2. Develop a target replacement behavior (TRB) that serves the same function as the identified problem behavior.
- 3. Develop a behavioral objective that corresponds with the target replacement behavior.
- 4. Observe, count, and graph behavioral data that is based on the target replacement behavior.
- 5. Make data based decisions using these data to determine the most effective intervention to increase the occurrence of the TRB.
- 6. Employ appropriate techniques for designing the Behavioral Intervention Plan. This includes manipulating setting events, using instructional methods, providing differential reinforcement, and arranging appropriate consequences.

CPSE 420 : Assessment and Evaluation of Students with Exceptional Needs. (3:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to special education program; FBI fingerprint background clearance.

DESCRIPTION: Determining present levels of performance, classifying students for special education services, and writing goals and objectives for IEP development.

**Course Outcomes**

- Demonstrate an understanding of the basic terminology used in an assessment.
- Discuss the ethical concerns related to assessment.
- Outline legal provisions, regulations and program standards regarding assessment.
- Identify the procedure used for screening, pre-referral, referral, and classification.
- Describe the application and interpretation of assessment scores, including grade score vs. standard score, percentile rank, age/grade equivalents, and standings.
- Identify, administer, select and describe the different types of non-biased assessments using appropriate technology when necessary.
- Discuss the components of and procedures for curriculum-based, portfolio, authentic, and functional assessment (informal test procedures), and apply these to different categories of exceptional children (e.g., L.D., E.D, & I.D.).
- Discuss the influence of diversity on assessment, eligibility, programming and placement of exceptional learners.
- Describe the relationship between assessment and placement decisions.
- Outline, develop or modify methods used for monitoring student progress.

CPSE 430 : Teaching Reading/Language Arts to Students with Disabilities. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent; FBI fingerprint background clearance

DESCRIPTION: Research-based methods for teaching language arts to students with disabilities.

**Course Outcomes**

- 1. Write IEP present levels of educational performance and, measurable annual goals for reading.
- 2. Demonstrate knowledge of core curriculum for reading and language arts
- 3. Task analyze learning objectives for reading and language arts
- 4. Plan daily lessons for reading and language arts.
- 5. Use Dynamic Indicators of Basic Early Literacy Skills (DIBELS) to benchmark and monitor reading progress of one early elementary student.
- 6. Choose reading materials to match student instructional reading levels.
- 7. Demonstrate the teaching of the 5 areas of the national reading panel
- 8. Demonstrate the teaching of writing.
- 9. Demonstrate the use of progress monitoring data to make instructional decisions.

CPSE 440 : Curriculum and Instruction for Secondary Students with Disabilities. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent.

DESCRIPTION: Selection and adaptation of curriculum accommodations, transition planning, and post-secondary preparation.

**Course Outcomes**

- Historical foundations, classic studies, major contributors, major legislation, and current issues related to knowledge and practice of transition/secondary special education.
- Continuum of placement and services available for individuals with disabilities at the secondary level.
- Psychological and social-emotional characteristics of individuals with disabilities as adolescents and young adults.
- Specialized materials and instructional approaches for individuals with disabilities at the secondary level.
- Advantages and limitations of instructional strategies and practices for teaching individuals with disabilities at this level.
- Strategies for integrating student initiated learning experiences into ongoing instruction.
- Methods for guiding individuals in identifying and organizing critical vocational content.
- Assessing for transition planning.
- Multicultural competence in transition planning processes
- Use research-supported methods for academic instruction of secondary age individuals with disabilities.
- Use research-supported methods for non-academic instruction of secondary age individuals with disabilities.
- Use appropriate adaptations and technology for all individuals with disabilities.
- Use resources and techniques for transitioning individuals with disabilities into and out of school and post-school environments.

CPSE 460 : Collaborating with School and Family. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent.

DESCRIPTION: Foundations in collaborating with school professionals, para-professionals, and families of children with disabilities.

**Course Outcomes**

- 1. Define and address issues related to collaboration and other models of working together including:a. Teamsb. Consultationc. Team teaching
- 2. Demonstrate understanding of collaborating with the following:a. Other professionalsb. Paraeducatorsc. Families
- 3. Understand and demonstrate appropriate interpersonal skills including:a. Program solvingb. Communicationc. Using statementsd. Asking questionse. Handling difficult interactions

CPSE 470 : Legal Issues Influencing Collaboration in Special Education. (3:3:0)

WHEN TAUGHT: Summer

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent.

DESCRIPTION: Laws and issues influencing special education and educator's roles in collaborating with families and professionals.

**Course Outcomes**

- Students will describe, discuss and/or apply:1. The six principles basic to P.L. 94-142/IDEA/IDEA 04.
- Rules governing the provision of special education services.
- Create a safe, equitable, positive and supportive learning environment in which diversities are valued.
- Demonstrate sensitivity for the culture, language, religion, gender, disability, socio-economic status, and sexual orientation of individuals.
- Use assessment information in making ineligibility, program, and placement decisions for individuals with exceptional learning needs, including those from culturally and/or linguistically diverse backgrounds.
- Historical points of view and contribution of culturally diverse groups.
- Ways specific cultures are negatively stereotyped.
- Legal provisions and ethical principles regarding assessment of individuals.
- 3. Duties and responsibilities of school personnel in relation to provision of special education services.
- Use assessment information in making eligibility, program, and placement decisions for individuals.
- Communicate effectively with families of individuals with exceptional learning needs from diverse backgrounds.

CPSE 480 : Educational and Multicultural Issues in Special Education. (3:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: FBI fingerprint background clearance.

DESCRIPTION: Special education issues: multicultural, historical, and legal foundations.

**Course Outcomes**

- KnowledgeDiffering ways of learning of individuals with exceptional learning needs including those from culturally diverse backgrounds and strategies for addressing these differences.
- Ways to create learning environments that allow individuals to retain and appreciate their own and each others' respective language and cultural heritage.
- Ways specific cultures are negatively stereotyped.
- Strategies used by diverse populations to cope with a legacy of former and continuing racism.
- Characteristics of one's own culture and use of language and the ways in which these can differ from other cultures and uses of languages.
- Ways of behaving and communicating among cultures that can lead to misinterpretation and misunderstanding.
- SkillsMediate controversial intercultural issues among students within the learning environment in ways that enhance any culture, group, or person.
- Students will interact with individuals from a culture different than their own.

CPSE 490 : Capstone Seminar: Students With Disabilities. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Successful completion of all special education courses and concurrent enrollment with student teaching/internship.

DESCRIPTION: Synthesis of knowledge and skills in special education; development of professional ethics and commitment to professional development.

**Course Outcomes**

- Models, theories, and philosophies that form the basis for special education practice.
- Rights and responsibilities of students, parents, teachers, and other professionals, and schools related to exceptional learning needs.
- Teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs. Social skills needed for educational and other environments.
- National, state or provincial, and local curricula standards. As well as organizations to support individuals with special needs.
- Prepare and organize materials to implement daily instruction.
- Develop or modify specialized materials for individuals with disabilities.
- Create a safe, equitable, positive, and supportive learning environment in which diversities are valued.
- Continuum of lifelong professional development.

IP&T 387 : Integrating Technology in Special Education 1. (1:1.0:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent with CPSE 410.

DESCRIPTION: Integrating instructional technology with special education instructional strategies.

**Course Outcomes**

There are no course outcomes available

IP&T 487 : Integrating Technology in Special Education 2. (1:1.0:0)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent with CPSE 430.

DESCRIPTION: Integrating instructional technology with special education instructional strategies.

**Course Outcomes**

There are no course outcomes available

MTHED 305 : Basic Concepts of Mathematics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Math 110 or equivalent; permission from Teacher Education Department.

DESCRIPTION: Concept-oriented exploration of number, measurement, and informal geometry in relation to children's learning.

NOTE: Required of prospective elementary school teachers.

**Course Outcomes**

- Students have a deep understanding of central concepts in elementary school mathematics related to whole numbers and whole number operations, number theory, integers and integer operations, geometry, and measurement; as well as core representations, canonical examples, patterns in children's thinking, and alternative algorithms germane to teaching these concepts.
- Students understand mathematics as a sense-making activity, can solve problems by employing conceptual understanding and mathematical reasoning, and can reflect on their own learning to make inferences about how children experience and understand mathematics.
- Students engage productively in mathematical inquiry, effectively communicate their mathematical ideas and reasoning with their peers, and reflect on the teaching practices modeled in the MthEd 305 classroom to make inferences about teaching practices that help children learn mathematics.

4. Complete the following courses which, in conjunction with the other required courses in the program, will allow you to fulfill the requirements of the TESOL K-12 minor:

TELL 410 : Second Language Acquisition. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: EL ED 323 & EL ED 203; or ELANG 223 & SC ED 353; or CPSE 425

DESCRIPTION: Processes and variables in native- and second-language development. How teachers can foster efficient acquisition of language, cognitive, and academic skills in second-language environments.

**Course Outcomes**

- Candidates know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas

TELL 440 : Content-Based Language Instruction. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TELL 410 & TELL 420; or TELL 410 & IP&T 213; or TELL 410 & CPSE 420

RECOMMENDED: El Ed 333, TELL 430, and CPSE 430 concurrently.

DESCRIPTION: Instructional methods, strategies, and materials for integrating curriculum content and language instruction. Teaching, creating, and adapting lesson materials in a multicultural context.

**Course Outcomes**

- Candidates know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas.

TELL 477R : TESOL K-12 Student Teaching. (.5-4:0:4)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: TELL 440; FBI fingerprint background clearance.

DESCRIPTION: Supervised, full-day experience to develop and demonstrate competence in teaching English Learners in an approved public school setting. Observation is stressed initially, with responsibility for teaching increasing across the four-week experience.

NOTE: Can be taken concurrently with student teaching/internship in a diverse-language setting.

**Course Outcomes**

There are no course outcomes available

Note: Must take 4 credit hours of TELL 477R.

5. Complete the following emphasis courses:

CPSE 442 : Social and Behavioral Strategies for Students with Mild/Moderate Disabilities. (3:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: CPSE 403 or equivalent; CPSE 410; admission to special education program.

DESCRIPTION: Principles, procedures, and strategies for classroom behavior management, social competence, and individual and school wide intervention plans.

**Course Outcomes**

- (Knowledge-based Objectives)1. Describe and define the components of schoolwide positive behavior support, it relationship with risk and protetective factors and multicultural issues.
- 2. Describe how to assess and create a positive learning environment in schools.
- 3. Describe how to build strong, positive relationships with children and youth.
- 4. Describe how to use a positive, teaching (discipline) approach.
- 5. Describe how to assess and address the social needs of individuals and groups of students.
- 6. Describe and list the procedural and content steps of an effective social skills program.
- 7. Describe how to organize an effective classroom management system for all students, particularly those with exceptional learning needs (i.e., schedules, procedures, routines, signals, physical set-up of room, rules and consquences, monitoring, transitions).
- 8. Describe the various components and appropriate use of Utah's Least Restrictive Behavioral Interventions (LRBI).
- 9. Describe the elements of multi-level interventions (primary, secondary, and tertiary), includeing positive and reductive interventions. 1. Token economy and response cost 2. Group contingencies 3. Behavioral contracts 4. Home notes 5. Precision commands 6. Time-out 7. Self managment 8. Response cost 9. Administrative intervention 10. Other procedures
- (Skill-based objectives)1. Assess a school climate and identify strengths and areas in which to improve the environment.
- 2. Build strong, positive relationships with children and youth. Develop and use praise notes as one way in which to build such relationships.
- 3. Demonstrate correct use of social skills assessments, procedures and curriculum that can be used in a classroom environment.
- 4. Design a positive behavior support system for classroom and nonclassroom environments. Develop a classroom management plan/disclsure document.
- 5. Demonstrate a variety of effective behavior intervention strategies appropriate to the needs of individuals with exceptional learning needs.
- 6. Select and implement the least intensive intervention consistent with the needs of individuals with exceptionalities. Consider LRBI and multi-level evidence-based practices that offer prevention with various behaviors.

CPSE 446R : Practicum in Secondary Education: Mild/Moderate Disabilities. (1:0:ARR)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent; concurrent enrollment in CPSE 440 (secondary); FBI fingerprint background clearance.

DESCRIPTION: Practicum in teaching students with mild-moderate disabilities in secondary settings.

**Course Outcomes**

- Continuum of placement and services available for individuals with disabilities at the secondary level.
- Psychological and social-emotional characteristics of individuals with disabilities as adolescents and young adults.
- Specialized materials and instructional approaches for individuals with disabilities at the secondary level.
- Advantages and limitations of instructional strategies and practices for teaching individuals with disabilities at this level.
- Strategies for integrating student initiated learning experiences into ongoing instruction.
- Methods for guiding individuals in identifying and organizing critical vocational content.
- Assessing for transition planning.
- Multicultural competence in transition planning processes.
- Skill-Based ObjectivesUse resources and techniques for transitioning individuals with disabilities into and out of school and post-school environments
- Demonstrate sensitivity for the culture, language, religion, gender, disability, socio-economic status, and sexual orientation of individuals.
- Create a safe, equitable positive and supportive learning environment in which diversities are valued.
- Organize, develop, and sustain learning environments that support positive intracultural and intercultural experiences.

- Use research-supported methods for academic instruction of secondary age individuals with disabilities.
- Use research-supported methods for non-academic instruction of secondary age individuals with disabilities.
- Use appropriate adaptations and technology for all individuals with disabilities.
- Identify and teach essential concepts, vocabulary, and content across the general curriculum.

CPSE 452 : Effective Teaching Strategies for Students with Mild/Moderate Disabilities. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent.

DESCRIPTION: IEP-based lesson planning and teacher-directed and student-mediated instructional strategies.

**Course Outcomes**

- Describe educational characteristics of students with mild/moderate disabilities.
- Describe the components of the IEP process and curriculum scope and sequence standards.
- Describe the process of writing goals, objectives and developing a task analysis.
- Discuss the components of writing effective lesson plans.
- Describe the effective teaching cycle, student response rates, praise, and corrective feedback.
- Identify models of collaboration with parents and general education.
- Discuss differentiated instruction and classroom accommodations for students with disabilities.
- Recognize examples of student-mediated strategies and how they can best be included in teacher-directed lessons.
- Demonstrate an understanding of how to teach learning strategies and academic skills.
- Demonstrate how to incorporate learning strategies in content area instruction.
- Discuss appropriate technologies to support instructional planning and individualized instruction.
- Describe how to design and collect data on informal curriculum based assessments.
- Discuss the role of the special educator in writing IEPs and conducting IEP meetings.
- Demonstrate the collaborative role of the special educator with families and school and community personnel in planning of an individualized program.

CPSE 462 : Teaching Math to Students with Disabilities. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent.

DESCRIPTION: Research-based methods for teaching mathematics to students with disabilities.

**Course Outcomes**

- 1. Describe research and results for current mathematics research for National Council of Teachers of Mathematics standards.
- 2. Develop Focused and Survey Curriculum Based Assessment.
- 3. Write Present Levels of Academic and Functional Performance (PLAAFP) statements and IEP goals based on informal assessment data.Create a scope and sequence of skills.
- 4. Write lesson plans to address IEP goals and objectives.
- 5. Demonstrate direct instruction presentation techniques.
- 6. Design data systems for monitoring student progress.
- 7. Demonstrate one Morningside Math lesson, with data management

6. Complete 8 hours of the following:

CPSE 466R : Practicum: Teaching Students with Mild/Moderate Disabilities. (1-6:0:ARR)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: Admission to special education licensure program; CPSE 403 or equivalent; FBI fingerprint background clearance.

DESCRIPTION: Practicum in the effective teaching cycle for students with mild/moderate disabilities.

**Course Outcomes**

- 1. Develop a classroom management plan that includes 4-6 operational rules, positive and negative consequences, reinforcement menu and explanation of routines and reward system.
- 2. Administer DIBELS, math CBA assessment to students and record data.Compile and organize summer teaching materials, including instructional binders.Practice effective self-reflection skills.Teach and evaluate language arts and math lessons.Review forms and expectations for Summer Term 466R.Set-up summer teaching classroom.

7. Complete 12 hours of the following student teaching or internship experience:

CPSE 486R : Student Teaching: Students with Mild/Moderate Disabilities. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Successful completion of all core courses and practica in special education; FBI fingerprint background clearance.

DESCRIPTION: Culminating experience teaching students with mild/moderate disabilities in school settings.

NOTE: Fee.

**Course Outcomes**

- Students must complete the Teacher Work Sample including: a. Contextual Factors b. Unit Framework c. Assessment Plan d. Design for Instruction e. Data-Based Decision Making f. Report of Student Learning
- Planning Rubric: a. Participation in IEP Process b. Developing, Writing, and Conducting and IEP
- Interpersonal Relationships: A. Working with and Training Paraprofessionals a. Role Description b. Training B. Collaboration and School Involement

CPSE 496R : Academic Internship: Special Education. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Departmental approval of application; placement one semester in advance of registration; FBI fingerprint background clearance.

DESCRIPTION: Culminating experience in the licensure program teaching students with disabilities in a school setting full-time for one academic year.

**Course Outcomes**

- Students must complete the Teacher Work Sample: a. Contextual Factors b. Unit Framework c. Assessment Data d. Design for Instruction e. Data-Based Decision Making f. Report of Student Learning
- Planning Rubric: a. Participating in IEP Process b. Developing, Writing, and Conducting an IEP
- Interpersonal Relationships A. Working with and Training paraprofessionals a. Role Description b. Training B. Collaboration and School Involvement

**Show all Counseling Psychology and Special Education Courses**

**David O. McKay School of Education Home**

**Counseling Psychology and Special Education Department Home**

**Majors**

BS in Special Education:
Emphases:
- Mild/Moderate Disabilities Emphasis
- Severe Disabilities Emphasis

**Course Information**

- Counseling Psychology and Special Education Courses

**Faculty**

# BS in Special Education: Severe Disabilities Emphasis (73 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see Education Student Services (350 MCKB) for information regarding requirements for admission to this program.*

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following with at least a B– grade prior to beginning the program:

CPSE 403 : Introduction to Special Education. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: FBI fingerprint background clearance.

DESCRIPTION: Understanding the characteristics of students with various exceptionalities, ranging from mild to moderate to severe disabilities. How student with specific disabilities learn; using basic strategies for meeting their educational needs.

**Course Outcomes**

- 1. Describe the ways in which people differ, learning characteristics and special learning needs.
- 2. Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act.
- 3. Articulate issues related to the identification of students with disabilities, referral and placement and the need to provide differing levels of support.
- 4. Articulate issues related to collaboration in special education. Identify the skills for effective collaboration.
- 5. Describe policies and programs for young children; define elements of the Child Find system.
- 6. Describe the steps in the Individualized Education Program (IEP) process.
- 7. Describe the characteristics, prevalence, and educational implications for students with specific learning disabilities, speech or language impairment, mental retardation, and emotional disturbance.
- 8. Describe the characteristics, prevalence, and educational implications for students with other health impairments, orthopedic impairment, visual impairments, autism, traumatic brain injury, deaf/blindness, and developmental delay.
- 9. Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- 10. Identify strategies for accommodating to meet individual student needs.
- 10. Demonstrate the ability to use assessment results to make instructional decisions.
- 11. Complete a 12-hour field experience involving volunteer service with four students with disabilities (2 at each site) and submit assignments regarding the experience.

PETE 461 : Adapted and Multicultural Physical Education for Teaching Majors. (3:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Legal mandates, assessing and identifying special needs students, multicultural issues, and management and instructional techniques.

**Course Outcomes**

- *Identify, select, and implement appropriate instruction that is sensitive to the strength/weaknesses, multiple needs, learning style, and experiences of diverse learners.
- *Use appropriate strategies, services, and resources to meet special and diverse learning needs.
- *Create a learning environment which respects and incorporates learners' personal, family, cultural, and community experiences
- Know the principles that address the physiological and biomechanical applications encountered when working with diverse populations.
- Know how to assess and evaluate students with disabilities in order to make appropriate decisions about special services and program components.
- Know how to teach students with disabilities integrated in regular physical education programs.
- Learn how to provide consultation and staff development activities related to students with disabilities and their IEP.

- Learn how to work and attend to the needs of multicultural students integrated in physical education

3. Complete the following core courses:

CPSE 410 : Applied Behavior Analysis in Education. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to special education program; FBI fingerprint background clearance.

DESCRIPTION: Strategies for educating individuals with or at-risk for disabilities. Prevention, early intervention, and treatment strategies.

**Course Outcomes**

- (Knowledge-based objectives)1. Describe the history of ABA.
- 2. Describe several approaches for explaining the occurrence of human behavior.
- 3. Describe the ethical and responsible use of ABA.
- 4. Describe the components of a Functional Behavior Assessment and Behavior Intervention Plan.
- 5. Describe the function and format of target replacement behaviors and behavior objectives.
- 6. Describe data collection and graphing procedures.
- 7. Describe a variety of single-subject designs, their elements, how they are used, and when they are used.
- 8. Describe the principles that underlie the selection of appropriate consequences and providing differential reinforcement.
- 9. Describe stimulus control, its various facets, and how it is used.
- 10. Describe the principle components of generalization procedures and provide appropriate rationale for training for generalization.
- 11. Effectively describe the elements of self-management and how it might be taught to children, youth, and adults.
- (Skill-based objectives)1. Use the Functional Behavior Assessment procedures to determine the function of an identified problem behavior.
- 2. Develop a target replacement behavior (TRB) that serves the same function as the identified problem behavior.
- 3. Develop a behavioral objective that corresponds with the target replacement behavior.
- 4. Observe, count, and graph behavioral data that is based on the target replacement behavior.
- 5. Make data based decisions using these data to determine the most effective intervention to increase the occurrence of the TRB.
- 6. Employ appropriate techniques for designing the Behavioral Intervention Plan. This includes manipulating setting events, using instructional methods, providing differential reinforcement, and arranging appropriate consequences.

CPSE 420 : Assessment and Evaluation of Students with Exceptional Needs. (3:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to special education program; FBI fingerprint background clearance.

DESCRIPTION: Determining present levels of performance, classifying students for special education services, and writing goals and objectives for IEP development.

**Course Outcomes**

- Demonstrate an understanding of the basic terminology used in an assessment.
- Discuss the ethical concerns related to assessment.
- Outline legal provisions, regulations and program standards regarding assessment.
- Identify the procedure used for screening, pre-referral, referral, and classification.
- Describe the application and interpretation of assessment scores, including grade score vs. standard score, percentile rank, age/grade equivalents, and standings.
- Identify, administer, select and describe the different types of non-biased assessments using appropriate technology when necessary.
- Discuss the components of and procedures for curriculum-based, portfolio, authentic, and functional assessment (informal test procedures), and apply these to different categories of exceptional children (e.g., L.D., E.D, & I.D.).
- Discuss the influence of diversity on assessment, eligibility, programming and placement of exceptional learners.
- Describe the relationship between assessment and placement decisions.
- Outline, develop or modify methods used for monitoring student progress.

CPSE 425 : Foundations in Language Arts Instruction for Students with Disabilities. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Foundations in analyzing and delivering research-based language arts instruction to students with disabilities, including second language learners with disabilities.

**Course Outcomes**

- Describe the components of oral language.
- Describe the process of oral language development.
- Describe common communication disorders in children.
- Explain the interplay between culture and language.
- Explain the interplay between language and learning.
- Describe listening comprehension and its effect on learning.
- Describe the demands of learning English as a second language.
- Explain the cognitive processes for changing from spoken to written language.
- Explain the 5 component skills for reading.
- Administer DIBELS©Benchmark assessments for K-1.

CPSE 430 : Teaching Reading/Language Arts to Students with Disabilities. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent; FBI fingerprint background clearance

DESCRIPTION: Research-based methods for teaching language arts to students with disabilities.

**Course Outcomes**

- 1. Write IEP present levels of educational performance and, measurable annual goals for reading.
- 2. Demonstrate knowledge of core curriculum for reading and language arts
- 3. Task analyze learning objectives for reading and language arts
- 4. Plan daily lessons for reading and language arts.
- 5. Use Dynamic Indicators of Basic Early Literacy Skills (DIBELS) to benchmark and monitor reading progress of one early elementary student.
- 6. Choose reading materials to match student instructional reading levels.
- 7. Demonstrate the teaching of the 5 areas of the national reading panel
- 8. Demonstrate the teaching of writing.
- 9. Demonstrate the use of progress monitoring data to make instructional decisions.

CPSE 440 : Curriculum and Instruction for Secondary Students with Disabilities. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent.

DESCRIPTION: Selection and adaptation of curriculum accommodations, transition planning, and post-secondary preparation.

**Course Outcomes**

- Historical foundations, classic studies, major contributors, major legislation, and current issues related to knowledge and practice of transition/secondary special education.
- Continuum of placement and services available for individuals with disabilities at the secondary level.
- Psychological and social-emotional characteristics of individuals with disabilities as adolescents and young adults.
- Specialized materials and instructional approaches for individuals with disabilities at the secondary level.
- Advantages and limitations of instructional strategies and practices for teaching individuals with disabilities at this level.
- Strategies for integrating student initiated learning experiences into ongoing instruction.
- Methods for guiding individuals in identifying and organizing critical vocational content.
- Assessing for transition planning.
- Multicultural competence in transition planning processes
- Use research-supported methods for academic instruction of secondary age individuals with disabilities.
- Use research-supported methods for non-academic instruction of secondary age individuals with disabilities.
- Use appropriate adaptations and technology for all individuals with disabilities.
- Use resources and techniques for transitioning individuals with disabilities into and out of school and post-school environments.

CPSE 460 : Collaborating with School and Family. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent.

DESCRIPTION: Foundations in collaborating with school professionals, para-professionals, and families of children with disabilities.

**Course Outcomes**

- 1. Define and address issues related to collaboration and other models of working together including:a. Teamsb. Consultationc. Team teaching
- 2. Demonstrate understanding of collaborating with the following:a. Other professionalsb. Paraeducatorsc. Families
- 3. Understand and demonstrate appropriate interpersonal skills including:a. Program solvingb. Communicationc. Using statementsd. Asking questionse. Handling difficult interactions

CPSE 470 : Legal Issues Influencing Collaboration in Special Education. (3:3:0)

WHEN TAUGHT: Summer

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent.

DESCRIPTION: Laws and issues influencing special education and educator's roles in collaborating with families and professionals.

**Course Outcomes**

- Students will describe, discuss and/or apply:1. The six principles basic to P.L. 94-142/IDEA/IDEA 04.
- Rules governing the provision of special education services.
- Create a safe, equitable, positive and supportive learning environment in which diversities are valued.
- Demonstrate sensitivity for the culture, language, religion, gender, disability, socio-economic status, and sexual orientation of individuals.
- Use assessment information in making ineligibility, program, and placement decisions for individuals with exceptional learning needs, including those from culturally and/or linguistically diverse backgrounds.
- Historical points of view and contribution of culturally diverse groups.
- Ways specific cultures are negatively stereotyped.
- Legal provisions and ethical principles regarding assessment of individuals.
- 3. Duties and responsibilities of school personnel in relation to provision of special education services.
- Use assessment information in making eligibility, program, and placement decisions for individuals.
- Communicate effectively with families of individuals with exceptional learning needs from diverse backgrounds.

CPSE 480 : Educational and Multicultural Issues in Special Education. (3:ARR:ARR)

WHEN TAUGHT: Fall
PREREQUISITE: FBI fingerprint background clearance.
DESCRIPTION: Special education issues: multicultural, historical, and legal foundations.

**Course Outcomes**

- KnowledgeDiffering ways of learning of individuals with exceptional learning needs including those from culturally diverse backgrounds and strategies for addressing these differences.
- Ways to create learning environments that allow individuals to retain and appreciate their own and each others' respective language and cultural heritage.
- Ways specific cultures are negatively stereotyped.
- Strategies used by diverse populations to cope with a legacy of former and continuing racism.
- Characteristics of one's own culture and use of language and the ways in which these can differ from other cultures and uses of languages.
- Ways of behaving and communicating among cultures that can lead to misinterpretation and misunderstanding.
- SkillsMediate controversial intercultural issues among students within the learning environment in ways that enhance any culture, group, or person.
- Students will interact with individuals from a culture different than their own.

CPSE 490 : Capstone Seminar: Students With Disabilities. (1:1:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Successful completion of all special education courses and concurrent enrollment with student teaching/internship.
DESCRIPTION: Synthesis of knowledge and skills in special education; development of professional ethics and commitment to professional development.

**Course Outcomes**

- Models, theories, and philosophies that form the basis for special education practice.
- Rights and responsibilities of students, parents, teachers, and other professionals, and schools related to exceptional learning needs.
- Teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs. Social skills needed for educational and other environments.
- National, state or provincial, and local curricula standards. As well as organizations to support individuals with special needs.
- Prepare and organize materials to implement daily instruction.
- Develop or modify specialized materials for individuals with disabilities.
- Create a safe, equitable, positive, and supportive learning environment in which diversities are valued.
- Continuum of lifelong professional development.

IP&T 387 : Integrating Technology in Special Education 1. (1:1.0:0)

WHEN TAUGHT: Fall
PREREQUISITE: Concurrent with CPSE 410.
DESCRIPTION: Integrating instructional technology with special education instructional strategies.

**Course Outcomes**

There are no course outcomes available

IP&T 487 : Integrating Technology in Special Education 2. (1:1.0:0)

WHEN TAUGHT: Winter
PREREQUISITE: Concurrent with CPSE 430.
DESCRIPTION: Integrating instructional technology with special education instructional strategies.

**Course Outcomes**

There are no course outcomes available

MTHED 305 : Basic Concepts of Mathematics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Math 110 or equivalent; permission from Teacher Education Department.
DESCRIPTION: Concept-oriented exploration of number, measurement, and informal geometry in relation to children's learning.
NOTE: Required of prospective elementary school teachers.

**Course Outcomes**

- Students have a deep understanding of central concepts in elementary school mathematics related to whole numbers and whole number operations, number theory, integers and integer operations, geometry, and measurement; as well as core representations, canonical examples, patterns in children's thinking, and alternative algorithms germane to teaching these concepts.
- Students understand mathematics as a sense-making activity, can solve problems by employing conceptual understanding and mathematical reasoning, and can reflect on their own learning to make inferences about how children experience and understand mathematics.
- Students engage productively in mathematical inquiry, effectively communicate their mathematical ideas and reasoning with their peers, and reflect on the teaching practices modeled in the MthEd 305 classroom to make inferences about teaching practices that help children learn mathematics.

4. Complete the following emphasis courses:
   ASL 101 : First-Year American Sign Language. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: First in a series of courses which focuses on acquiring basic ASL skills, both receptive and expressive. An introduction to the Deaf community and culture will be provided.

NOTE: Intended for students with little or no experience in ASL.

**Course Outcomes**

There are no course outcomes available

ASL 102 : First-Year American Sign Language. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ASL 101

DESCRIPTION: Second in a series of courses which focuses on acquiring basic ASL skills, both receptive and expressive. An introduction to the Deaf community and culture will be provided.

NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

- Be able to converse naturally using selected vocabulary.
- Be able to develop and use appropriate classifiers.
- Be able to develop and use appropriate ASL structure.
- Be able to identify and explain selected culture rules.
- able to answer questions about selected films.

CPSE 443 : Social and Behavioral Strategies for Students with Severe Disabilities. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CPSE 403 or equivalent; CPSE 410; admission to special education program; FBI fingerprint background clearance.

DESCRIPTION: Principles, procedures, and strategies for creating positive educational environments, including functional assessment, behavior intervention plans, and development of social competence.

**Course Outcomes**

- · Demonstrate knowledge of adaptive behavior assessment.
- · Describe the correct, ethical, and responsible use of Functional Behavior Assessment (FUBA) for students with severe disabilities.
- · Demonstrate knowledge of common environmental and personal barriers that hinder accessibility and acceptance of individuals with severe disabilities.
- · Demonstrate knowledge of sources of unique services, networks, and organizations for students with severe disabilities.
- · Demonstrate knowledge of ways of behaving and communicating among cultures that can lead to misinterpretation and misunderstanding.
- · Demonstrate knowledge of cultural perspectives influencing relationships among families, schools, and communities as related to instruction.
- · Demonstrate knowledge of variations in belief, traditions, and values across and within cultures and their effects on relationships among individuals with exceptional learning needs, family, and schooling.
- · Demonstrate knowledge of how to coordinate activities of related services personnel to maximize direct instruction time for individuals with severe disabilities.
- · Demonstrate knowledge of theories of behavior problems in individuals with severe disabilities, including self-stimulation and self-abuse.
- · Demonstrate knowledge of the impact of multiple disabilities on behavior.
- · Demonstrate knowledge of how to integrate functional and social skills training into the curriculum.

CPSE 447R : Practicum in Secondary Education: Severe Disabilities. (1:0:ARR)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent; concurrent enrollment in CPSE 440 (secondary); FBI fingerprint background clearance.

DESCRIPTION: Practicum in teaching students with severe disabilities in secondary settings.

**Course Outcomes**

- Continuum of placement and services available for individuals with disabilities at the secondary level.
- Psychological and social-emotional characteristics of individuals with disabilities as adolescents and young adults.
- Specialized materials and instructional approaches for individuals with disabilities at the secondary level.
- Advantages and limitations of instructional strategies and practices for teaching individuals with disabilities at this level.
- Strategies for integrating student initiated learning experiences into ongoing instruction.
- Methods for guiding individuals in identifying and organizing critical vocational content.
- Multicultural competence in transition planning processes
- Use resources and techniques for transitioning individuals with disabilities into and out of school and post-school environments.

CPSE 453 : Curriculum and Instruction: Severe Disabilities. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: Admission to special education program or instructor's consent.

DESCRIPTION: Strategies for designing and implementing educational programs, curricula, and teaching methods for students with severe disabilities.

**Course Outcomes**

- The necessity of assessment for curriculum planning.
- Historical foundations, classic studies, major contributors, major legislation, and current issues related to knowledge and practice of curriculum & instruction in special education.
- Effective Teaching principles.
- Positive classroom management.
- Teaching field as a professional setting.
- Various teaching methods used in teaching students with severe disabilities.
- Use research-supported methods for academic instruction of individuals with severe disabilities.
- Use research-supported methods for non-academic instruction of individuals with severe disabilities.
- Use appropriate adaptations and technology for all individuals with disabilities and from diverse backgrounds.
- Create lesson plans derived from assessments.

CPSE 463 : Assistive Technology for Students with Disabilities. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to special education program or instructor's consent; FBI fingerprint background clearance.

DESCRIPTION: Principles and applications in using assistive technology to improve the education and communication skills of students with disabilities.

**Course Outcomes**

- Effects of cultural and linguistic differences on growth and development.
- Characteristics of one's own culture and use of language and the ways in which these can differ from other cultures and uses of languages.
- Ways of behaving and communicating among cultures that can lead to misinterpretation and misunderstanding.
- Augmentative and assistive communication strategies.
- Impact of language development and listening comprehension on academic and non-academic learning of individuals with disabilities.
- Communication and social interaction alternatives for individuals who are nonspeaking.
- Use strategies to support and enhance communication skills of individuals with exceptional learning needs.
- Use communication strategies and resources to facilitate understanding of subject matter for students whose primary language is not the dominant language.
- Incorporate and implement instructional and assistive technology into the educational program.
- Use appropriate adaptations and assistive technology for all individuals with disabilities.
- Use and maintain assistive technologies.
- Teach individuals with disabilities to monitor for errors in oral and written language.
- Plan instruction on the use of alternative and augmentative communication systems.
- Develop and use a technology plan based on adaptive technology assessment.

5. Complete 8 hours of the following:

CPSE 467R : Practicum: Teaching Students with Severe Disabilities. (1-6:0:ARR)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: Admission to special education licensure program; CPSE 403 or equivalent; FBI fingerprint background clearance.

DESCRIPTION: Practicum in the effective teaching cycle for students with severe disabilities.

**Course Outcomes**

- Rights and responsibilities of students, parents, teachers, and other professionals, and schools related to exceptional learning needs.
- Models, theories, and philosophies that form the basis for special education practice.
- Specialized materials for individuals with disabilities.
- Use a variety of nonaversive techniques to control targeted behavior and maintain attention of individuals with disabilities.
- Teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs. Social skills needed for educational and other environments.
- National, state or provincial, and local curricula standards.
- Prepare and organize materials to implement daily lesson plans.
- Develop or modify individualized assessment strategies.
- Create a safe, equitable, positive, and supportive learning environment in which diversities are valued.
- Continuum of lifelong professional development.

6. Complete 12 hours of the following student teaching or internship experience:

CPSE 487R : Student Teaching: Students with Severe Disabilities. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Successful completion of all core courses and practica in special education; FBI fingerprint background clearance.

DESCRIPTION: Culminating experience teaching students with severe disabilities in school settings.

**Course Outcomes**

- Student must complete the Teacher Work Sample: a. Contextual Factors b. Unit Framework c. Assessment Plan d. Design for Instruction e. Data-Based Decision Making f. Report of Student Learning
- Planning Rubric: a. Participating in IEP Process b. Developing, Writing, and Conducting and IEP
- Interpersonal Relationships: A. Working With and Training Paraprofessionals a. Role Description b. Training B. Collaboration and School Involvement

CPSE 496R : Academic Internship: Special Education. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Departmental approval of application; placement one semester in advance of registration; FBI fingerprint background clearance.

DESCRIPTION: Culminating experience in the licensure program teaching students with disabilities in a school setting full-time for one academic year.

**Course Outcomes**

- Students must complete the Teacher Work Sample: a. Contextual Factors b. Unit Framework c. Assessment Data d. Design for Instruction e. Data-Based Decision Making f. Report of Student Learning
- Planning Rubric: a. Participating in IEP Process b. Developing, Writing, and Conducting an IEP
- Interpersonal Relationships A. Working with and Training paraprofessionals a. Role Description b. Training B. Collaboration and School Involvement

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**Majors**

BS in Special Education:
Emphases:
- Mild/Moderate Disabilities Emphasis
- Severe Disabilities Emphasis

**Course Information**

- Counseling Psychology and Special Education Courses

**Faculty**

# Counseling Psychology and Special Education (CPSE)

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## Undergraduate Courses

### 300-Level Courses

CPSE 300 : Exceptional Students: Principles of Collaboration. (2:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: FBI fingerprint background clearance.

DESCRIPTION: Basic principles and legislative issues in effectively communicating and collaborating with professionals, parents, and other service providers to meet needs of individuals with disabilities in inclusive educational environments. Lab.

**Course Outcomes**

- Analyze student's learning difficulties and plan appropriate accommodations.
- Describe learning characteristics of special needs students.
- Develop assessment plans to evaluate students' progress and collaborate with school experts to support student learning.
- Collaboration: Candidates work effectively with parents, professionals, paraprofessionals, and others in the school and community to help students with disabilities achieve their IEP goals.
- Interpersonal Relations: Candidates work with students, parents, professionals, paraprofessionals, and others in the school and community with kindness and respect regardless of their diverse backgrounds.
- Professional Practice: Candidates fulfill all duties and assignments, comply with all education laws and policies, and continue to improve professional practice.

### 400-Level Courses

CPSE 401R : Practicum in Educational Partnerships. (1:0:1)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Admission to elementary, secondary, or special education program.

DESCRIPTION: Collaborating with parents, professionals, and others to meet needs of individuals with disabilities in inclusive or special education environments.

**Course Outcomes**

No outcomes are available at this time.

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

CPSE 403 : Introduction to Special Education. (3:3:0)

WHEN Fall; Winter

TAUGHT:

PREREQUISITE: FBI fingerprint background clearance.

DESCRIPTION: Understanding the characteristics of students with various exceptionalities, ranging from mild to moderate to severe disabilities. How student with specific disabilities learn; using basic strategies for meeting their educational needs.

**Course Outcomes**

- 1. Describe the ways in which people differ, learning characteristics and special learning needs.
- 2. Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act.
- 3. Articulate issues related to the identification of students with disabilities, referral and placement and the need to provide differing levels of support.
- 4. Articulate issues related to collaboration in special education. Identify the skills for effective collaboration.
- 5. Describe policies and programs for young children; define elements of the Child Find system.
- 6. Describe the steps in the Individualized Education Program (IEP) process.
- 7. Describe the characteristics, prevalence, and educational implications for students with specific learning disabilities, speech or language impairment, mental retardation, and emotional disturbance.
- 8. Describe the characteristics, prevalence, and educational implications for students with other health impairments, orthopedic impairment, visual impairments, autism, traumatic brain injury, deaf/blindness, and developmental delay.
- 9. Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- 10. Identify strategies for accommodating to meet individual student needs.
- 10. Demonstrate the ability to use assessment results to make instructional decisions.
- 11. Complete a 12-hour field experience involving volunteer service with four students with disabilities (2 at each site) and submit assignments regarding the experience.

CPSE 410 : Applied Behavior Analysis in Education. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to special education program; FBI fingerprint background clearance.

DESCRIPTION: Strategies for educating individuals with or at-risk for disabilities. Prevention, early intervention, and treatment strategies.

**Course Outcomes**

- (Knowledge-based objectives)1. Describe the history of ABA.
- 2. Describe several approaches for explaining the occurrence of human behavior.
- 3. Describe the ethical and responsible use of ABA.
- 4. Describe the components of a Functional Behavior Assessment and Behavior Intervention Plan.
- 5. Describe the function and format of target replacement behaviors and behavior objectives.
- 6. Describe data collection and graphing procedures.
- 7. Describe a variety of single-subject designs, their elements, how they are used, and when they are used.
- 8. Describe the principles that underlie the selection of appropriate consequences and providing differential reinforcement.
- 9. Describe stimulus control, its various facets, and how it is used.
- 10. Describe the principle components of generalization procedures and provide appropriate rationale for training for generalization.
- 11. Effectively describe the elements of self-management and how it might be taught to children, youth, and adults.
- (Skill-based objectives)1. Use the Functional Behavior Assessment procedures to determine the function of an identified problem behavior.
- 2. Develop a target replacement behavior (TRB) that serves the same function as the identified problem behavior.
- 3. Develop a behavioral objective that corresponds with the target replacement behavior.
- 4. Observe, count, and graph behavioral data that is based on the target replacement behavior.
- 5. Make data based decisions using these data to determine the most effective intervention to increase the occurrence of the TRB.
- 6. Employ appropriate techniques for designing the Behavioral Intervention Plan. This includes manipulating setting events, using instructional methods, providing differential reinforcement, and arranging appropriate consequences.

CPSE 420 : Assessment and Evaluation of Students with Exceptional Needs. (3:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to special education program; FBI fingerprint background clearance.

DESCRIPTION: Determining present levels of performance, classifying students for special education services, and writing goals and objectives for IEP development.

**Course Outcomes**

- Demonstrate an understanding of the basic terminology used in an assessment.
- Discuss the ethical concerns related to assessment.
- Outline legal provisions, regulations and program standards regarding assessment.
- Identify the procedure used for screening, pre-referral, referral, and classification.
- Describe the application and interpretation of assessment scores, including grade score vs. standard score, percentile rank, age/grade equivalents, and standings.
- Identify, administer, select and describe the different types of non-biased assessments using appropriate technology when necessary.
- Discuss the components of and procedures for curriculum-based, portfolio, authentic, and functional assessment (informal test procedures), and apply these to different categories of exceptional children (e.g., L.D., E.D, & I.D.).
- Discuss the influence of diversity on assessment, eligibility, programming and placement of exceptional learners.
- Describe the relationship between assessment and placement decisions.
- Outline, develop or modify methods used for monitoring student progress.

CPSE 425 : Foundations in Language Arts Instruction for Students with Disabilities. (3:3:0)

WHEN Winter

TAUGHT:

DESCRIPTION: Foundations in analyzing and delivering research-based language arts instruction to students with disabilities, including second language learners with disabilities.

**Course Outcomes**

- Describe the components of oral language.
- Describe the process of oral language development.
- Describe common communication disorders in children.
- Explain the interplay between culture and language.
- Explain the interplay between language and learning.
- Describe listening comprehension and its effect on learning.
- Describe the demands of learning English as a second language.
- Explain the cognitive processes for changing from spoken to written language.
- Explain the 5 component skills for reading.
- Administer DIBELS©Benchmark assessments for K-1.

CPSE 430 : Teaching Reading/Language Arts to Students with Disabilities. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent; FBI fingerprint background clearance

DESCRIPTION: Research-based methods for teaching language arts to students with disabilities.

**Course Outcomes**

- 1. Write IEP present levels of educational performance and, measurable annual goals for reading.
- 2. Demonstrate knowledge of core curriculum for reading and language arts
- 3. Task analyze learning objectives for reading and language arts
- 4. Plan daily lessons for reading and language arts.
- 5. Use Dynamic Indicators of Basic Early Literacy Skills (DIBELS) to benchmark and monitor reading progress of one early elementary student.
- 6. Choose reading materials to match student instructional reading levels.
- 7. Demonstrate the teaching of the 5 areas of the national reading panel
- 8. Demonstrate the teaching of writing.
- 9. Demonstrate the use of progress monitoring data to make instructional decisions.

CPSE 440 : Curriculum and Instruction for Secondary Students with Disabilities. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent.

DESCRIPTION: Selection and adaptation of curriculum accommodations, transition planning, and post-secondary preparation.

**Course Outcomes**

- Historical foundations, classic studies, major contributors, major legislation, and current issues related to knowledge and practice of transition/secondary special education.
- Continuum of placement and services available for individuals with disabilities at the secondary level.
- Psychological and social-emotional characteristics of individuals with disabilities as adolescents and young adults.
- Specialized materials and instructional approaches for individuals with disabilities at the secondary level.
- Advantages and limitations of instructional strategies and practices for teaching individuals with disabilities at this level.
- Strategies for integrating student initiated learning experiences into ongoing instruction.
- Methods for guiding individuals in identifying and organizing critical vocational content.
- Assessing for transition planning.
- Multicultural competence in transition planning processes
- Use research-supported methods for academic instruction of secondary age individuals with disabilities.
- Use research-supported methods for non-academic instruction of secondary age individuals with disabilities.
- Use appropriate adaptations and technology for all individuals with disabilities.
- Use resources and techniques for transitioning individuals with disabilities into and out of school and post-school environments.

CPSE 442 : Social and Behavioral Strategies for Students with Mild/Moderate Disabilities. (3:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: CPSE 403 or equivalent; CPSE 410; admission to special education program.

DESCRIPTION: Principles, procedures, and strategies for classroom behavior management, social competence, and individual and school wide intervention plans.

**Course Outcomes**

- (Knowledge-based Objectives)1. Describe and define the components of schoolwide positive behavior support, it relationship with risk and protetective factors and multicultural issues.
- 2. Describe how to assess and create a positive learning environment in schools.
- 3. Describe how to build strong, positive relationships with children and youth.
- 4. Describe how to use a positive, teaching (discipline) approach.
- 5. Describe how to assess and address the social needs of individuals and groups of students.
- 6. Describe and list the procedural and content steps of an effective social skills program.
- 7. Describe how to organize an effective classroom management system for all students, particularly those with exceptional learning needs (i.e., schedules, procedures, routines, signals, physical set-up of room, rules and consquences, monitoring, transitions).
- 8. Describe the various components and appropriate use of Utah's Least Restrictive Behavioral Interventions (LRBI).
- 9. Describe the elements of multi-level interventions (primary, secondary, and tertiary), includeing positive and reductive interventions. 1. Token economy and response cost 2. Group contingencies 3. Behavioral contracts 4. Home notes 5. Precision commands 6. Time-out 7. Self managment 8. Response cost 9. Administrative intervention 10. Other procedures
- (Skill-based objectives)1. Assess a school climate and identify strengths and areas in which to improve the environment.
- 2. Build strong, positive relationships with children and youth. Develop and use praise notes as one way in

which to build such relationships.
- 3. Demonstrate correct use of social skills assessments, procedures and curriculum that can be used in a classroom environment.
- 4. Design a positive behavior support system for classroom and nonclassroom environments. Develop a classroom management plan/disclsure document.
- 5. Demonstrate a variety of effective behavior intervention strategies appropriate to the needs of individuals with exceptional learning needs.
- 6. Select and implement the least intensive intervention consistent with the needs of individuals with exceptionalities. Consider LRBI and multi-level evidence-based practices that offer prevention with various behaviors.

CPSE 443 : Social and Behavioral Strategies for Students with Severe Disabilities. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CPSE 403 or equivalent; CPSE 410; admission to special education program; FBI fingerprint background clearance.

DESCRIPTION: Principles, procedures, and strategies for creating positive educational environments, including functional assessment, behavior intervention plans, and development of social competence.

**Course Outcomes**

- · Demonstrate knowledge of adaptive behavior assessment.
- · Describe the correct, ethical, and responsible use of Functional Behavior Assessment (FUBA) for students with severe disabilities.
- · Demonstrate knowledge of common environmental and personal barriers that hinder accessibility and acceptance of individuals with severe disabilities.
- · Demonstrate knowledge of sources of unique services, networks, and organizations for students with severe disabilities.
- · Demonstrate knowledge of ways of behaving and communicating among cultures that can lead to misinterpretation and misunderstanding.
- · Demonstrate knowledge of cultural perspectives influencing relationships among families, schools, and communities as related to instruction.
- · Demonstrate knowledge of variations in belief, traditions, and values across and within cultures and their effects on relationships among individuals with exceptional learning needs, family, and schooling.
- · Demonstrate knowledge of how to coordinate activities of related services personnel to maximize direct instruction time for individuals with severe disabilities.
- · Demonstrate knowledge of theories of behavior problems in individuals with severe disabilities, including self-stimulation and self-abuse.
- · Demonstrate knowledge of the impact of multiple disabilities on behavior.
- · Demonstrate knowledge of how to integrate functional and social skills training into the curriculum.

CPSE 446R : Practicum in Secondary Education: Mild/Moderate Disabilities. (1:0:ARR)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent; concurrent enrollment in CPSE 440 (secondary); FBI fingerprint background clearance.

DESCRIPTION: Practicum in teaching students with mild-moderate disabilities in secondary settings.

**Course Outcomes**

- Continuum of placement and services available for individuals with disabilities at the secondary level.
- Psychological and social-emotional characteristics of individuals with disabilities as adolescents and young adults.
- Specialized materials and instructional approaches for individuals with disabilities at the secondary level.
- Advantages and limitations of instructional strategies and practices for teaching individuals with disabilities at this level.
- Strategies for integrating student initiated learning experiences into ongoing instruction.
- Methods for guiding individuals in identifying and organizing critical vocational content.
- Assessing for transition planning.
- Multicultural competence in transition planning processes.
- Skill-Based ObjectivesUse resources and techniques for transitioning individuals with disabilities into and out of school and post-school environments
- Demonstrate sensitivity for the culture, language, religion, gender, disability, socio-economic status, and sexual orientation of individuals.
- Create a safe, equitable positive and supportive learning environment in which diversities are valued.
- Organize, develop, and sustain learning environments that support positive intracultural and intercultural experiences.
- Use research-supported methods for academic instruction of secondary age individuals with disabilities.
- Use research-supported methods for non-academic instruction of secondary age individuals with disabilities.
- Use appropriate adaptations and technology for all individuals with disabilities.
- Identify and teach essential concepts, vocabulary, and content across the general curriculum.

CPSE 447R : Practicum in Secondary Education: Severe Disabilities. (1:0:ARR)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent; concurrent enrollment in CPSE 440 (secondary); FBI fingerprint background clearance.

DESCRIPTION: Practicum in teaching students with severe disabilities in secondary settings.

**Course Outcomes**

- Continuum of placement and services available for individuals with disabilities at the secondary level.
- Psychological and social-emotional characteristics of individuals with disabilities as adolescents and young adults.
- Specialized materials and instructional approaches for individuals with disabilities at the secondary level.
- Advantages and limitations of instructional strategies and practices for teaching individuals with disabilities at this level.
- Strategies for integrating student initiated learning experiences into ongoing instruction.
- Methods for guiding individuals in identifying and organizing critical vocational content.

- Multicultural competence in transition planning processes
- Use resources and techniques for transitioning individuals with disabilities into and out of school and post-school environments.

CPSE 452 : Effective Teaching Strategies for Students with Mild/Moderate Disabilities. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent.

DESCRIPTION: IEP-based lesson planning and teacher-directed and student-mediated instructional strategies.

**Course Outcomes**

- Describe educational characteristics of students with mild/moderate disabilities.
- Describe the components of the IEP process and curriculum scope and sequence standards.
- Describe the process of writing goals, objectives and developing a task analysis.
- Discuss the components of writing effective lesson plans.
- Describe the effective teaching cycle, student response rates, praise, and corrective feedback.
- Identify models of collaboration with parents and general education.
- Discuss differentiated instruction and classroom accommodations for students with disabilities.
- Recognize examples of student-mediated strategies and how they can best be included in teacher-directed lessons.
- Demonstrate an understanding of how to teach learning strategies and academic skills.
- Demonstrate how to incorporate learning strategies in content area instruction.
- Discuss appropriate technologies to support instructional planning and individualized instruction.
- Describe how to design and collect data on informal curriculum based assessments.
- Discuss the role of the special educator in writing IEPs and conducting IEP meetings.
- Demonstrate the collaborative role of the special educator with families and school and community personnel in planning of an individualized program.

CPSE 453 : Curriculum and Instruction: Severe Disabilities. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: Admission to special education program or instructor's consent.

DESCRIPTION: Strategies for designing and implementing educational programs, curricula, and teaching methods for students with severe disabilities.

**Course Outcomes**

- The necessity of assessment for curriculum planning.
- Historical foundations, classic studies, major contributors, major legislation, and current issues related to knowledge and practice of curriculum & instruction in special education.
- Effective Teaching principles.
- Positive classroom management.
- Teaching field as a professional setting.
- Various teaching methods used in teaching students with severe disabilities.
- Use research-supported methods for academic instruction of individuals with severe disabilities.
- Use research-supported methods for non-academic instruction of individuals with severe disabilities.
- Use appropriate adaptations and technology for all individuals with disabilities and from diverse backgrounds.
- Create lesson plans derived from assessments.

CPSE 460 : Collaborating with School and Family. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent.

DESCRIPTION: Foundations in collaborating with school professionals, para-professionals, and families of children with disabilities.

**Course Outcomes**

- 1. Define and address issues related to collaboration and other models of working together including:a. Teamsb. Consultationc. Team teaching
- 2. Demonstrate understanding of collaborating with the following:a. Other professionalsb. Paraeducatorsc. Families
- 3. Understand and demonstrate appropriate interpersonal skills including:a. Program solvingb. Communicationc. Using statementsd. Asking questionse. Handling difficult interactions

CPSE 462 : Teaching Math to Students with Disabilities. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent.

DESCRIPTION: Research-based methods for teaching mathematics to students with disabilities.

**Course Outcomes**

- 1. Describe research and results for current mathematics research for National Council of Teachers of Mathematics standards.
- 2. Develop Focused and Survey Curriculum Based Assessment.
- 3. Write Present Levels of Academic and Functional Performance (PLAAFP) statements and IEP goals based on informal assessment data.Create a scope and sequence of skills.
- 4. Write lesson plans to address IEP goals and objectives.
- 5. Demonstrate direct instruction presentation techniques.
- 6. Design data systems for monitoring student progress.
- 7. Demonstrate one Morningside Math lesson, with data management

CPSE 463 : Assistive Technology for Students with Disabilities. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to special education program or instructor's consent; FBI fingerprint background clearance.

DESCRIPTION: Principles and applications in using assistive technology to improve the education and communication skills of students with disabilities.

**Course Outcomes**

- Effects of cultural and linguistic differences on growth and development.
- Characteristics of one's own culture and use of language and the ways in which these can differ from other cultures and uses of languages.
- Ways of behaving and communicating among cultures that can lead to misinterpretation and misunderstanding.
- Augmentative and assistive communication strategies.
- Impact of language development and listening comprehension on academic and non-academic learning of individuals with disabilities.
- Communication and social interaction alternatives for individuals who are nonspeaking.
- Use strategies to support and enhance communication skills of individuals with exceptional learning needs.
- Use communication strategies and resources to facilitate understanding of subject matter for students whose primary language is not the dominant language.
- Incorporate and implement instructional and assistive technology into the educational program.
- Use appropriate adaptations and assistive technology for all individuals with disabilities.
- Use and maintain assistive technologies.
- Teach individuals with disabilities to monitor for errors in oral and written language.
- Plan instruction on the use of alternative and augmentative communication systems.
- Develop and use a technology plan based on adaptive technology assessment.

CPSE 466R : Practicum: Teaching Students with Mild/Moderate Disabilities. (1-6:0:ARR)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: Admission to special education licensure program; CPSE 403 or equivalent; FBI fingerprint background clearance.

DESCRIPTION: Practicum in the effective teaching cycle for students with mild/moderate disabilities.

**Course Outcomes**

- 1. Develop a classroom management plan that includes 4-6 operational rules, positive and negative consequences, reinforcement menu and explanation of routines and reward system.
- 2. Administer DIBELS, math CBA assessment to students and record data.Compile and organize summer teaching materials, including instructional binders.Practice effective self-reflection skills.Teach and evaluate language arts and math lessons.Review forms and expectations for Summer Term 466R.Set-up summer teaching classroom.

CPSE 467R : Practicum: Teaching Students with Severe Disabilities. (1-6:0:ARR)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: Admission to special education licensure program; CPSE 403 or equivalent; FBI fingerprint background clearance.

DESCRIPTION: Practicum in the effective teaching cycle for students with severe disabilities.

**Course Outcomes**

- Rights and responsibilities of students, parents, teachers, and other professionals, and schools related to exceptional learning needs.
- Models, theories, and philosophies that form the basis for special education practice.
- Specialized materials for individuals with disabilities.
- Use a variety of nonaversive techniques to control targeted behavior and maintain attention of individuals with disabilities.
- Teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs. Social skills needed for educational and other environments.
- National, state or provincial, and local curricula standards.
- Prepare and organize materials to implement daily lesson plans.
- Develop or modify individualized assessment strategies.
- Create a safe, equitable, positive, and supportive learning environment in which diversities are valued.
- Continuum of lifelong professional development.

CPSE 470 : Legal Issues Influencing Collaboration in Special Education. (3:3:0)

WHEN TAUGHT: Summer

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent.

DESCRIPTION: Laws and issues influencing special education and educator's roles in collaborating with families and professionals.

**Course Outcomes**

- Students will describe, discuss and/or apply:1. The six principles basic to P.L. 94-142/IDEA/IDEA 04.
- Rules governing the provision of special education services.
- Create a safe, equitable, positive and supportive learning environment in which diversities are valued.
- Demonstrate sensitivity for the culture, language, religion, gender, disability, socio-economic status, and sexual orientation of individuals.
- Use assessment information in making ineligibility, program, and placement decisions for individuals with exceptional learning needs, including those from culturally and/or linguistically diverse backgrounds.
- Historical points of view and contribution of culturally diverse groups.
- Ways specific cultures are negatively stereotyped.
- Legal provisions and ethical principles regarding assessment of individuals.
- 3. Duties and responsibilities of school personnel in relation to provision of special education services.
- Use assessment information in making eligibility, program, and placement decisions for individuals.
- Communicate effectively with families of individuals with exceptional learning needs from diverse backgrounds.

CPSE 480 : Educational and Multicultural Issues in Special Education. (3:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: FBI fingerprint background clearance.

DESCRIPTION: Special education issues: multicultural, historical, and legal foundations.

**Course Outcomes**

- KnowledgeDiffering ways of learning of individuals with exceptional learning needs including those from culturally diverse backgrounds and strategies for addressing these differences.
- Ways to create learning environments that allow individuals to retain and appreciate their own and each others' respective language and cultural heritage.
- Ways specific cultures are negatively stereotyped.
- Strategies used by diverse populations to cope with a legacy of former and continuing racism.
- Characteristics of one's own culture and use of language and the ways in which these can differ from other cultures and uses of languages.
- Ways of behaving and communicating among cultures that can lead to misinterpretation and misunderstanding.
- SkillsMediate controversial intercultural issues among students within the learning environment in ways that enhance any culture, group, or person.
- Students will interact with individuals from a culture different than their own.

CPSE 486R : Student Teaching: Students with Mild/Moderate Disabilities. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Successful completion of all core courses and practica in special education; FBI fingerprint background clearance.

DESCRIPTION: Culminating experience teaching students with mild/moderate disabilities in school settings.

NOTE: Fee.

**Course Outcomes**

- Students must complete the Teacher Work Sample including: a. Contextual Factors b. Unit Framework c. Assessment Plan d. Design for Instruction e. Data-Based Decision Making f. Report of Student Learning
- Planning Rubric: a. Participation in IEP Process b. Developing, Writing, and Conducting and IEP
- Interpersonal Relationships: A. Working with and Training Paraprofessionals a. Role Description b. Training B. Collaboration and School Involement

CPSE 487R : Student Teaching: Students with Severe Disabilities. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Successful completion of all core courses and practica in special education; FBI fingerprint background clearance.

DESCRIPTION: Culminating experience teaching students with severe disabilities in school settings.

**Course Outcomes**

- Student must complete the Teacher Work Sample: a. Contextual Factors b. Unit Framework c. Assessment Plan d. Design for Instruction e. Data-Based Decision Making f. Report of Student Learning
- Planning Rubric: a. Participating in IEP Process b. Developing, Writing, and Conducting and IEP
- Interpersonal Relationships: A. Working With and Training Paraprofessionals a. Role Description b. Training B. Collaboration and School Involvement

CPSE 490 : Capstone Seminar: Students With Disabilities. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Successful completion of all special education courses and concurrent enrollment with student teaching/internship.

DESCRIPTION: Synthesis of knowledge and skills in special education; development of professional ethics and commitment to professional development.

**Course Outcomes**

- Models, theories, and philosophies that form the basis for special education practice.
- Rights and responsibilities of students, parents, teachers, and other professionals, and schools related to exceptional learning needs.
- Teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs. Social skills needed for educational and other environments.
- National, state or provincial, and local curricula standards. As well as organizations to support individuals with special needs.
- Prepare and organize materials to implement daily instruction.
- Develop or modify specialized materials for individuals with disabilities.
- Create a safe, equitable, positive, and supportive learning environment in which diversities are valued.
- Continuum of lifelong professional development.

CPSE 493R : Readings. (.5-2:ARR:ARR)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

- Students will improve their understanding of a focused topic through mentored inquiry and the completion of related writing or design activities.

CPSE 496R : Academic Internship: Special Education. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Departmental approval of application; placement one semester in advance of registration; FBI fingerprint background clearance.

DESCRIPTION: Culminating experience in the licensure program teaching students with disabilities in a school setting full-time for one academic year.

**Course Outcomes**

- Students must complete the Teacher Work Sample: a. Contextual Factors b. Unit Framework c. Assessment Data d. Design for Instruction e. Data-

Based Decision Making f. Report of Student Learning
- Planning Rubric: a. Participating in IEP Process b. Developing, Writing, and Conducting an IEP
- Interpersonal Relationships A. Working with and Training paraprofessionals a. Role Description b. Training B. Collaboration and School Involvement

## 500-Level Graduate Courses (available to advanced undergraduates)

CPSE 580R : Directed Observation in the Schools. (.5-3:0:8)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

**Course Outcomes**

There are no course outcomes available

CPSE 589R : Current Topics in Special Education. (.5-3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

**Course Outcomes**

There are no course outcomes available

: Classroom Behavior Management.

**Course Outcomes**

: Assessing Learning and Behavior.

**Course Outcomes**

: Curriculum.

**Course Outcomes**

: Effective Teaching.

**Course Outcomes**

: Evaluating Student Learning.

**Course Outcomes**

: Gifted and Talented Education.

**Course Outcomes**

: Gifted and Talented: Creative Thinking Strategies.

**Course Outcomes**

: Gifted and Talented: Models and Systems.

**Course Outcomes**

: Gifted and Talented: Curriculum.

**Course Outcomes**

: Gifted and Talented: Identification and Assessment.

**Course Outcomes**

: Gifted and Talented Practicum.

**Course Outcomes**

: Gifted and Talented: Social and Emotional Needs of the Gifted Student.

**Course Outcomes**

# Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Counseling Psychology and Special Education Department Home**

**David O. McKay School of Education Home**

**Counseling Psychology and Special Education Department Home**

**Majors**

BS in Special Education:
Emphases:
- Mild/Moderate Disabilities Emphasis
- Severe Disabilities Emphasis

**Course Information**

- Counseling Psychology and Special Education Courses

**Faculty**

# Counseling Psychology and Special Education Faculty

Show All
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## Professors

Dyches, Tina Taylor
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, Utah State University, 1990
EdD, Illinois State University, 1995

Prater, Mary Anne
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Professor
**DEGREES:** BMu, University of Utah, 1975
MS, University of Utah, 1982
PhD, Utah State University, 1987

Richards, P Scott
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
MA, Brigham Young University, 1983
PhD, University of Minnesota, 1988

Smith, Timothy B.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1991
MS, Utah State University, 1993
MA, Rhodes University, South Africa, 1995
MA, Utah State University, 1996
PhD, Utah State University, 1997

Young, K Richard
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1969
MS, University of Utah, 1971
PhD, University of Utah, 1973

## Associate Professors

Ashbaker, Betty Y.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1972
MS, Utah State University, 1974
PhD, Brigham Young University, 1982

Fischer, Lane

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1979
MA, Brigham Yound University, 1982
PhD, University of Minnesota, 1991

Gibb, Gordon

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Professor
**DEGREES:** BS, Eastern Montana College, 1976
MEd, Brigham Young University, 1988
PhD, University of Utah, 1994

Heath, Melissa Ann

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1975
PhD, Texas A&M, 1996

Jackson, Aaron Paul

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1985
MA, Brigham Young University, 1989
PhD, University of Missouri-Columbia, 1993

Marchant, Michelle

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1991
MS, Utah State University, 1996
PhD, Utah State University, 2000

Young, Ellie L.

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1986
MEd, Brigham Young University, 1987
SPC, Brigham Young University, 1988
PhD, University of South Florida, 2001

## Assistant Professors

Allen, Kawika

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Assistant Professor
**DEGREES:** BA, University of Utah, 1999
MS, University of Missouri, 2005
PhD, Duke University, 2011

Gabrielsen, Terisa

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, University of Utah, 2009
PhD, University of Utah, 2012

Hansen, Blake

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Assistant Professor

**DEGREES:** BA, University of Utah, 2004
MS, University of Utah, 2007
PhD, University of Kansas, 2010

Kellems, Ryan

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2004
MEd, Washburn University, 2007
PhD, University of Kansas, 2010

## Associate Clinical Professors

Abraham, Heidi L.

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Clinical Professor
**DEGREES:** BS, Brigham Young University, 2000
MS, Brigham Young University, 2004

Smith, Barbara M.

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Clinical Professor
**DEGREES:** BS, Brigham Young University, 1978
MEd, Brigham Young University, 1982

Steed, Katie Edna

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Associate Clinical Professor
**DEGREES:** BS, Brigham Young University, 2000
MS, Brigham Young University, 2004

## Research Associate

Andersen, Darlene

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Counseling Psychology and Special Education
**RANK:** Research Associate
**DEGREES:** BA, Brigham Young University, 1965
MS, University of Utah, 1992
PhD, Utah State University, 2002

McKay School of Education Home

Educational Leadership and Foundations Department Home

Course Information

- Educational Leadership and Foundations (EdLF) Courses

Faculty

# Educational Leadership and Foundations

Sterling C. Hilton, Chair
306M MCKB, (801) 422-4291
Internet: http://education.byu.edu/edlf
Fax: (801) 422-0196

## Graduate Programs and Degrees

MEd in Educational Leadership
EdD in Educational Leadership

For more information see the BYU 2014–2015 Graduate Catalog.

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**Educational Leadership and Foundations Department Home**

**Course Information**

- Educational Leadership and Foundations (EdLF) Courses

**Faculty**

# Educational Leadership and Foundations (EdLF)

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## Undergraduate Courses

### 200-Level Courses

EDLF 201 : Foundations of Education. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: The purposes of education and schooling in a democracy and the historical, cultural, philosophical, and sociological foundations underlying the development of the American educational system.

**Course Outcomes**

- Be exposed to the major philosophical, historical, and sociological movements in Western education.
- Confront central issues and contexts of education, e.g., the nature of man, external structure & individual freedom, wealth & poverty, school & family, alternative delivery systems, school & democracy, school & law, religion & education, etc.
- Develop and articulate their own views of education and connect these views to their future professional practice.
- Examine the moral dimensions of education including access to knowledge, providing nurturing pedagogy, stewardship of schools, and perpetuating our political democracy.

### 300-Level Courses

EDLF 362 : Introduction to International Development Education. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Major concepts and research in educational aspects of poverty alleviation and human development. Role of education as foundation of poverty alleviation, expanding human capabilities, and for promoting national development.

**Course Outcomes**

- Develop basic literacy in the historical and current debates on the meaning and goals of education and development and a framework.
- Become aware of key theoretical concepts and different understandings on education and development, and the significance of human rights mainstreaming as a pillar in disciplinary and professional divide.
- Grasp the interdependence of socio-cultural, political, and economic systems in education and development.
- Understand development as a problem-solving process advanced through policies and programs at different levels by diverse actors.
- Examine strengths and weaknesses of development architectures--particularly in relation to key problems and issues like poverty, exclusion, gender, empowerment and dignity, sustainability, capabilities and functioning and human rights. Learn to question the "Washington Consensus" wisdom and existing systems, structures, and models are working and, if not, what might work instead.
- Begin the process of coming to a personal definition of poverty and development, in harmony with global guidelines and professional standards.
- Study development as part of the larger International Development community and integrate IDE framework into this professional learning community.

EDLF 363 : Education, Poverty, and Community Development. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Examines the nexus between education, poverty, and socioeconomic development challenges facing developing countries through the perspective of economics, religion, and the state.

**Course Outcomes**

- Identify and critically reflect upon issues and theories of poverty and human development causes, interrelations, feedback, and be able to offer possible solutions.
- Locate, understand, and critically review development theories and research within their respective disciplines and within the interdisciplinary field of Development Studies
- Analyze relevant development phenomena in a complex manner using key concepts and theories studied during the course.
- Formulate complex research questions regarding development.
- Communicate scientific issues and follow the development of knowledge.
- Develop a more effective understanding of the economics, social, and political dimensions of educational development within and across national boundaries.

Compare the benefits and limitations of different policy construction and aggregation methods and the kinds of results that one might obtain in interventions.
- Improve critical thinking and reasoning, and writing skills.

EDLF 390R : Special Topics in Education. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Various topics dealing with educational issues.

**Course Outcomes**

There are no course outcomes available

EDLF 399R : Academic Internship. (1-9:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Departmental consent.
DESCRIPTION: On-the-job experience and training under the guidance of a mentor.

**Course Outcomes**

No outcomes are available at this time.

### 400-Level Courses

EDLF 452 : Foundations of Education. (.5-2:2:0)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Introduction to the philosophical, sociological, and historical foundations of American education, with special reference to current issues in U.S. public schooling.

**Course Outcomes**

There are no course outcomes available

EDLF 494R : Independent Readings. (1-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Departmental consent.
DESCRIPTION: Readings in education.

**Course Outcomes**

There are no course outcomes available

EDLF 495R : Independent Research. (1-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Departmental consent.
DESCRIPTION: Student research mentored by faculty member.

**Course Outcomes**

There are no course outcomes available

## 500-Level Graduate Courses (available to advanced undergraduates)

EDLF 515R : Special Topics in Education. (.5-3:3:1)

WHEN TAUGHT: Fall; Winter; Summer
NOTE: Credit earned in 515R is not counted toward graduate degrees.

**Course Outcomes**

There are no course outcomes available

: Topics in Community Educating.

**Course Outcomes**

: Home-School Relationships.

**Course Outcomes**

: Topics in Educational Leadership.

**Course Outcomes**

: Topics in Elementary Leadership.

**Course Outcomes**

: Curriculum Innovation.

**Course Outcomes**

: Effective Teaching.

**Course Outcomes**

: School Leadership.

**Course Outcomes**

: Elementary Princip.

**Course Outcomes**

: Secondary Principl.

**Course Outcomes**

: Higher Education Topics.

**Course Outcomes**

EDLF 530 : School and Community Programs in Education. (2:2:0)

DESCRIPTION: Examination of programs in school and community for enhancement of teaching and learning.

**Course Outcomes**

No outcomes are available at this time.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Educational Leadership and Foundations Department Home**

**Course Information**

- Educational Leadership and Foundations (EdLF) Courses

**Faculty**

# Educational Leadership and Foundations Faculty

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## Professors

Ferrin, Scott Ellis

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1980
JD, J. Reuben Clark Law School, BYU, 1984
MEd, Harvard Graduate School of Education, 1989
EdD, Harvard Graduate School of Education, 1996

Geo-JaJa, MacLeans A.

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Professor
**DEGREES:** BSc, Morehead State University, 1976
MSc, Indiana State University, 1980
PhD, University of Utah, 1986

Hite, Julie Melville

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MOB, Brigham Young University, 1995
PhD, University of Utah, 1999

Hite, Steven Jeffrey

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 1982
EdD, Harvard University, 1985

Mayes, Clifford Thomas

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Professor
**DEGREES:** BA, University of Arizona, 1977
MA, University of Oregon, 1979
MA, University of Arizona, 1981
Psy D, Southern California University for Professional Studies, 1992
PhD, University of Utah, 1997

Randall, E. Vance

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Professor
**DEGREES:** BS, Brigham Young Univesity, 1975
MEd, Brigham Young University, 1978
PhD, Cornell University, 1989

## Associate Professors

Baugh, Steven Clare

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1969
MEd, Brigham Young University, 1970
EdD, Brigham Young University, 1978

Hallam, Pamela

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1979
MS, Brigham Young University, 1990
EdD, University of Utah, 2006

Hilton, Sterling Clint

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
MS, Brigham Young University, 1990
MA, Brigham Young University, 1990
PhD, John Hopkins University, 1996

Richards, A. Legrand

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1975
MEd, Harvard University, 1976
PhD, Brigham Young University, 1982

## Assistant Professor

Dulaney, Shannon

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Educational Leadership and Foundations
**RANK:** Assistant Professor
**DEGREES:** BA, California State University, Fullerton, 1994
MEd, Southern Utah University, 2000
EdD, Utah State University, 2010

**David O. McKay School of Education Home**

**Instructional Psychology and Technology Department Home**

**Course Information**

- Instructional Psychology and Technology (IP&T) Courses

**Faculty**

# Instructional Psychology and Technology

Andrew S. Gibbons, Chair
150 MCKB, (801) 422-5097

David O. McKay School of Education Student Services
120 MCKB, (801) 422-3426

## Graduate Programs and Degrees

MS in Instructional Psychology and Technology
PhD in Instructional Psychology and Technology

For more information see the BYU 2014–2015 Graduate Catalog.

David O. McKay School of Education Home

Instructional Psychology and Technology Department Home

Course Information

- Instructional Psychology and Technology (IP&T) Courses

Faculty

# Instructional Psychology and Technology (IP&T)

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## Undergraduate Courses

The Department of Instructional Psychology and Technology does not offer a baccalaureate degree. However, undergraduate courses are offered as service courses to other departments in the David O. McKay School of Education.

### 200-Level Courses

IP&T 201 : History of Learning in the Arts, Sciences, and Technology (Part 1). (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: History of civilization from antiquity to circa A.D. 1500. This course has two primary goals: to study (1) how past civilizations learned and (2) how we as individuals learn.

**Course Outcomes**

There are no course outcomes available

IP&T 202 : History of Learning in the Arts, Sciences, and Technology (Part 2). (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: History of civilization from circa A.D. 1500 to present. This course has two primary goals: to study (1) how past civilizations learned and (2) how we as individuals learn.

**Course Outcomes**

There are no course outcomes available

IP&T 213 : Foundations of Instructional Design and Assessment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Elementary Education major status.

DESCRIPTION: Curriculum design and assessment theory, strategies, and tools for the K-6 classroom. Backward design and seamless assessment for informing and improving student performance.

**Course Outcomes**

- Teacher candidates will be able to describe, define and apply the principles and science of assessment to determine instructional needs, design and deliver effective instruction and communicate assessment results to appropriate audiences in a multi-tiered system of support.
- Teacher candidates will be able to describe their role and responsibility regarding curriculum standards and ensure that curriculum addresses the needs of diverse students.
- Teacher candidates will be able to synthesize and employ assessment evidence to inform instructional decision-making, interpret data to evaluate instruction, and apply a problem-solving process to address students' cognitive, social-emotional and linguistic learning needs within a multi-tiered system of support.
- Teacher candidates will be able to define, design and employ evidenced-based instructional practices within a multi-tiered system of support.

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

IP&T 287 : Instructional Technology for Early Childhood Education. (2:2:ARR)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles, along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for

early childhood, elementary, and special education settings.

**Course Outcomes**

- Students will increase their familiarity with and ability to use a wide range of educational technologies.
- Students will develop positive dispositions towards using educational technologies that can help improve student learning.
- Student will strengthen their knowledge of ways to use technology in teaching core content areas (fine arts, language arts, math, science, & social studies) that lead to improved effectiveness, engagement, and/or efficiency.
- Students will strengthen their knowledge of technologies and teaching methods that can be used effectively with with young children in the K-2 elementary grades.
- Students will understand basic issues related to internet safety for children and create lessons that help children have positive, safe experiences with online technologies. Students will follow fairuse guidelines as they incorporate digital media into their teaching.

### 300-Level Courses

IP&T 301 : Educational Psychology. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Basic principles of educational psychology applied to teaching, including learning theory, instructional strategies, assessment of learning outcomes, and classroom inquiry.

**Course Outcomes**

- Identify your own theory of teaching and examine the underlying assumptions of teaching and learning theories.
- Understand student thinking and behavior.
- Construct sound assessments of student learning.
- Apply concepts learned in this class to your own teaching.

IP&T 334 : Integrating Technology in Early Childhood Education. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent with El Ed 333.

DESCRIPTION: Integrating instructional technology with early childhood education instructional strategies.

**Course Outcomes**

- Students will increase their familiarity with and ability to use a wide range of educational technologies.
- Students will develop positive dispositions towards using educational technologies that can help improve student learning.
- Student will strengthen their knowledge of ways to use technology in teaching math and literacy that lead to improved effectiveness, engagement, and/or efficiency.
- Students will practice their technology integration skills in real-world early childhood elementary level settings and learn to evaluate the strengths and weaknesses of their performance.
- Students will follow fairuse guidelines as they incorporate digital media into their teaching.

IP&T 387 : Integrating Technology in Special Education 1. (1:1.0:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent with CPSE 410.

DESCRIPTION: Integrating instructional technology with special education instructional strategies.

**Course Outcomes**

There are no course outcomes available

### 400-Level Courses

IP&T 444 : Integrating Technology in Elementary Education. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent with El Ed 445 and El Ed 446.

DESCRIPTION: Integrating instructional technology into K-6 instructional strategies.

**Course Outcomes**

- Students will increase their familiarity with and ability to use a wide range of educational technologies.
- Students will develop positive dispositions towards using educational technologies that can help improve student learning.
- Student will strengthen their knowledge of ways to use technology in teaching core content areas (fine arts, language arts, math, science, & social studies) that lead to improved effectiveness, engagement, and/or efficiency.
- Students will practice their technology integration skills in real-world upper elementary level settings and learn to evaluate the strengths and weaknesses of their performance.
- Students will understand basic issues related to internet safety for children and create lessons that help children have positive, safe experiences with online technologies. Students will follow fairuse guidelines as they incorporate digital media into their teaching.

IP&T 470R : Undergraduate Research Training. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction of undergraduate students to the concepts of research and evaluation through practical experience.

**Course Outcomes**

- To learn some basic issues associated with research, evaluation, and other forms of inquiry
- To participate in a mentored inquiry experience with a faculty member.
- To develop some basic skills in conducting and presenting inquiry studies.

IP&T 487 : Integrating Technology in Special Education 2. (1:1.0:0)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent with CPSE 430.

DESCRIPTION: Integrating instructional technology with special education instructional strategies.

**Course Outcomes**

There are no course outcomes available

## 500-Level Graduate Courses (available to advanced undergraduates)

IP&T 514R : Special Topics in Instructional Psychology. (.5-3:ARR:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Topics vary. Topics may include technical applications, effective teaching, student assessment.

**Course Outcomes**

There are no course outcomes available

: Technical Applications.

**Course Outcomes**

: Effective Teaching.

**Course Outcomes**

: Student Assessment.

**Course Outcomes**

IP&T 515R : Special Topics in Instructional Psychology and Technology. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

**Course Outcomes**

- Students will develop understanding and competency in a specific area of instructional psychology and technology through focused learning of a topic.

: Evaluating Student Learning.

**Course Outcomes**

: Program Evaluation.

**Course Outcomes**

: Instructional Techniques in Teaching.

**Course Outcomes**

: Tutoring Children in Reading. (2:2:0)

**Course Outcomes**

: Scholarly Writing and Argumentation. (3:3:0)

**Course Outcomes**

IP&T 520 : Foundations of Instructional Technology. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to instructional psychology and technology theory and practice: psychological foundations of human performance technology and learning sciences. Current research issues, professional organization of the field, and ethical issues.

**Course Outcomes**

- Understand the current issues, discussions, research, and debates in this field as well as comparable sister professions.
- Understand the history of the field of Instructional Technology, including the various trends, people, and issues that shaped it.
- Clarify and define your own professional trajectory into your profession including your personal beliefs; the kind of career you are seeking; and the skills, knowledge, and characteristics you need to develop to be successful.
- Begin to develop skills in literature analysis and scholarly writing.
- Create an initial professional web presence that you can develop during your career.
- Begin defining for yourself what the future of our field is or may be, and what your role may be in that future.

IP&T 560 : Instructional Product Development. (3:3:ARR)

WHEN TAUGHT: Winter

DESCRIPTION: Designing, programming, and debugging a learning product using a high-level computer language.

**Course Outcomes**

- Students will design and develop an e-learning program using a technology of the student's choice.
- Students will build a personal learning environment
- Students will become part of an online community of learners.

IP&T 564 : Instructional Design. (3:3:ARR)

WHEN TAUGHT: Fall; Summer

DESCRIPTION: Identifying instructional problems; specifying objectives, instructional strategies, and media; analyzing learning outcomes; developing instructional materials and assessment instruments; validating instructional systems.

**Course Outcomes**

- Learn the design languages generally used in the IT field to describe the processes, products, theories, and principles of instructional development.
- Learn to perform process-oriented instructional design.
- Learn to perform architecture-oriented instructional design.
- Learn how to document designs.
- Learn the basic principle of how theory relates to instruction and gain exposure to the key principles of prominent current theories.
- Complete and document two design projects.

IP&T 599R : Academic Internship. (.5-6:0:18)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Departmental consent.

**Course Outcomes**

- Students will develop greater competency in research, evaluation, measurement, or design by performing professional work for a client.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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**David O. McKay School of Education Home**

**Instructional Psychology and Technology Department Home**

**Course Information**

- Instructional Psychology and Technology (IP&T) Courses

**Faculty**

# Instructional Psychology and Technology Faculty

Show All
Hide All

## Professors

Gibbons, Andrew S

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1969
PhD, Brigham Young University, 1974

Graham, Charles R

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, University of Illinois, 1997
PhD, Indiana University, 2002

Sudweeks, Richard R

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1965
MA, Brigham Young University, 1973
PhD, University of Illinois, 1978

Williams, David Dwayne

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1976
MA, Western Michigan University, 1978
PhD, University of Colorado, Boulder, 1981

## Associate Professors

Bush, Michael D.

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1972
MBA, University of Missouri, 1976
PhD, Ohio State University, 1983

Rich, Peter Jacob

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 2002
PhD, University of Georgia, 2007

Yanchar, Stephen C

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology

**RANK:** Associate Professor
**DEGREES:** BS, Cleveland State University, 1991
MS, Brigham Young University, 1995
PhD, Brigham Young University, 1997

## Assistant Professors

Davies, Randy
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Assistant Professor
**DEGREES:** BS, University of Alberta, 1984
BEd, University of Alberta, 1985
PhD, Brigham Young University, 2002

West, Richard E.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Instructional Psychology and Technology
**RANK:** Assistant Professor
**DEGREES:** AA, Ricks College, 1998
BA, Utah State University, 2002
MS, Brigham Young University, 2005
PhD, University of Georgia, 2009

**David O. McKay School of Education Home**

**Teacher Education Department Home**

**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# Teacher Education

Michael O. Tunnell, Chair
205 MCKB, (801) 422-4077

David O. McKay School of Education Student Services
350 MCKB, (801) 422-3426

## Admission to Degree Program

Admission to programs in the Teacher Education Department is by department approval. Please see Education Student Services, 350 MCKB, for specific details.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Early Childhood Education** (Program Outcomes)
**BS in Elementary Education** (Program Outcomes)
**BS in Physical Education Teaching/Coaching (K–12)** (Program Outcomes)

**Minor in Physical Education Teaching/Coaching**
**Minor in TESOL K-12**
**Minor in Dual-Language Immersion K-12 Teaching**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MA in Teacher Education

For more information see the BYU 2014–2015 Graduate Catalog.

## Additional Educator License Endorsements

Additional endorsement may be acquired through completion of a teaching minor in addition to a teaching major.

See Education Student Services (350 MCKB) for further information.

**Music Education: Elementary Music Specialist Emphasis**

Students completing this major will receive a K-6 Elementary Education license with a Music Teaching endorsement. See the College of Fine Arts and Communications Advisement Center (D-444 HFAC) for music programs and course listings and Education Student Services (350 MCKB) for the education program.

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**Teacher Education Department Home**

**Early Childhood Education Program**

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- BS in Early Childhood Education

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- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# Early Childhood Education

## Admission to Degree Program

To begin the early childhood education (ECE) teacher preparation program, students must complete the entrance process with the Teacher Education Department (201 MCKB). The entrance process includes but is not limited to the following:

1. Technology Skills Assessment (TSA).
2. FBI fingerprint and background clearance. Check with Education Student Services (350 MCKB) for instructions.
3. Approved graduation plan on file with Education Student Services (350 MCKB).
4. Departmental approval is required for deferment from the four-semester professional sequence.

Admission to this program requires departmental approval. Please see Education Student Services, 350 MCKB, for information regarding requirements for admission to this program.

## FBI Fingerprint and Background Check

All candidates for teacher licensure are required by state statute to be fingerprinted and pass an FBI background check before participating in required field experiences. Fingerprints are taken in Education Student Services (ESS) in 350 MCKB. Allow from five to six weeks for fingerprints to be processed. FBI background clearance is valid for only three years. If clearance expires before graduation, candidates must repeat the fingerprinting and clearance process, including a new fee payment.

Failing to expunge a police record resulting from a background check will result in a blocked registration while a panel reviews the charges. Candidates who cannot pass an FBI background check will be removed from the teacher education licensure program.

## Additional Licensing Requirements

It is the student's responsibility to be sure that the approved Praxis test has been taken and passed, that BYU has received the test scores, that fingerprint background clearance is current prior to graduation, and that state licensing fees have been paid. Students will also be responsible for any additional requirements imposed by the state prior to their graduation. To confirm the status of these requirements contact Education Student Services, 350 MCKB, (801) 422-3426. Graduation and Utah licensure cannot be processed until these requirements have been completed.

## GE Major Overlap

The following GE requirements will be fulfilled through completion of the Early Childhood Education major: Global & Cultural Awareness and Letters. More information on the GE/major overlap can be found at http://ge.byu.edu/ge/content/ge-major-overlap.

## The Discipline

Early childhood education prepares teachers who, having gained their own liberal education, help preschool, kindergarten, and primary-grade children learn by improving the teaching children receive in the home, school, church, and community. Early childhood education helps students enhance their thinking abilities, build their confidence in exploring new ideas, and become self-motivated, independent learners.

In the program, prospective teachers learn about the culture of young children, develop a solid foundation in basic principles of teaching and learning that originate in developmental theory and research, and become proficient in appropriately implementing those basic principles in practical settings.

## Career Opportunities

A degree in early childhood education leads to licensure in kindergarten through grade three. See Education Student Services for details.

**David O. McKay School of Education Home**

**Teacher Education Department Home**

**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# BS in Early Childhood Education (81–84 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

To complete this major, students will also be required to complete the TESOL K-12 minor. The courses the student will need to take in order to complete the minor are reflected in the requirements listed below.

1. Complete all GE courses, including the following:
   SFL 210 : Human Development. (3:3:0)
   OFFERED: Independent Study also.
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: Growth and development of the child from conception through adolescence; influences of family, peers, and schools.
   NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

   **Course Outcomes**
   - Comprehend the dynamic and complex interaction among the domains of human development (e.g., biological, cognitive, emotional, social, etc.)Critically apply information learned in class to your own life.Provide knowledge and skills that will benefit the lives of the children for whom you will have stewardship in this life.Acquire a broad base of knowledge of human development.Be conversant with the major human development theories as well as their strengths and weaknesses.
   - Improve your writing and critical thinking skills.
   - Understand the research methodology utilized in the study of human development.

   **Note:** VAEdu 326: Art for Elementary Teachers is highly recommended. It fulfills requirement 7 below.

   **Note:** The Global & Cultural Awareness and Letters general education requirements are fulfilled through completion of the Early Childhood Education major.

2. Attend a program orientation meeting (schedule posted in 350 MCKB) and on MYLink.
3. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
4. Complete entrance process for the program through MYLink.
5. Complete the following courses for the ECE K-3 major and TESOL K-12 minor:
   - Required courses for the ECE K-3 major:
     CPSE 300 : Exceptional Students: Principles of Collaboration. (2:1:ARR)
     WHEN TAUGHT: Fall; Winter; Spring
     PREREQUISITE: FBI fingerprint background clearance.
     DESCRIPTION: Basic principles and legislative issues in effectively communicating and collaborating with professionals, parents, and other service providers to meet needs of individuals with disabilities in inclusive educational environments. Lab.

     **Course Outcomes**
     - Analyze student's learning difficulties and plan appropriate accommodations.
     - Describe learning characteristics of special needs students.
     - Develop assessment plans to evaluate students' progress and collaborate with school experts to support student learning.
     - Collaboration: Candidates work effectively with parents, professionals, paraprofessionals, and others in the school and community to help students with disabilities achieve their IEP goals.
     - Interpersonal Relations: Candidates work with students, parents, professionals, paraprofessionals, and others in the school and community with kindness and respect regardless of their diverse backgrounds.
     - Professional Practice: Candidates fulfill all duties and assignments, comply with all education laws and policies, and continue to improve professional practice.

ECE 322 : Parenting and Child Guidance in Early Childhood. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: EL ED 202

DESCRIPTION: Address young children's socio-emotional development in early childhood classrooms. Review theory and research to related peer interactions and parent-child and teacher-student relationships. Develop an understanding of instructional strategies and guidance practices in early childhood classrooms.

**Course Outcomes**

No outcomes are available at this time.

ECE 331 : Early Childhood Education Developmentally Appropriate Practices Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 202; ECE 332 concurrently.

DESCRIPTION: Designing an Early Childhood curriculum based on child development as hands-on experiences are created to meet children's individual learning needs and address contextual factors in the child's life experiences.

NOTE: Due to enrollment constraints, ECE 331 may not be retaken to improve a grade unless approved by the Child and Family Studies Laboratory Steering Committee.

**Course Outcomes**

There are no course outcomes available

ECE 332 : Early Childhood Education Developmentally Appropriate Practices Practicum. (3:0:8)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 202; ECE 331 concurrently.

DESCRIPTION: Intitial practicum with young children in designing an Early Childhood curriculum based on a knowledge of child development that meets children's individual learning needs and address contextual factors in the child's life experience.

NOTE: Due to enrollment constraints, ECE 332 may not be retaken to improve a grade unless approved by the Child and Family Studies Laboratory Steering Committee.

**Course Outcomes**

There are no course outcomes available

ECE 336 : Planning and Assessment in Early Childhood Education (Pre K-3). (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECE 331 and 332 concurrently.

DESCRIPTION: Learn key instructional principles, instructional strategies, lesson planning procedures that are appropriate and effective when working with young children. Understand formal and informal assessment strategies and data collection procedures for evaluating children's progress, informing instruction, communicating results with key stakeholders.

**Course Outcomes**

There are no course outcomes available

ECE 337 : Family, School, and Community Partnerships in ECE. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ECE 331 and ECE 332.

DESCRIPTION: Understand policies and processes for partnering with families, schools, and communities of young children in early childhood settings.

**Course Outcomes**

No outcomes are available at this time.

ECE 433 : Teaching Literacy in Early Childhood Classrooms (Pre K-3). (2-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Admittance to ECE program; concurrent enrollment in ECE 441 and 442.

DESCRIPTION: Study instructional practices for teaching children the literacy concepts, skills and strategies they need to learn in Pre K-3rd grade, and assessing, monitoring and evaluating children's literacy knowledge and learning in Pre K-3rd grade.

**Course Outcomes**

There are no course outcomes available

ECE 441 : Early Childhood Education Primary Grade Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECE 331; Concurrent with ECE 442.

DESCRIPTION: Gaining insight into significant issues in early childhood education, developing a sense of professional ethics, and becoming personally committed to ongoing professional development.

**Course Outcomes**

There are no course outcomes available

ECE 442 : Primary Grade Practicum. (2:0:12)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECE 332; ECE 441 concurrently.

DESCRIPTION: Practicum experience in the primary grades. Field experience designed to give students opportunities to interact with primary children (grades 1-3) and apply skills and knowledge acquired in Pre K-3 methods courses.

**Course Outcomes**

There are no course outcomes available

ECE 445 : Teaching Social Studies in Early Childhood Classrooms (Pre K-3). (2-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in ECE 441 and 442.

DESCRIPTION: This course will prepare teaching candidates (1) with methods, skills and strategies for teaching social studies to children in grades Pre K-3, (2) to model democratic teaching practices, and (3) to establish democratic classroomsas they prepare children to assume roles as participatory citizens in a democracy.

**Course Outcomes**

There are no course outcomes available

ECE 446 : Teaching Science in Early Childhood Classrooms (Pre K-3). (2-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in ECE 441 and 442.

DESCRIPTION: Develop the pedagogical knowledge, skills, and dispositions necessary to teach science to young children of various ages, abilities, backgrounds, and exceptionalities.

**Course Outcomes**

There are no course outcomes available

ECE 447 : Teaching Mathematics in Early Childhood Classrooms (Pre K-3). (2-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MTHED 305; ECE 441 and 442 concurrent.

DESCRIPTION: Study the teaching and learning of early childhood mathematics guided by current principles relating to mathematics content, social interaction, student thinking, and child development.

**Course Outcomes**

There are no course outcomes available

EL ED 202 : Foundations of Child Development. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status.

DESCRIPTION: The development of the whole child including cognitive, social, emotional, linguistic, and physical development and how to apply it to planning, teaching, and assessing children.

**Course Outcomes**

- The candidate will demonstrate knowledge of social, cognitive and physical development of children ages birth to 12.
- The candidate will understand how the knowledge of child development will impact instructional practices in the school classroom.

EL ED 203 : Foundations of Multicultural Education. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status.

DESCRIPTION: Cultural identities in family life, physical attributes, culture, and language. Recognizing prejudice in individuals and institutions. Culturally and linguistically relevant pedagogical frameworks.

**Course Outcomes**

- Examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavior.
- Recognize and use a moral spiritual framework and the social science theoretical framework to

guide multicultural and English language learner education.
- Recognize and acknowledge racism and discrimination in themselves, in others, and within institutions.
- Acknowledge the dynamics of how culture effects students' language learning and school success and teachers' teaching.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.

EL ED 323 : Foundations of Literacy Development. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Admittance into elementary education program.

DESCRIPTION: Language and literacy development for first and second language learners including theoretical underpinnings, processes, historical foundations, and instructional contexts that support language and literacy development for all K-6 children.

**Course Outcomes**

- Explain, compare and critique theories of reading and writing processes and development with supporting research evidence. (IRA Standard 1.1.1)
- Explain and apply first language acquisition processes that support literacy development across elementary years, e.g., cueing systems, vocabulary, teacher talk). (IRA Standard 1.1.2)
- Explain, apply, and compare/contrast knowedge about second language literacy development in context. (IRA Standard 1.1.3 & NCTE Standard 9)
- Explain and apply reading and writing development across elementary years, e.g., word recognition, language comprehension, strategic knowledge, spelling, qualities of good writing, and reading/writing connections. (IRA Standard 1.1.2)
- Identify and synthesize major milestones in literacy instruction.(IRA Standard 1.2.1)

EL ED 335 : Early Childhood Education Integration Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in El Ed 332.

DESCRIPTION: Methods in designing an early childhood curriculum with attention to hands-on experiences meeting children's individual learning needs and addressing contextual factors in the child's life experiences.

**Course Outcomes**

- a) understanding young childrenâ s characteristics and needs, including issues of diversity, and complex characteristics of families b) understanding effective and appropriate methods for supporting young childrenâ s growth and development in a classroom setting c) knowledge of K-3 instructional and assessment strategies in content areas (literacy, math, science, social studies, arts), d) understanding purposes and application of curriculum integration

EL ED 340 : Children's Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Elementary education or early childhood education major status.

DESCRIPTION: Trends and titles in children's and adolescent literature. Reading and critiquing as well as practical uses of children's literature in both school and home.

**Course Outcomes**

- 1. Students will understand and apply criteria in evaluating children's books for quality and function.
- 2. Students will gain a knowledge base concerning the field of children's literature as contained in the assigned textbook and class lectures.

IP&T 334 : Integrating Technology in Early Childhood Education. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent with El Ed 333.

DESCRIPTION: Integrating instructional technology with early childhood education instructional strategies.

**Course Outcomes**

- Students will increase their familiarity with and ability to use a wide range of educational technologies.
- Students will develop positive dispositions towards using educational technologies that can help improve student learning.
- Student will strengthen their knowledge of ways to use technology in teaching math and literacy that lead to improved effectiveness, engagement, and/or efficiency.
- Students will practice their technology integration skills in real-world early childhood elementary level settings and learn to evaluate the strengths and weaknesses of their performance.
- Students will follow fairuse guidelines as they incorporate digital media into their teaching.

MTHED 305 : Basic Concepts of Mathematics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Math 110 or equivalent; permission from Teacher Education Department.

DESCRIPTION: Concept-oriented exploration of number, measurement, and informal geometry in relation to children's learning.

NOTE: Required of prospective elementary school teachers.

**Course Outcomes**

- Students have a deep understanding of central concepts in elementary school mathematics related to whole numbers and whole number operations, number theory, integers and integer operations, geometry, and measurement; as well as core representations, canonical examples, patterns in children's thinking, and alternative algorithms germane to teaching these concepts.
- Students understand mathematics as a sense-making activity, can solve problems by employing conceptual understanding and mathematical reasoning, and can reflect on their own learning to make inferences about how children experience and understand mathematics.
- Students engage productively in mathematical inquiry, effectively communicate their mathematical ideas and reasoning with their peers, and reflect on the teaching practices modeled in the MthEd 305 classroom to make inferences about teaching practices that help children learn mathematics.

MUSIC 378 : Music for the Elementary Classroom Teacher. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Establishing a classroom environment for musical development; emphasis on appropriate songs, activities, resources, and teaching strategies.

**Course Outcomes**

- Students will acquire personal musicianship skills applied to knowledge of age-appropriate musical activities, materials and delivery techniques for grades K–6.
- Students will acquire personal musicianship skills applied to knowledge of age-appropriate musical activities, materials and delivery techniques for grades K–6.

SFL 352 : Cognitive Development. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.

DESCRIPTION: Development of mental abilities; effects of maturation and learning on memory, perception, attention processes, intelligence, social cognition.

**Course Outcomes**

- Critically examine and discuss selected topics in cognitive development.Identify and discuss selected theories and theoretical models of cognitive development, as well as the various research methods used in the study of cognitive develop. Understand how cognitive development changes throughout life span.
- Evaluate in empirical research studies a specific topic in cognitive development and synthesize in each study the research questions, methodology, findings, and discussions of the findings.
- Succinctly summarize in writing a collection of empirical studies on a topic in cognitive development of your interest.

SFL 355 : Language Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Philosophical, social, intellectual, and emotional contexts of language acquisition and usage.

**Course Outcomes**

There are no course outcomes available

- Required courses for the TESOL K-12 minor:

TELL 410 : Second Language Acquisition. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: EL ED 323 & EL ED 203; or ELANG 223 & SC ED 353; or CPSE 425

DESCRIPTION: Processes and variables in native- and second-language development. How teachers can foster efficient acquisition of language, cognitive, and academic skills in second-language environments.

**Course Outcomes**

- Candidates know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas

TELL 420 : Assessing Linguistically Diverse Students. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 223 & SC ED 353; or EL ED 203

DESCRIPTION: Fundamental concepts in testing, use/interpretation of current instruments for language/academic assessment, appropriate placement of linguistically diverse students, and developing classroom language assessments.

**Course Outcomes**

- Candidates will know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language

and literacy and achieve in the content areas.
- Candidates will demonstrate understanding of issues and concepts of assessment and use standards-based procedures with ELLs.

TELL 440 : Content-Based Language Instruction. (2:2:1)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: TELL 410 & TELL 420; or TELL 410 & IP&T 213; or TELL 410 & CPSE 420
RECOMMENDED: El Ed 333, TELL 430, and CPSE 430 concurrently.
DESCRIPTION: Instructional methods, strategies, and materials for integrating curriculum content and language instruction. Teaching, creating, and adapting lesson materials in a multicultural context.

**Course Outcomes**
- Candidates know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas.

TELL 477R : TESOL K-12 Student Teaching. (.5-4:0:4)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: TELL 440; FBI fingerprint background clearance.
DESCRIPTION: Supervised, full-day experience to develop and demonstrate competence in teaching English Learners in an approved public school setting. Observation is stressed initially, with responsibility for teaching increasing across the four-week experience.
NOTE: Can be taken concurrently with student teaching/internship in a diverse-language setting.

**Course Outcomes**
There are no course outcomes available

(Must take 4 credit hours of TELL 477R.)

6. Complete one course from the following:

SFL 331 : Infant Development in the Family. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.
DESCRIPTION: Conception, prenatal development, pregnancy. Physical, cognitive, and social development of the first twenty-four months. Implications for guidance and care in the family.

**Course Outcomes**
There are no course outcomes available

SFL 351 : Socialization Across Childhood. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.
DESCRIPTION: Processes and sequences of social development across childhood.

**Course Outcomes**
There are no course outcomes available

SFL 420 : Administering Programs for Young Children. (2:2:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: SFL 222
DESCRIPTION: Strategies for planning and administering quality programs in settings for young children. Budgeting, staffing, accrediting, selecting equipment, etc.

**Course Outcomes**
- Demonstrate how to operationalize appropriate curriculum based on your understanding of development and be able to critically design early childhood programs.Plan the physical environment including financing and budgeting of an early childhood program.Obtain information and guidelines on nutrition, health, and safety services for young children.
- Develop strategies for assessing, recording, and reporting children's progress as well as evaluating the overall effectiveness of the program.Critically evaluate ways to contribute to the profession by addressing the individual needs of the families; influencing public policy; and becoming involved in research.

7. Complete one course from the following:

DANCE 326 : Rhythm and Dance. (2:1:2)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Methodology course for elementary education majors; creative dance and structured rhythmic dance forms.

**Course Outcomes**
- Students will identify the value of dance in the elementary setting, including the following

benefits:· Decision making skills· Confidence and self-expression· Cultural perspective· Collaboration and social skills· Physical skills and kinesthetic learning· Accessibility for a diverse population· Recreation and fun
- Students will demonstrate sound dance methodology, including:· Teaching structured dance forms· Leading the creative process· Clear verbalization of directions, cues, side-coaching, and feedback
- Students will identify various dance teaching resources that enrich the curriculum, including:· State Core Curriculum· National Standards· Music resources
- Students will increase knowledge and develop skills in the dance discipline, including:· The elements of dance: space, motion, time, energy· Problem solving through movement· Choreographic skills
- Students will identify age appropriate material and pedagogy that address the needs of the wide age span of elementary students.
- Students will identify ways to incorporate dance into school-wide projects that create community, including dance festivals and performances.

TMA 352 : Drama in the Elementary Classroom. (2:4:Arr)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Theatre education major status: TMA 101 or 102; TMA 276. Or early childhood education or elementary education major status. Or instructor's consent.

DESCRIPTION: Varied teaching methodologies for application of drama within the pre-K--6 classroom. Dual emphasis on Utah state elementary drama standards as well as integration with core curricula.

**Course Outcomes**

There are no course outcomes available

VAEDU 326 : Art for Elementary Teachers. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Preservice preparation designed to help elementary classroom teachers understand the visual arts and develop skills necessary for implementing a discipline-based approach for art education.

**Course Outcomes**

No outcomes are available at this time.

8. Complete 8 hours of one of the following (prior application required):

ECE 425 : Grades 1-3 Student Teaching. (6-12:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: All ECE core and professional sequence courses; concurrent enrollment in ECE 426; prior application; requires a major GPA of 2.85; at least a C- grade in methods courses (ECE 324, 327, 356, 361, 363, 365); FBI fingerprint background clearance.

DESCRIPTION: Student teaching experience in the primary grades.

**Course Outcomes**

- 1. The students will observe, plan, teach, assess, and reflect throughout this course as they participate in a primary grade classroom.
- The student will demonstrate ability to be a reflective practitioner who continually evaluates the effects of his or her choices, and who actively seeks out opportunities to grow professionally.

EL ED 496R : Academic Internship. (8-12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Three-semester professional sequence and prior application; requires a major GPA of 2.85; at least a C- grade in methods courses (El Ed 302, 356, 357, 361, 363, 365, 372).

DESCRIPTION: A full-year classroom teaching internship in the public schools in lieu of El Ed 400, student teaching.

NOTE: See Education Student Services for application dates.

**Course Outcomes**

There are no course outcomes available

## Recommended Courses

The following courses are strongly recommended:

BIO 175 : Principles of Biology Laboratory. (1:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Elementary education or early childhood education pre-major or major status; concurrent enrollment in Bio 100.

**Course Outcomes**

There are no course outcomes available

ENGL 313 : Expository Writing for Elementary Education Majors. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Learning to write as professional educators and to teach writing to children. Best taken before the professional sequence. Library research paper.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

There are no course outcomes available

MTHED 306 : Concepts of Mathematics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MTHED 305; Permission from Teacher Education Department.

DESCRIPTION: Concept-oriented exploration of rational numbers and proportional reasoning, probability, and early algebraic reasoning in relation to children's learning.

NOTE: Required of prospective elementary school teachers.

**Course Outcomes**

- Students have a deep understanding of central concepts in elementary school mathematics related to fractions and fraction operations, probability, and early algebraic reasoning; as well as core representations, canonical examples, patterns in children's thinking, and alternative algorithms germane to teaching these concepts.
- Students engage productively in mathematical inquiry, effectively communicate their mathematical ideas and reasoning with their peers, and reflect on the teaching practices modeled in the MthEd 306 classroom to make inferences about teaching practices that help children learn mathematics.
- Students understand mathematics as a sense-making activity, can solve problems by employing conceptual understanding and mathematical reasoning, and can reflect on their own learning to make inferences about how children experience and understand mathematics.

*Hours include courses that may fulfill university core requirements.

## Show all Early Childhood Education (ECE) Courses

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**Teacher Education Department Home**

**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# Early Childhood Education (ECE)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 300-Level Courses

ECE 322 : Parenting and Child Guidance in Early Childhood. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: EL ED 202

DESCRIPTION: Address young children's socio-emotional development in early childhood classrooms. Review theory and research to related peer interactions and parent-child and teacher-student relationships. Develop an understanding of instructional strategies and guidance practices in early childhood classrooms.

**Course Outcomes**

No outcomes are available at this time.

ECE 323 : Integrated Curriculum in Programs for Young Children. (2:2:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Admittance to either ECE or El Ed licensing programs. Dual majors, please see advisor.

DESCRIPTION: Implementing integrated learning experiences in dance, music, drama, and visual art for the very young, including importance of home, family, and environments on child's aesthetic growth.

**Course Outcomes**

- 2. The student will understand the cognitive processes associated with various kinds of learning (e.g., critical and creative thinking, problem structuring and problem solving, invention, memorization and recall).
- 1. The student will recognize the significance of factors that impact children's learning and development
- 3. The student will understand how an integrated curriculum not only addresses children's cognitive development but how social and emotional development is also incorporated into learning activities.
- 4. The student will know how to integrate the parents and family into the curriculum.
- 5. The student will become aware of the principles and techniques along with advantages and limitations associated with various instructional strategies (e.g., cooperative learning, direct instruction, discovery learning, whole group instruction, independent study and interdisciplinary instruction).
- 6. The student will become familiar with the value and use of national and state curriculum standards in developing curriculum.
- 7. The student will evaluate teaching resources and curriculum materials for usefulness, relevance and appropriateness in teaching ideas and concepts to young children and develop integrated learning activities (e.g., activity enhancers, learning centers, thematic activities, literature extensions, etc.).
- 8. The student will know how to enhance learning through the use of a wide variety of materials as well as human and technological resources (e.g., computers, audiovisual technologies, videotapes and discs,local experts, primary documents and artifacts, texts, reference books, literature and other printresources).
- 9. The student will create developmentally appropriate learning experiences using integrated curriculum strategies (e.g., project work, curriculum mapping) that encourage and allow children tointegrate knowledge, skills and methods of inquiry from several subject areas and thatmaximize student progress.
- 10. The student will create culturally appropriate learning experiences for children utilizing integrated curriculum strategies. Understand the importance of a multicultural and anti-bias curriculum.

ECE 324 : Planning and Management. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Admittance to ECE program.

DESCRIPTION: Learning principles, lesson planning, classroom atmosphere, classroom management, professional attitudes and practices.

**Course Outcomes**

- 1. The student will understand and use a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.
- 3. Students will foster relationships with school colleagues, parents, and agencies in the larger community to support students; learning and well being.
- 2. Students will identify, demonstrate, and synthesize multiple qualities of effective child guidance.

ECE 327 : Assessment and Action Research in Early Childhood Programs. (2:2:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Admittance to ECE program.

DESCRIPTION: Formal and informal assessment strategies and data collection procedures for evaluating children's progress; programs to enhance learning, individualize instruction, and communicate with others.

**Course Outcomes**

- 2. The student will understand the characteristics, uses, advantages, and limitations of different types of assessments.
- 1. The student will understand major concepts, conditions, and assumptions central to assessment.
- 3. The student will select, construct, and use assessment strategies and instruments appropriate to learning outcomes being evaluated and to other diagnostic purposes.
- 4. The student will understand measurement theory and assessment-related issues, such as validity, reliability, bias and scoring concerns.
- 5. The student will recognize the importance of culturally and developmentally relevant assessment
- 5. The student will appropriately use a variety of formal and informal assessment techniques to enhance his or her knowledge of learners, evaluate students' progress and performances and modify teaching and learning strategies.
- 6. The student will use assessment strategies to involve learners in self assessment activities and, when appropriate, to help them become aware of their strengths and needs and to encourage them to set personal goals.
- 7. The student will evaluate the effect of class activities on both individuals and the class as a whole, collecting information through observation of classroom interactions, questioning and analysis of student work.
- 8. The student will know how to maintain useful records of student work and performance and will communicate student progress knowledgeably and responsibly.
- Students will know about communicating regarding assessments with parents and professionals in a manner that develops partnerships and demonstrates professionalism.

## ECE 331 : Early Childhood Education Developmentally Appropriate Practices Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 202; ECE 332 concurrently.

DESCRIPTION: Designing an Early Childhood curriculum based on child development as hands-on experiences are created to meet children's individual learning needs and address contextual factors in the child's life experiences.

NOTE: Due to enrollment constraints, ECE 331 may not be retaken to improve a grade unless approved by the Child and Family Studies Laboratory Steering Committee.

**Course Outcomes**

There are no course outcomes available

## ECE 332 : Early Childhood Education Developmentally Appropriate Practices Practicum. (3:0:8)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 202; ECE 331 concurrently.

DESCRIPTION: Intitial practicum with young children in designing an Early Childhood curriculum based on a knowledge of child development that meets children's individual learning needs and address contextual factors in the child's life experience.

NOTE: Due to enrollment constraints, ECE 332 may not be retaken to improve a grade unless approved by the Child and Family Studies Laboratory Steering Committee.

**Course Outcomes**

There are no course outcomes available

## ECE 336 : Planning and Assessment in Early Childhood Education (Pre K-3). (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECE 331 and 332 concurrently.

DESCRIPTION: Learn key instructional principles, instructional strategies, lesson planning procedures that are appropriate and effective when working with young children. Understand formal and informal assessment strategies and data collection procedures for evaluating children's progress, informing instruction, communicating results with key stakeholders.

**Course Outcomes**

There are no course outcomes available

## ECE 337 : Family, School, and Community Partnerships in ECE. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ECE 331 and ECE 332.

DESCRIPTION: Understand policies and processes for partnering with families, schools, and communities of young children in early childhood settings.

**Course Outcomes**

No outcomes are available at this time.

## ECE 353 : Emergent Literacy. (2:2:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SFL 355 or equivalent.

DESCRIPTION: Issues, themes, and practices of literacy instruction for young children (P-3).

**Course Outcomes**

- Explain, compare, and critique theories of reading and writing processes and development with supporting research evidence. (IRA Standard 1.1.1)
- Explain and apply first language acquisition processes that support literacy development across elementary years, e.g., cueing systems, vocabulary, teacher talk. (IRA Standard 1.1.2)
- Explain and apply reading and writing development across elementary years, e.g., word recognition, language comprehension, strategic knowledge, spelling, qualities of good writing, and reading/writing connections. (IRA Standard 1.1.2)
- Identify and synthesize major milestones in literacy instruction.(IRA Standard 1.2.1)
- Identify and synthesize major milestones in literacy instruction.(IRA Standard 1.2.1)

### 400-Level Courses

ECE 422 : Preschool or Kindergarten Student Teaching. (6:0:6.0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: All ECE core and professional sequence courses; concurrent enrollment in ECE 426; prior application; requires a major GPA of 2.85; at least a C- grade in methods courses (ECE 324, 327, 356, 361, 363, 365); FBI fingerprint background clearance.

DESCRIPTION: Student teaching experience in preschool or kindergarten.

**Course Outcomes**

- 2. The student will demonstrate ability to be a reflective practitioner who continually evaluates the effects of his or her choices, and who actively seeks out opportunities to grow professionally.
- 1. The students will observe, plan, teach, assess, and reflect throughout this course as they participate in a PK or K classroom.

ECE 425 : Grades 1-3 Student Teaching. (6-12:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: All ECE core and professional sequence courses; concurrent enrollment in ECE 426; prior application; requires a major GPA of 2.85; at least a C- grade in methods courses (ECE 324, 327, 356, 361, 363, 365); FBI fingerprint background clearance.

DESCRIPTION: Student teaching experience in the primary grades.

**Course Outcomes**

- 1. The students will observe, plan, teach, assess, and reflect throughout this course as they participate in a primary grade classroom.
- The student will demonstrate ability to be a reflective practitioner who continually evaluates the effects of his or her choices, and who actively seeks out opportunities to grow professionally.

ECE 427 : El Ed/ECE Emphasis Capstone Seminar. (.5:1:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: El Ed majors with an ECE emphasis; concurrent enrollment in ECE student teaching practicum block.

DESCRIPTION: Gaining insight into significant issues in early childhood education, developing a sense of professional ethics, and becoming personally committed to ongoing professional development.

**Course Outcomes**

- The student will be reflective practitioner who continually evaluates the effects of his or her choices, and who actively seeks out opportunities to grow professionally.
- The student will foster relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being.

ECE 433 : Teaching Literacy in Early Childhood Classrooms (Pre K-3). (2-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Admittance to ECE program; concurrent enrollment in ECE 441 and 442.

DESCRIPTION: Study instructional practices for teaching children the literacy concepts, skills and strategies they need to learn in Pre K-3rd grade, and assessing, monitoring and evaluating children's literacy knowledge and learning in Pre K-3rd grade.

**Course Outcomes**

There are no course outcomes available

ECE 441 : Early Childhood Education Primary Grade Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECE 331; Concurrent with ECE 442.

DESCRIPTION: Gaining insight into significant issues in early childhood education, developing a sense of professional ethics, and becoming personally committed to ongoing professional development.

**Course Outcomes**

There are no course outcomes available

ECE 442 : Primary Grade Practicum. (2:0:12)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECE 332; ECE 441 concurrently.

DESCRIPTION: Practicum experience in the primary grades. Field experience designed to give students opportunities to interact with primary children (grades 1-3) and apply skills and knowledge acquired in Pre K-3 methods courses.

**Course Outcomes**

There are no course outcomes available

ECE 445 : Teaching Social Studies in Early Childhood Classrooms (Pre K-3). (2-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in ECE 441 and 442.

DESCRIPTION: This course will prepare teaching candidates (1) with methods, skills and strategies for teaching social studies to children in grades Pre K-3, (2) to model democratic teaching practices, and (3) to establish democratic classroomsas they prepare children to assume roles as participatory citizens in a democracy.

**Course Outcomes**

There are no course outcomes available

ECE 446 : Teaching Science in Early Childhood Classrooms (Pre K-3). (2-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in ECE 441 and 442.

DESCRIPTION: Develop the pedagogical knowledge, skills, and dispositions necessary to teach science to young children of various ages, abilities, backgrounds, and exceptionalities.

**Course Outcomes**

There are no course outcomes available

ECE 447 : Teaching Mathematics in Early Childhood Classrooms (Pre K-3). (2-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MTHED 305; ECE 441 and 442 concurrent.

DESCRIPTION: Study the teaching and learning of early childhood mathematics guided by current principles relating to mathematics content, social interaction, student thinking, and child development.

**Course Outcomes**

There are no course outcomes available

ECE 493R : Independent Readings or Project. (.5-4:0:3)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Departmental approval.

**Course Outcomes**

- Students will demonstrate an advanced level of knowledge in a chosen specialty area.
- Students will explain relationships between key concepts in a specialty area.

ECE 496R : Academic Internship. (12:0:0)

WHEN TAUGHT: Fall

PREREQUISITE: Three-semester professional sequence and prior application; requires a major GPA of 2.85; at least a C- grade in methods courses (ECE 324, 327, 356, 361, 363, 365); FBI fingerprint background clearance.

DESCRIPTION: A full-year classroom teaching internship in the public schools.

NOTE: See Education Student Services for application dates.

**Course Outcomes**

- 1. The students will observe, plan, teach, assess, and reflect throughout this course as they participate in an early childhood classroom.
- 2. The student will demonstrate ability to be a reflective practitioner who continually evaluates the effects of his or her choices, and who actively seeks out opportunities to grow professionally.

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**Early Childhood Education Program**

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**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# Elementary Education

## Admission to Degree Program

To begin the elementary education teacher preparation program students must complete the entrance process with the Teacher Education Department (201 MCKB). Students must attend an orientation meeting held by Education Student Services, and register on MYLink prior to completing entrance process.

The entrance process includes but is not limited to the following:

1. Technology Skills Assessment (TSA).
2. FBI fingerprint and background clearance. See Education Student Services (350 MCKB) for instructions.
3. Departmental approval is required for deferment from the professional sequence.
4. Approved graduation plan on file with Education Student Services (350 MCKB).

## FBI Fingerprint and Background Check

All candidates for teacher licensure are required by state statute to be fingerprinted and pass an FBI background check before participating in required field experiences. Fingerprints are taken in Education Student Services (ESS) in 350 MCKB. Allow from five to six weeks for fingerprints to be processed. FBI background clearance is valid for only three years. If clearance expires before graduation, candidates must repeat the fingerprinting and clearance process, including a new fee payment.

Failing to expunge a police record prior to the background check may result in a blocked registration while a panel reviews the charges. Candidates who cannot pass an FBI background check will be removed from the teacher education licensure program.

## Additional Licensing Requirements

It is the student's responsibility to be sure that the approved Praxis test has been taken and passed, that BYU has received the test scores, that fingerprint background clearance is current prior to graduation, and that state licensing fees have been paid. Students will also be responsible for any additional requirements imposed by the state prior to their graduation. To confirm the status of these requirements contact Education Student Services, 350 MCKB, (801) 422-3426. Graduation and Utah licensure cannot be processed until these requirements have been completed.

## GE Major Overlap

The following GE requirements will be fulfilled through completion of the Elementary Education major: Global & Cultural Awareness and Letters. More information on the GE/major overlap can be found at http://ge.byu.edu/ge/content/ge-major-overlap.

## The Discipline

Elementary education prepares teachers who, having gained their own liberal education, help elementary school children learn by improving the teaching children receive in the home, school, church, and community. Elementary education helps students enhance their thinking abilities, build their confidence in exploring new ideas, and become self-motivated, independent learners.

In the program prospective teachers learn about the culture of the elementary school, develop a solid foundation in basic principles of teaching and learning that originate in educational theory and research, and become proficient in systematically applying those basic principles in practical settings.

## Career Opportunities

A degree in elementary education leads to a K-6 educator licensure, providing opportunities for teaching in elementary schools. The TESOL K-12 minor is a required component of this major and will lead to an ESL endorsement in the State of Utah.

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**Teacher Education Department Home**

**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# BS in Elementary Education (83 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

To complete this major, students will also be required to complete the TESOL K-12 minor. The courses the student will need to take in order to complete the minor are reflected in the requirements listed below.

1. Complete all GE courses, including the following:

   SFL 210 : Human Development. (3:3:0)

   OFFERED: Independent Study also.
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: Growth and development of the child from conception through adolescence; influences of family, peers, and schools.
   NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

   **Course Outcomes**

   - Comprehend the dynamic and complex interaction among the domains of human development (e.g., biological, cognitive, emotional, social, etc.)Critically apply information learned in class to your own life.Provide knowledge and skills that will benefit the lives of the children for whom you will have stewardship in this life.Acquire a broad base of knowledge of human development.Be conversant with the major human development theories as well as their strengths and weaknesses.
   - Improve your writing and critical thinking skills.
   - Understand the research methodology utilized in the study of human development.

   **Note:** The Global & Cultural Awareness and Letters general education requirements are fulfilled through completion of the Elementary Education major.

2. Attend a program orientation meeting (schedule posted in 350 MCKB and on MYLink).
3. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
4. Complete entrance process for the program through the Teacher Education Department (201 MCKB).
5. Complete the following courses:

   CPSE 300 : Exceptional Students: Principles of Collaboration. (2:1:ARR)

   WHEN TAUGHT: Fall; Winter; Spring
   PREREQUISITE: FBI fingerprint background clearance.
   DESCRIPTION: Basic principles and legislative issues in effectively communicating and collaborating with professionals, parents, and other service providers to meet needs of individuals with disabilities in inclusive educational environments. Lab.

   **Course Outcomes**

   - Analyze student's learning difficulties and plan appropriate accommodations.
   - Describe learning characteristics of special needs students.
   - Develop assessment plans to evaluate students' progress and collaborate with school experts to support student learning.
   - Collaboration: Candidates work effectively with parents, professionals, paraprofessionals, and others in the school and community to help students with disabilities achieve their IEP goals.
   - Interpersonal Relations: Candidates work with students, parents, professionals, paraprofessionals, and others in the school and community with kindness and respect regardless of their diverse backgrounds.
   - Professional Practice: Candidates fulfill all duties and assignments, comply with all education laws and policies, and continue to improve professional practice.

   EDLF 201 : Foundations of Education. (3:3:0)

   WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: The purposes of education and schooling in a democracy and the historical, cultural, philosophical, and sociological foundations underlying the development of the American educational system.

**Course Outcomes**

- Be exposed to the major philosophical, historical, and sociological movements in Western education.
- Confront central issues and contexts of education, e.g., the nature of man, external structure & individual freedom, wealth & poverty, school & family, alternative delivery systems, school & democracy, school & law, religion & education, etc.
- Develop and articulate their own views of education and connect these views to their future professional practice.
- Examine the moral dimensions of education including access to knowledge, providing nurturing pedagogy, stewardship of schools, and perpetuating our political democracy.

EL ED 202 : Foundations of Child Development. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status.

DESCRIPTION: The development of the whole child including cognitive, social, emotional, linguistic, and physical development and how to apply it to planning, teaching, and assessing children.

**Course Outcomes**

- The candidate will demonstrate knowledge of social, cognitive and physical development of children ages birth to 12.
- The candidate will understand how the knowledge of child development will impact instructional practices in the school classroom.

EL ED 203 : Foundations of Multicultural Education. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status.

DESCRIPTION: Cultural identities in family life, physical attributes, culture, and language. Recognizing prejudice in individuals and institutions. Culturally and linguistically relevant pedagogical frameworks.

**Course Outcomes**

- Examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavior.
- Recognize and use a moral spiritual framework and the social science theoretical framework to guide multicultural and English language learner education.
- Recognize and acknowledge racism and discrimination in themselves, in others, and within institutions.
- Acknowledge the dynamics of how culture effects students' language learning and school success and teachers' teaching.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.

EL ED 323 : Foundations of Literacy Development. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Admittance into elementary education program.

DESCRIPTION: Language and literacy development for first and second language learners including theoretical underpinnings, processes, historical foundations, and instructional contexts that support language and literacy development for all K-6 children.

**Course Outcomes**

- Explain, compare and critique theories of reading and writing processes and development with supporting research evidence. (IRA Standard 1.1.1)
- Explain and apply first language acquisition processes that support literacy development across elementary years, e.g., cueing systems, vocabulary, teacher talk). (IRA Standard 1.1.2)
- Explain, apply, and compare/contrast knowedge about second language literacy development in context. (IRA Standard 1.1.3 & NCTE Standard 9)
- Explain and apply reading and writing development across elementary years, e.g., word recognition, language comprehension, strategic knowledge, spelling, qualities of good writing, and reading/writing connections. (IRA Standard 1.1.2)
- Identify and synthesize major milestones in literacy instruction.(IRA Standard 1.2.1)

EL ED 324 : Foundations of Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Exploring philosophies of classroom management focusing on promoting child guidance in an engaging and effective K-6 classroom learning environment.

**Course Outcomes**

- Upon completion of this course, students will be able to compare and contrast various theories and approaches to classroom management, describe ways to prevent management problems, describe practical approaches for addressing problems that arise, and identify approaches that align with the vision of the McKay School of Education.
- Upon completion of this course, students will be able to describe and justify necessary components of an effective learning environment, including, but not limited to, aspects related to physical space, academic approaches, and the social/emotional environment.
- Upon completion of this course, students will formulate a personal philosophy statement describing their

approach to management and the learning environment which includes expectations and responsibilities of both the teacher and of the students.

EL ED 330 : K-2 Practicum Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in El Ed 332.

DESCRIPTION: Prepare for and reflect on the K-2 practicum experience.

**Course Outcomes**

There are no course outcomes available

EL ED 332 : Practicum in Grades K-2. (2:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 324; concurrent enrollment in El Ed 330; FBI fingerprint and background clearance.

DESCRIPTION: Applying knowledge from foundational and content courses to teaching in a K-2 setting. Observing, planning, teaching, assessing, and reflecting in a public school setting.

**Course Outcomes**

There are no course outcomes available

EL ED 333 : Teaching Literacy in the Primary Grades (K-2). (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 323; Concurrent enrollment in El Ed 332.

DESCRIPTION: Instructional practices for teaching children the literacy concepts, skills, and strategies they need to learn in grades K-2. Assessing, monitoring, and evaluating children's literacy knowledge and learning in grades K-2.

**Course Outcomes**

There are no course outcomes available

EL ED 335 : Early Childhood Education Integration Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in El Ed 332.

DESCRIPTION: Methods in designing an early childhood curriculum with attention to hands-on experiences meeting children's individual learning needs and addressing contextual factors in the child's life experiences.

**Course Outcomes**

- a) understanding young childrenâ s characteristics and needs, including issues of diversity, and complex characteristics of families b) understanding effective and appropriate methods for supporting young childrenâ s growth and development in a classroom setting c) knowledge of K-3 instructional and assessment strategies in content areas (literacy, math, science, social studies, arts), d) understanding purposes and application of curriculum integration

EL ED 340 : Children's Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Elementary education or early childhood education major status.

DESCRIPTION: Trends and titles in children's and adolescent literature. Reading and critiquing as well as practical uses of children's literature in both school and home.

**Course Outcomes**

- 1. Students will understand and apply criteria in evaluating children's books for quality and function.
- 2. Students will gain a knowledge base concerning the field of children's literature as contained in the assigned textbook and class lectures.

EL ED 440 : Grades 3-6 Practicum Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 332; concurrent with El Ed 442; FBI fingerprint and background clearance.

DESCRIPTION: Prepare for and reflect on the 3-6 practicum experience.

**Course Outcomes**

There are no course outcomes available

EL ED 442 : Practicum in the Elementary Education 3-6 Classroom. (2:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 332; Concurrent enrollment in El Ed 440.

DESCRIPTION: Applying knowledge from foundational and content courses to teaching in a 3-6 classroom. Observing, planning, teaching, assessing, and reflecting in a 3-6 public school setting.

**Course Outcomes**

There are no course outcomes available

EL ED 443 : Teaching Literacy in the Intermediate Grades (3-6). (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 333; Concurrent enrollment in El Ed 442.

DESCRIPTION: Information and skills needed to make informed decisions about literacy instruction and evaluation. Establishing an effective 3-6 grade classroom literacy environment.

**Course Outcomes**

There are no course outcomes available

EL ED 445 : Teaching Social Studies in Grades K-6. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: IP&T 213; Concurrent enrollment in El Ed 442.

DESCRIPTION: The methods, skills, and strategies for teaching social studies in grades K-6. Modeling democratic teaching practices and establishing democratic classrooms to prepare children to assume roles as participatory citizens in a democracy.

**Course Outcomes**

There are no course outcomes available

EL ED 446 : Teaching Science in Grades K-6. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: IP&T 213; Concurrent enrollment in El Ed 442.

DESCRIPTION: Developing the pedagogical knowledge, skills, and dispositions necessary to teach science to elementary children of various ages, abilities, backgrounds, and exceptionalities.

**Course Outcomes**

There are no course outcomes available

EL ED 447 : Teaching Mathematics in Grades K-6. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MTHED 305 & MTHED 306 & IP&T 213; Concurrent enrollment in El Ed 442.

DESCRIPTION: The teaching and learning of elementary school mathematics guided by current principles relating to mathematics content, social interaction, student thinking, and child development.

**Course Outcomes**

- Preservice teachers enrolled in El Ed 447 will:Make appropriate decisions relative to teaching mathematics in K-6 classroomsPlan and implement standards-based lessons to teach mathematics conceptsPlan and use mathematics inquiry groups and student discourse for assessing studentsExamine provisions for students with varying language and cultural backgroundsPractice professionalism: in commitment to learning to teach, in appearance and demeanor, and in the quality of work submitted

IP&T 213 : Foundations of Instructional Design and Assessment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Elementary Education major status.

DESCRIPTION: Curriculum design and assessment theory, strategies, and tools for the K-6 classroom. Backward design and seamless assessment for informing and improving student performance.

**Course Outcomes**

- Teacher candidates will be able to describe, define and apply the principles and science of assessment to determine instructional needs, design and deliver effective instruction and communicate assessment results to appropriate audiences in a multi-tiered system of support.
- Teacher candidates will be able to describe their role and responsibility regarding curriculum standards and ensure that curriculum addresses the needs of diverse students.
- Teacher candidates will be able to synthesize and employ assessment evidence to inform instructional decision-making, interpret data to evaluate instruction, and apply a problem-solving process to address students' cognitive, social-emotional and linguistic learning needs within a multi-tiered system of support.
- Teacher candidates will be able to define, design and employ evidenced-based instructional practices within a multi-tiered system of support.

IP&T 334 : Integrating Technology in Early Childhood Education. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent with El Ed 333.

DESCRIPTION: Integrating instructional technology with early childhood education instructional strategies.

**Course Outcomes**

- Students will increase their familiarity with and ability to use a wide range of educational technologies.
- Students will develop positive dispositions towards using educational technologies that can help improve

student learning.
- Student will strengthen their knowledge of ways to use technology in teaching math and literacy that lead to improved effectiveness, engagement, and/or efficiency.
- Students will practice their technology integration skills in real-world early childhood elementary level settings and learn to evaluate the strengths and weaknesses of their performance.
- Students will follow fairuse guidelines as they incorporate digital media into their teaching.

IP&T 444 : Integrating Technology in Elementary Education. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent with El Ed 445 and El Ed 446.

DESCRIPTION: Integrating instructional technology into K-6 instructional strategies.

**Course Outcomes**

- Students will increase their familiarity with and ability to use a wide range of educational technologies.
- Students will develop positive dispositions towards using educational technologies that can help improve student learning.
- Student will strengthen their knowledge of ways to use technology in teaching core content areas (fine arts, language arts, math, science, & social studies) that lead to improved effectiveness, engagement, and/or efficiency.
- Students will practice their technology integration skills in real-world upper elementary level settings and learn to evaluate the strengths and weaknesses of their performance.
- Students will understand basic issues related to internet safety for children and create lessons that help children have positive, safe experiences with online technologies. Students will follow fairuse guidelines as they incorporate digital media into their teaching.

MTHED 305 : Basic Concepts of Mathematics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Math 110 or equivalent; permission from Teacher Education Department.

DESCRIPTION: Concept-oriented exploration of number, measurement, and informal geometry in relation to children's learning.

NOTE: Required of prospective elementary school teachers.

**Course Outcomes**

- Students have a deep understanding of central concepts in elementary school mathematics related to whole numbers and whole number operations, number theory, integers and integer operations, geometry, and measurement; as well as core representations, canonical examples, patterns in children's thinking, and alternative algorithms germane to teaching these concepts.
- Students understand mathematics as a sense-making activity, can solve problems by employing conceptual understanding and mathematical reasoning, and can reflect on their own learning to make inferences about how children experience and understand mathematics.
- Students engage productively in mathematical inquiry, effectively communicate their mathematical ideas and reasoning with their peers, and reflect on the teaching practices modeled in the MthEd 305 classroom to make inferences about teaching practices that help children learn mathematics.

MTHED 306 : Concepts of Mathematics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MTHED 305; Permission from Teacher Education Department.

DESCRIPTION: Concept-oriented exploration of rational numbers and proportional reasoning, probability, and early algebraic reasoning in relation to children's learning.

NOTE: Required of prospective elementary school teachers.

**Course Outcomes**

- Students have a deep understanding of central concepts in elementary school mathematics related to fractions and fraction operations, probability, and early algebraic reasoning; as well as core representations, canonical examples, patterns in children's thinking, and alternative algorithms germane to teaching these concepts.
- Students engage productively in mathematical inquiry, effectively communicate their mathematical ideas and reasoning with their peers, and reflect on the teaching practices modeled in the MthEd 306 classroom to make inferences about teaching practices that help children learn mathematics.
- Students understand mathematics as a sense-making activity, can solve problems by employing conceptual understanding and mathematical reasoning, and can reflect on their own learning to make inferences about how children experience and understand mathematics.

PETE 169 : Elementary Skills and Activities. (1:0:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Physical skills and activities specific to elementary-age children.

NOTE: Required for elementary education majors.

**Course Outcomes**

- 1. The students will develop the skills for physical education activities taught in elementary schools.

PETE 212 : Physical Education for Elementary School Teachers. (2:1:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PETE 169; FBI fingerprint and background clearance.

**Course Outcomes**

- The students will Interact with students with special needs.

- The students will explore interactions of students in the classroom.

6. Complete the following courses, which, in conjunction with the other required courses in this program, will allow you to fulfill the requirements of the TESOL K-12 minor:

TELL 410 : Second Language Acquisition. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: EL ED 323 & EL ED 203; or ELANG 223 & SC ED 353; or CPSE 425

DESCRIPTION: Processes and variables in native- and second-language development. How teachers can foster efficient acquisition of language, cognitive, and academic skills in second-language environments.

**Course Outcomes**

- Candidates know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas

TELL 440 : Content-Based Language Instruction. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TELL 410 & TELL 420; or TELL 410 & IP&T 213; or TELL 410 & CPSE 420

RECOMMENDED: El Ed 333, TELL 430, and CPSE 430 concurrently.

DESCRIPTION: Instructional methods, strategies, and materials for integrating curriculum content and language instruction. Teaching, creating, and adapting lesson materials in a multicultural context.

**Course Outcomes**

- Candidates know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas.

TELL 450 : Family, School, and Community Partnerships. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ELANG 223 & TELL 410 & SC ED 353; or EL ED 203 & EL ED 323

DESCRIPTION: Standards, principles, policies, and processes of partnering with parents, families, schools, and communities in fostering and sustaining the development of children and youth.

**Course Outcomes**

There are no course outcomes available

TELL 477R : TESOL K-12 Student Teaching. (.5-4:0:4)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: TELL 440; FBI fingerprint background clearance.

DESCRIPTION: Supervised, full-day experience to develop and demonstrate competence in teaching English Learners in an approved public school setting. Observation is stressed initially, with responsibility for teaching increasing across the four-week experience.

NOTE: Can be taken concurrently with student teaching/internship in a diverse-language setting.

**Course Outcomes**

There are no course outcomes available

(Must take 4 credit hours of TELL 477R.)

7. Complete two courses from the following:

DANCE 326 : Rhythm and Dance. (2:1:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Methodology course for elementary education majors; creative dance and structured rhythmic dance forms.

**Course Outcomes**

- Students will identify the value of dance in the elementary setting, including the following benefits:· Decision making skills· Confidence and self-expression· Cultural perspective· Collaboration and social skills· Physical skills and kinesthetic learning· Accessibility for a diverse population· Recreation and fun
- Students will demonstrate sound dance methodology, including:· Teaching structured dance forms· Leading the creative process· Clear verbalization of directions, cues, side-coaching, and feedback
- Students will identify various dance teaching resources that enrich the curriculum, including:· State Core Curriculum· National Standards· Music resources
- Students will increase knowledge and develop skills in the dance discipline, including:· The elements of dance: space, motion, time, energy· Problem solving through movement· Choreographic skills
- Students will identify age appropriate material and pedagogy that address the needs of the wide age span of elementary students.
- Students will identify ways to incorporate dance into school-wide projects that create community, including dance festivals and performances.

MUSIC 378 : Music for the Elementary Classroom Teacher. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Establishing a classroom environment for musical development; emphasis on appropriate songs, activities, resources, and teaching strategies.

**Course Outcomes**

- Students will acquire personal musicianship skills applied to knowledge of age-appropriate musical activities, materials and delivery techniques for grades K–6.
- Students will acquire personal musicianship skills applied to knowledge of age-appropriate musical activities, materials and delivery techniques for grades K–6.

TMA 352 : Drama in the Elementary Classroom. (2:4:Arr)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Theatre education major status: TMA 101 or 102; TMA 276. Or early childhood education or elementary education major status. Or instructor's consent.

DESCRIPTION: Varied teaching methodologies for application of drama within the pre-K--6 classroom. Dual emphasis on Utah state elementary drama standards as well as integration with core curricula.

**Course Outcomes**

There are no course outcomes available

8. Complete 8 hours of one of the following (prior application required):

EL ED 400R : Elementary Student-Teaching. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Semester-long or two consecutive term, full-day student teaching experience in the public schools. Seminar attendance required.

NOTE: See Education Student Services for application dates.

**Course Outcomes**

- The student teacher will observe, plan, teach, assess, and reflect throughout the course as they participate in a public school setting.
- The student teacher will apply knowledge from various content courses as they relate to teaching in an elementary classroom.
- The student teacher will apply knowledge of various pedagogical approaches and methods and when they are most appropriate for which subject or lesson type.

EL ED 496R : Academic Internship. (8-12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Three-semester professional sequence and prior application; requires a major GPA of 2.85; at least a C- grade in methods courses (El Ed 302, 356, 357, 361, 363, 365, 372).

DESCRIPTION: A full-year classroom teaching internship in the public schools in lieu of El Ed 400, student teaching.

NOTE: See Education Student Services for application dates.

**Course Outcomes**

There are no course outcomes available

## Recommended Courses

The following courses are strongly recommended:

BIO 100 : Principles of Biology. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Introductory course for general education students.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

BIO 175 : Principles of Biology Laboratory. (1:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Elementary education or early childhood education pre-major or major status; concurrent enrollment in Bio 100.

**Course Outcomes**

There are no course outcomes available

ENGL 313 : Expository Writing for Elementary Education Majors. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Learning to write as professional educators and to teach writing to children. Best taken before the professional sequence. Library research paper.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

There are no course outcomes available

VAEDU 326 : Art for Elementary Teachers. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Preservice preparation designed to help elementary classroom teachers understand the visual arts and develop skills necessary for implementing a discipline-based approach for art education.

**Course Outcomes**

No outcomes are available at this time.

*Hours include courses that may fulfill university core requirements.

## Show all Elementary Education (El Ed) Courses

**David O. McKay School of Education Home**

**Teacher Education Department Home**

**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# Elementary Education (El Ed)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 200-Level Courses

EL ED 202 : Foundations of Child Development. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status.

DESCRIPTION: The development of the whole child including cognitive, social, emotional, linguistic, and physical development and how to apply it to planning, teaching, and assessing children.

**Course Outcomes**

- The candidate will demonstrate knowledge of social, cognitive and physical development of children ages birth to 12.
- The candidate will understand how the knowledge of child development will impact instructional practices in the school classroom.

EL ED 203 : Foundations of Multicultural Education. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status.

DESCRIPTION: Cultural identities in family life, physical attributes, culture, and language. Recognizing prejudice in individuals and institutions. Culturally and linguistically relevant pedagogical frameworks.

**Course Outcomes**

- Examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavior.
- Recognize and use a moral spiritual framework and the social science theoretical framework to guide multicultural and English language learner education.
- Recognize and acknowledge racism and discrimination in themselves, in others, and within institutions.
- Acknowledge the dynamics of how culture effects students' language learning and school success and teachers' teaching.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.

### 300-Level Courses

EL ED 323 : Foundations of Literacy Development. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Admittance into elementary education program.

DESCRIPTION: Language and literacy development for first and second language learners including theoretical underpinnings, processes, historical foundations, and instructional contexts that support language and literacy development for all K-6 children.

**Course Outcomes**

- Explain, compare and critique theories of reading and writing processes and development with supporting research evidence. (IRA Standard 1.1.1)
- Explain and apply first language acquisition processes that support literacy development across elementary years, e.g., cueing systems, vocabulary, teacher talk). (IRA Standard 1.1.2)
- Explain, apply, and compare/contrast knowedge about second language literacy development in context. (IRA Standard 1.1.3 & NCTE Standard 9)
- Explain and apply reading and writing development across elementary years, e.g., word recognition, language comprehension, strategic knowledge, spelling, qualities of good writing, and reading/writing connections. (IRA Standard 1.1.2)
- Identify and synthesize major milestones in literacy instruction.(IRA Standard 1.2.1)

EL ED 324 : Foundations of Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Exploring philosophies of classroom management focusing on promoting child guidance in an engaging and effective K-6 classroom learning environment.

**Course Outcomes**

- Upon completion of this course, students will be able to compare and contrast various theories and approaches to classroom management, describe ways to prevent management problems, describe practical approaches for addressing problems that arise, and identify approaches that align with the vision of the McKay School of Education.
- Upon completion of this course, students will be able to describe and justify necessary components of an effective learning environment, including, but not limited to, aspects related to physical space, academic approaches, and the social/emotional environment.
- Upon completion of this course, students will formulate a personal philosophy statement describing their approach to management and the learning environment which includes expectations and responsibilities of both the teacher and of the students.

EL ED 330 : K-2 Practicum Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in El Ed 332.

DESCRIPTION: Prepare for and reflect on the K-2 practicum experience.

**Course Outcomes**

There are no course outcomes available

EL ED 332 : Practicum in Grades K-2. (2:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 324; concurrent enrollment in El Ed 330; FBI fingerprint and background clearance.

DESCRIPTION: Applying knowledge from foundational and content courses to teaching in a K-2 setting. Observing, planning, teaching, assessing, and reflecting in a public school setting.

**Course Outcomes**

There are no course outcomes available

EL ED 333 : Teaching Literacy in the Primary Grades (K-2). (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 323; Concurrent enrollment in El Ed 332.

DESCRIPTION: Instructional practices for teaching children the literacy concepts, skills, and strategies they need to learn in grades K-2. Assessing, monitoring, and evaluating children's literacy knowledge and learning in grades K-2.

**Course Outcomes**

There are no course outcomes available

EL ED 335 : Early Childhood Education Integration Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in El Ed 332.

DESCRIPTION: Methods in designing an early childhood curriculum with attention to hands-on experiences meeting children's individual learning needs and addressing contextual factors in the child's life experiences.

**Course Outcomes**

- a) understanding young childrenâ s characteristics and needs, including issues of diversity, and complex characteristics of families b) understanding effective and appropriate methods for supporting young childrenâ s growth and development in a classroom setting c) knowledge of K-3 instructional and assessment strategies in content areas (literacy, math, science, social studies, arts), d) understanding purposes and application of curriculum integration

EL ED 340 : Children's Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Elementary education or early childhood education major status.

DESCRIPTION: Trends and titles in children's and adolescent literature. Reading and critiquing as well as practical uses of children's literature in both school and home.

**Course Outcomes**

- 1. Students will understand and apply criteria in evaluating children’s books for quality and function.
- 2. Students will gain a knowledge base concerning the field of children’s literature as contained in the assigned textbook and class lectures.

EL ED 343 : Language Acquisition in Elementary Education. (2:2:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: EL ED 203; major status.

DESCRIPTION: Processes and variables in native- and second-language development. Fostering efficient acquisition of language, cognitive, and academic skills in second-language environments.

**Course Outcomes**

No outcomes are available at this time.

EL ED 344 : Content-Based Literacy. (2:2:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: El Ed 343 or concurrent enrollment.

DESCRIPTION: Instructional methods, strategies, and materials for integrating curriculum content and language instruction. Teaching, creating, and adapting lesson materials in a multicultural context.

**Course Outcomes**

No outcomes are available at this time.

EL ED 345 : Family, School, and Community Partnership. (2:2:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: El Ed 344 or concurrent enrollment.

DESCRIPTION: Standards, principles, policies, and processes of collaborating with parents, families, schools, and communities in fostering and sustaining the development of children and youth.

**Course Outcomes**

No outcomes are available at this time.

### 400-Level Courses

EL ED 400R : Elementary Student-Teaching. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Semester-long or two consecutive term, full-day student teaching experience in the public schools. Seminar attendance required.

NOTE: See Education Student Services for application dates.

**Course Outcomes**

- The student teacher will observe, plan, teach, assess, and reflect throughout the course as they participate in a public school setting.
- The student teacher will apply knowledge from various content courses as they relate to teaching in an elementary classroom.
- The student teacher will apply knowledge of various pedagogical approaches and methods and when they are most appropriate for which subject or lesson type.

EL ED 440 : Grades 3-6 Practicum Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 332; concurrent with El Ed 442; FBI fingerprint and background clearance.

DESCRIPTION: Prepare for and reflect on the 3-6 practicum experience.

**Course Outcomes**

There are no course outcomes available

EL ED 442 : Practicum in the Elementary Education 3-6 Classroom. (2:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 332; Concurrent enrollment in El Ed 440.

DESCRIPTION: Applying knowledge from foundational and content courses to teaching in a 3-6 classroom. Observing, planning, teaching, assessing, and reflecting in a 3-6 public school setting.

**Course Outcomes**

There are no course outcomes available

EL ED 443 : Teaching Literacy in the Intermediate Grades (3-6). (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 333; Concurrent enrollment in El Ed 442.

DESCRIPTION: Information and skills needed to make informed decisions about literacy instruction and evaluation. Establishing an effective 3-6 grade classroom literacy environment.

**Course Outcomes**

There are no course outcomes available

EL ED 445 : Teaching Social Studies in Grades K-6. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: IP&T 213; Concurrent enrollment in El Ed 442.

DESCRIPTION: The methods, skills, and strategies for teaching social studies in grades K-6. Modeling democratic teaching practices and establishing democratic classrooms to prepare children to assume roles as participatory citizens in a democracy.

**Course Outcomes**

There are no course outcomes available

EL ED 446 : Teaching Science in Grades K-6. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: IP&T 213; Concurrent enrollment in El Ed 442.

DESCRIPTION: Developing the pedagogical knowledge, skills, and dispositions necessary to teach science to elementary children of various ages, abilities, backgrounds, and exceptionalities.

**Course Outcomes**

There are no course outcomes available

EL ED 447 : Teaching Mathematics in Grades K-6. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MTHED 305 & MTHED 306 & IP&T 213; Concurrent enrollment in El Ed 442.

DESCRIPTION: The teaching and learning of elementary school mathematics guided by current principles relating to mathematics content, social interaction, student thinking, and child development.

**Course Outcomes**

- Preservice teachers enrolled in El Ed 447 will:Make appropriate decisions relative to teaching mathematics in K-6 classroomsPlan and implement standards-based lessons to teach mathematics conceptsPlan and use mathematics inquiry groups and student discourse for assessing studentsExamine provisions for students with varying language and cultural backgroundsPractice professionalism: in commitment to learning to teach, in appearance and demeanor, and in the quality of work submitted

EL ED 493R : Independent Readings or Project. (.5-4:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Departmental approval.

**Course Outcomes**

- Students will explore and demonstrate knowledge in an area of specialization under the direction of a faculty member.

EL ED 496R : Academic Internship. (8-12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Three-semester professional sequence and prior application; requires a major GPA of 2.85; at least a C- grade in methods courses (El Ed 302, 356, 357, 361, 363, 365, 372).

DESCRIPTION: A full-year classroom teaching internship in the public schools in lieu of El Ed 400, student teaching.

NOTE: See Education Student Services for application dates.

**Course Outcomes**

There are no course outcomes available

## 500-Level Graduate Courses (available to advanced undergraduates)

EL ED 589R : Special Topics in Education. (.5-3:Arr.:Arr.)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Topics vary.

NOTE: Does not count toward a graduate degree without prior approval.

**Course Outcomes**

There are no course outcomes available

: Children's Literature.

**Course Outcomes**

: Classroom Management.

**Course Outcomes**

: Writing Instruction.

**Course Outcomes**

: Effective Teaching.

**Course Outcomes**

: Mathematics.

**Course Outcomes**

: Art Education.

**Course Outcomes**

: Foundations of Literacy.

**Course Outcomes**

: Literacy Assessment and Intervention.

**Course Outcomes**

: Literature for Young People.

**Course Outcomes**

: Content-Area Literacy.

**Course Outcomes**

: Literacy Development and Instruction.

**Course Outcomes**

: Comprehension Instruction.

**Course Outcomes**

: Supervision of Literacy Programs.

**Course Outcomes**

: Literacy Specialist Practicum.

**Course Outcomes**

: Organization and Administration of Reading Programs.

**Course Outcomes**

: Utah Math Core Curriculum.

**Course Outcomes**

: Analysis of Teaching and Learning.

**Course Outcomes**

: K-6 Rational Number.

**Course Outcomes**

: K-6 Algebra and Geometry.

**Course Outcomes**

: K-6 Math Topics (TBA).

**Course Outcomes**

: Techniques for Elementary Math.

**Course Outcomes**

: Perspectives on Elementary Learner.

**Course Outcomes**

: Math Pedagogy for Elementary.

**Course Outcomes**

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Elementary Education Home**

**Back to Teacher Education Department Home**

**David O. McKay School of Education Home**

**Teacher Education Department Home**

**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# Secondary Education

## The Discipline

The Department of Teacher Education provides a program which licenses secondary teachers for the public schools. In addition to content courses in the field(s) in which they plan to teach, students complete professional education courses and practicum experiences which prepare them to teach in a secondary school setting.

## Career Opportunities

Secondary education teacher.

## Teaching Majors

The following is a list of teaching majors and minors offered jointly with the Department of Teacher Education and other academic departments throughout the university. For specific major course requirements, see the department offering the teaching major or minor. For licensure requirements, refer to Education Student Services, 350 MCKB, (801) 422-3426.

## Teaching Majors and Composite Teaching Majors

(Hours listed include courses taken to fill both major and licensure requirements.)

- Art Education (K–12) (80 hours) (see Department of Visual Arts)
- Biological Science Education (84 hours) (see Department of Biology)
- Chemistry Education (80.5 hours)
- Dance Education K-12 (80 hours)
- Earth and Space Science Education (83–86 hours)(see Department of Geological Sciences)
- English Teaching (74–91 hours)
- Family and Consumer Science Education (75–76 hours) (see School of Family Life)
- French Teaching (69–92 hours)
- German Teaching (79–100 hours)
- History Teaching (67–84 hours)
- Latin Teaching (78–91 hours) (see Department of Humanities, Classics, and Comparative Literature)
- Mathematics Education (74 hours)
- Music Education: K–12 Choral Emphasis (87 hours)
- Music Education: K–12 Instrumental Emphasis (92 hours)
- Physical Education Teaching/Coaching (K–12) (60 hours) (see Department of Teacher Education)
- Physics Teaching (74.5–77.5 hours)
- Spanish Teaching (75–108 hours)
- Special Education: Mild/Moderate Disabilities Emphasis (59 hours)
- Special Education: Severe Disabilities Emphasis (59 hours)
- Teaching Physical Science (77.5–78.5 hours)
- Teaching Social Science (76 hours) (see Department of History)
- Technology and Engineering Education (73–74 hours) (see School of Technology)
- Theatre Arts Education K-12 (83 hours)

## Teaching Minors

- Art Education (24.5 hours) (see Department of Visual Arts)
- Chemistry Education (18.5–20.5 hours)
- Chinese Teaching (23–39 hours) (see Department of Asian and Near Eastern Languages)
- Computer Science Teaching (18–19 hours)
- Dual-Language Immersion K-12 Teaching (20 hours)
- English Teaching (27 hours)
- French Teaching (23–38 hours)
- Geography Teaching (19 hours)
- Geology Teaching (16 hours)
- German Teaching (20–36 hours)
- Health Education (22 hours)
- History Teaching (21 hours)
- Japanese Teaching (25–41 hours) (see Department of Asian and Near Eastern Languages)
- Latin Teaching (23–31 hours) (see Department of Humanities, Classics, and Comparative Literature)
- Mathematics Education (33 hours)
- Physical Education Teaching/Coaching (24 hours) (see Department of Teacher Education)
- Physics Teaching (26 hours)
- Political Science Teaching (21 hours)
- Portuguese Teaching (18–40 hours)
- Psychology Teaching (21 hours)
- Russian Teaching (17–32 hours) (see Department of German and Russian)
- Spanish Teaching (21–37 hours)
- Teaching English to Speakers of Other Languages (TESOL) K–12 (19 hours)

## Professional Education Requirements

All teacher candidates in secondary education complete an approved sequence of required professional education courses. Please see the appropriate department listing for each teaching major.

## FBI Fingerprint and Background Check

All candidates for teacher licensure are required by state statute to be fingerprinted and pass an FBI background check before participating in required field experiences. Fingerprints are taken in Education Student Services (ESS) in 350 MCKB. FBI background clearance is valid for only three years. If clearance expires before graduation, candidates must repeat the fingerprinting and clearance process, including new fee payments.

Failing to expunge a police record prior to the background check may result in a blocked registration while a state panel reviews the charges. Candidates who cannot pass an FBI background check will be removed from the teacher education licensure program.

## Licensing Requirements

Only students graduating with a teaching major will be recommended for a Utah State teacher license. Students who also complete a teaching minor will have the appropriate endorsement listed on their teacher license by the Utah State Office of Education. No student can receive a teacher license by completing only a teaching minor without also completing a teaching major.

It is the student's responsibility to be sure the approved PRAXIS II tests have been taken and passed, that BYU has received the test scores, that fingerprint background clearance is current prior to graduation, and state licensing fees have been paid. Students will also be responsible for any additional requirements imposed by the state prior to their graduation. To confirm the status of these requirements contact Education Student Services, 350 MCKB, (801) 422-3426. Graduation and Utah licensure cannot be processed until these requirements have been completed. For additional requirements see the following: http://education.byu.edu/ESS/Licensing.html.

### Student Teaching Prerequisites

1. *Teaching Major & Teaching Minor*. Complete all teaching major and teaching minor requirements. Grades below C- in professional education courses and content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
2. *Application*. Apply for student teaching at Education Student Services. Packets are available online at http://education.byu.edu/ess/

### Licensing Procedures

Students are responsible for keeping Education Student Services informed of their progress toward licensure.

To avoid undue licensing delay, students are urged to arrange for a personal review of their licensing records well in advance of registering for their final semester. See Education Student Services, 350 MCKB and http://education.byu.edu/ess/licensing.html.

**David O. McKay School of Education Home**

**Teacher Education Department Home**

**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# BS in Physical Education Teaching/Coaching (K–12) (60 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## The Discipline

Students preparing to teach physical education and/or coach will have a variety of experiences that will enhance proficiency in the knowledge and skills requisite to working in the contemporary school setting. Majors learn to perform a variety of sport, outdoor adventure, and dance activities. After becoming proficient, students take courses and have practical experiences in teaching and coaching children, adolescents, and adults. The discipline is interesting and rewarding, and those in a teaching/coaching career help others pursue and practice healthy lifestyle habits.

## Career Opportunities

Graduates seek teaching and physical education/coaching careers in elementary and secondary education settings. With an advanced degree, teaching and coaching positions at institutions of higher learning are available.

It is recommended that students desiring to be optimally employable in secondary schools complete an approved teaching minor.

## Program Requirements | View MAP | View Program Outcomes

1. Students who are interested in the program should meet with the Physical Education Teaching Education program director (249-D SFH) and Education Student Services (350 MCKB) in September of their sophomore year. Then they must complete the online application (found at http://mylink.byu.edu). Applications for the Physical Education Teaching Education program are due October 1 for Winter semester and February 1 for Fall semester.
2. A teaching minor is not required for licensure. However, it is *strongly* recommended (approximately 16-30 hours).
3. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
4. Complete the following required prerequisite courses:

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

SFL 210 : Human Development. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Growth and development of the child from conception through adolescence; influences of family, peers, and schools.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Comprehend the dynamic and complex interaction among the domains of human development (e.g., biological, cognitive, emotional, social, etc.)Critically apply information learned in class to your own life.Provide knowledge and skills that will benefit the lives of the children for whom you will have stewardship in this life.Acquire a broad base of knowledge of human development.Be conversant with the major human development theories as well as their strengths and weaknesses.
- Improve your writing and critical thinking skills.

- Understand the research methodology utilized in the study of human development.

5. Complete the following:

EXSC 302 : Philosophical and Ethical Issues in Exercise Sciences. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Philosophical and ethical issues common to exercise sciences majors. Concept of mind, body, spirit.

**Course Outcomes**

- Learn contemporary tenets of philosophy that will serve as a basis for understanding important ideas in our own cultural tradition as well as that of others.
- Comprehend philosophical worldviews to facilitate respectful relationships with others.
- Pursue truth, think clearly and communicate effectively one's own beliefs and values; deepen one's understanding of the nature of being.
- Comprehend and apply the truths of the gospel of Jesus Christ. Reflect devout love of God and a loving, genuine concern for the welfare of others in the learning environment.
- Acquire/reinforce a profound respect for the divine nature of one's own life, a reverence for one's value, the purpose of one's life and a desire to live a healthy lifestyle.
- Articulate one's valuing of the entire self, bodymindspirit, with particular focus on the meaning and importance of the physical body.
- Strengthen the formulation of own personal and professional philosophy establishing clear standards of integrity. Improve the communication of one's beliefs, written and verbal.
- Analyze contemporary issues from an ethical standpoint. Demonstrate own professional ethical behavior, think critically and take an informed position on an issue.

EXSC 320 : Basic Athletic Training. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 220; Some majors require concurrent enrollment in ExSc 321. Check MAP requirements for major.

DESCRIPTION: Recognition, evaluation, and care of athletic injuries. Techniques in taping, preventing, and rehabilitating injuries.

**Course Outcomes**

- Review general responsibilities, roles, and tasks of athletic trainers, physical therapists, and otherallied health professionals involved in sports medicine.
- Learn assessment, first aid, and treatments for common musculoskeletal injuries.
- Examine methods of injury prevention including conditioning principles, environmental hazards,and protective equipment.
- Learn and utilize resources available to sports medicine professionals.
- Apply knowledge to practical situations.

EXSC 321 : Basic Athletic Training Lab. (.5:0:.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Concurrent enrollment in ExSc 320.

NOTE: Fee.

**Course Outcomes**

- Demonstrate competency and proficiency in taping the ankle, foot, lower leg, knee, thigh/hip,shoulder, elbow, wrist, thumb, and finger joints.
- Demonstrate competency and proficiency in wrapping the ankle, foot, lower leg, thigh/hip,shoulder, elbow, wrist, thumb, and finger joints.
- Demonstrate competency and profiency in wound care management.
- Demonstrate competency and profiency in injury evaluation.
- Demonstrate competency and profiency in injury treatment management.
- Demonstrate competency and profiency in spineboarding and splinting.

EXSC 365 : Scientific Bases of Sport: Kinesiology. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Kinesiology and biomechanics for physical education/coaching minor.

**Course Outcomes**

- Students will demonstrate how to apply physical laws to human performance. Included physical laws deal with: Linear motion, projectile motion, forces, impulse and momentum, fluid mechanics, and tissue mechanics.

EXSC 366 : Scientific Bases of Sport: Exercise Physiology. (2.5:2:0)

WHEN TAUGHT: Winter

RECOMMENDED: PDBio 305.

DESCRIPTION: Physiology of activity for physical education teaching students.

**Course Outcomes**

There are no course outcomes available

PETE 230 : K-12 Physical Activities Content and Skills 1. (2:2:0)

WHEN Fall

TAUGHT:
PREREQUISITE: Admittance into PETE program.
DESCRIPTION: Skills, content, and pedagogical knowledge in lifetime activities: golf, soccer, tennis. Also covers Fitness for Life and legal issues in PE.

**Course Outcomes**

- Demonstrate proper technique for the major skills of each sport
- Develop basic skills for each sport/activity
- Learn the basic rules of each sport/activity
- Learn basic drills and lead-up games for each sport
- Understand how to ensure safety in the physical education program, focusing on prevention

PETE 231 : K-12 Physical Activities Content and Skills 2. (2:2:0)

WHEN TAUGHT: Winter
PREREQUISITE: Admittance into PETE program.
DESCRIPTION: Skills, content, and pedagogical knowledge in lifetime activities: aerobics, badminton, basketball, flag football, and volleyball.

**Course Outcomes**

- The students will know a variety of sport/activity specific drills and activities that can be used in future teaching through participation in class.
- The students will demonstrate knowledge of sport/activity specific skills, drills, rules and strategies and their applications to Secondary PE settings as demonstrated on an exam.
- The students wil demonstrate how to teach a sport/activity specific skill, drill, or strategy through a group teaching assignment.
- Demonstrate skill ability in the basic sport/activity skills through a skill assessment.

PETE 300 : Advocacy for Physical Education. (2:2:0)

WHEN TAUGHT: Fall
PREREQUISITE: Admittance into PETE program.
DESCRIPTION: Historical and sociological cornerstones of physical education.

**Course Outcomes**

- The students will use the knowledge and experience of the past to understand the programs of today and apply it toward building programs of the future.
- The students will interpret and communicate knowledge and experience in both written and verbal forms.
- The students will demonstrate an understanding of the principles of effective advocacy in the K-12 school teaching setting.
- The students will demonstrate an understanding of the history of physical education and its impact on the future.

PETE 301 : K-12 Healthy and Active Lifestyle Management. (2:2:0)

WHEN TAUGHT: Winter
PREREQUISITE: Admittance into PETE program.
DESCRIPTION: Understanding the content and pedagogical knowledge required to manage a healthy and active lifestyle; how to impart this knowledge to public school students.

**Course Outcomes**

- Learn and apply lifestyle (nutrition/weight control and physical activity) management skills in their personal lives.
- Demonstrate understanding of current curricular trends specific to healthy lifestyle choices such as the health club model.
- Demonstrate understanding and ability to design, implement and manage a healthy and active school environment program.
- Demonstrate understanding of the Wellness and Nutrition act and its implications in the public school setting.
- Demonstrate understanding and application of concepts specific to healthy and active lifestyle management and their accompanying pedagogical strategies.

PETE 364 : Scientific Bases of Sport: Motor Learning. (2:2:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Motor learning principles for physical education and coaching.

**Course Outcomes**

There are no course outcomes available

PETE 399R : Academic Internship: Coaching. (1-4:0:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Advisor's consent.
DESCRIPTION: On-the-job experience in coaching.

**Course Outcomes**

- Students will demonstrate their ability to coach a variety of sports in the 7-12 classroom.

(1 hour required)

PETE 430 : Principles of Coaching. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Developing a philosophy of coaching; understanding coaching responsibilities and techniques; preparing athletes; valuing professional relationships with others.

**Course Outcomes**

- Develop a philosophy of coaching and officiating after discussion of the psychological, physiological and sociological implication of coaching students.
- Gain an understanding of various coaching responsibilities and team organizational procedures such as: public relations, team selection, motivation, scheduling, etc.
- Understand the student-athlete and the techniques of team leadership and interaction.
- Become acquainted with a variety of coaching techniques.
- Explore player preparation in the areas of conditioning, skill acquisition, and evaluation.
- Become aware of the literature and resources available to aid coaches.
- Participate in an extensive class project.
- Gain an understanding of preparation necessary for becoming an official for youth sports.
- Develop an understanding of and be able to make application of rules and strategies relating to specific sports.
- Develop an understanding of methods to develop a professional relationship with coaches, administrators, officials, fans, parents, and players.
- Learn to observe and critique game official's performance from a professional viewpoint.

RECM 123 : Introduction to Outdoor Recreation Activities. (2:1:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Participation in a variety of outdoor activities.

**Course Outcomes**

There are no course outcomes available

6. Complete two courses from the following:

STAC 107 : Pilates. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Pilates strengthens and tones muscles, improves posture, provides flexibility and balance, unites body and mind, and enables a sense of mental control.

**Course Outcomes**

- Students will learn how to perform a safe and effective workout for total body fitness.
- Students will evaluate their own physical fitness and set individual goals for improvement.
- Students will demonstrate an understanding of basic scientific principles regarding cardiovasular endurance, strength, flexibility, and lean/fat body ratio.

STAC 108 : Zumba. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Zumba Fitness is a dance exercise program designed to bring about an increase in total body fitness for participants of all levels of condition, ability, and needs.

**Course Outcomes**

- Students will establish healthy perspectives on body image and appropriate health goals.
- Students will evaluate their own health and determine needed changes.
- Students will learn a variety of Latin, international, and folk dance movements adapted for the purpose of exercise.
- Students will gain an understanding of basic principles of exercise, physiology, and health maintenance.

STAC 109 : Yoga. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Yoga teaches how to exercise and/or meditate in order to unify the mind, body and spirit, feeling quiet in your mind, strong and energized in your body, and peaceful in your spirit.

**Course Outcomes**

- Students will demonstrate an understanding of basic yoga principles and practices.
- Students will learn basic sequencing and alignment for an Ashtanga Vinyasa practice.
- Students will develop a yoga practice that supports and honors their bodies.

STAC 110 : Indoor Cycling. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Students in the class will be guided through weekly cycling exercise sessions to improve their cardiovascular fitness and aerobic endurance as well as increase their leg muscle strength and power.

**Course Outcomes**

- Students will learn proper bicycle positioning skills and techniques to provide comfort, safety and efficiency while cycling.

- Students will learn some basica principles of endurance training and be exposed to a variety of cycling exercise programs designed to develop muscular endurance, strength and power.
- Students will understand basic principles of nutrition and hydration to support endurance exercise performance.

STAC 125 : Flexibility. (.5:0:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Demonstrate the ability to assess flexibility progress through the completion of pre and post tests.
- Demonstrate an understanding of the strategies behind and importance of flexibility to improve and maintain good health by passing a written test.
- Demonstrate the ability to make life changing decisions about health and fitness by writing a one-month flexibility program.

STAC 141 : Martial Arts. (.5:0:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Show and explain proper etiquette expected in martial arts in a written examination and through daily class activities.
- Perform basic grappling control tactics in class to defeat larger and stronger opponents.
- Participate in grappling martial art competition.

STAC 155 : Self-Defense. (.5:0:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Fundamental principles, skills, and techniques.

**Course Outcomes**

- Demonstrate the punch, kick, strike, and block skills used to evade or excape an attack by passing a simulation test.
- Demonstrate a knowledge of effective responses (verbal, physical, use of objects) to escape from an attack by passing a written exam.

STAC 171 : Swimming, Beginning. (.5:0:2)
WHEN TAUGHT: Fall; Winter; Spring

**Course Outcomes**

- Demonstrate proper form and technique in the standard swimming strokes (freestyle, backstroke, and breaststroke).
- Demonstrate a beginning swimming fitness level by completing a 500-yard swim test.
- Demonstrate ability to correctly set up swimming workouts by submitting a sample workout.

STAC 172 : Swimming, Intermediate. (.5:0:2)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ExSc 171 or equivalent.

**Course Outcomes**

- Demonstrate proper form and technique in all four competitive strokes.
- Demonstrate an intermediate swimming fitness level by completing a 650-yard swim test.

STAC 191 : Weight Training, Beginning. (.5:0:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Demonstrate an understanding of the concepts and strategies associated with weight training by passing a written exam.
- Demonstrate a foundation of muscle strength by taking a muscle strength test.

7. Complete one course from the following:

PETE 330R : Coaching Selected Sports. (2:1:2)
WHEN TAUGHT: Winter
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching golf, tennis, or wrestling.

**Course Outcomes**

- Understand procedures, guidelines, and duties of the coach as they relate to risk management.
- Gain an understanding of offense, defense, special situations, and philosophy.
- Understand the importance of discussing the sport, how it should be taught, and safety procedures with other coaches.
- Demonstrate knowledge of the rules and strategies of your selected sport.

PETE 335 : Coaching Competitive Swimming. (2:1:2)

WHEN TAUGHT: Fall
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching swimming.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of your selected sport .

PETE 341 : Coaching Basketball. (2:1:2)
WHEN TAUGHT: Fall
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching basketball.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of your selected sport .

PETE 342 : Coaching Track and Field. (2:1:2)
WHEN TAUGHT: Fall
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching track and field.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of your selected sport .

PETE 344 : Coaching Football. (2:1:2)
WHEN TAUGHT: Winter
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching football.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of football .

PETE 345 : Coaching Volleyball. (2:1:2)
WHEN TAUGHT: Winter
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching volleyball.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of volleyball .

PETE 346 : Coaching Baseball and Softball. (2:1:2)
WHEN TAUGHT: Fall
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching baseball and softball.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of baseball and softbball.

PETE 347 : Coaching Soccer. (2:1:2)
WHEN TAUGHT: Fall
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching soccer.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of soccer .

8. Complete the Professional Education Component:
   - Complete the following:

PETE 274 : Fundamental Skills and Teaching Methods for Elementary Physical Education. (3:2:2)
WHEN TAUGHT: Fall
PREREQUISITE: Concurrent enrollment in PETE 230; FBI fingerprint and background clearance.
DESCRIPTION: Identifying and demonstrating fundamental skills; identifying immature and mature movement patterns; selecting developmentally appropriate activities; appropriate management techniques.

**Course Outcomes**

- Demonstrate an understanding of the National Standards for Elementary School Physical Education
- Learn the tools to effectively manage and instruct a classroom
- Learn, select and implement in your lessons management and instruction strategies based on developmental levels, and safety issues.
- Apply activities and techniques that encourages learners to see, question, and interpret physical

activity from diverse perspectives

PETE 276R : Exploration of Teaching. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: PETE 230 & PETE 274; FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

- The students will demonstrate an understanding of the National Standards in relationship to junior high school students.
- The students will demonstrate attitudes and behaviors that exhibit professionalism.
- The students will demonstrate traditional and authentic assessment strategies by applying them to an assigned unit of instruction, creating objectives and designing assessments to meet those objectives in all three learning domains completing two sections of the Teacher Work Sample (TWS).
- The students will write developmentally appropriate lesson plans for junior high school students using the known characteristics of junior high students.
- The students will demonstrate the ability to identify the current trends in physical education assessment and grading strategies.
- The students will model appropriate instruction and management skills when teaching junior high students.

PETE 377 : Secondary Practicum. (3:1:3)

WHEN TAUGHT: Fall

PREREQUISITE: PETE 231 & PETE 276R; FBI fingerprint and background clearance.

DESCRIPTION: Written and practical teaching assignments designed to help prospective teachers plan, conduct, and evaluate lessons and unit plans appropriate to adolescent students.

**Course Outcomes**

- The students will understand the tasks associated with the effective running of a physical education program.
- The students will incorporate effective management and instructional strategies when teaching.
- The students will understand types of tournaments and when to use them.
- The students will adapt the discipline plan that they created in ScEd 276 and make it applicable for high school students.
- The students will understand how to integrate reading skills into the physical education curriculum by passing the reading assignments.
- The students will demonstrate competency in instructional design principles by completing a unit plan of instruction and passing the assignment.

PETE 461 : Adapted and Multicultural Physical Education for Teaching Majors. (3:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Legal mandates, assessing and identifying special needs students, multicultural issues, and management and instructional techniques.

**Course Outcomes**

- *Identify, select, and implement appropriate instruction that is sensitive to the strength/weaknesses, multiple needs, learning style, and experiences of diverse learners.
- *Use appropriate strategies, services, and resources to meet special and diverse learning needs.
- *Create a learning environment which respects and incorporates learners' personal, family, cultural, and community experiences
- Know the principles that address the physiological and biomechanical applications encountered when working with diverse populations.
- Know how to assess and evaluate students with disabilities in order to make appropriate decisions about special services and program components.
- Know how to teach students with disabilities integrated in regular physical education programs.
- Learn how to provide consultation and staff development activities related to students with disabilities and their IEP.
- Learn how to work and attend to the needs of multicultural students integrated in physical education

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

SC ED 350 : Adolescent Development in an Education Context. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Adolescent development and its implications for integrated school culture, curriculum design, instructional practices, and assessment.

**Course Outcomes**

- The students will demonstrate how the stages of development impact instructional practices.
- The students will understand the social, physical, and cognitive developmental stages of adolescence in relation to the tasks of automony, identity and intimacy.
- The students will demonstrate how the stages of development impact classroom environments and management.

**Note:** FBI fingerprinting and background clearance must be completed prior to enrollment in PETE 276R.

- Complete 12 hours of one of the following:

PETE 476R : Student Teaching - Physical Education (12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

SC ED 496R : Academic Internship: Secondary Education. (12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will demonstrate that they can teach, manage, and assess content area knowledge and skills in the 7-12 classroom.
- Foster relationships with school colleagues, parents, and the larger community.

: Academic Internship: Social Sciences.

**Course Outcomes**

: Academic Internship: English.

**Course Outcomes**

: Academic Internship: Mathematics.

**Course Outcomes**

: Academic Internship: Biological Sciences.

**Course Outcomes**

: Academic Internship: Physical Sciences.

**Course Outcomes**

**Note:** PETE 399R must be completed before PETE 476R and SC ED 496R.

9. Complete the senior exit interview.
10. Complete the PRAXIS II exam.

*Hours include courses that may fulfill university core requirements.

## Show all Physical Education Teacher Education Courses

**David O. McKay School of Education Home**

**Teacher Education Department Home**

**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# Minor in Physical Education Teaching/Coaching (24 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements | View MAP

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following:

EXSC 320 : Basic Athletic Training. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PDBIO 220; Some majors require concurrent enrollment in ExSc 321. Check MAP requirements for major.
DESCRIPTION: Recognition, evaluation, and care of athletic injuries. Techniques in taping, preventing, and rehabilitating injuries.

**Course Outcomes**

- Review general responsibilities, roles, and tasks of athletic trainers, physical therapists, and otherallied health professionals involved in sports medicine.
- Learn assessment, first aid, and treatments for common musculoskeletal injuries.
- Examine methods of injury prevention including conditioning principles, environmental hazards,and protective equipment.
- Learn and utilize resources available to sports medicine professionals.
- Apply knowledge to practical situations.

EXSC 321 : Basic Athletic Training Lab. (.5:0:.5)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Concurrent enrollment in ExSc 320.
NOTE: Fee.

**Course Outcomes**

- Demonstrate competency and proficiency in taping the ankle, foot, lower leg, knee, thigh/hip,shoulder, elbow, wrist, thumb, and finger joints.
- Demonstrate competency and proficiency in wrapping the ankle, foot, lower leg, thigh/hip,shoulder, elbow, wrist, thumb, and finger joints.
- Demonstrate competency and profiency in wound care management.
- Demonstrate competency and profiency in injury evaluation.
- Demonstrate competency and profiency in injury treatment management.
- Demonstrate competency and profiency in spineboarding and splinting.

EXSC 365 : Scientific Bases of Sport: Kinesiology. (2:2:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Kinesiology and biomechanics for physical education/coaching minor.

**Course Outcomes**

- Students will demonstrate how to apply physical laws to human performance. Included physical laws deal with: Linear motion, projectile motion, forces, impulse and momentum, fluid mechanics, and tissue mechanics.

EXSC 366 : Scientific Bases of Sport: Exercise Physiology. (2.5:2:0)
WHEN TAUGHT: Winter
RECOMMENDED: PDBio 305.
DESCRIPTION: Physiology of activity for physical education teaching students.

**Course Outcomes**

There are no course outcomes available

PETE 229 : Physical Education Pedagogy. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PETE 234; physical education/coaching minor status.

DESCRIPTION: Sport pedagogy for students minoring in coaching and teaching physical education.

**Course Outcomes**

- Acquire the basic knowledge and skills necessary to effectively help secondary students become physically educated.
- Understand current instructional methods and the theories upon which they are based.
- Develop and demonstrate the ability to teach using a variety of teaching styles and methods effectively in the physical education setting.
- Learn the tools to effectively manage and instruct a physical education classroom.
- Analyze and evaluate your teaching performance by watching the video of each of your teaching performance and completing a self-evaluation form setting goals and strategies to be implemented in the next lesson.
- Learn how to be an effective observer and evaluator of your peer by completing a peer evaluation form for each lesson taught.

PETE 234 : Team Sport Fundamental and Fitness for Life. (2:0:4)

WHEN TAUGHT: Fall

PREREQUISITE: Physical education/coaching minor status.

DESCRIPTION: Skills, content, and pedagogical knowledge in team sports: soccer, basketball, volleyball, and football. Also covers Fitness for Life.

**Course Outcomes**

There are no course outcomes available

PETE 300 : Advocacy for Physical Education. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admittance into PETE program.

DESCRIPTION: Historical and sociological cornerstones of physical education.

**Course Outcomes**

- The students will use the knowledge and experience of the past to understand the programs of today and apply it toward building programs of the future.
- The students will interpret and communicate knowledge and experience in both written and verbal forms.
- The students will demonstrate an understanding of the principles of effective advocacy in the K-12 school teaching setting.
- The students will demonstrate an understanding of the history of physical education and its impact on the future.

PETE 301 : K-12 Healthy and Active Lifestyle Management. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Admittance into PETE program.

DESCRIPTION: Understanding the content and pedagogical knowledge required to manage a healthy and active lifestyle; how to impart this knowledge to public school students.

**Course Outcomes**

- Learn and apply lifestyle (nutrition/weight control and physical activity) management skills in their personal lives.
- Demonstrate understanding of current curricular trends specific to healthy lifestyle choices such as the health club model.
- Demonstrate understanding and ability to design, implement and manage a healthy and active school environment program.
- Demonstrate understanding of the Wellness and Nutrition act and its implications in the public school setting.
- Demonstrate understanding and application of concepts specific to healthy and active lifestyle management and their accompanying pedagogical strategies.

PETE 364 : Scientific Bases of Sport: Motor Learning. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Motor learning principles for physical education and coaching.

**Course Outcomes**

There are no course outcomes available

PETE 430 : Principles of Coaching. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Developing a philosophy of coaching; understanding coaching responsibilities and techniques; preparing athletes; valuing professional relationships with others.

**Course Outcomes**

- Develop a philosophy of coaching and officiating after discussion of the psychological, physiological and sociological implication of coaching students.
- Gain an understanding of various coaching responsibilities and team organizational procedures such as: public relations, team selection, motivation, scheduling, etc.
- Understand the student-athlete and the techniques of team leadership and interaction.
- Become acquainted with a variety of coaching techniques.
- Explore player preparation in the areas of conditioning, skill acquisition, and evaluation.
- Become aware of the literature and resources available to aid coaches.
- Participate in an extensive class project.
- Gain an understanding of preparation necessary for becoming an official for youth sports.
- Develop an understanding of and be able to make application of rules and strategies relating to specific sports.
- Develop an understanding of methods to develop a professional relationship with coaches, administrators, officials, fans, parents, and players.
- Learn to observe and critique game official's performance from a professional viewpoint.

3. Complete a minimum of 1 hour from the following:

PETE 399R : Academic Internship: Coaching. (1-4:0:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Advisor's consent.
DESCRIPTION: On-the-job experience in coaching.

**Course Outcomes**

- Students will demonstrate their ability to coach a variety of sports in the 7-12 classroom.

4. Complete one course from the following:

PETE 330R : Coaching Selected Sports. (2:1:2)

WHEN TAUGHT: Winter
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching golf, tennis, or wrestling.

**Course Outcomes**

- Understand procedures, guidelines, and duties of the coach as they relate to risk management.
- Gain an understanding of offense, defense, special situations, and philosophy.
- Understand the importance of discussing the sport, how it should be taught, and safety procedures with other coaches.
- Demonstrate knowledge of the rules and strategies of your selected sport.

PETE 335 : Coaching Competitive Swimming. (2:1:2)

WHEN TAUGHT: Fall
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching swimming.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of your selected sport .

PETE 341 : Coaching Basketball. (2:1:2)

WHEN TAUGHT: Fall
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching basketball.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of your selected sport .

PETE 342 : Coaching Track and Field. (2:1:2)

WHEN TAUGHT: Fall
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching track and field.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of your selected sport .

PETE 344 : Coaching Football. (2:1:2)

WHEN TAUGHT: Winter
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching football.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of football .

PETE 345 : Coaching Volleyball. (2:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching volleyball.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of volleyball .

PETE 346 : Coaching Baseball and Softball. (2:1:2)

WHEN TAUGHT: Fall
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching baseball and softball.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of baseball and softbball.

PETE 347 : Coaching Soccer. (2:1:2)

WHEN TAUGHT: Fall
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching soccer.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of soccer .

**Show all Exercise Sciences Courses**

**David O. McKay School of Education Home**

**Teacher Education Department Home**

**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# Physical Education Teaching Education (PETE)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

PETE 169 : Elementary Skills and Activities. (1:0:2)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Physical skills and activities specific to elementary-age children.
NOTE: Required for elementary education majors.

**Course Outcomes**

- 1. The students will develop the skills for physical education activities taught in elementary schools.

### 200-Level Courses

PETE 212 : Physical Education for Elementary School Teachers. (2:1:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PETE 169; FBI fingerprint and background clearance.

**Course Outcomes**

- The students will Interact with students with special needs.
- The students will explore interactions of students in the classroom.

PETE 229 : Physical Education Pedagogy. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: PETE 234; physical education/coaching minor status.
DESCRIPTION: Sport pedagogy for students minoring in coaching and teaching physical education.

**Course Outcomes**

- Acquire the basic knowledge and skills necessary to effectively help secondary students become physically educated.
- Understand current instructional methods and the theories upon which they are based.
- Develop and demonstrate the ability to teach using a variety of teaching styles and methods effectively in the physical education setting.
- Learn the tools to effectively manage and instruct a physical education classroom.
- Analyze and evaluate your teaching performance by watching the video of each of your teaching performance and completing a self-evaluation form setting goals and strategies to be implemented in the next lesson.
- Learn how to be an effective observer and evaluator of your peer by completing a peer evaluation form for each lesson taught.

PETE 230 : K-12 Physical Activities Content and Skills 1. (2:2:0)

WHEN TAUGHT: Fall
PREREQUISITE: Admittance into PETE program.
DESCRIPTION: Skills, content, and pedagogical knowledge in lifetime activities: golf, soccer, tennis. Also covers Fitness for Life and legal issues in PE.

**Course Outcomes**

- Demonstrate proper technique for the major skills of each sport
- Develop basic skills for each sport/activity
- Learn the basic rules of each sport/activity
- Learn basic drills and lead-up games for each sport
- Understand how to ensure safety in the physical education program, focusing on prevention

PETE 231 : K-12 Physical Activities Content and Skills 2. (2:2:0)

WHEN TAUGHT: Winter
PREREQUISITE: Admittance into PETE program.
DESCRIPTION: Skills, content, and pedagogical knowledge in lifetime activities: aerobics, badminton, basketball, flag football, and

volleyball.

**Course Outcomes**

- The students will know a variety of sport/activity specific drills and activities that can be used in future teaching through participation in class.
- The students will demonstrate knowledge of sport/activity specific skills, drills, rules and strategies and their applications to Secondary PE settings as demonstrated on an exam.
- The students wil demonstrate how to teach a sport/activity specific skill, drill, or strategy through a group teaching assignment.
- Demonstrate skill ability in the basic sport/activity skills through a skill assessment.

PETE 234 : Team Sport Fundamental and Fitness for Life. (2:0:4)

WHEN TAUGHT: Fall

PREREQUISITE: Physical education/coaching minor status.

DESCRIPTION: Skills, content, and pedagogical knowledge in team sports: soccer, basketball, volleyball, and football. Also covers Fitness for Life.

**Course Outcomes**

There are no course outcomes available

PETE 274 : Fundamental Skills and Teaching Methods for Elementary Physical Education. (3:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in PETE 230; FBI fingerprint and background clearance.

DESCRIPTION: Identifying and demonstrating fundamental skills; identifying immature and mature movement patterns; selecting developmentally appropriate activities; appropriate management techniques.

**Course Outcomes**

- Demonstrate an understanding of the National Standards for Elementary School Physical Education
- Learn the tools to effectively manage and instruct a classroom
- Learn, select and implement in your lessons management and instruction strategies based on developmental levels, and safety issues.
- Apply activities and techniques that encourages learners to see, question, and interpret physical activity from diverse perspectives

PETE 276R : Exploration of Teaching. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: PETE 230 & PETE 274; FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

- The students will demonstrate an understanding of the National Standards in relationship to junior high school students.
- The students will demonstrate attitudes and behaviors that exhibit professionalism.
- The students will demonstrate traditional and authentic assessment strategies by applying them to an assigned unit of instruction, creating objectives and designing assessments to meet those objectives in all three learning domains completing two sections of the Teacher Work Sample (TWS).
- The students will write developmentally appropriate lesson plans for junior high school students using the known characteristics of junior high students.
- The students will demonstrate the ability to identify the current trends in physical education assessment and grading strategies.
- The students will model appropriate instruction and management skills when teaching junior high students.

### 300-Level Courses

PETE 300 : Advocacy for Physical Education. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admittance into PETE program.

DESCRIPTION: Historical and sociological cornerstones of physical education.

**Course Outcomes**

- The students will use the knowledge and experience of the past to understand the programs of today and apply it toward building programs of the future.
- The students will interpret and communicate knowledge and experience in both written and verbal forms.
- The students will demonstrate an understanding of the principles of effective advocacy in the K-12 school teaching setting.
- The students will demonstrate an understanding of the history of physical education and its impact on the future.

PETE 301 : K-12 Healthy and Active Lifestyle Management. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Admittance into PETE program.

DESCRIPTION: Understanding the content and pedagogical knowledge required to manage a healthy and active lifestyle; how to impart this knowledge to public school students.

**Course Outcomes**

- Learn and apply lifestyle (nutrition/weight control and physical activity) management skills in their personal lives.
- Demonstrate understanding of current curricular trends specific to healthy lifestyle choices such as the health club model.
- Demonstrate understanding and ability to design, implement and manage a healthy and active school environment program.
- Demonstrate understanding of the Wellness and Nutrition act and its implications in the public school setting.
- Demonstrate understanding and application of concepts specific to healthy and active lifestyle management and their accompanying pedagogical strategies.

PETE 330R : Coaching Selected Sports. (2:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.

DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching golf, tennis, or wrestling.

**Course Outcomes**

- Understand procedures, guidelines, and duties of the coach as they relate to risk management.
- Gain an understanding of offense, defense, special situations, and philosophy.
- Understand the importance of discussing the sport, how it should be taught, and safety procedures with other coaches.
- Demonstrate knowledge of the rules and strategies of your selected sport.

PETE 335 : Coaching Competitive Swimming. (2:1:2)

WHEN TAUGHT: Fall

PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.

DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching swimming.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of your selected sport .

PETE 341 : Coaching Basketball. (2:1:2)

WHEN TAUGHT: Fall

PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.

DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching basketball.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of your selected sport .

PETE 342 : Coaching Track and Field. (2:1:2)

WHEN TAUGHT: Fall

PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.

DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching track and field.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of your selected sport .

PETE 344 : Coaching Football. (2:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: Appropriate skills and teaching techniques class or equivalent

DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching football.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of football .

PETE 345 : Coaching Volleyball. (2:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.

DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching volleyball.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of volleyball .

PETE 346 : Coaching Baseball and Softball. (2:1:2)

WHEN TAUGHT: Fall

PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.

DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching baseball and softball.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of baseball and softbball.

PETE 347 : Coaching Soccer. (2:1:2)

WHEN TAUGHT: Fall
PREREQUISITE: Appropriate skills and teaching techniques class or equivalent.
DESCRIPTION: Theory, fundamentals, strategies, and techniques of coaching soccer.

**Course Outcomes**

- The students will demonstrate knowledge of the rules and strategies of soccer .

PETE 364 : Scientific Bases of Sport: Motor Learning. (2:2:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Motor learning principles for physical education and coaching.

**Course Outcomes**

There are no course outcomes available

PETE 377 : Secondary Practicum. (3:1:3)

WHEN TAUGHT: Fall
PREREQUISITE: PETE 231 & PETE 276R; FBI fingerprint and background clearance.
DESCRIPTION: Written and practical teaching assignments designed to help prospective teachers plan, conduct, and evaluate lessons and unit plans appropriate to adolescent students.

**Course Outcomes**

- The students will understand the tasks associated with the effective running of a physical education program.
- The students will incorporate effective management and instructional strategies when teaching.
- The students will understand types of tournaments and when to use them.
- The students will adapt the discipline plan that they created in ScEd 276 and make it applicable for high school students.
- The students will understand how to integrate reading skills into the physical education curriculum by passing the reading assignments.
- The students will demonstrate competency in instructional design principles by completing a unit plan of instruction and passing the assignment.

PETE 399R : Academic Internship: Coaching. (1-4:0:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Advisor's consent.
DESCRIPTION: On-the-job experience in coaching.

**Course Outcomes**

- Students will demonstrate their ability to coach a variety of sports in the 7-12 classroom.

**400-Level Courses**

PETE 430 : Principles of Coaching. (2:2:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Developing a philosophy of coaching; understanding coaching responsibilities and techniques; preparing athletes; valuing professional relationships with others.

**Course Outcomes**

- Develop a philosophy of coaching and officiating after discussion of the psychological, physiological and sociological implication of coaching students.
- Gain an understanding of various coaching responsibilities and team organizational procedures such as: public relations, team selection, motivation, scheduling, etc.
- Understand the student-athlete and the techniques of team leadership and interaction.
- Become acquainted with a variety of coaching techniques.
- Explore player preparation in the areas of conditioning, skill acquisition, and evaluation.
- Become aware of the literature and resources available to aid coaches.
- Participate in an extensive class project.
- Gain an understanding of preparation necessary for becoming an official for youth sports.
- Develop an understanding of and be able to make application of rules and strategies relating to specific sports.
- Develop an understanding of methods to develop a professional relationship with coaches, administrators, officials, fans, parents, and players.
- Learn to observe and critique game official's performance from a professional viewpoint.

PETE 450 : Psychology of Sport. (2:2:0)

WHEN TAUGHT: Fall
DESCRIPTION: Basic overview of sports psychology.

**Course Outcomes**

There are no course outcomes available

PETE 461 : Adapted and Multicultural Physical Education for Teaching Majors. (3:2:1)

WHEN TAUGHT: Winter
PREREQUISITE: FBI fingerprint and background clearance.
DESCRIPTION: Legal mandates, assessing and identifying special needs students, multicultural issues, and management and

instructional techniques.

**Course Outcomes**

- *Identify, select, and implement appropriate instruction that is sensitive to the strength/weaknesses, multiple needs, learning style, and experiences of diverse learners.
- *Use appropriate strategies, services, and resources to meet special and diverse learning needs.
- *Create a learning environment which respects and incorporates learners' personal, family, cultural, and community experiences
- Know the principles that address the physiological and biomechanical applications encountered when working with diverse populations.
- Know how to assess and evaluate students with disabilities in order to make appropriate decisions about special services and program components.
- Know how to teach students with disabilities integrated in regular physical education programs.
- Learn how to provide consultation and staff development activities related to students with disabilities and their IEP.
- Learn how to work and attend to the needs of multicultural students integrated in physical education

PETE 476R : Student Teaching - Physical Education (12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

**Back to Physical Education Teaching/Coaching (K-12) program**

**Back to Teacher Education Department Home**

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**Teacher Education Department Home**

**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# Secondary Education (Sc Ed)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 200-Level Courses

SC ED 250 : Literacy and Learning for the Disciplines. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: An investigation of the literacies needed to participate in the various disciplines and the support needed to learn those literacies.

**Course Outcomes**

There are no course outcomes available

SC ED 276R : Exploration of Teaching. (3-4:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major-area preadmission requirements; FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

No outcomes are available at this time.

### 300-Level Courses

SC ED 350 : Adolescent Development in an Education Context. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Adolescent development and its implications for integrated school culture, curriculum design, instructional practices, and assessment.

**Course Outcomes**

- The students will demonstrate how the stages of development impact instructional practices.
- The students will understand the social, physical, and cognitive developmental stages of adolescence in relation to the tasks of autonomy, identity and intimacy.
- The students will demonstrate how the stages of development impact classroom environments and management.

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.

Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or HIth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.

DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

SC ED 377R : Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major-specific program requirements.

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- The students will understand and implement a variety of teaching strategies in teaching content in secondary classrooms.
- The students will link assessment to learning goals and strategies in teaching content in secondary classrooms.
- Students will create learning objectives to meet content and instructional goals.

SC ED 379 : Classroom Management. (1:1:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Concurrent enrollment in Sc Ed 377R and 378, or equivalent major courses; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or HIth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Current theory, research, and application in classroom management; creating positive teacher-student and peer relationships; developing optimal learning environments.

**Course Outcomes**

- The student will create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.
- The student will plan instruction based upon knowledge of subject matter, students, the community, and curriculum goals.
- The student will be a reflective practitioner who continually evaluates the effects of his or her choices, and who actively seeks out opportunities to grow professionally.

SC ED 380 : Content-Area Literacy. (2:2:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Concurrent enrollment in Sc Ed 377 or equivalent course.

DESCRIPTION: Current theory and related practices in literacy assessment and instruction for content-area classrooms.

**Course Outcomes**

- Teacher candidates will gain an understanding of theories related to literacy, reading, writing, texts, and literacy instruction.
- Teacher candidates will use instructional strategies and design curriculum materials to support students' creation, negotiation, and use of texts.
- Teacher candidates will develop an understanding of the place of literacy instruction in content-area classrooms to support students' access to knowledge and participation in a social and political democracy.

**400-Level Courses**

SC ED 476R : Secondary Student-Teaching. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will put into practice the theories they have learned in content and pedagogy courses including planning lessons, assessing students of all abilities and cultural backgrounds, using a variety of instructional strategies, and collaborating with other teachers and with the community.

: Secondary Student Teaching - Art.

**Course Outcomes**

: Secondary Student Teaching - Foreign Language. (12:ARR:ARR)

**Course Outcomes**

: Secondary Student Teaching - French.

**Course Outcomes**

: Secondary Student Teaching - Mathematics.

**Course Outcomes**

: Secondary Student Teaching - Physical Science.

**Course Outcomes**

: Secondary Student Teaching - Social Science.

**Course Outcomes**

: Secondary Student Teaching - Spanish.

**Course Outcomes**

SC ED 490R : Senior Seminar. (.5-2:2:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- The candidates will reflect on their concurrent practicum experiences related to the professionalism aims of El Ed Program Learning Outcomes Grid: Demonstrate professional judgment in supporting and sustaining student learning and development. Demonstrate professional judgment and democratic character. Demonstrate professional judgment grounded in the conviction that all individuals can learn. Demonstrate professional judgment relative to self, students, colleagues and others.

SC ED 493R : Readings. (.5-2:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- Students will explore specific topics under the direction of a faculty member.

SC ED 496R : Academic Internship: Secondary Education. (12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will demonstrate that they can teach, manage, and assess content area knowledge and skills in the 7-12 classroom.
- Foster relationships with school colleagues, parents, and the larger community.

: Academic Internship: Social Sciences.

**Course Outcomes**

: Academic Internship: English.

**Course Outcomes**

: Academic Internship: Mathematics.

**Course Outcomes**

: Academic Internship: Biological Sciences.

**Course Outcomes**

: Academic Internship: Physical Sciences.

**Course Outcomes**

## 500-Level Graduate Courses (available to advanced undergraduates)

SC ED 589R : Special Topics in Education. (.5-3:Arr.:Arr.)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Topics vary.

NOTE: For recertification only. Must have prior approval of department to count toward graduate degrees.

**Course Outcomes**

- Candidates will explore special topics in secondary education under the direction of a specific instructor.

: Classroom Management.

**Course Outcomes**

: Writing Instruction.

**Course Outcomes**

: Effective Teaching.

**Course Outcomes**

: Sciences.

**Course Outcomes**

: Foundations of Literacy.

**Course Outcomes**

: Literacy Assessment and Intervention.

**Course Outcomes**

: Literature for Young People.

**Course Outcomes**

: Content-Area Literacy.

**Course Outcomes**

: Literacy Development and Instruction.

**Course Outcomes**

: Comprehension Instruction.

**Course Outcomes**

: Supervision of Literacy Programs.

**Course Outcomes**

: Literacy Specialist Practicum.

**Course Outcomes**

: Organization and Administration of Reading Programs.

**Course Outcomes**

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# Teaching English Language Learners Program

## Admission to TESOL K–12 and Dual-Language Immersion K-12 Teaching Minors

Only students completing teaching programs may enroll in these minors.

## The Discipline

Preparation to teach English to children and youth of other languages which involves multidisciplinary course work in a number of areas, including language acquisition; teaching methods and materials; educational programs; and family, school, and community partnerships.

The TESOL K–12 minor focuses on teaching students of limited English proficiency who are in the public schools of the United States.

## Career Opportunities

The TESOL K–12 minor meets the requirements, as approved by the Utah State Board of Education, leading to the Utah ESL endorsement. Earning this endorsement will enhance the career possibilities of licensed teachers.

## Undergraduate Programs and Degrees

Minors

- TESOL K–12
- Dual-Language Immersion K-12 Teaching

**David O. McKay School of Education Home**

**Teacher Education Department Home**

**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# Minor in TESOL K–12 (19 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach children who are English learners in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

**Notes:**

Courses must be taken in sequential order and meet all prerequisites. No more than two TELL courses may be taken in the same semester/term.

Because the TESOL K-12 minor is now part of the required major programs for elementary education, early childhood education, and special education mild/moderate, students enrolled in these majors will meet some of the course requirements within their major program. Please contact Education Student Services, 350 MCKB, (801) 422-3426 with any questions.

## Program Requirements

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete one of the following courses:

CPSE 425 : Foundations in Language Arts Instruction for Students with Disabilities. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Foundations in analyzing and delivering research-based language arts instruction to students with disabilities, including second language learners with disabilities.

**Course Outcomes**

- Describe the components of oral language.
- Describe the process of oral language development.
- Describe common communication disorders in children.
- Explain the interplay between culture and language.
- Explain the interplay between language and learning.
- Describe listening comprehension and its effect on learning.
- Describe the demands of learning English as a second language.
- Explain the cognitive processes for changing from spoken to written language.
- Explain the 5 component skills for reading.
- Administer DIBELS©Benchmark assessments for K-1.

ELANG 223 : Introduction to the English Language. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Overview of English from linguistic point of view, emphasizing structure of English and social, biological, and psychological aspects of language.

**Course Outcomes**

- Students will have acquired basic analytical tools in core areas of linguistics: phonology, morphology, syntax, semantics, and pragmatics.
- Students will be able to apply these analytical tools to English language data of various types, such as those involving aspects of variation, acquisition, and historical change.

EL ED 323 : Foundations of Literacy Development. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Admittance into elementary education program.

DESCRIPTION: Language and literacy development for first and second language learners including theoretical underpinnings, processes, historical foundations, and instructional contexts that support language and literacy development for all K-6 children.

**Course Outcomes**

- Explain, compare and critique theories of reading and writing processes and development with supporting research evidence. (IRA Standard 1.1.1)
- Explain and apply first language acquisition processes that support literacy development across

elementary years, e.g., cueing systems, vocabulary, teacher talk). (IRA Standard 1.1.2)
- Explain, apply, and compare/contrast knowedge about second language literacy development in context. (IRA Standard 1.1.3 & NCTE Standard 9)
- Explain and apply reading and writing development across elementary years, e.g., word recognition, language comprehension, strategic knowledge, spelling, qualities of good writing, and reading/writing connections. (IRA Standard 1.1.2)
- Identify and synthesize major milestones in literacy instruction.(IRA Standard 1.2.1)

3. Complete one of the following courses:

CPSE 480 : Educational and Multicultural Issues in Special Education. (3:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: FBI fingerprint background clearance.

DESCRIPTION: Special education issues: multicultural, historical, and legal foundations.

**Course Outcomes**

- KnowledgeDiffering ways of learning of individuals with exceptional learning needs including those from culturally diverse backgrounds and strategies for addressing these differences.
- Ways to create learning environments that allow individuals to retain and appreciate their own and each others' respective language and cultural heritage.
- Ways specific cultures are negatively stereotyped.
- Strategies used by diverse populations to cope with a legacy of former and continuing racism.
- Characteristics of one's own culture and use of language and the ways in which these can differ from other cultures and uses of languages.
- Ways of behaving and communicating among cultures that can lead to misinterpretation and misunderstanding.
- SkillsMediate controversial intercultural issues among students within the learning environment in ways that enhance any culture, group, or person.
- Students will interact with individuals from a culture different than their own.

EL ED 203 : Foundations of Multicultural Education. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status.

DESCRIPTION: Cultural identities in family life, physical attributes, culture, and language. Recognizing prejudice in individuals and institutions. Culturally and linguistically relevant pedagogical frameworks.

**Course Outcomes**

- Examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavior.
- Recognize and use a moral spiritual framework and the social science theoretical framework to guide multicultural and English language learner education.
- Recognize and acknowledge racism and discrimination in themselves, in others, and within institutions.
- Acknowledge the dynamics of how culture effects students' language learning and school success and teachers' teaching.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

4. Complete the following course:

TELL 410 : Second Language Acquisition. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: EL ED 323 & EL ED 203; or ELANG 223 & SC ED 353; or CPSE 425

DESCRIPTION: Processes and variables in native- and second-language development. How teachers can foster efficient acquisition of language, cognitive, and academic skills in second-language environments.

**Course Outcomes**

Candidates know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas

5. Complete one of the following courses:

CPSE 420 : Assessment and Evaluation of Students with Exceptional Needs. (3:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to special education program; FBI fingerprint background clearance.

DESCRIPTION: Determining present levels of performance, classifying students for special education services, and writing goals and objectives for IEP development.

**Course Outcomes**

- Demonstrate an understanding of the basic terminology used in an assessment.
- Discuss the ethical concerns related to assessment.
- Outline legal provisions, regulations and program standards regarding assessment.
- Identify the procedure used for screening, pre-referral, referral, and classification.
- Describe the application and interpretation of assessment scores, including grade score vs. standard score, percentile rank, age/grade equivalents, and standings.
- Identify, administer, select and describe the different types of non-biased assessments using appropriate technology when necessary.
- Discuss the components of and procedures for curriculum-based, portfolio, authentic, and functional assessment (informal test procedures), and apply these to different categories of exceptional children (e.g., L.D., E.D, & I.D.).
- Discuss the influence of diversity on assessment, eligibility, programming and placement of exceptional learners.
- Describe the relationship between assessment and placement decisions.
- Outline, develop or modify methods used for monitoring student progress.

IP&T 213 : Foundations of Instructional Design and Assessment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Elementary Education major status.

DESCRIPTION: Curriculum design and assessment theory, strategies, and tools for the K-6 classroom. Backward design and seamless assessment for informing and improving student performance.

**Course Outcomes**

- Teacher candidates will be able to describe, define and apply the principles and science of assessment to determine instructional needs, design and deliver effective instruction and communicate assessment results to appropriate audiences in a multi-tiered system of support.
- Teacher candidates will be able to describe their role and responsibility regarding curriculum standards and ensure that curriculum addresses the needs of diverse students.
- Teacher candidates will be able to synthesize and employ assessment evidence to inform instructional decision-making, interpret data to evaluate instruction, and apply a problem-solving process to address students' cognitive, social-emotional and linguistic learning needs within a multi-tiered system of support.
- Teacher candidates will be able to define, design and employ evidenced-based instructional practices within a multi-tiered system of support.

TELL 420 : Assessing Linguistically Diverse Students. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 223 & SC ED 353; or EL ED 203

DESCRIPTION: Fundamental concepts in testing, use/interpretation of current instruments for language/academic assessment, appropriate placement of linguistically diverse students, and developing classroom language assessments.

**Course Outcomes**

- Candidates will know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas.
- Candidates will demonstrate understanding of issues and concepts of assessment and use standards-based procedures with ELLs.

6. Complete one of the following courses:

CPSE 430 : Teaching Reading/Language Arts to Students with Disabilities. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent; FBI fingerprint background clearance

DESCRIPTION: Research-based methods for teaching language arts to students with disabilities.

**Course Outcomes**

- 1. Write IEP present levels of educational performance and, measurable annual goals for reading.
- 2. Demonstrate knowledge of core curriculum for reading and language arts
- 3. Task analyze learning objectives for reading and language arts
- 4. Plan daily lessons for reading and language arts.
- 5. Use Dynamic Indicators of Basic Early Literacy Skills (DIBELS) to benchmark and monitor reading progress of one early elementary student.
- 6. Choose reading materials to match student instructional reading levels.

7. Demonstrate the teaching of the 5 areas of the national reading panel
- 8. Demonstrate the teaching of writing.
- 9. Demonstrate the use of progress monitoring data to make instructional decisions.

EL ED 333 : Teaching Literacy in the Primary Grades (K-2). (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 323; Concurrent enrollment in El Ed 332.

DESCRIPTION: Instructional practices for teaching children the literacy concepts, skills, and strategies they need to learn in grades K-2. Assessing, monitoring, and evaluating children's literacy knowledge and learning in grades K-2.

**Course Outcomes**

There are no course outcomes available

TELL 430 : Developing K-12 Literacy in a Second Language. (2:2:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: ELANG 223 & SC ED 353 & TELL 410

DESCRIPTION: Instructional strategies, methodologies, and materials for developing reading and writing skills in a second language. Developing cognitive academic language proficiency and integrating multiple cultural perspectives.

**Course Outcomes**

- Candidates will know, understand, and use evidence-based practices and strategies related to planning, implementing, and managing standards-based ESL and content instruction.
- Candidates will know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas.
- Candidateswill integrate technology as well as choose and adapt classroom resources appropriate for their ELLs.

7. Complete the following course:

TELL 440 : Content-Based Language Instruction. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TELL 410 & TELL 420; or TELL 410 & IP&T 213; or TELL 410 & CPSE 420

RECOMMENDED: El Ed 333, TELL 430, and CPSE 430 concurrently.

DESCRIPTION: Instructional methods, strategies, and materials for integrating curriculum content and language instruction. Teaching, creating, and adapting lesson materials in a multicultural context.

**Course Outcomes**

- Candidates know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas.

8. Complete one of the following courses:

CPSE 460 : Collaborating with School and Family. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to special education program; CPSE 403 or equivalent.

DESCRIPTION: Foundations in collaborating with school professionals, para-professionals, and families of children with disabilities.

**Course Outcomes**

- 1. Define and address issues related to collaboration and other models of working together including:a. Teamsb. Consultationc. Team teaching
- 2. Demonstrate understanding of collaborating with the following:a. Other professionalsb. Paraeducatorsc. Families
- 3. Understand and demonstrate appropriate interpersonal skills including:a. Program solvingb. Communicationc. Using statementsd. Asking questionse. Handling difficult interactions

TELL 450 : Family, School, and Community Partnerships. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ELANG 223 & TELL 410 & SC ED 353; or EL ED 203 & EL ED 323

DESCRIPTION: Standards, principles, policies, and processes of partnering with parents, families, schools, and communities in fostering and sustaining the development of children and youth.

**Course Outcomes**

There are no course outcomes available

9. Complete four credit hours of one of the following after all the courses above have been completed:

TELL 477R : TESOL K-12 Student Teaching. (.5-4:0:4)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: TELL 440; FBI fingerprint background clearance.
DESCRIPTION: Supervised, full-day experience to develop and demonstrate competence in teaching English Learners in an approved public school setting. Observation is stressed initially, with responsibility for teaching increasing across the four-week experience.
NOTE: Can be taken concurrently with student teaching/internship in a diverse-language setting.

**Course Outcomes**

There are no course outcomes available

TELL 478R : Dual-Language Immersion K-12 Student Teaching. (.5-4:0:Arr.)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: TELL 435 & TELL 445; FBI fingerprint background clearance; Language teaching methods in the target language; Passing OPI at advanced-mid; Praxis II.
DESCRIPTION: Supervised, full-day experience to develop and demonstrate competence in teaching content in a foreign language in an approved public school setting. Observation is stressed initially, with responsibility for teaching increasing across the four-week experience.

**Course Outcomes**

There are no course outcomes available

## Show all Teaching English Language Learners (TELL) Courses

**David O. McKay School of Education Home**

**Teacher Education Department Home**

**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# Minor in Dual-Language Immersion K-12 Teaching (20 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

The Dual-Language Immersion K-12 Teaching Minor is offered through the Department of Teaching Education in the McKay School of Education. This minor prepares educators to teach in a public school setting where both English and one other approved foreign language are taught. Currently approved languages include Chinese, French, German, Portuguese, and Spanish. This minor can lead to a Dual-Language Immersion endorsement through the Utah State Office of Education.

Non-language teaching majors and minors: Students must pass the OPI at an advanced-mid level and the Praxis in the target language before they can start the Dual-Language Immersion minor. If a student does not pass, the student will be encouraged to take a conversational class in the language before taking the OPI and Praxis again and applying for the minor.

Language teaching majors and minors: Students must pass the OPI and Praxis before TELL 435. If a student does not pass, the student will be encouraged to take a conversational class in the language. If instructors believe students could pass OPI before taking TELL 435, they can make the decision to allow students into the class. However, if students do not pass the OPI and/or Language Praxis, they will not be allowed to continue on to TELL 445.

**Note:** Courses must be taken in sequential order and no more than two TELL courses can be taken in the same semester/term.

## Program Requirements

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
2. A multicultural course is required for this minor and must be taken before or concurrently with TELL 410. El Ed and ECE majors should take El Ed 203; secondary education majors should take Sc Ed 353.
3. Complete the following core courses:

FLANG 300 : Foundations of Dual Language and Immersion Education. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Historical overview, theoretical and research foundations for dual language and immersion education; practical application of theory and research in immersion programs.

**Course Outcomes**

- Discuss theoretical principles and research findings that underlie dual language and immersion education
- Explain differences and similarities between one-way, two-way, developmental bilingual and indigenous language immersion programs
- Summarize key principles of first and second language learning in dual language and immersion classrooms
- Discuss the social and political contexts for dual language education and their implications for classrooms and programs
- Synthesize lessons that can be learned from dual language and immersion programs around the world

TELL 410 : Second Language Acquisition. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: EL ED 323 & EL ED 203; or ELANG 223 & SC ED 353; or CPSE 425

DESCRIPTION: Processes and variables in native- and second-language development. How teachers can foster efficient acquisition of language, cognitive, and academic skills in second-language environments.

**Course Outcomes**

- Candidates know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas

TELL 420 : Assessing Linguistically Diverse Students. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 223 & SC ED 353; or EL ED 203

DESCRIPTION: Fundamental concepts in testing, use/interpretation of current instruments for language/academic

assessment, appropriate placement of linguistically diverse students, and developing classroom language assessments.

**Course Outcomes**

- Candidates will know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas.
- Candidates will demonstrate understanding of issues and concepts of assessment and use standards-based procedures with ELLs.

TELL 435 : Language and Literacy Instruction in K-12 Dual Immersion Settings. (3:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: FLANG 300 & TELL 410 & TELL 420; or FLANG 300 & TELL 410 & IP&T 213; OPI (Advanced-Mid), FBI fingerprint background clearance.

DESCRIPTION: Theory and rationale for developing language and literacy in two or more languages. Focus on the development of a variety of language arts and literacy instruction, techniques, methods, and theory in K-12 dual immersion classrooms.

**Course Outcomes**

- The students will identify the historical and legal foundations of bilingual/dual-immersion education and relate these to specific requirements and procedures in Utahl
- The students will identify different models of bilingual/dual-immersion programs in relation to characteristics of effective instructional practices in a variety of content subjects
- The students will identify and be able to articulate theories and philosophies of second language acquisition and language teaching in bilingual/dual-immersion instruction
- The students will create meaningful lesson plans and activities that demonstrate appropriate decision-making procedures to meet bilingual/dual-immersion educational program needs.
- The students will implement techniques, strategies, tasks, related to the teaching of content literacy and language in bilingual or dual-immersion programs in the classroom.

4. Complete the following after completing the core courses above:

TELL 445 : Content-Based Language Instruction in K-12 Dual-Language Immersion Settings. (3:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: TELL 435; OPI (Advanced-Mid), FBI fingerprint background clearance.

DESCRIPTION: Methods, theories, and practice for teaching language in content area subjects such as math, science, and social studies in K-12 dual immersion environments.

**Course Outcomes**

There are no course outcomes available

5. Complete one of the following target language teaching methods courses:

CHIN 377 : Chinese Language Teaching Procedures. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Chin 301 or instructor's consent.

DESCRIPTION: Acquiring knowledge and skills specific to teaching Chinese as a foreign language. Conducted in Chinese and English.

**Course Outcomes**

- Students will prepare lesson plans and implement their plans in teaching demonstrations (see Chinese major expected learning outcome 3).
- Learn to critically evaluate existing language materials and teaching methods, develop an understanding of curriculum design and materials development, and develop effective teaching materials (see Chinese major expected learning outcome 3).
- Demonstrate an understanding of the basic principles and methods of teaching the four language skills: listening, speaking, reading, and writing, within a cultural context (see Chinese major expected learning outcomes 1-3).
- Apply a knowledge of basic theories and methodologies for teaching a foreign language including being able to use a performance-based approach for teaching Chinese (see Chinese major expected learning outcome 3).

FREN 377 : Introduction to French Language Teaching. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Fren 321; FLang 276 (if a French teaching major)

DESCRIPTION: Language acquisition theories and instructional practices specific to French language classrooms. Includes teaching phonological features and pronunciation. Lectures, demonstrations, and microteaching.

NOTE: Taught in French and English.

**Course Outcomes**

- Design and deliver effective French instruction appropriate to learners' needs.
- Discuss and apply basic principles of language acquisition.
- Discuss and apply basic principles of formal and informal assessment.
- Reflect on and justify instructional choices and actions.
- Describe the phonological features of French and diagnose your own pronunciation problems.

GERM 377 : Methods in Teaching German. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GERM 303 & GERM 344 & FLANG 276

DESCRIPTION: Developing meaningful and engaging instruction for secondary students in German; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

There are no course outcomes available

PORT 377 : Methods of Portuguese Teaching. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Methods for planning Portuguese language and culture instruction, teaching communicative skills, and assessing students' learning. Course is geared toward instructors at K-12 as well as university level.

**Course Outcomes**

- Discuss historical trends in the teaching of foreign languages.
- Select and evaluate textbooks for teaching Portuguese.
- Plan thematic units and lessons incorporating theStandards for Foreign Language Learning.
- Plan and implement communicative activities for teaching speaking, listening, reading, and writing, as well as grammar and vocabulary, in a thematic context.
- Plan instruction about the cultural products, practices, and perspectives of Lusophone countries.
- Create and adapt various forms of assessment, including tests, project, rubrics and portfolios, to assess language and culture learning and provide feedback to students.
- Use technological tools for teaching languages and cultures, as well as for discussing and reflecting on professional themes with colleagues.
- Plan instruction that attends to the diverse needs of students, including Spanish speakers.

SPAN 377 : Spanish Teaching Methods 1. (3:3:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SPAN 321 & SPAN 326 & SPAN 345; or SPAN 321 & SPAN 326 & SPAN 355; Spanish Teaching major or minor status.

DESCRIPTION: History of language teaching methods; standards-based unit and lesson planning; strategies for teaching speaking, listening, reading, writing, grammar, and vocabulary.

**Course Outcomes**

- explain the benefits of studying a foreign language
- discuss major historical trends in foreign language teaching
- discuss ways of setting up your classroom to motivate students to learn Spanish
- select and evaluate textbooks for your program
- use the Standards for Foreign Language Learning to plan units and lessons
- plan and implement various methods for teaching oral skills (including pronunciation, conversation, games, and songs)
- plan and implement methods for teaching listening, reading, and writing
- plan and implement methods for teaching grammar and vocabulary

6. Complete four credit hours of the following after all the above courses have been completed:

TELL 478R : Dual-Language Immersion K-12 Student Teaching. (.5-4:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TELL 435 & TELL 445; FBI fingerprint background clearance; Language teaching methods in the target language; Passing OPI at advanced-mid; Praxis II.

DESCRIPTION: Supervised, full-day experience to develop and demonstrate competence in teaching content in a foreign language in an approved public school setting. Observation is stressed initially, with responsibility for teaching increasing across the four-week experience.

**Course Outcomes**

There are no course outcomes available

## Show all Teaching English Language Learners (TELL) Courses

**David O. McKay School of Education Home**

**Teacher Education Department Home**

**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# Teaching English Language Learners (TELL)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 400-Level Courses

TELL 400 : Foundations in Education for English Language Learners. (2:2:1)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Identifying and assessing legal, linguistic, cultural, community, and familial issues affecting access of Limited English Proficient (LEP) student populations to education.

**Course Outcomes**

- Candidates know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas.

TELL 410 : Second Language Acquisition. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: EL ED 323 & EL ED 203; or ELANG 223 & SC ED 353; or CPSE 425

DESCRIPTION: Processes and variables in native- and second-language development. How teachers can foster efficient acquisition of language, cognitive, and academic skills in second-language environments.

**Course Outcomes**

- Candidates know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas

TELL 420 : Assessing Linguistically Diverse Students. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 223 & SC ED 353; or EL ED 203

DESCRIPTION: Fundamental concepts in testing, use/interpretation of current instruments for language/academic assessment, appropriate placement of linguistically diverse students, and developing classroom language assessments.

**Course Outcomes**

- Candidates will know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas.
- Candidates will demonstrate understanding of issues and concepts of assessment and use standards-based procedures with ELLs.

TELL 430 : Developing K-12 Literacy in a Second Language. (2:2:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: ELANG 223 & SC ED 353 & TELL 410

DESCRIPTION: Instructional strategies, methodologies, and materials for developing reading and writing skills in a second language. Developing cognitive academic language proficiency and integrating multiple cultural perspectives.

**Course Outcomes**

- Candidates will know, understand, and use evidence-based practices and strategies related to planning, implementing, and managing standards-based ESL and content instruction.
- Candidates will know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas.
- Candidateswill integrate technology as well as choose and adapt classroom resources appropriate for their ELLs.

TELL 435 : Language and Literacy Instruction in K-12 Dual Immersion Settings. (3:2:1)

WHEN Winter

TAUGHT:

PREREQUISITE: FLANG 300 & TELL 410 & TELL 420; or FLANG 300 & TELL 410 & IP&T 213; OPI (Advanced-Mid), FBI fingerprint background clearance.

DESCRIPTION: Theory and rationale for developing language and literacy in two or more languages. Focus on the development of a variety of language arts and literacy instruction, techniques, methods, and theory in K-12 dual immersion classrooms.

**Course Outcomes**

- The students will identify the historical and legal foundations of bilingual/dual-immersion education and relate these to specific requirements and procedures in Utahl
- The students will identify different models of bilingual/dual-immersion programs in relation to characteristics of effective instructional practices in a variety of content subjects
- The students will identify and be able to articulate theories and philosophies of second language acquisition and language teaching in bilingual/dual-immersion instruction
- The students will create meaningful lesson plans and activities that demonstrate appropriate decision-making procedures to meet bilingual/dual-immersion educational program needs.
- The students will implement techniques, strategies, tasks, related to the teaching of content literacy and language in bilingual or dual-immersion programs in the classroom.

TELL 440 : Content-Based Language Instruction. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TELL 410 & TELL 420; or TELL 410 & IP&T 213; or TELL 410 & CPSE 420

RECOMMENDED: El Ed 333, TELL 430, and CPSE 430 concurrently.

DESCRIPTION: Instructional methods, strategies, and materials for integrating curriculum content and language instruction. Teaching, creating, and adapting lesson materials in a multicultural context.

**Course Outcomes**

- Candidates know, understand, and use the major theories and research related to the structure and acquisition of language to help English language learners' (ELLs') develop language and literacy and achieve in the content areas.

TELL 445 : Content-Based Language Instruction in K-12 Dual-Language Immersion Settings. (3:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: TELL 435; OPI (Advanced-Mid), FBI fingerprint background clearance.

DESCRIPTION: Methods, theories, and practice for teaching language in content area subjects such as math, science, and social studies in K-12 dual immersion environments.

**Course Outcomes**

There are no course outcomes available

TELL 450 : Family, School, and Community Partnerships. (2:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ELANG 223 & TELL 410 & SC ED 353; or EL ED 203 & EL ED 323

DESCRIPTION: Standards, principles, policies, and processes of partnering with parents, families, schools, and communities in fostering and sustaining the development of children and youth.

**Course Outcomes**

There are no course outcomes available

TELL 477R : TESOL K-12 Student Teaching. (.5-4:0:4)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: TELL 440; FBI fingerprint background clearance.

DESCRIPTION: Supervised, full-day experience to develop and demonstrate competence in teaching English Learners in an approved public school setting. Observation is stressed initially, with responsibility for teaching increasing across the four-week experience.

NOTE: Can be taken concurrently with student teaching/internship in a diverse-language setting.

**Course Outcomes**

There are no course outcomes available

TELL 478R : Dual-Language Immersion K-12 Student Teaching. (.5-4:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TELL 435 & TELL 445; FBI fingerprint background clearance; Language teaching methods in the target language; Passing OPI at advanced-mid; Praxis II.

DESCRIPTION: Supervised, full-day experience to develop and demonstrate competence in teaching content in a foreign language in an approved public school setting. Observation is stressed initially, with responsibility for teaching increasing across the four-week experience.

**Course Outcomes**

There are no course outcomes available

**David O. McKay School of Education Home**

**Teacher Education Department Home**

**Early Childhood Education Program**

Majors

- BS in Early Childhood Education

Course Information

- Early Childhood Education (ECE) Courses

**Elementary Education Program**

Majors

- BS in Elementary Education

Course Information

- Elementary Education (El Ed) Courses

**Secondary Education Program**

Majors

- BS in Physical Education Teaching/Coaching (K–12)

Minors

- Physical Education Teaching/Coaching

Course Information

- Physical Education Teaching Education (PETE) Courses
- Secondary Education (Sc Ed) Courses

**Teaching English Language Learners Program**

Minors

- TESOL K-12
- Dual-Language Immersion K-12 Teaching

Course Information

- Teaching English Language Learner (TELL) Courses

**Faculty**

# Teacher Education Faculty

Show All
Hide All

## Professors

Bullough, Robert V.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1971
MEd, University of Utah, 1973
PhD, Ohio State University, 1976

Draper, Roni Jo
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Professor
**DEGREES:** BS, University of Nevada, Reno, 1991
MS, University of Nevada, Reno, 1995
PhD, University of Nevada, Reno, 2000

Monroe, Eula Ewing
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Professor
**DEGREES:** BS, Western Kentucky University, 1960
MA, Western Kentucky University, 1964
EdD, George Peabody College for Teachers of Vanderbilt University, 1980

Tunnell, Michael O.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1973
MEd, Utah State University, 1978
EdD, Brigham Young University, 1986

Wentworth, Nancy
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1971
MA, University of Utah, 1972
PhD, University of Utah, 1993

Young, Terrell A.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Professor
**DEGREES:** BS, Kansas State University, 1975
MEd, Utah State University, 1981
EdD, Brigham Young University, 1988

## Associate Professors

Bahr, Damon L.

**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1979
MEd, Utah State University, 1982
EdD, Brigham Young University, 1988

Barney, David C.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BS, Weber State University, 1989
MEd, Utah State University, 1995
EdD, Florida State University, 2002

Erickson, Lynnette B.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1978
MA, Brigham Young University, 1987
PhD, Arizona State University, 1996

Hall-Kenyon, Kendra Maria
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1996
MA, Columbia University, 2002
PhD, Columbia University, 2002

Morrison, Timothy G.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1977
MEd, Brigham Young University, 1979
PhD, University of Illinois, 1986

Pennington, Todd R.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MS, University of Utah, 1995
PhD, Virginia Polytechnic Inst. and State University, 1998

Pinnegar, Stefinee E.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** MA, Brigham Young University, 1978
PhD, University of Arizona, 1989

Prusak, Keven A.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1986
MEd, Utah State University, 1990
PhD, Arizona State University, 2000

Smith, Leigh K.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** AS, Brigham Young University, 1975
BS, Brigham Young University, 1989
MA, Brigham Young University, 1995
PhD, University of Utah, 2002

Wilcox, Bradley Ray
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education

**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1985
MEd, Brigham Young University, 1990
PhD, University of Wyoming, 1994

Wilkinson, Carol
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BEd, Durham University, England, 1976
MS, Brigham Young University, 1981
EdD, Brigham Young University, 1983

Young, Janet R.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1974
MA, Brigham Young University, 1989
PhD, University of Oklahoma, 1996

Zanandrea, Maria Luiza Betioli
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1983
MA, Brigham Young University, 1984
EdD, Brigham Young University, 1992

## Assistant Professors

Cutri, Ramona
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BA, University of California, Los Angeles, 1988
PhD, University of California, Los Angeles, 1997

Feinauer, Erika
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** MEd, Harvard Graduate School of Education, 1999
EdD, Harvard Graduate School of Education, 2006

Jensen, Bryant T.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BA, Arizona State University, 2003
MA, Arizona State University, 2006
PhD, Arizona State University, 2009

Korth, Byran B.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Brigham Young University, 1995
PhD, Auburn University, 2000

Newberry, Melissa
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, Ohio State University, 2006
PhD, Ohio State University, 2008

Richardson, Michael J.
**COLLEGE:** David O. McKay School of Education

**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1995
MS, University of Utah, 2003
PhD, Brigham Young University, 2009

Rosborough, Alessandro A.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1996
MA, University of Utah, 2001
PhD, University of Nevada, Las Vegas, 2010

Whiting, Erin
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1997
MS, Brigham Young University, 1999
PhD, University of Missouri, Columbia, 2006

Wimmer, Jennifer J.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1995
MA, Brigham Young University, 2004
PhD, University of Nevada, Las Vegas, 2010

## Associate Teaching Professor

Losser, Janet L.
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Utah State University, 1989
MEd, Brigham Young University, 1997
PhD, University of Georgia, 2004

## Assistant Teaching Professor

Leavitt, Teresa
**COLLEGE:** David O. McKay School of Education
**DEPARTMENT:** Teacher Education
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 1998
MA, University of Phoenix, 2000
PhD, University of Nevada, 2008

- Education
- Engineering and Technology
- Family, Home, and Social Sciences
- Fine Arts and Communications
- Humanities
- Law School
- Life Sciences
- Management
- Nursing
- Physical and Mathematical Sciences
- Religious Education
- Undergraduate Education

**Departments/Schools/Programs**

- Chemical Engineering
- Civil and Environmental Engineering
- Electrical and Computer Engineering
- Engineering and Technology program
- Mechanical Engineering
- School of Technology

# Ira A. Fulton College of Engineering and Technology

270 CB
(801) 422-4326

**Dean**: Alan R. Parkinson, Professor, Mechanical Engineering
**Assistant Dean**: David K. Anthony
**Associate Dean**: David G. Long, Electrical and Computer Engineering
**Associate Dean**: Spencer P. Magleby, Professor, Mechanical Engineering

The Ira A. Fulton College of Engineering and Technology is accredited under the Accreditation Board for Engineering and Technology (ABET) for all engineering and technology programs. The men and women who have graduated from our college will be prepared for entry into the finest graduate schools or workplaces. The mission of the Fulton College is to develop men and women of faith, character, and technical ability who will become outstanding leaders throughout the world.

Alphabetical list of majors offered in the College of Engineering and Technology:

Chemical Engineering (Ch En)
Civil and Environmental Engineering (CE En)
Construction and Facility Management (CFM)
Electrical and Computer Engineering (EC En)
Industrial Design (InDes)
Information Technology (IT)
Manufacturing Engineering Technology (MET)
Mechanical Engineering (Me En)
Technology and Engineering Education (TEE)

Minors offered in the College of Engineering and Technology:

Information Technology (IT)
Manufacturing (Mfg)

See the department sections in this catalog for details regarding these programs or go to http://www.et.byu.edu.

## Student Service Center/Advisement

Pamela O. Williamson, Manager Student Center/Advisement Supervisor
Judith Ann Benedict, Advisor
242 Clyde Building
(801) 422-4325
engineering_advisement@byu.edu

The Student Service Center provides assistance with resumes, resources for internships, and career placement. In Advisement, professional academic advisors are available to assist students with academic planning and provide information for specific majors. Students are assisted in major exploration and basic developmental career issues. Information is also provided regarding university resources and further career and major exploration. Advisement services also include assistance with university core, change of major, academic success, graduation processes, university policies and procedures, and scholarships.

**Ira A Fulton College of Engineering and Technology Home**

**Chemical Engineering Department Home**

**Major**

- BS in Chemical Engineering

**Course Information**

- Chemical Engineering Courses

**Faculty**

# Chemical Engineering

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## Admission to Degree Program

The chemical engineering degree program is open to all students.

## The Discipline

Chemical engineering is the application of chemistry, biology, physics, mathematics, computer skills, and economics to designing, developing, and implementing chemical processes that convert raw materials into more useful, valuable products. Engineering skills are required for design, testing, scale-up, operation, control, and optimization. Applications range in size from the molecular level to large chemical production facilities with objectives ranging from economic performance to protection of the environment and the safety of workers and consumers. Chemical engineers are engaged in developing and producing a diverse range of products from raw materials to commodity and specialty chemicals. These products include high-performance materials needed for aerospace, automotive, biomedical, electronic, environmental, and military applications. Chemical engineers work in a variety of industries, including chemical manufacturing, energy, biotechnology, electronics, food, clothing, paper, health care, and business services.

## Educational Objectives

The Chemical Engineering Department's educational objectives apply to graduates in the years following their graduation. These graduates will:

1. Remain committed to and exhibit lives of faith in Jesus Christ and service to family and community (including church).
2. Demonstrate effective reasoning and communication skills, continue to be informed about contemporary and global issues, and pursue life-long learning.
3. Be effective and innovative in developing and implementing solutions to open-ended problems (technical and/or non-technical), and thereby contribute to the improvement of society. In doing this, graduates will draw on the foundation of a broad university education and of excellent preparation in mathematics, science, and engineering.
4. Exemplify sound ethics, be professionally responsible, interact effectively with others, appreciate their contributions, and contribute to their growth and development.

These objectives will be achieved through the development of the following attributes in students graduating from the program:

1. A knowledge of the requirements of the chemical engineering major, familiarity with professional opportunities, and a knowledge of contemporary issues.
2. An ability to apply knowledge of fundamental principles of mathematics and science.
3. An ability to apply knowledge of chemical engineering fundamentals.
4. Practical experience with chemical process equipment, chemical handling, chemical analysis, and process instrumentation, including the ability to design and conduct experiments, as well as to analyze and interpret data.
5. An ability to use modern engineering tools necessary for engineering practice.
6. An ability to define and solve engineering problems, including the utilization of creative and innovative skills.
7. An understanding of the impact of engineering solutions in a global, economic, environmental, and societal context. A dedication to safe, environmentally and societally responsible engineering.
8. An ability to communicate ideas effectively in both oral and written form.
9. An ability to work effectively with others from diverse backgrounds to accomplish common goals.
10. An ability to apply chemical engineering fundamentals to design process units and systems of process units including multiple operations, within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
11. An appreciation for and a commitment to ethical, professional, and personal responsibilities.
12. An appreciation for and a commitment to the continuing pursuit of excellence and the full realization of human potential in self and others.

## Career Opportunities

The combination of knowledge about process engineering, math, and chemistry obtained in the chemical engineering curriculum is a versatile preparation that opens a wide variety of opportunities to graduates. This versatility is one reason why chemical engineers have traditionally been among the highest paid professionals in the engineering and science disciplines.

Chemical engineers make a significant difference in the quality of life. Some develop clean, new energy sources to power society. Some develop and produce fertilizers and other agricultural chemicals to feed mankind. Virtually all pharmaceuticals are produced by chemical engineers to enhance the life of millions. Others study and produce biomedical devices and artificial organs. Still others are involved in development and production of new materials for use in new high-tech products.

Chemical engineers produce chemicals ranging in use from cleaning products to medicines and from man-made fibers for clothing and textiles to plastics for construction and consumer goods. Another large employer of chemical engineers is the semiconductor industry. In work that involves significant knowledge of chemistry and related processes, chemical engineers assist in the design and manufacture of semiconductor chips and circuit boards. The petroleum industry also employs chemical engineers, requiring their

expertise for the discovery, production, and refining of petro-chemicals, including fuels, chemicals, and oils.

Many chemical engineers are employed in environmentally related positions, working on ways to improve air and water quality, to reduce acid rain and smog, and to recycle and reduce waste. Additionally, chemical engineers are employed by universities as teachers and researchers and by government agencies to provide answers for energy, environmental, and defense concerns. Chemical engineers also train to work in the medical, business, and legal professions.

Though chemical engineering career opportunities are diverse, job functions can be categorized more easily. Chemical engineers are usually involved in research, design, development, production, technical sales, or management.

In research, they develop new ideas, new products, and new ways to produce existing products more economically and with less environmental impact.

In design, they create the processes that convert raw materials into finished products with emphasis on efficiency, safety, consumer needs, and environmental protection.

The development engineer improves existing processes and technology to better meet changing needs.

Production engineering involves supervision, quality control, and testing of production processes and operations.

Management and technical sales involve decision making with regard to consumer needs and technical capabilities.

Chemical engineers are creative problem solvers. Their careers are rewarding not only from an intellectual and financial view, but also from a personal perspective. Affecting the lives of millions, their solutions provide a better lifestyle for mankind.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Chemical Engineering** (Program Outcomes)

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Chemical Engineering
PhD in Chemical Engineering

For more information see the BYU 2014–2015 Graduate Catalog.

## General Information

The Chemical Engineering Department offers a professional program leading to the bachelor of science degree.

Any student who is admitted to the university may choose this program as a possible major. All students are urged to declare their intention to major in the department upon first entry to the university or as soon thereafter as possible by contacting the college advisement center (242 CB). The Chemical Engineering Department requires the student to meet with their department advisor upon completion of Ch En 273 and Math 302 or equivalent.

**Transfer Students.** Provisions have been made so that a qualified student transferring from a junior college or from another university, college, or department, who has completed the equivalent of the first two years of the academic program, can complete the BS degree requirements in another two years. Contact the department at the earliest date possible so that any variations can be accommodated with minimum loss of time.

**Integrated Master's Program.** At the end of the sophomore year or during the junior year, qualified students desiring a master's degree in chemical engineering may elect to enter the integrated master's program. The purpose of this program is to afford greater flexibility in scheduling course work than is normally available through the traditional BS degree followed by MS degree program. In this program students may work toward both the bachelor's and master's degrees simultaneously, either receiving the BS degree before or at the same time as the MS degree. At the end of the sophomore year students must have a cumulative GPA of 3.5 or more. All credit to be counted toward the master's degree must carry a cumulative GPA of 3.0 or better.

Before completing the final 30 hours of undergraduate course work, students should submit a formal application for admission to the Office of Graduate Studies. Additional details may be obtained from the college advisement center.

**Professional Registration.** The Chemical Engineering Department encourages graduates to become registered professional engineers. General qualifications for becoming registered are explained in the Ira A. Fulton College of Engineering and Technology section of this catalog. Some states require this status for consulting and practice in the private sector. Successful completion of the basic chemical engineering program outline prepares graduates to pass the Fundamentals of Engineering (FE) examination. Students who wish to become registered as professional engineers are also advised to talk to their advisor about developing their own professional engineering option, which may include additional FE preparation courses.

**Professional Program Admission Policy.** Admission to the professional program is available to all students in good academic standing with the university who have (a) passed the prerequisite courses for the first-semester professional courses, namely Ch En 273 and Math 302, and (b) submitted to the department an Application for the Chemical Engineering Professional Program.

The Application for the Chemical Engineering Professional Program requires the student to meet with their department advisor for direction and counseling with regard to performance in the preprofessional program courses and successful completion of the professional program.

**Academic Standards and Continuance Policy.** The student's academic standing with the university must be "Good" or "Previous"

to enroll in professional program courses. Anyone who accumulates chemical engineering grades below C– in excess of 6 hours may not take further chemical engineering courses until he or she has reduced the unacceptable credits to 6 hours or less. A student may not graduate with more than 3 hours below C– in chemical engineering courses. Since all grades earned for a course (original and any retakes) are retained in university records and GPA calculations, this policy applies to the most recent grades for retaken courses.

**Ira A Fulton College of Engineering and Technology Home**

**Chemical Engineering Department Home**

**Major**

- BS in Chemical Engineering

**Course Information**

- Chemical Engineering Courses

**Faculty**

# BS in Chemical Engineering (101.5–103.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Students are strongly encouraged to consult with the department about their course scheduling.
2. Complete the following preprofessional courses:

CH EN 170 : Introduction to Chemical Engineering. (2:1:2)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Chem 105 or Chem 111.
DESCRIPTION: Introduction to fundamental principles of chemical engineering and development of problem-solving skills through in-class activities, laboratory experiments, and a hands-on design project.
NOTE: The prerequisites may be taken concurrent with the course. Check with the department.

**Course Outcomes**

- Students will gain a knowledge of the major through the course material.
- Students will be introduced to chemical processes, units, and corresponding equipment.
- Students will gain a familiarity with the chemical engineering field, career options, and potential job functions, and be aware of contemporary issues that may have an impact on professional activities, through lectures and solving homework problems.
- Students will gain appreciation and respect for other disciplines and a knowledge of how chemical engineering relates to other disciplines through faculty lectures and homework problems.
- Students will be able to use basic engineering units in both SI and AES systems in solving problems, and be able to convert between unit systems.
- Students will be introduced to the solution of steady-state, overall, material and energy balances.
- Students will be introduced to the mechanical energy balance equation to solve fluid flow problems both with and without friction.
- Students will be introduced to conduction, forced and free convection, and radiation.
- Students will be introduced to the fundamentals of kinetics including definitions of rate and forms of rate expressions.
- Students will be introduced to the first law of thermodynamics for closed and open systems.
- Students will be introduced to process control terminology and feed-back and feed-forward control systems.
- Students will be introduced to the effective interpretation of graphical data.
- Students will be introduced to a spreadsheet package to perform engineering calculations.
- Students will be introduced to engineering problems and their solutions.
- Students will be introduced to a problem solving strategy to define and solve engineering problems.
- Students will be introduced to critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be introduced to the notions of rationalizing units, making order of magnitude estimates, assessing reasonableness of solutions, and selecting appropriate levels of solution sophistication.
- Students will be introduced to how environmental considerations are incorporated into engineering problem solving.
- Students will understand the impact of engineering solutions, including environmental and economic impacts, in a global context (across cultures and societies) AND in a societal context (within a society).
- Students will practice good teamwork principles.
- Students will demonstrate experience working together in teams.
- Students will be introduced to performance calculations on CSTR reactors.
- Students will be introduced to preliminary size and performance calculations on shell-and-tube heat exchangers.
- Students will be introduced to practical considerations of heat exchangers including types of heat exchangers, materials of construction, and fouling.
- Students will be introduced to the design of flow systems involving pumps for Newtonian fluids.
- Students will be introduced to environmental, social, political, ethical, health and safety, manufacturability, and sustainability constraints in process synthesis.
- Students will be introduced to costs in capital ventures (e.g., capital vs operating costs, salvage value, equipment costing).
- Students will develop a sense of professional community with students by working in teams.
- Students will be introduced to the effective reading of technical material.

CH EN 191 : Preprofessional Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Presentations by faculty, advisors, and industrial representatives.
NOTE: College Lecture attendance required.

**Course Outcomes**

- Students will gain a knowledge of the major and required curriculum through lectures.
- Students will gain a familiarity with the chemical engineering field, career options, and potential job

functions, and be aware of contemporary issues that may have an impact on professional activities, through presentations by faculty and guest lecturers.
- Students will demonstrate a sense of the importance of life-long learning.
- Students will learn to take responsibility for their own learning experience at BYU by maintaining disciplined study habits.
- Students will understand the importance of a well-written resume in obtaining professional employment.

CH EN 263 : Computational Tools for Chemical Engineers. (2:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CH EN 170 & MATH 113; or concurrent enrollment.

DESCRIPTION: Use of spreadsheets, advanced equation-solving packages, and structured languages to solve engineering problems. Introduction to chemical process principles.

NOTE: College Lecture attendance required.

**Course Outcomes**

- Students will demonstrate an understanding of fundamental mathematics (including calculus, linear and nonlinear simultaneous equation solving, etc.) by using computer tools to solve problems.
- Students will be able to use basic engineering units in both SI and AES systems in solving problems, and be able to convert between unit systems while using an equation solver like Mathcad.
- Students will be able to use a spreadsheet package to perform engineering calculations which include some of the following: economic analysis, processing and analysis of data, graphical analysis and presentation, etc.
- Students will be able to solve numerical and symbolic problems using advanced math software (e.g. Mathcad).
- Students will be able to write program structures, and understand when programming is most appropriate.
- Students will demonstrate an ability to solve engineering problems.
- Students will be able to convert problem solving strategies to procedural algorithms.
- Students will be able to make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.

CH EN 273 : Chemical Process Principles. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: CHEM 106 & CH EN 263; or CHEM 112 & CH EN 263; or concurrent enrollment.

DESCRIPTION: Material and energy balances.

NOTE: College Lecture attendance required.

**Course Outcomes**

- Students will learn about chemical processes, units, and corresponding equipment
- Students will be able to use basic engineering units in both SI and AES systems in solving problems, and be able to convert between unit systems both by hand and with an equation solver.
- Students will be able to solve steady-state, overall, material and energy balances for systems which include one or more of the following: recycle, multiple units, chemical reactions.
- Students will be able to set up and solve simple transient material balances.
- Students will be able to use a degree-of-freedom approach to assist in the solution of material and energy balances.
- Students will be able to read pure component and mixture phase diagrams (e.g. psychrometric chart, solid solubility, liquid-liquid, VLE) and construct mass balances from them using the lever rule, tie lines, etc.
- Students will understand the phase behavior of pure substances in relationship to the variables T, P, and density (including vapor pressure, critical point, freezing line, triple point, etc.).
- Students will be able to use the mechanical energy balance equation to solve fluid flow problems both with and without friction.
- Students will be able to solve simple fluid statics problems (e.g., manometers, fluid head, etc.)
- Students will be introduced to the first law of thermodynamics for closed and open systems.
- Students will be able to apply Raoult's law to solve VLE problems including bubble point, dew point, and flash calculations.
- Students will understand and be able to use the extent of reaction in material balances
- Students will be introduced to equations of state and corresponding states correlations.
- Students will be introduced to the concepts of heat capacity, latent heat, heat of reaction, heat of combustion, and heat of formation.
- Students will be introduced to process variables (e.g., P, T, flow rate, conc.) and their measurement.
- Students will demonstrate effective interpretation of graphical data.
- Students will be able to solve numerical and symbolic problems using advanced math software (e.g. Mathcad).
- Students will be introduced to the use of appropriate information skills, standard office applications, and tools (e.g. WWW, electronic and reference book library searches, modern property databases) to assist in problem solving.
- Students will demonstrate an ability to solve engineering problems.
- Students will be able to use a problem solving strategy to define and solve engineering problems.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to obtain and evaluate appropriate input information/data from databases, handbooks, correlations, experiments, literature, etc.
- Students will be introduced to the notions of rationalizing units, making order of magnitude estimates, assessing reasonableness of solutions, and selecting appropriate levels of solution sophistication.
- Students will be introduced to how safety considerations are incorporated into engineering problem solving.
- Students will be introduced to how environmental considerations are incorporated into engineering problem solving.
- Students will practice good teamwork principles.
- Students will demonstrate experience working together in teams.
- Students will be introduced to calculations involving work in turbines, compressors, and pumps.
- Students will be introduced to the AIChE code of ethics.
- Students will demonstrate effective reading of technical material.

EC EN 301 : Elements of Electrical Engineering. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PHSCS 220 & MATH 303; or PHSCS 220 & MATH 334
DESCRIPTION: Linear electric circuits, computer organization, and logic circuits for nonmajors.
NOTE: Fee.

**Course Outcomes**

- Understand and apply basic principles of electronic circuits.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Calculus or concurrent enrollment.
DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

**And** complete one of the following options:

**Either**

CHEM 111 : Principles of Chemistry. (4:3:3)

OFFERED: Honors also.
WHEN TAUGHT: Fall
PREREQUISITE: Math 110 or equivalent.
RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.
DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.
NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

: Honors Principles of Chemistry.

**Course Outcomes**

CHEM 112 : Principles of Chemistry. (3:3:2)

WHEN TAUGHT: Winter
PREREQUISITE: Chem 111 or Chem 105 or equivalent.
DESCRIPTION: Continuation of Chem 111.
NOTE: Tutorial included.

**Course Outcomes**

- Students will be able to use thermodynamic principles and their application to physical and chemical equilibria to calculate entropic and enthalpic contributions to physical changes and reactions and predict equilibria given entropic and enthalpic changes.
- Students will be able to apply acid-base theory, including interactions of strong and weak acids and bases, to determination of pH values of solutions, calculating buffering capacity and performance of acid-base titrations. They will be able to use structural features of molecules to estimate acid and base strength.
- Students will demonstrate an understanding of electrochemistry in designing simple electrodes and will use reduction/oxidation potentials to characterize electrodes.
- Students will be able to apply transition state theory to reaction kinetics. Students will be able to model mathematically rates of multiple reaction types.
- Students will be able to apply the periodic nature of the elements to classify elements and identify the compositions of inorganic salts.

**Or**

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.
DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.
NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: CHEM 105; or CHEM 111
DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.
NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.
DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.
NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

3. Complete one of the following options:

**Either**

MATH 302 : Mathematics for Engineering 1. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Math 113.
DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

MATH 303 : Mathematics for Engineering 2. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MATH 302
DESCRIPTION: ODEs, Laplace transforms, Fourier series, PDEs.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For a more detailed course description, visit Math 303 Wiki.

**Or**

MATH 313 : Elementary Linear Algebra. (3:3:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
RECOMMENDED: Math 290.
DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

: Honors Elementary Linear Algebra. (3:3:1)

**Course Outcomes**

MATH 314 : Calculus of Several Variables. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 313.
DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

MATH 334 : Ordinary Differential Equations. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 113 and Math 313.
DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

4. Complete the following professional courses:

CH EN 311 : Chemical Engineering and Society. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CH EN 273 & ENG T 231

DESCRIPTION: Responsibility of chemical engineers in society relative to ethics, leadership, safety, environment, and energy.

**Course Outcomes**

- Students will demonstrate effective interpretation of graphical data.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will pass the HAZCOM test.
- Students will be dedicated to safe engineering practices; demonstrate knowledge of pertinent safety laws and regulations; understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will be dedicated to environmentally responsible engineering; demonstrate knowledge of pertinent environmental laws and regulations; understand and have a basic knowledge of how environmental considerations, including green engineering strategies, are incorporated into engineering problem solving.
- Students will understand the impact of engineering solutions, including environmental and economic impacts, in a global context (across cultures and societies) AND in a societal context (within a society).
- Students will understand teamwork principles including: recognition of team members' strengths and weaknesses; importance of effective communication skills; recognition of unique contributions of team members; and the need to facilitate team members' development.
- Students will demonstrate experience working together in teams.
- Students will understand safety constraints and be able to use hazard evaluation tools (e.g., HAZOP, fault-tree).
- Students will understand and commit to practice gospel standards as a basis for sound ethical behavior.
- Students will understand and commit to practice the AIChE code and other professional codes of ethics.
- Students will incorporate an engineering and a gospel-centered problem solving approach to the resolution of ethical dilemmas.
- Students will develop a sense of professional community with students by working in teams.
- Students will understand and strive to develop the qualities of a good leader whose public and private lives are consistent.
- Students will demonstrate effective reading of technical material.

CH EN 373 : Chemical Engineering Thermodynamics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CH EN 273 & CHEM 467

RECOMMENDED: Chem 461.

DESCRIPTION: First and second laws of thermodynamics as applied to behavior of real fluids; physical and chemical equilibrium.

NOTE: College Lecture attendance required.

**Course Outcomes**

- Students will be able to solve steady-state, overall, material and energy balances for systems which include one or more of the following: recycle, multiple units, chemical reactions.
- Students will be able to read mixture phase diagrams (liquid-liquid and VLE) and construct mass balances from them using the lever rule, tie lines, etc.
- Students will be able to set up and solve simple transient energy balances.
- Students will be able to apply solution thermodynamics fundamentals to solve VLE, LLE, SLE, and GLE problems including bubble point, dew point and flash calculations.
- Students will demonstrate an ability to solve engineering problems.
- Students will demonstrate effective interpretation of graphical data.
- Students will be able to use equations of state and corresponding states correlations in the determination of properties.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to perform energy conversion calculations for Rankine power and compression refrigeration cycles.
- Students will be able to set up and solve single-stage flash calculations.
- Students will understand the phase behavior of pure substances in relationship to the variables T, P, and density (including vapor pressure, critical point, freezing line, triple point, etc.)
- Students will understand the concept of entropy and the second law of thermodynamics and be able to apply the second law to closed and open systems.
- Students will understand the fundamental principles of chemical reaction equilibria including extent of reaction, equilibrium constant and its temperature-dependence, equilibrium conversion.
- Students will be able to use modern property databases to assist in problem solving.
- Students will be able to apply the first law of thermodynamics to closed and open systems (including energy, work, and heat transformations in process units such as tanks, turbines, compressors, valves, etc.).
- Students will be able to perform design (sizing) calculations for turbines and compressors (e.g., involving delta H, delta S, work, heat, efficiencies).
- Students will understand the fundamental concepts of solution thermodynamics including chemical potential, fugacity, activity, partial molar properties, ideal solutions, and excess properties.
- Students will understand and have a basic knowledge of how environmental considerations are incorporated into engineering problem solving.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will demonstrate effective reading of technical material.
- Students will understand and have a basic knowledge of how safety considerations are incorporated into

engineering problem solving.
- Students will understand and be able to apply the concepts of heat capacity, latent heat, heat of reaction, heat of combustion, and heat of formation.

CH EN 374 : Fluid Mechanics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CH EN 273 & CH EN 311 & MATH 302; or CH EN 273 & CH EN 311 & MATH 314; or concurrent enrollment; admission to professional program.

DESCRIPTION: Basic mass, momentum, and energy relations of fluid flow; design of fluid-handling systems and equipment.

NOTE: College Lecture attendance required.

**Course Outcomes**

- Students will understand mechanical behavior of materials including elastic, viscous, surface, and stress phenomena as it pertains to fluid flow applications.
- Students will be able to use the mechanical energy balance equation to solve fluid flow problems both with and without friction.
- Students will understand and be able to describe the physical significance of key dimensionless quantities including Re and f.
- Students will be able to solve simple fluid statics problems.
- Students will be able to determine velocity profiles for steady-state, laminar flow in simple geometries for Newtonian and power-law fluids.
- Students will understand the significance of steady-state, integral and differential mass, energy, and momentum balances in one dimension.
- Students will understand and be able to use advanced fluid mechanical concepts including boundary-layer theory, creeping flow, non-Newtonian flow, rheology, and turbulent flow.
- Students will understand qualitatively how external flow around objects affects drag and will be able to calculate drag forces and terminal velocities.
- Students will understand basic concepts relating to compressible flow, including Mach numbers, shock waves, and choked flow.
- Students will demonstrate effective interpretation of graphical data.
- Students will demonstrate an ability to solve engineering problems.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will understand and have a basic knowledge of how environmental considerations are incorporated into engineering problem solving.
- Students will be able to design flow systems involving pipes, valves, fittings, and pumps for Newtonian fluids.
- Students will be able to select, based on performance characteristics and operational constraints, the appropriate kind of pumps (positive displacement, radial, axial, etc.), turbines (impulse, Francis, Kaplan, etc), and valves for a given application.
- Students will be able to design flow systems involving pipes and pumps for power-law fluids.
- Students will be familiar with the use of computational fluid dynamics as a tool for solving fluid flow in complex geometries.
- Students will demonstrate effective reading of technical material.

CH EN 376 : Heat and Mass Transfer. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CH EN 374

DESCRIPTION: Heat and mass transfer, including conduction, convection, radiation, diffusion; steady and unsteady state systems; transport analogies; design applications.

**Course Outcomes**

- Students will be able to estimate mass transfer coefficients and use them to determine mass transfer rates for both external and internal flows and across phase boundaries.
- Students will understand radiative heat transfer including blackbody radiation and Kirchoffï¿½s law, and be able to solve radiative problems involving view factors and radiative exchange between surfaces.
- Students will learn about chemical processes, units, and corresponding equipment related to heat and mass transfer
- Students will understand qualitatively conduction, forced and free convection, and radiation.
- Students will be able to solve simple transient heat and mass transfer problems with methods such as lumped capacitance, Heisler charts, 1st term approximation, exact numerical solutions, etc.
- Students will understand and be able to use Fick's Law.
- Students will be able to formulate and solve differential energy balances for conduction within a single phase.
- Students will understand heat/mass transfer analogies including their limitations.
- Students will understand convective heat transfer and use of heat transfer coefficients for laminar and turbulent flows, internal and external flows, fully developed flow, flow with entry effects, and forced and free convection.
- Students will be able to analyze systems containing multiple resistances to heat transfer.
- Students will be able to do preliminary size calculations on shell-and-tube heat exchangers using the log-mean-temperature-difference (LMTD) method.
- Students will demonstrate effective reading of technical material.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will demonstrate effective interpretation of graphical data.
- Students will be able to solve simple problems where heat and mass transfer are coupled.
- Students will understand and have a basic knowledge of how environmental considerations are incorporated into engineering problem solving.

Students will be able to calculate and use overall heat transfer coefficients in designing heat exchangers.
- Students will understand practical considerations of heat exchangers including types of heat exchangers, materials of construction, and fouling.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will demonstrate an ability to solve engineering problems.
- Students will be able to do preliminary size calculations on shell-and-tube heat exchangers using the effectiveness-NTU method.

CH EN 378 : Science of Engineering Materials. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 351

DESCRIPTION: Fundamental principles of solid materials and their properties and behavior in engineering applications of metals, polymers, ceramics, and glasses.

**Course Outcomes**

- Students will be able to read liquid-solid mixture phase diagrams involving liquid-solid and solid-solid equilibria and solid solubility and construct mass balances from them using the lever rule, tie lines, etc.
- Students will understand the relationship of molecular interactions, including potential energy and intermolecular forces, to the properties and behaviors of materials.
- Students will understand crystal structure including nomenclature, packing, and defects.
- Students will understand mechanical behavior of materials including elastic, plastic, viscous, glass, surface, and stress/strain phenomena and how they are affected by molecular structure and/or microstructure.
- Students will understand the physical/chemical behaviors of metals, ceramics, and polymers including effects of molecular weight, crystallinity, crystallite size defects, surface energy, heat-treating, and corrosion.
- Students will understand the electronic behaviors of metals, semiconductors, and insulators.
- Students will be able to match the physical and chemical characteristics of a material to process conditions/variables in order to evaluate its suitability for use with the process.
- Students will demonstrate effective interpretation of graphical data.
- Students will demonstrate an ability to solve engineering problems.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will demonstrate effective reading of technical material.

CH EN 386 : Chemical Reaction Engineering. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CH EN 373 & MATH 303; or CH EN 373 & MATH 334; or concurrent enrollment.

DESCRIPTION: Fundamental principles and equations of chemical kinetics and reactor design.

**Course Outcomes**

- Students will be exposed to the fundamentals of heterogeneous catalytic, and non-catalytic systems including potentially limiting mass-transfer and reaction resistances.
- Students will be able to determine rate expressions by analyzing reactor data including integral and differential analysis on constant- and variable-volume systems.
- Students will understand the relationship between forward and reverse rates and chemical equilibrium.
- Students will understand and have a basic knowledge of how environmental considerations are incorporated into engineering problem solving.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will demonstrate an ability to solve engineering problems.
- Students will understand the kinetics of competing reactions and their influence on product yield and selectivity.
- Students will be able to design systems of multiple isothermal reactors.
- Students will be able to develop rate expressions from elementary step mechanisms using steady-state and quasi-equilibrium approximations.
- Students will be able to solve numerical problems using advanced math software.
- Students will be able to select and size isothermal reactors for series and/or parallel systems of reactions.
- Students will be able to size and do performance calculations on single, isothermal plug-flow, CSTR, and batch reactors for a single homogeneous or heterogeneous reaction given either rate data or a rate expression.
- Students will understand fundamentals of kinetics including definitions of rate and forms of rate expressions and relationships between moles, concentration, extent of reaction and conversion.
- Students will demonstrate effective interpretation of graphical data.
- Students will understand the effects of mass and heat transfer, particularly pore diffusion, on heterogeneous catalytic systems.
- Students will understand practical considerations of reactor design including materials of construction, mixing, heat transfer, and economics.
- Students will demonstrate effective reading of technical material.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will be able to derive batch, CSTR, and PFR performance equations from general material balances.
- Students will be able to select and size non-isothermal reactors.
- Students will understand and be able to apply the concepts of heat capacity, latent heat, heat of reaction, heat of combustion, and heat of formation.

CH EN 391 : Career Skills. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Admission to professional program.
DESCRIPTION: Professional, communication, and lifelong learning skills. Field trip to chemical process facility.

**Course Outcomes**

- Students will be able to write an effective personal resume.
- Students will be able to use appropriate information skills, standard office applications, and tools (e.g. WWW, electronic and reference book library searches, modern property databases) to assist in problem solving.
- Students will understand the importance of a well-written resume in obtaining professional employment.
- Students will be able to give effective, well organized oral presentations of technical material in both business and engineering formats including the handling of questions and the use of appropriate visual aids.
- Students will be dedicated to and prepared for a life time of learning.
- Students will develop a sense of professional community with students, faculty, and others.
- Students will learn about chemical processes, units, and corresponding equipment through industrial speakers and a field trip.
- Students will demonstrate experience and ability in interviewing skills.
- Students will demonstrate effective reading of technical material.
- Students will gain a familiarity with the chemical engineering field, career options, and potential job functions, and be aware of contemporary issues that may have an impact on professional activities, through student presentations and a field trip

CH EN 436 : Process Control and Dynamics. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: CH EN 376 & CH EN 386
DESCRIPTION: Process systems, associated control systems, and instrumentation. Use of Laplace transforms and complex variables.

**Course Outcomes**

- Students will learn about chemical processes, units, and corresponding equipment related to process control.
- Students will be able to set up and solve simple transient material balances.
- Students will be able to set up and solve simple transient energy balances.
- Students will demonstrate familiarity with process control terminology and understand the following control strategies: feed-back control, feed-forward control, and cascade control; as well as the difference between linear and nonlinear systems.
- Students will be able to write and solve ODE's that describe the transient behavior of simple systems.
- Students will be able to fit data from step or pulse tests to linear models.
- Students will understand the concept of a transfer function in classical control and be able to use transfer functions (Laplace domain) to approximate the behavior of control loops and their components.
- Students will be able to predict the closed-loop behavior and evaluate the stability of simple control loops.
- Students will understand and be able to use tuning relationships for PID controllers.
- Students will be able to use block diagrams to help determine system response characteristics.
- Demonstrate familiarity with equipment for measurement and control of process variables.
- Students will demonstrate familiarity and experience with the application of process control principles on an industrial control system.
- Students will demonstrate familiarity and experience with process control equipment.
- Students will demonstrate effective interpretation of graphical data.
- Students will be able to use a process simulator to conduct process control.
- Students will demonstrate an ability to solve engineering problems.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will understand and have a basic knowledge of how environmental considerations are incorporated into engineering problem solving.
- Students will understand the principles involved in selecting a control valve.
- Students will be able to tune a single feedback control loop.
- Students will be able to design a simple feedback loop to control process equipment.
- Students will be able to perform preliminary valve sizing and understand the interaction of the valve with other process components.
- Students will understand the concepts involved in multiple single loops in applications like simple distillation column control.
- Students will demonstrate effective reading of technical material.

CH EN 451 : Chemical Engineering Plant Design and Process Synthesis. (4:4:0)

WHEN TAUGHT: Winter
PREREQUISITE: CH EN 391 & CH EN 436 & CH EN 476
DESCRIPTION: Design of chemical engineering machinery; plants and/or processes requiring application of unit operations; chemical process principles; economic analysis. Synthesis and optimization of chemical processes.
NOTE: College Lecture attendance required.

**Course Outcomes**

- Students will perform a capstone design and demonstrate their familiarity with chemical processes, units, and corresponding equipment.
- Students will gain appreciation and respect for other disciplines and a knowledge of how chemical engineering relates to other disciplines through the capstone design problem.
- Students will be able to solve steady-state, overall, material and energy balances for systems which include one or more of the following: recycle, multiple units, chemical reactions.
- Students will be able to apply solution thermodynamics fundamentals to solve VLE, LLE, SLE, and GLE

problems including bubble point, dew point and flash calculations.
- Students will demonstrate effective interpretation of graphical data.
- Students will be able to use a process simulator to develop process flow diagrams.
- Students will be able to use a process simulator to design single unit operations including separation columns and reactors.
- Students will be able to use commercial process simulation software for process development.
- Students will be able to use appropriate information skills, standard office applications, and tools (e.g. WWW, electronic and reference book library searches, modern property databases) to assist in problem solving.
- Students will demonstrate an ability to solve engineering problems.
- Students will be able to integrate topics from various Chemical Engineering courses to solve realistic problems.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to obtain and evaluate appropriate input information/data from databases, handbooks, correlations, experiments, literature, etc.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will be dedicated to safe engineering practices; demonstrate knowledge of pertinent safety laws and regulations; understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will incorporate applicable safety and environmental considerations as part of a capstone design project.
- Students will be dedicated to environmentally responsible engineering; demonstrate knowledge of pertinent environmental laws and regulations; understand and have a basic knowledge of how environmental considerations, including green engineering strategies, are incorporated into engineering problem solving.
- Students will understand the impact of engineering solutions, including environmental and economic impacts, in a global context (across cultures and societies) AND in a societal context (within a society).
- Students will be able to give effective, well organized oral presentations of technical material in both business and engineering formats including the handling of questions and the use of appropriate visual aids.
- Students will be able to write effective, well organized technical reports, including formal engineering reports and short letter reports.
- Students will practice good teamwork principles.
- Students will demonstrate experience working together in teams.
- Students will be able to select and size isothermal reactors for series and/or parallel systems of reactions.
- Students will understand practical considerations of reactor design including materials of construction, mixing, heat transfer, and economics.
- Students will be able to size and estimate the capital costs of heat exchangers.
- Students will be able to select pumps, turbines, and valves for a specific application.
- Students will be able to design tray-type columns (e.g., number of trays, tray efficiency, column height, column diameter, product specs) and/or packed columns (e.g., height of column, packing material, column diameter, flooding velocity).
- Students will understand the implications of nonideal phase behavior and the practical constraints of pressure, temperature, and available utilities on distillation column design.
- Students will understand the interaction of valves with other process components.
- Students will be able to perform design (sizing) calculations for turbines and compressors (e.g., involving delta H, delta S, work, heat, efficiencies).
- Students will understand design hierarchy rationale and be able to apply it to the design of a process.
- Students will understand safety constraints and be able to use HAZOPS and fault-tree analyses in process design.
- Students will understand environmental, social, political, ethical, health and safety, manufacturability, and sustainability constraints and be able to incorporate these into process synthesis.
- Students will be able to design multiple unit processes and be able to optimize them with respect to energy efficiency and economics.

CH EN 475 : Unit Operations Laboratory 1. (2:1:6)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: CH EN 376 & CH EN 391 & ENGL 316
RECOMMENDED: Stat 201.
DESCRIPTION: Experimental verification of unit operations design principles; data collection and reduction; report preparation.

**Course Outcomes**

- Students will gain hands on experience with chemical processes, units, and corresponding equipment through lab experiments
- Students will understand and be able to describe the physical significance of key dimensionless quantities including Re.
- Students will understand qualitatively conduction, forced and free convection, and radiation and have experience with one or more modes during experiments.
- Students will be able to analyze systems containing multiple resistances to heat transfer during laboratory experiments.
- Students will understand convective heat transfer and be able to use heat transfer coefficients as they relate to the UO Laboratory experiments.
- Students will demonstrate familiarity and experience with the measurement of process variables (e.g., P, T, flow rate, conc.) using manual and/or electronic devices and computers.
- Students will demonstrate knowledge of basic laboratory techniques.
- Students will be able to use the scientific method and problem solving strategies, as well as statistical methods, to design, carry out, and analyze experiments in order to solve engineering problems.
- Students will demonstrate familiarity and experience with the application of process control principles on an industrial control system.
- Students will demonstrate familiarity and experience with chemical process equipment.
- Students will demonstrate an understanding of basic engineering statistics in their laboratory reports
- Students will demonstrate effective interpretation of graphical data.
- Students will demonstrate an ability to solve engineering problems.
- Students will be able to integrate topics from various Chemical Engineering courses to solve realistic problems in the areas of heat transfer, fluid flow, and thermodynamics.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and

cause-effect relationships.
- Students will be able to obtain and evaluate appropriate input information/data from databases, handbooks, correlations, experiments, literature, etc.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will understand and practice safe laboratory and chemicals-handling principles.
- Students will be able to give effective, well organized oral presentations including the handling of questions and the use of appropriate visual aids.
- Students will be able to write effective, well organized technical reports, including formal engineering reports and short letter reports.
- Students will practice good teamwork principles.
- Students will be able to do performance calculations on heat exchangers from experimental data and demonstrate abilities or understanding in one or more of the following aspects: heat exchanger sizing, heat exchanger design, fouling, utilization of overall heat transfer coefficients, types of heat exchangers, and materials of construction.
- Students will be able to design or analyze flow systems involving one or more of the following aspects: pipes, valves, fittings, pumps, flow meters, Newtonian fluids, non-Newtonian fluids, laminar flow, and turbulent flow.
- Students will demonstrate effective reading of technical material.

CH EN 476 : Separations. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: CH EN 373 & CH EN 376
DESCRIPTION: Stage operations, distillation, extraction, and absorption; design applications.
NOTE: College Lecture attendance required.

**Course Outcomes**

- Students will be able to solve steady-state material and energy balances as they relate to operating lines and multi-stage separation units.
- Students will be able to read mixture phase diagrams (solid solubility, liquid-liquid, VLE) and construct mass balances from them using the lever rule, tie lines, etc.
- Students will be able to estimate mass transfer coefficients and use them to determine mass transfer rates across phase boundaries.
- Students will be able to apply solution thermodynamics fundamentals to solve VLE, LLE, SLE, and GLE problems including bubble point, dew point and flash calculations.
- Students will understand the fundamental concepts of solution thermodynamics including chemical potential, fugacity, activity, partial molar properties, ideal solutions, and excess properties.
- Students will demonstrate effective interpretation of graphical data.
- Students will be able to use a process simulator to design separation columns.
- Students will demonstrate an ability to solve engineering problems.
- Students will be able to integrate topics from various Chemical Engineering courses to solve realistic problems.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will understand and have a basic knowledge of how environmental considerations are incorporated into engineering problem solving.
- Students will have an overall understanding of basic separation techniques used in industry, the principles upon which they are based, and their limitations and assets.
- Students will be able to set up and solve single-stage flash calculations.
- Students will be able to design tray-type columns (e.g., number of trays, tray efficiency, column height, column diameter, product specs) and packed columns (e.g., height of column, packing material, column diameter, flooding velocity).
- Students will be able to find the number of stages required for liquid-liquid extraction from ternary phase diagrams.
- Students will be able to solve binary batch distillation design problems with and without rectifying stages.
- Students should understand the implications of non-ideal phase behavior (e.g., azeotropes and partial miscibility) and the practical constraints of pressure, temperature, and available utilities on distillation column design.
- Students will demonstrate effective reading of technical material.

CH EN 477 : Unit Operations Laboratory 2. (2:1:6)

WHEN TAUGHT: Winter; Spring
PREREQUISITE: CH EN 386 & CH EN 475 & CH EN 476
DESCRIPTION: Experimental verification of unit operations design principles; data collection and reduction; report preparation.

**Course Outcomes**

- Students will gain hands on experience with chemical processes, units, and corresponding equipment through lab experiments
- Students will be able to estimate mass transfer coefficients and use them to determine mass transfer rates for both external and internal flows and across phase boundaries.
- Students will understand fundamentals of kinetics including definitions of rate and forms of rate expressions during laboratory experiments.
- Students will demonstrate familiarity and experience with the measurement of process variables (e.g., P, T, flow rate, conc.) using manual and/or electronic devices and computers.
- Students will demonstrate knowledge of basic laboratory techniques.
- Students will be able to use the scientific method and problem solving strategies, as well as statistical methods, to design, carry out, and analyze experiments in order to solve engineering problems.
- Students will demonstrate familiarity and experience with chemical process equipment.
- Students will demonstrate an understanding of basic engineering statistics in their laboratory reports
- Students will be able to determine rate expressions by analyzing reactor data including integral and

differential analysis on constant- and/or variable-volume systems in laboratory experiments.
- Students will demonstrate effective interpretation of graphical data.
- Students will demonstrate an ability to solve engineering problems.
- Students will be able to integrate topics from various Chemical Engineering courses to solve realistic problems in the areas of kinetics and separations.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to obtain and evaluate appropriate informational/data from databases, hand books, correlations, experiments, literature, etc.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will understand and practice safe laboratory and chemicals-handling principles.
- Students will be able to give effective, well organized oral presentations including the handling of questions and the use of appropriate visual aids.
- Students will be able to write effective, well organized technical reports, including formal engineering reports and short letter reports.
- Students will practice good teamwork principles.
- Students will be able to size and do performance calculations on single, isothermal plug-flow, CSTR, or batch reactors for a single homogeneous or heterogeneous reaction from experimental data.
- Students will be able to design tray-type columns (e.g., number of trays, tray efficiency, column height, column diameter, product specs) and/or packed columns (e.g., height of column, packing material, column diameter, flooding velocity).
- Students will demonstrate effective reading of technical material.

5. Complete the following supporting courses:

BIO 100 : Principles of Biology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Introductory course for general education students.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: CHEM 105; or CHEM 111
DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.
NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: CHEM 351; or CHEM 351M
DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 467 : Physical Chemistry for Engineers. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: CHEM 351 & MATH 302 & PHSCS 121; Ch En 263.
DESCRIPTION: Quantum mechanics, atomic and molecular structure, spectroscopy, computational methods,

statistical mechanics, thermodynamics and equilibria, states of matter, kinetic-molecular theory, kinetics.

NOTE: For chemical engineering majors and other interested students in fields of engineering and physical science.

**Course Outcomes**

- understand the fundamentals of classical thermodynamics, quantum mechanics, reaction kinetics, and statistical mechanics, including foundational principles, key mathematical relationships and derivations, at a deeper, more rigorous level than Chem 111H and 112.
- be able to relate atomic/molecular properties and interactions to bulk properties and vice versa.
- be able to interpret atomic and molecular spectra in terms of quantum mechanical models.
- be able to describe the kinetics of chemical reactions in terms of molecular mechanisms and empirical rate laws.
- be able to apply the laws of thermodynamics to physical and chemical processes.
- be able to analyze and interpret experimental data to draw conclusions about chemical processes from a wide range of disciplines, including chemistry, biology, engineering and geology.
- be able to develop and use models, both conceptual and mathematical, of physical and chemical phenomena and understand the limitations of these models.

ENG T 231 : Foundations of Global Leadership. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Foundational principles and practices of individual and organizational leadership in a global context from an integrated moral, technical and social perspective. Emphasis on developing integrity, valuing and leveraging diversity, acquiring and applying leadership skills.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Able to define integrity, and demonstrate understanding of how it applies to their lives and how to develop it through practice.
- Able to demonstrate familiarity with the code of ethics that corresponds to their profession.
- Able to describe a procedure for making and implementing ethical decisions and effectively apply the procedure to ethical problems of practical interest.
- Able to understand and use a model to describe their own personality type and/or preferences.
- Able to describe what it means to be self-aware and how self-awareness applies to leadership, ethical behavior and global awareness.
- Able to define and effectively practice key interpersonal skills and indicate how they can be cultivated.
- Able to describe a team development process.
- Able to value the diversity that individuals bring to a team setting and use those skills to improve team performance.
- Able to formulate a strategy and develop a plan, consistent with a vision, to accomplish a team project
- Able to define globalization, put it in an historical context and identify some key positive and negative outcomes attributed to globalization
- Able to develop an appreciation for other cultures and an understanding of how cultural factors and other forms of diversity influence communication, teamwork, and the practice of technical disciplines across the globe.
- Able to demonstrate technical understanding of a few global issues and think critically regarding the wise use of technology relative to these issues.

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely

randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

6. Complete technical electives (12 hours minimum) satisfying the following requirements:
   - Complete 2 hours of chemistry laboratory:

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.

NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

CHEM 464 : Physical Chemistry Laboratory 1. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 463 or 467 or 468 or concurrent enrollment.

DESCRIPTION: Experiments related to physical chemistry: thermodynamics and equilibria, phase transitions, kinetic-molecular theory, kinetics; computer manipulation of data, report preparation.

NOTE: May be taken before, after, or concurrent (preferred) with Chem 465.

**Course Outcomes**

- Collect quantitative data using a variety of instruments, including calorimeters and spectrometers
- Fit collected data to mathematical models and extract molecular and bulk parameters
- Prepare and present clear graphs and tables, showing data from experiments
- Write clear lab reports in standard scientific journal format
- Prepare and give high quality oral presentations

CHEM 465 : Physical Chemistry Laboratory 2. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 462 or 467 or 468 or concurrent enrollment.

DESCRIPTION: Experiments related to physical chemistry: quantum mechanics, group theory, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics; computer manipulation of data, report preparation.

NOTE: May be taken before, after, or concurrent (preferred) with Chem 464.

**Course Outcomes**

- Collect quantitative spectroscopic data using a variety of instruments, including FT-IR, UV/Vis
- Fit collected data to physical chemical mathematical models and extract molecular parameters

- Perform molecular computations on the molecules in laboratory experiments
- Prepare and present clear graphs and tables, showing data from experiments
- Write clear lab reports in standard scientific journal format

- Complete 6 hours of approved advanced Engineering course work. In general, these courses are 300-level or above from any of the following departments: Chemical Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical Engineering, or the School of Technology. For details and exceptions, see the department webpage.

- Complete 4 hours of approved advanced course work from an engineering, math, science, or business (EMSB) department. In general, these courses are 300-level or above from any of the following colleges: College of Engineering & Technology, College of Physical and Mathematical Sciences, College of Life Sciences, and the Marriott School of Management. For details and exceptions, see the department webpage.

- At least 1 hour, but no more than 4 hours, of the technical electives must be from a course or courses that provide significant experiential or project-centered learning, or focus on creativity and innovation skills. Applicable courses include Ch En 199R (Internship), Ch En 400 (Creativity), Ch En 498R (Mentored Research), and Eng T 497R (Global Engineering Outreach). For a full list of approved courses, see the department webpage. A course taken under this requirement will count toward either the advanced engineering or EMSB requirement above, depending on the department in which it is listed.

7. Pass a basic compentency exam (L3 Exam) administered by the Chemical Engineering Department (see the department for details.)

*Hours include courses that may fulfill university core requirements.

## Show all Chemical Engineering Courses

**Ira A Fulton College of Engineering and Technology Home**

**Chemical Engineering Department Home**

**Major**

- BS in Chemical Engineering

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# Chemical Engineering (Ch En)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

CH EN 170 : Introduction to Chemical Engineering. (2:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Chem 105 or Chem 111.

DESCRIPTION: Introduction to fundamental principles of chemical engineering and development of problem-solving skills through in-class activities, laboratory experiments, and a hands-on design project.

NOTE: The prerequisites may be taken concurrent with the course. Check with the department.

**Course Outcomes**

- Students will gain a knowledge of the major through the course material.
- Students will be introduced to chemical processes, units, and corresponding equipment.
- Students will gain a familiarity with the chemical engineering field, career options, and potential job functions, and be aware of contemporary issues that may have an impact on professional activities, through lectures and solving homework problems.
- Students will gain appreciation and respect for other disciplines and a knowledge of how chemical engineering relates to other disciplines through faculty lectures and homework problems.
- Students will be able to use basic engineering units in both SI and AES systems in solving problems, and be able to convert between unit systems.
- Students will be introduced to the solution of steady-state, overall, material and energy balances.
- Students will be introduced to the mechanical energy balance equation to solve fluid flow problems both with and without friction.
- Students will be introduced to conduction, forced and free convection, and radiation.
- Students will be introduced to the fundamentals of kinetics including definitions of rate and forms of rate expressions.
- Students will be introduced to the first law of thermodynamics for closed and open systems.
- Students will be introduced to process control terminology and feed-back and feed-forward control systems.
- Students will be introduced to the effective interpretation of graphical data.
- Students will be introduced to a spreadsheet package to perform engineering calculations.
- Students will be introduced to engineering problems and their solutions.
- Students will be introduced to a problem solving strategy to define and solve engineering problems.
- Students will be introduced to critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be introduced to the notions of rationalizing units, making order of magnitude estimates, assessing reasonableness of solutions, and selecting appropriate levels of solution sophistication.
- Students will be introduced to how environmental considerations are incorporated into engineering problem solving.
- Students will understand the impact of engineering solutions, including environmental and economic impacts, in a global context (across cultures and societies) AND in a societal context (within a society).
- Students will practice good teamwork principles.
- Students will demonstrate experience working together in teams.
- Students will be introduced to performance calculations on CSTR reactors.
- Students will be introduced to preliminary size and performance calculations on shell-and-tube heat exchangers.
- Students will be introduced to practical considerations of heat exchangers including types of heat exchangers, materials of construction, and fouling.
- Students will be introduced to the design of flow systems involving pumps for Newtonian fluids.
- Students will be introduced to environmental, social, political, ethical, health and safety, manufacturability, and sustainability constraints in process synthesis.
- Students will be introduced to costs in capital ventures (e.g., capital vs operating costs, salvage value, equipment costing).
- Students will develop a sense of professional community with students by working in teams.
- Students will be introduced to the effective reading of technical material.

CH EN 191 : Preprofessional Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Presentations by faculty, advisors, and industrial representatives.

NOTE: College Lecture attendance required.

**Course Outcomes**

- Students will gain a knowledge of the major and required curriculum through lectures.
- Students will gain a familiarity with the chemical engineering field, career options, and potential job functions, and be aware of contemporary issues that may have an impact on professional activities, through

presentations by faculty and guest lecturers.
- Students will demonstrate a sense of the importance of life-long learning.
- Students will learn to take responsibility for their own learning experience at BYU by maintaining disciplined study habits.
- Students will understand the importance of a well-written resume in obtaining professional employment.

CH EN 199R : Academic Internship. (.5-3:ARR:ARR)

PREREQUISITE: Consent of department internship coordinator.

DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Student acquires professional experiences in the discipline.
- Student demonstrates professional communication skills (report).
- Student demonstrates the ability to use reflective thinking to convert professional experience into academic understanding.

### 200-Level Courses

CH EN 263 : Computational Tools for Chemical Engineers. (2:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CH EN 170 & MATH 113; or concurrent enrollment.

DESCRIPTION: Use of spreadsheets, advanced equation-solving packages, and structured languages to solve engineering problems. Introduction to chemical process principles.

NOTE: College Lecture attendance required.

**Course Outcomes**

- Students will demonstrate an understanding of fundamental mathematics (including calculus, linear and nonlinear simultaneous equation solving, etc.) by using computer tools to solve problems.
- Students will be able to use basic engineering units in both SI and AES systems in solving problems, and be able to convert between unit systems while using an equation solver like Mathcad.
- Students will be able to use a spreadsheet package to perform engineering calculations which include some of the following: economic analysis, processing and analysis of data, graphical analysis and presentation, etc.
- Students will be able to solve numerical and symbolic problems using advanced math software (e.g. Mathcad).
- Students will be able to write program structures, and understand when programming is most appropriate.
- Students will demonstrate an ability to solve engineering problems.
- Students will be able to convert problem solving strategies to procedural algorithms.
- Students will be able to make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.

CH EN 273 : Chemical Process Principles. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: CHEM 106 & CH EN 263; or CHEM 112 & CH EN 263; or concurrent enrollment.

DESCRIPTION: Material and energy balances.

NOTE: College Lecture attendance required.

**Course Outcomes**

- Students will learn about chemical processes, units, and corresponding equipment
- Students will be able to use basic engineering units in both SI and AES systems in solving problems, and be able to convert between unit systems both by hand and with an equation solver.
- Students will be able to solve steady-state, overall, material and energy balances for systems which include one or more of the following: recycle, multiple units, chemical reactions.
- Students will be able to set up and solve simple transient material balances.
- Students will be able to use a degree-of-freedom approach to assist in the solution of material and energy balances.
- Students will be able to read pure component and mixture phase diagrams (e.g. psychrometric chart, solid solubility, liquid-liquid, VLE) and construct mass balances from them using the lever rule, tie lines, etc.
- Students will understand the phase behavior of pure substances in relationship to the variables T, P, and density (including vapor pressure, critical point, freezing line, triple point, etc.).
- Students will be able to use the mechanical energy balance equation to solve fluid flow problems both with and without friction.
- Students will be able to solve simple fluid statics problems (e.g., manometers, fluid head, etc.)
- Students will be introduced to the first law of thermodynamics for closed and open systems.
- Students will be able to apply Raoult's law to solve VLE problems including bubble point, dew point, and flash calculations.
- Students will understand and be able to use the extent of reaction in material balances
- Students will be introduced to equations of state and corresponding states correlations.
- Students will be introduced to the concepts of heat capacity, latent heat, heat of reaction, heat of combustion, and heat of formation.
- Students will be introduced to process variables (e.g., P, T, flow rate, conc.) and their measurement.
- Students will demonstrate effective interpretation of graphical data.
- Students will be able to solve numerical and symbolic problems using advanced math software (e.g. Mathcad).
- Students will be introduced to the use of appropriate information skills, standard office applications, and tools (e.g. WWW, electronic and reference book library searches, modern property databases) to assist in problem solving.
- Students will demonstrate an ability to solve engineering problems.
- Students will be able to use a problem solving strategy to define and solve engineering problems.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to obtain and evaluate appropriate input information/data from databases, handbooks, correlations, experiments, literature, etc.
- Students will be introduced to the notions of rationalizing units, making order of magnitude estimates, assessing reasonableness of solutions, and selecting appropriate levels of solution sophistication.
- Students will be introduced to how safety considerations are incorporated into engineering problem solving.

- Students will be introduced to how environmental considerations are incorporated into engineering problem solving.
- Students will practice good teamwork principles.
- Students will demonstrate experience working together in teams.
- Students will be introduced to calculations involving work in turbines, compressors, and pumps.
- Students will be introduced to the AIChE code of ethics.
- Students will demonstrate effective reading of technical material.

**300-Level Courses**

CH EN 311 : Chemical Engineering and Society. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CH EN 273 & ENG T 231

DESCRIPTION: Responsibility of chemical engineers in society relative to ethics, leadership, safety, environment, and energy.

**Course Outcomes**

- Students will demonstrate effective interpretation of graphical data.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will pass the HAZCOM test.
- Students will be dedicated to safe engineering practices; demonstrate knowledge of pertinent safety laws and regulations; understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will be dedicated to environmentally responsible engineering; demonstrate knowledge of pertinent environmental laws and regulations; understand and have a basic knowledge of how environmental considerations, including green engineering strategies, are incorporated into engineering problem solving.
- Students will understand the impact of engineering solutions, including environmental and economic impacts, in a global context (across cultures and societies) AND in a societal context (within a society).
- Students will understand teamwork principles including: recognition of team members' strengths and weaknesses; importance of effective communication skills; recognition of unique contributions of team members; and the need to facilitate team members' development.
- Students will demonstrate experience working together in teams.
- Students will understand safety constraints and be able to use hazard evaluation tools (e.g., HAZOP, fault-tree).
- Students will understand and commit to practice gospel standards as a basis for sound ethical behavior.
- Students will understand and commit to practice the AIChE code and other professional codes of ethics.
- Students will incorporate an engineering and a gospel-centered problem solving approach to the resolution of ethical dilemmas.
- Students will develop a sense of professional community with students by working in teams.
- Students will understand and strive to develop the qualities of a good leader whose public and private lives are consistent.
- Students will demonstrate effective reading of technical material.

CH EN 373 : Chemical Engineering Thermodynamics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CH EN 273 & CHEM 467

RECOMMENDED: Chem 461.

DESCRIPTION: First and second laws of thermodynamics as applied to behavior of real fluids; physical and chemical equilibrium.

NOTE: College Lecture attendance required.

**Course Outcomes**

- Students will be able to solve steady-state, overall, material and energy balances for systems which include one or more of the following: recycle, multiple units, chemical reactions.
- Students will be able to read mixture phase diagrams (liquid-liquid and VLE) and construct mass balances from them using the lever rule, tie lines, etc.
- Students will be able to set up and solve simple transient energy balances.
- Students will be able to apply solution thermodynamics fundamentals to solve VLE, LLE, SLE, and GLE problems including bubble point, dew point and flash calculations.
- Students will demonstrate an ability to solve engineering problems.
- Students will demonstrate effective interpretation of graphical data.
- Students will be able to use equations of state and corresponding states correlations in the determination of properties.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to perform energy conversion calculations for Rankine power and compression refrigeration cycles.
- Students will be able to set up and solve single-stage flash calculations.
- Students will understand the phase behavior of pure substances in relationship to the variables T, P, and density (including vapor pressure, critical point, freezing line, triple point, etc.)
- Students will understand the concept of entropy and the second law of thermodynamics and be able to apply the second law to closed and open systems.
- Students will understand the fundamental principles of chemical reaction equilibria including extent of reaction, equilibrium constant and its temperature-dependence, equilibrium conversion.
- Students will be able to use modern property databases to assist in problem solving.
- Students will be able to apply the first law of thermodynamics to closed and open systems (including energy, work, and heat transformations in process units such as tanks, turbines, compressors, valves, etc.).
- Students will be able to perform design (sizing) calculations for turbines and compressors (e.g., involving delta H, delta S, work, heat, efficiencies).
- Students will understand the fundamental concepts of solution thermodynamics including chemical potential, fugacity, activity, partial molar properties, ideal solutions, and excess properties.
- Students will understand and have a basic knowledge of how environmental considerations are incorporated into engineering problem solving.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will demonstrate effective reading of technical material.

- Students will understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will understand and be able to apply the concepts of heat capacity, latent heat, heat of reaction, heat of combustion, and heat of formation.

CH EN 374 : Fluid Mechanics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CH EN 273 & CH EN 311 & MATH 302; or CH EN 273 & CH EN 311 & MATH 314; or concurrent enrollment; admission to professional program.

DESCRIPTION: Basic mass, momentum, and energy relations of fluid flow; design of fluid-handling systems and equipment.

NOTE: College Lecture attendance required.

**Course Outcomes**

- Students will understand mechanical behavior of materials including elastic, viscous, surface, and stress phenomena as it pertains to fluid flow applications.
- Students will be able to use the mechanical energy balance equation to solve fluid flow problems both with and without friction.
- Students will understand and be able to describe the physical significance of key dimensionless quantities including Re and f.
- Students will be able to solve simple fluid statics problems.
- Students will be able to determine velocity profiles for steady-state, laminar flow in simple geometries for Newtonian and power-law fluids.
- Students will understand the significance of steady-state, integral and differential mass, energy, and momentum balances in one dimension.
- Students will understand and be able to use advanced fluid mechanical concepts including boundary-layer theory, creeping flow, non-Newtonian flow, rheology, and turbulent flow.
- Students will understand qualitatively how external flow around objects affects drag and will be able to calculate drag forces and terminal velocities.
- Students will understand basic concepts relating to compressible flow, including Mach numbers, shock waves, and choked flow.
- Students will demonstrate effective interpretation of graphical data.
- Students will demonstrate an ability to solve engineering problems.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will understand and have a basic knowledge of how environmental considerations are incorporated into engineering problem solving.
- Students will be able to design flow systems involving pipes, valves, fittings, and pumps for Newtonian fluids.
- Students will be able to select, based on performance characteristics and operational constraints, the appropriate kind of pumps (positive displacement, radial, axial, etc.), turbines (impulse, Francis, Kaplan, etc), and valves for a given application.
- Students will be able to design flow systems involving pipes and pumps for power-law fluids.
- Students will be familiar with the use of computational fluid dynamics as a tool for solving fluid flow in complex geometries.
- Students will demonstrate effective reading of technical material.

CH EN 376 : Heat and Mass Transfer. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CH EN 374

DESCRIPTION: Heat and mass transfer, including conduction, convection, radiation, diffusion; steady and unsteady state systems; transport analogies; design applications.

**Course Outcomes**

- Students will be able to estimate mass transfer coefficients and use them to determine mass transfer rates for both external and internal flows and across phase boundaries.
- Students will understand radiative heat transfer including blackbody radiation and Kirchoffï¿½s law, and be able to solve radiative problems involving view factors and radiative exchange between surfaces.
- Students will learn about chemical processes, units, and corresponding equipment related to heat and mass transfer
- Students will understand qualitatively conduction, forced and free convection, and radiation.
- Students will be able to solve simple transient heat and mass transfer problems with methods such as lumped capacitance, Heisler charts, 1st term approximation, exact numerical solutions, etc.
- Students will understand and be able to use Fick's Law.
- Students will be able to formulate and solve differential energy balances for conduction within a single phase.
- Students will understand heat/mass transfer analogies including their limitations.
- Students will understand convective heat transfer and use of heat transfer coefficients for laminar and turbulent flows, internal and external flows, fully developed flow, flow with entry effects, and forced and free convection.
- Students will be able to analyze systems containing multiple resistances to heat transfer.
- Students will be able to do preliminary size calculations on shell-and-tube heat exchangers using the log-mean-temperature-difference (LMTD) method.
- Students will demonstrate effective reading of technical material.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will demonstrate effective interpretation of graphical data.
- Students will be able to solve simple problems where heat and mass transfer are coupled.
- Students will understand and have a basic knowledge of how environmental considerations are incorporated into engineering problem solving.
- Students will be able to calculate and use overall heat transfer coefficients in designing heat exchangers.
- Students will understand practical considerations of heat exchangers including types of heat exchangers, materials of construction, and fouling.

Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will demonstrate an ability to solve engineering problems.
- Students will be able to do preliminary size calculations on shell-and-tube heat exchangers using the effectiveness-NTU method.

CH EN 378 : Science of Engineering Materials. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 351

DESCRIPTION: Fundamental principles of solid materials and their properties and behavior in engineering applications of metals, polymers, ceramics, and glasses.

**Course Outcomes**

- Students will be able to read liquid-solid mixture phase diagrams involving liquid-solid and solid-solid equilibria and solid solubility and construct mass balances from them using the lever rule, tie lines, etc.
- Students will understand the relationship of molecular interactions, including potential energy and intermolecular forces, to the properties and behaviors of materials.
- Students will understand crystal structure including nomenclature, packing, and defects.
- Students will understand mechanical behavior of materials including elastic, plastic, viscous, glass, surface, and stress/strain phenomena and how they are affected by molecular structure and/or microstructure.
- Students will understand the physical/chemical behaviors of metals, ceramics, and polymers including effects of molecular weight, crystallinity, crystallite size defects, surface energy, heat-treating, and corrosion.
- Students will understand the electronic behaviors of metals, semiconductors, and insulators.
- Students will be able to match the physical and chemical characteristics of a material to process conditions/variables in order to evaluate its suitability for use with the process.
- Students will demonstrate effective interpretation of graphical data.
- Students will demonstrate an ability to solve engineering problems.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will demonstrate effective reading of technical material.

CH EN 386 : Chemical Reaction Engineering. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CH EN 373 & MATH 303; or CH EN 373 & MATH 334; or concurrent enrollment.

DESCRIPTION: Fundamental principles and equations of chemical kinetics and reactor design.

**Course Outcomes**

- Students will be exposed to the fundamentals of heterogeneous catalytic, and non-catalytic systems including potentially limiting mass-transfer and reaction resistances.
- Students will be able to determine rate expressions by analyzing reactor data including integral and differential analysis on constant- and variable-volume systems.
- Students will understand the relationship between forward and reverse rates and chemical equilibrium.
- Students will understand and have a basic knowledge of how environmental considerations are incorporated into engineering problem solving.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will demonstrate an ability to solve engineering problems.
- Students will understand the kinetics of competing reactions and their influence on product yield and selectivity.
- Students will be able to design systems of multiple isothermal reactors.
- Students will be able to develop rate expressions from elementary step mechanisms using steady-state and quasi-equilibrium approximations.
- Students will be able to solve numerical problems using advanced math software.
- Students will be able to select and size isothermal reactors for series and/or parallel systems of reactions.
- Students will be able to size and do performance calculations on single, isothermal plug-flow, CSTR, and batch reactors for a single homogeneous or heterogeneous reaction given either rate data or a rate expression.
- Students will understand fundamentals of kinetics including definitions of rate and forms of rate expressions and relationships between moles, concentration, extent of reaction and conversion.
- Students will demonstrate effective interpretation of graphical data.
- Students will understand the effects of mass and heat transfer, particularly pore diffusion, on heterogeneous catalytic systems.
- Students will understand practical considerations of reactor design including materials of construction, mixing, heat transfer, and economics.
- Students will demonstrate effective reading of technical material.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will be able to derive batch, CSTR, and PFR performance equations from general material balances.
- Students will be able to select and size non-isothermal reactors.
- Students will understand and be able to apply the concepts of heat capacity, latent heat, heat of reaction, heat of combustion, and heat of formation.

CH EN 391 : Career Skills. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Admission to professional program.

DESCRIPTION: Professional, communication, and lifelong learning skills. Field trip to chemical process facility.

**Course Outcomes**

- Students will be able to write an effective personal resume.
- Students will be able to use appropriate information skills, standard office applications, and tools (e.g. WWW, electronic and reference book library searches, modern property databases) to assist in problem solving.
- Students will understand the importance of a well-written resume in obtaining professional employment.

- Students will be able to give effective, well organized oral presentations of technical material in both business and engineering formats including the handling of questions and the use of appropriate visual aids.
- Students will be dedicated to and prepared for a life time of learning.
- Students will develop a sense of professional community with students, faculty, and others.
- Students will learn about chemical processes, units, and corresponding equipment through industrial speakers and a field trip.
- Students will demonstrate experience and ability in interviewing skills.
- Students will demonstrate effective reading of technical material.
- Students will gain a familiarity with the chemical engineering field, career options, and potential job functions, and be aware of contemporary issues that may have an impact on professional activities, through student presentations and a field trip

**400-Level Courses**

CH EN 400 : Creative Skills in Chemical Engineering. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Applications in creativity and technical knowledge from prior course work to solution of relevant, open-ended problems.

**Course Outcomes**

There are no course outcomes available

CH EN 410 : Principles of Reservoir Engineering. (3:3:0)

WHEN TAUGHT: Winter Contact Department

PREREQUISITE: CH EN 373 & CH EN 374

DESCRIPTION: Reservoir engineering principles including a review of rock and fluid properties, material balance in oil and gas reservoirs, fluid flow in porous media, and hydrocarbon production.

**Course Outcomes**

- Calculate values of initial oil and gas in place
- Understand the displacement processes in reservoirs
- Estimate future production from oil and gas reservoirs under primary production
- Use fluid flow equations to calculate pressure drops and flow rates of oil and gas in porous media
- Perform a history match on actual production data and predict future production rates
- Screen reservoirs for enhanced oil recovery processes

CH EN 412 : Introductory Nuclear Engineering. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: CHEM 106 & MATH 303; or CHEM 112 & MATH 303; or equivalent.

DESCRIPTION: Principles and application of nuclear reactor design.

**Course Outcomes**

- At the end of this course, each student should have competent andwell-supported command of the following:I. Nuclear physicsa. Particle and Atom Physicsb. Mass and Energyc. Radioactive Decay Processesd. Interactions of Particles and Radiation with Matter
- Reactor Design and Safetya. Fundamentals of Fission Reactions and Fuelsb. Generation I-IV designs, with distinguishing safety and securityfeaturesc. Reactor Types (fast, breeder, thermal, other)d. Quantitative Approximations for Temperature and Heat Releasee. Reactor Control
- Fuel and waste managementa. Regulationsb. Fuel and Waste Processingc. Accident Histories and Root CausesIV. Career Opportunities in Nuclear Engineering

CH EN 433 : Energy Engineering. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CH EN 311

DESCRIPTION: Science and engineering of energy production including fossil fuels, nuclear, and renewable. Meeting the challenges of future energy needs of the U.S. and the world.

**Course Outcomes**

- Explain the history of energy use, the energy supply problems thathave existed in the past, that exist today, and the potential for problemsin the future.
- Describe current, conventional sources of energy, their availability, and current cost.
- Describe alternate sources of energy, their technical feasibility,and relative cost.
- Explain the technical working principals of major energy processingsystems (turbines, boilers, engines, fuel cells, solar conversion, etc
- Appreciate of the role of energy in our society, and how it affects life-style.
- Evaluate his or her own energy use patterns, and to develop ways tominimize the impact of personal energy usage.
- Understand current and potential future energy career opportunities.

CH EN 436 : Process Control and Dynamics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CH EN 376 & CH EN 386

DESCRIPTION: Process systems, associated control systems, and instrumentation. Use of Laplace transforms and complex variables.

**Course Outcomes**

- Students will learn about chemical processes, units, and corresponding equipment related to process control.

- Students will be able to set up and solve simple transient material balances.
- Students will be able to set up and solve simple transient energy balances.
- Students will demonstrate familiarity with process control terminology and understand the following control strategies: feed-back control, feed-forward control, and cascade control; as well as the difference between linear and nonlinear systems.
- Students will be able to write and solve ODE's that describe the transient behavior of simple systems.
- Students will be able to fit data from step or pulse tests to linear models.
- Students will understand the concept of a transfer function in classical control and be able to use transfer functions (Laplace domain) to approximate the behavior of control loops and their components.
- Students will be able to predict the closed-loop behavior and evaluate the stability of simple control loops.
- Students will understand and be able to use tuning relationships for PID controllers.
- Students will be able to use block diagrams to help determine system response characteristics.
- Demonstrate familiarity with equipment for measurement and control of process variables.
- Students will demonstrate familiarity and experience with the application of process control principles on an industrial control system.
- Students will demonstrate familiarity and experience with process control equipment.
- Students will demonstrate effective interpretation of graphical data.
- Students will be able to use a process simulator to conduct process control.
- Students will demonstrate an ability to solve engineering problems.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will understand and have a basic knowledge of how environmental considerations are incorporated into engineering problem solving.
- Students will understand the principles involved in selecting a control valve.
- Students will be able to tune a single feedback control loop.
- Students will be able to design a simple feedback loop to control process equipment.
- Students will be able to perform preliminary valve sizing and understand the interaction of the valve with other process components.
- Students will understand the concepts involved in multiple single loops in applications like simple distillation column control.
- Students will demonstrate effective reading of technical material.

CH EN 451 : Chemical Engineering Plant Design and Process Synthesis. (4:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: CH EN 391 & CH EN 436 & CH EN 476

DESCRIPTION: Design of chemical engineering machinery; plants and/or processes requiring application of unit operations; chemical process principles; economic analysis. Synthesis and optimization of chemical processes.

NOTE: College Lecture attendance required.

**Course Outcomes**

- Students will perform a capstone design and demonstrate their familiarity with chemical processes, units, and corresponding equipment.
- Students will gain appreciation and respect for other disciplines and a knowledge of how chemical engineering relates to other disciplines through the capstone design problem.
- Students will be able to solve steady-state, overall, material and energy balances for systems which include one or more of the following: recycle, multiple units, chemical reactions.
- Students will be able to apply solution thermodynamics fundamentals to solve VLE, LLE, SLE, and GLE problems including bubble point, dew point and flash calculations.
- Students will demonstrate effective interpretation of graphical data.
- Students will be able to use a process simulator to develop process flow diagrams.
- Students will be able to use a process simulator to design single unit operations including separation columns and reactors.
- Students will be able to use commercial process simulation software for process development.
- Students will be able to use appropriate information skills, standard office applications, and tools (e.g. WWW, electronic and reference book library searches, modern property databases) to assist in problem solving.
- Students will demonstrate an ability to solve engineering problems.
- Students will be able to integrate topics from various Chemical Engineering courses to solve realistic problems.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to obtain and evaluate appropriate input information/data from databases, handbooks, correlations, experiments, literature, etc.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will be dedicated to safe engineering practices; demonstrate knowledge of pertinent safety laws and regulations; understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will incorporate applicable safety and environmental considerations as part of a capstone design project.
- Students will be dedicated to environmentally responsible engineering; demonstrate knowledge of pertinent environmental laws and regulations; understand and have a basic knowledge of how environmental considerations, including green engineering strategies, are incorporated into engineering problem solving.
- Students will understand the impact of engineering solutions, including environmental and economic impacts, in a global context (across cultures and societies) AND in a societal context (within a society).
- Students will be able to give effective, well organized oral presentations of technical material in both business and engineering formats including the handling of questions and the use of appropriate visual aids.
- Students will be able to write effective, well organized technical reports, including formal engineering reports and short letter reports.
- Students will practice good teamwork principles.
- Students will demonstrate experience working together in teams.
- Students will be able to select and size isothermal reactors for series and/or parallel systems of reactions.
- Students will understand practical considerations of reactor design including materials of construction, mixing, heat transfer, and economics.
- Students will be able to size and estimate the capital costs of heat exchangers.
- Students will be able to select pumps, turbines, and valves for a specific application.
- Students will be able to design tray-type columns (e.g., number of trays, tray efficiency, column height, column

diameter, product specs) and/or packed columns (e.g., height of column, packing material, column diameter, flooding velocity).
- Students will understand the implications of nonideal phase behavior and the practical constraints of pressure, temperature, and available utilities on distillation column design.
- Students will understand the interaction of valves with other process components.
- Students will be able to perform design (sizing) calculations for turbines and compressors (e.g., involving delta H, delta S, work, heat, efficiencies).
- Students will understand design hierarchy rationale and be able to apply it to the design of a process.
- Students will understand safety constraints and be able to use HAZOPS and fault-tree analyses in process design.
- Students will understand environmental, social, political, ethical, health and safety, manufacturability, and sustainability constraints and be able to incorporate these into process synthesis.
- Students will be able to design multiple unit processes and be able to optimize them with respect to energy efficiency and economics.

CH EN 475 : Unit Operations Laboratory 1. (2:1:6)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: CH EN 376 & CH EN 391 & ENGL 316
RECOMMENDED: Stat 201.
DESCRIPTION: Experimental verification of unit operations design principles; data collection and reduction; report preparation.

**Course Outcomes**

- Students will gain hands on experience with chemical processes, units, and corresponding equipment through lab experiments
- Students will understand and be able to describe the physical significance of key dimensionless quantities including Re.
- Students will understand qualitatively conduction, forced and free convection, and radiation and have experience with one or more modes during experiments.
- Students will be able to analyze systems containing multiple resistances to heat transfer during laboratory experiments.
- Students will understand convective heat transfer and be able to use heat transfer coefficients as they relate to the UO Laboratory experiments.
- Students will demonstrate familiarity and experience with the measurement of process variables (e.g., P, T, flow rate, conc.) using manual and/or electronic devices and computers.
- Students will demonstrate knowledge of basic laboratory techniques.
- Students will be able to use the scientific method and problem solving strategies, as well as statistical methods, to design, carry out, and analyze experiments in order to solve engineering problems.
- Students will demonstrate familiarity and experience with the application of process control principles on an industrial control system.
- Students will demonstrate familiarity and experience with chemical process equipment.
- Students will demonstrate an understanding of basic engineering statistics in their laboratory reports
- Students will demonstrate effective interpretation of graphical data.
- Students will demonstrate an ability to solve engineering problems.
- Students will be able to integrate topics from various Chemical Engineering courses to solve realistic problems in the areas of heat transfer, fluid flow, and thermodynamics.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to obtain and evaluate appropriate input information/data from databases, handbooks, correlations, experiments, literature, etc.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will understand and practice safe laboratory and chemicals-handling principles.
- Students will be able to give effective, well organized oral presentations including the handling of questions and the use of appropriate visual aids.
- Students will be able to write effective, well organized technical reports, including formal engineering reports and short letter reports.
- Students will practice good teamwork principles.
- Students will be able to do performance calculations on heat exchangers from experimental data and demonstrate abilities or understanding in one or more of the following aspects: heat exchanger sizing, heat exchanger design, fouling, utilization of overall heat transfer coefficients, types of heat exchangers, and materials of construction.
- Students will be able to design or analyze flow systems involving one or more of the following aspects: pipes, valves, fittings, pumps, flow meters, Newtonian fluids, non-Newtonian fluids, laminar flow, and turbulent flow.
- Students will demonstrate effective reading of technical material.

CH EN 476 : Separations. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: CH EN 373 & CH EN 376
DESCRIPTION: Stage operations, distillation, extraction, and absorption; design applications.
NOTE: College Lecture attendance required.

**Course Outcomes**

- Students will be able to solve steady-state material and energy balances as they relate to operating lines and multi-stage separation units.
- Students will be able to read mixture phase diagrams (solid solubility, liquid-liquid, VLE) and construct mass balances from them using the lever rule, tie lines, etc.
- Students will be able to estimate mass transfer coefficients and use them to determine mass transfer rates across phase boundaries.
- Students will be able to apply solution thermodynamics fundamentals to solve VLE, LLE, SLE, and GLE problems including bubble point, dew point and flash calculations.
- Students will understand the fundamental concepts of solution thermodynamics including chemical potential, fugacity, activity, partial molar properties, ideal solutions, and excess properties.
- Students will demonstrate effective interpretation of graphical data.
- Students will be able to use a process simulator to design separation columns.
- Students will demonstrate an ability to solve engineering problems.
- Students will be able to integrate topics from various Chemical Engineering courses to solve realistic problems.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect

relationships.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will understand and have a basic knowledge of how safety considerations are incorporated into engineering problem solving.
- Students will understand and have a basic knowledge of how environmental considerations are incorporated into engineering problem solving.
- Students will have an overall understanding of basic separation techniques used in industry, the principles upon which they are based, and their limitations and assets.
- Students will be able to set up and solve single-stage flash calculations.
- Students will be able to design tray-type columns (e.g., number of trays, tray efficiency, column height, column diameter, product specs) and packed columns (e.g., height of column, packing material, column diameter, flooding velocity).
- Students will be able to find the number of stages required for liquid-liquid extraction from ternary phase diagrams.
- Students will be able to solve binary batch distillation design problems with and without rectifying stages.
- Students should understand the implications of non-ideal phase behavior (e.g., azeotropes and partial miscibility) and the practical constraints of pressure, temperature, and available utilities on distillation column design.
- Students will demonstrate effective reading of technical material.

CH EN 477 : Unit Operations Laboratory 2. (2:1:6)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: CH EN 386 & CH EN 475 & CH EN 476

DESCRIPTION: Experimental verification of unit operations design principles; data collection and reduction; report preparation.

**Course Outcomes**

- Students will gain hands on experience with chemical processes, units, and corresponding equipment through lab experiments
- Students will be able to estimate mass transfer coefficients and use them to determine mass transfer rates for both external and internal flows and across phase boundaries.
- Students will understand fundamentals of kinetics including definitions of rate and forms of rate expressions during laboratory experiments.
- Students will demonstrate familiarity and experience with the measurement of process variables (e.g., P, T, flow rate, conc.) using manual and/or electronic devices and computers.
- Students will demonstrate knowledge of basic laboratory techniques.
- Students will be able to use the scientific method and problem solving strategies, as well as statistical methods, to design, carry out, and analyze experiments in order to solve engineering problems.
- Students will demonstrate familiarity and experience with chemical process equipment.
- Students will demonstrate an understanding of basic engineering statistics in their laboratory reports
- Students will be able to determine rate expressions by analyzing reactor data including integral and differential analysis on constant- and/or variable-volume systems in laboratory experiments.
- Students will demonstrate effective interpretation of graphical data.
- Students will demonstrate an ability to solve engineering problems.
- Students will be able to integrate topics from various Chemical Engineering courses to solve realistic problems in the areas of kinetics and separations.
- Students will exhibit critical and creative thinking skills for analysis and evaluation of problems and cause-effect relationships.
- Students will be able to obtain and evaluate appropriate informational/data from databases, hand books, correlations, experiments, literature, etc.
- Students will be able to rationalize units, make order of magnitude estimates, assess reasonableness of solutions, and select appropriate levels of solution sophistication.
- Students will understand and practice safe laboratory and chemicals-handling principles.
- Students will be able to give effective, well organized oral presentations including the handling of questions and the use of appropriate visual aids.
- Students will be able to write effective, well organized technical reports, including formal engineering reports and short letter reports.
- Students will practice good teamwork principles.
- Students will be able to size and do performance calculations on single, isothermal plug-flow, CSTR, or batch reactors for a single homogeneous or heterogeneous reaction from experimental data.
- Students will be able to design tray-type columns (e.g., number of trays, tray efficiency, column height, column diameter, product specs) and/or packed columns (e.g., height of column, packing material, column diameter, flooding velocity).
- Students will demonstrate effective reading of technical material.

CH EN 493R : Special Topics--Undergraduate. (.5-3:3:ARR)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Classroom study based on student and faculty interest.

**Course Outcomes**

- Students will gain a broad understanding of engineering fundamentals and practices.

CH EN 498R : Undergraduate Research. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Final report required; 2 hours maximum allowed for degree credit.

**Course Outcomes**

- Students will perform fundamental research on specialized topics in a mentored learing enviroment.

## 500-Level Graduate Courses (available to advanced undergraduates)

CH EN 513 : Molecular Modeling. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: CH EN 373; or CHEM 463; or concurrent enrollment.

DESCRIPTION: Fundamentals of quantum mechanics, statistical mechanics, and molecular-level modeling. Basics of computational chemistry and simulations using deterministic and stochastic methods (molecular dynamics and Monte Carlo) to calculate thermodynamic and transport properties of fluids and fluid mixtures.

**Course Outcomes**

There are no course outcomes available

CH EN 518 : Biomedical Engineering Principles. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CH EN 374 & CH EN 376; or equivalent.

DESCRIPTION: Application of chemical engineering principles to model physiologic systems and to solve medical problems.

**Course Outcomes**

- Students will be able to formulate total-body mass balances including the major incoming and outgoing components for the human body.
- Students will be able to discuss the transport characteristics of biological membranes in terms of permeability and to estimate the ion flux, electrochemical potential, or chemical species concentrations associated with a particular environment.
- Students will be able to discuss the factors important to the effectiveness of a neuroprosthetic device.
- Students will be able to describe and to numerically predict major aspects of the humancirculatory system and the behavior of blood in physiologic and man-made flow systems.
- Students will be able to analyze the mechanical behavior of physiological tissue and biomaterials in terms of stress-strain behavior, viscoelasticity, and motion.
- Students will be able to describe the general classes of biomaterials and how they address requirements in various biomedical applications.
- Students will be able to describe the basic processes of tissue engineering and the associated cell growth and transport issues.
- Students will be able to describe the major types of medical imaging and the advantages and disadvantages of each.
- Students will be able to describe several common strategies used in biosensors and to explain the need for such sensors.
- Students will be able to formulate the equations to describe the time behavior of a chemical species for given physiological model, transport, and reaction assumptions.
- Students will be able to describe several medical circumstances for which drug delivery systems would be advantageous and to formulate the equations to describe the release of a drug into a patient under such circumstances.
- Students will be able to describe the clinical requirements for hemodialysis and to mathematically estimate the rate of removal of metabolic products by normal kidneys and during hemodialysis.
- Students will be able to mathematically estimate the transfer of oxygen and carbon dioxide in the lungs and in artificial oxygenators.
- Students will be able to discuss the foundational principles of bioethics and the legal and sociological factors that affect their implementation.

CH EN 519 : Biochemical Engineering. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: CH EN 374 & CH EN 386; or concurrent enrollment.

DESCRIPTION: Applying chemical engineering principles to biochemical systems.

**Course Outcomes**

There are no course outcomes available

CH EN 528 : Industrial Catalytic Processes. (2:2:0)

WHEN TAUGHT: Spring Contact Department

PREREQUISITE: CH EN 386

DESCRIPTION: Fundamentals of catalytic chemistry and materials; applications to important industrial catalytic processes. Includes catalyst materials and preparation, catalyst characterization, fixed-bed reactor design, and catalyst deactivation.

**Course Outcomes**

- Students will learn about key industrial catalytic processes in the production of chemicals, refining of petroleum, and control of the environment.
- Students will learn the key aspects of the process chemistry, kinetics, mechanisms, catalyst deactivation, reactor design and process design of 13 globally-significant catalytic processes.
- Students will apply principles of catalysis to derivation of rate expressions and reactor design calculations for a few processes.

CH EN 531 : Thermodynamics of Multicomponent Systems. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CH EN 373; or CHEM 463; or concurrent enrollment.

DESCRIPTION: Fundamental concepts and applications in first and second laws, equilibrium and stability, phase equilibrium, and homogeneous and heterogeneous chemical equilibrium.

**Course Outcomes**

- Perform 1st & 2nd analysis of heat and work interactions for open systems.Calculate process variables for pure fluids using equations of state, departure functions, and corresponding states.
- Calculate properties of pure fluids (e.g., vapor pressure, molar volumes, etc.) using correlations and equations

of state. Calculate the properties of mixtures using ideal mixing properties and excess properties. Show relationships between pure-fluid properties (e.g., Clapeyron Equation) and determine partial molar enthalpies, volumes, and entropies from experimental data and from equations for excess Gibbs energy.
- Write down the basic equations for vapor-liquid equilibrium using the gamma and phi methods. Find vapor-liquid equilibrium phase compositions, dew points, and bubble points for binary systems with ideal gas phase using the method. Calculate, at a given temperature, pressure, and feed composition, liquid and vapor compositions and amounts vaporized using the gamma and phi methods. Calculate liquid-liquid compositions using excess Gibbs energy equations. Calculate solid-liquid solubilities.
- Know and use the relationship among heats of formation, absolute entropy and Gibbs energy of formation. Know and use the relationship between Gibbs energy of formation and the equilibrium constant. Calculate the equilibrium distribution of reacting ideal gas mixtures. Calculate equilibrium compositions and temperature for a given heat interaction (e.g., adiabatic, isothermal, or given heat leak) for a given feed compostion, pressure, and initial temperature and real fluids. Find the equilibrium distribution for complex reactions.

CH EN 533 : Transport Phenomena. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CH EN 376 & MATH 303; or CH EN 376 & MATH 447; ChEn 476 or concurrent enrollment.

RECOMMENDED: Math 447.

DESCRIPTION: Transport mechanisms and coefficients and fundamental field equations for momentum, heat, and mass transport, with application to system design.

**Course Outcomes**

- Derive the equations of change from conservation principles for a one-dimensional system.Derive the equations of change from conservation principles for an arbitrary curvilinear coordinate system.
- Apply the principles of dimensional analysis to the equations of change to generate terms containing dimensionless parameters such as Re, Pr, Sc, Gr, and Pe.For a given engineering problem, determine which terms in the equations of change are most significant in controlling the velocity, temperature, and concentration distributions.
- Mathematically interpret transport equations that are expressed using vector and tensor notation.Manipulate and generate solutions to equations using vector and tensor notation
- Generate analytic solutions to the equations of change when there is one independent variable, including unidirectional flow of an incompressible fluid with combined convection and diffusion.Demonstrate the principles for solving the equations of change for an incompressible fluid with two independent variables (two spatial, or time and one spatial).
- Solve simple interfacial transport problems with either heat, mass, or momentum transfer, including the use of Cf, Nu, and Sh.Solve interfacial transport problems with combined heat, mass, and momentum transfer; make “blowing factor” corrections to heat and mass transfer when the net-mass-transfer rate is high.
- Estimate viscosity, thermal conductivity, and mutual diffusivity from simple theories such as corresponding states and Chapman-Enskog.Explain the molecular origins of observed transport properties and predict qualitatively the transport performance of newly encountered materials.
- Qualitatively explain the origins and nature of turbulence.
- Describe the rationale and use of the Stefan-Maxwell equation for multicomponent mass transfer.
- Analyze the viability of proposed solutions to engineering problems in terms of transport processes.Apply knowledge of transport processes to generate new solutions to engineering problems.

CH EN 535 : Kinetics and Catalysis. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CH EN 386

DESCRIPTION: Theories and principles of chemical kinetics, including heterogeneous catalysis and reactor design.

**Course Outcomes**

- Define reaction rate; use extent of reaction for defining species concentrations.(a) General properties of rate function & five empirical rules; and (b) purposes of studying kinetics.
- (a) Define elementary step and its rate. (b) Estimate pre-exponential factors from transition-state theory for homogeneous reactions.(a) collision and transition-state theories; and (b) BEBO theory; properties and calculations of partition functions. Estimate pre-exponential factors from TST for surface-phase species.
- Derive a rate expression from a sequence of elementary steps for a homogeneous chain reaction or a heterogeneous catalytic reaction.(a) Applicability and limitations of kinetic tools, including SSA, LCA, RDS, and MASI; open/closed sequences.
- (a) Derive Langmuir adsorption isotherms; (b) calculate BET surface area from N2 adsorption in a solid; (c) calculate dispersion of supported metal catalysts from uptake data.(a) Molecular processes involved in adsorption/desorption of molecules on a solid surface; (b) information available from a full-range isotherm.
- (a) Derive rate expressions for Langmuir-Hinshelwood, Eley-Rideal, and two-site mechanisms of surface reactions; (b) fit rate data to a LH rate expression to determine values of the kinetic constants and specify acceptable statistical measures of the goodness of fit.(a) Principles and guidelines for experimental design and collecting rate data; (b) methods for fitting rate data to empirical and theoretically based rate models; (c) the microkinetics approach to modeling reaction kinetics.
- Calculate concentration and temperature gradients in film and pellet, % resistances for heat/mass transport and reaction, combined and effective diffusivities, and isothermal/-nonisothermal effectiveness factors.(a) Mechanisms of and fundamental equations for heat/mass transport processes during reaction in a solid, porous catalyst; (b) criteria for heat/mass transfer and pore-diffusional disguises.
- Set-up and solve energy, mass, and momentum balances for a 1D adiabatic or heat-exchange packed-bed reactor, incorporating film mass transfer and pore diffusional resistances and effects of gaseous expansion, to obtain catalyst requirements, axial temperature profile, and pressure drop.3D, unsteady-state equations for conservation of mass, energy, and momentum and simplification to 1D, steady-state reaction.

CH EN 541 : Computer Design Methods. (3:3:0)

PREREQUISITE: CH EN 376 & MATH 303; or CH EN 376 & MATH 334; or equivalent.

DESCRIPTION: Computer-aided design and numerical methods of chemical engineering processes.

**Course Outcomes**

- Students will apply computational techniques to solve a wide range of nerical problems arising in Chemical Engineering
- Students will become proficient in numerical computer programming.
- Students will learn theory, algorithms, implementation, and analysis of output for numerical methods including

the following:Round off and truncation errorsStability and convergence criteriaDirect and iterative solution of linear systems of equationsSolution of nonlinear algebraic systems of equationsSolution of linear and nonlinear systems of initial and boundary value ordinary differential equationsClassification and characteristics of partial differential equationsSolution of elliptic, parabolic, and hyperbolic partial differential equations using finite difference and finite volume methodsNumerical integration and interpolation of functions

CH EN 578 : Polymer Science and Engineering. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.; Spring Odd Yrs.

PREREQUISITE: CH EN 378; or equivalent.

DESCRIPTION: Foundation science and theory of polymer chemistry and physics and their implications in engineering applications. Topics include polymerization chemistry, structure-property relationships, polymer physics, and transport properties.

**Course Outcomes**

- Students can name polymers and identify the monomers from which the polymers are built.
- Students recognize the roles that polymer configuration and conformation have upon polymer physical and chemical properties.
- Students can describe the mechanisms of chain polymerizations, and can predict reaction rates and polymer chain lengths.
- Students can describle the mechanisms of step polymerizations, and can predict reaction rates and polymer chain lengths.
- Based on tabulated mechanical properties, students can design polymer structures to sustain engineering loads, and can predict deformations under load.
- Students can name various manufacturing processes and can do simple formulation of manufacturing processes to build things from polymers.
- Students recognize the principles of polymer recycling and can select appropriate recycle or reuse methods to balance economics and environmental responsibility.
- Students can analyze industrial scale polymerization processes and evaluate the advantages and disadvantages of various processes.
- For a given scenario or application, students can propose various polymers that meet the requirements, identify the monomers required to make the polymers, and design the industrial polymerization and manufacturing processes to produce the desired object for the application.

CH EN 593R : Special Topics - Intermediate. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Special topics for advanced undergraduate students and for graduate students.

**Course Outcomes**

- Students will develop knowledge and skills about topics addressed at the appropriate level but not regularly taught as part of the department curriculum

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Chemical Engineering Department Home**

**Major**

- BS in Chemical Engineering

**Course Information**

- Chemical Engineering Courses

**Faculty**

# Chemical Engineering Faculty

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## Professors

Baxter, Larry Lin
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1983
PhD, Brigham Young University, 1989

Fletcher, Thomas Harvey
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1979
MS, Brigham Young University, 1980
PhD, Brigham Young University, 1983

Harb, John N.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1983
MS, University of Illinois, Chicago, 1985
PhD, Uiversity of Illinois, Urbana, 1988

Lewis, Randy
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1989
PhD, Massachusetts Institute of Technology, 1995

Pitt, William G.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1983
PhD, Uiversity of Wisconsin, Madison, 1987

Wilding, Wade Vincent
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
PhD, Rice University, 1985

## Associate Professors

Argyle, Morris D.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1990

PhD, University of California, Berkeley, 2003

Hecker, William C.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, Brigham Young University, 1975
PhD, University of California, Berkeley, 1982

Knotts, Thomas Allen

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 2001
PhD, University of Wisconsin, Madison, 2006

Wheeler, Dean Richard

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Associate Professor
**DEGREES:** PhD, University of California, Berkeley, 2002

## Assistant Professors

Bundy, Bradley C.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2004
MS, Stanford University, 2006
PhD, Stanford University, 2009

Cook, Alonzo D.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1989
MS, Brigham Young University, 1991
PhD, Massachusetts Institute of Technology, 1996

Hendengren, John D.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
MS, Brigham Young University, 2002
PhD, University of Texas at Austin, 2005

Lignell, David O.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Chemical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 2001
PhD, University of Utah, 2008

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**Civil and Environmental Engineering Department Home**

**Majors**

- BS in Civil Engineering

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- Civil and Environmental Engineering Courses

**Faculty**

# Civil and Environmental Engineering

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## Admission to Degree Program

The degree program in the Department of Civil and Environmental Engineering is open enrollment.

## The Discipline

The BYU Department of Civil and Environmental Engineering prepares students for professional involvement in structural, water resources, environmental, geotechnical (soils), and transportation engineering.

Structural engineers analyze and design buildings, bridges, and other structures. The engineer applies principles of physics, mathematics, and engineering to develop efficient yet safe designs. Sophisticated computer models are used in these analyses. Materials used by structural engineers include steel, aluminum, concrete, masonry, wood, and composites.

Water resource and environmental engineers design pipeline systems, water treatment plants, dams, flood control structures, waste disposal sites, and environmental restoration projects. Computer modeling and analyses are used in design and to forecast storm runoff, flooding, and movement of contaminants in surface and subsurface waters. Environmental engineers evaluate and reduce pollutants from natural, human, agricultural, and industrial sources to preserve the beauty and quality of air, land, and water.

Geotechnical engineers design structures composed of or located within earth materials, including foundations for buildings and bridges, retaining walls, earth dams, highway embankments, tunnels, and liners for landfills. Field and laboratory tests on soil and rock, along with empirical and computer models, are used to assure safety and economy in design.

Traffic and transportation engineers apply scientific principles to the planning, design, construction, operation, and management of transportation systems, including highways, airports, and mass transit facilities. Transportation engineers are responsible for the safe, rapid, comfortable, convenient, economical, and environmentally compatible movement of people and goods. Computer models and simulations are frequently used by traffic engineers for geometric design and for planning, operating, and managing transportation networks, including intermodal systems.

## Department Mission Statement

The mission of the Department of Civil and Environmental Engineering is to produce graduates who possess technical competence in their chosen specialty area of civil engineering, integrity, and a commitment to the principles of the gospel of Jesus Christ, that will prepare them to serve and contribute as innovators, professional engineers, and leaders in the global community.

## Program Educational Objectives

The undergraduate program in civil engineering has the following educational objectives:

1. Develop innovative engineers who competently apply recognized technical methods to meet human needs for water, shelter, and transportation.
2. Develop leaders with global awareness who hold paramount the safety, health, and welfare of the public while sustaining and protecting the environment.
3. Develop citizens with moral character and commitment to the gospel of Jesus Christ who provide life-long service to the public, church, and professional community.

## Expected Learning Outcomes

These objectives are intended to develop the following outcomes in students graduating from the civil engineering program:

1. An ability to apply knowledge of mathematics through differential equations, calculus-based physics, chemistry, and geology.
2. An ability to design and conduct civil engineering experiments, as well as to analyze and interpret data.
3. An ability to design a system, component, or process in more than one civil engineering context to meet desired needs within multiple realistic constraints.
4. An ability to lead and function on multidisciplinary teams.
5. An ability to identify, formulate, and solve engineering problems.
6. An understanding of professional and ethical responsibility, and their relationship with faith.
7. An ability to communicate effectively.
8. The broad education necessary to understand sustainability—the impact of engineering solutions in a societal, environmental,

and economic context.
9. A recognition of the need for, and an ability to engage in life-long learning, professional licensure, and service.
10. A knowledge of contemporary issues including globalization.
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
12. An ability to explain basic concepts in management, business, and public policy.
13. An ability to apply knowledge of geotechnical engineering.
14. An ability to apply knowledge of structural engineering.
15. An ability to apply knowledge of transportation engineering.
16. An ability to apply knowledge of water resources engineering.

## Career Opportunities

Civil engineers are employed in industry, private consulting, and government. Industries employing many civil and environmental engineers include construction, transportation, aerospace, petroleum, and mining. Many civil engineers enter private consulting practices, and many eventually establish their own firms. The yellow-page directories for major cities generally list many civil, structural, environmental, geotechnical, and transportation engineering firms.

Civil engineers are also employed by national, state, and local governments. Most cities and counties have engineering departments staffed largely by civil engineers. Departments of transportation, environmental protection agencies, the Army Corps of Engineers, and the Bureau of Reclamation hire many civil engineers.

Civil engineering may be used as a preprofessional program for careers in architecture, law, and business.

Because civil engineers design structures that affect public health and safety, licensure as a Professional Engineer is required for most positions. A necessary prerequisite for licensure is graduation from an accredited engineering program. The civil engineering program is fully accredited by the Accreditation Board for Engineering and Technology (ABET).

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Civil Engineering** (Program Outcomes)

Students should see the department for help or information concerning the undergraduate program.

## Graduate Programs and Degrees

MS in Civil Engineering
PhD in Civil Engineering

For more information see the BYU 2014–2015 Graduate Catalog.

## General Information

Students are strongly encouraged to consult with the department regarding their course scheduling.

Qualified students from junior colleges with adequate preengineering programs can normally complete the BS degree in two additional years. Students who transfer into the department from other universities or from other departments at BYU will be placed in the civil engineering program according to an evaluation of completed work. Prospective transfer students should contact the department as soon as possible so that any variations can be accommodated with a minimum loss of time.

A maximum of 9 credit hours with D grades are allowed in the Department of Civil and Environmental Engineering classes. Clearance for graduation will be denied until D credits are reduced to 9 hours or less.

### Professional Engineer Registration

The Department of Civil and Environmental Engineering encourages graduates to become registered Professional Engineers. General qualifications for becoming registered are explained in the Ira A. Fulton College of Engineering and Technology section of this catalog. This status is vital to engineering practice in the public sector and to much consulting work. The civil engineering program prepares graduates to successfully complete the Fundamentals of Engineering (FE) examination, an important step in becoming registered. Students who wish to strengthen their preparation for the FE exam should select the required engineering courses with this need in mind.

**Ira A. Fulton College of Engineering and Technology Home**

**Civil and Environmental Engineering Department Home**

**Majors**

- BS in Civil Engineering

**Course Information**

- Civil and Environmental Engineering Courses

**Faculty**

# BS in Civil Engineering (94–97 hours*)

Show All Course Descriptions
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## Program Requirements | View MAP | View Program Outcomes

1. Complete the following courses:

CE EN 100A : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Activities of civil engineering; principles and methods involved in solving civil engineering problems.

NOTE: College Lecture attendance required.

**Course Outcomes**

- 1(i) Begin to understand the process required to become a professional engineer
- 2(i) Begin to understand the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- Begin to learn how to work in teams on civil engineering related projects that benefit the community.
- 4(f) Begin to understand ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Begin to understand contemporary issues in civil engineering as illustrated by projects presented by practicing engineers

CE EN 100B : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Winter

DESCRIPTION: Activities of civil engineering; principles and methods involved in solving civil engineering problems.

NOTE: College Lecture attendance required.

**Course Outcomes**

- 5(j) Begin to understand contemporary issues in civil engineering as illustrated by projects presented by practicing engineers
- 2(i) Begin to understand the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- 3(d) Begin to learn how to work in teams in civil engineering related projects that benefit the community
- 4(f) Begin to understand ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Begin to understand contemporary issues in civil engineering as illustrated by projects presented by practicing engineers

CE EN 101 : Introduction to Civil and Environmental Engineering. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to what civil and environmental engineering is all about. Careers in the profession. Courses and curriculum of the major. Freshman projects and teamwork.

**Course Outcomes**

- 1(d) Participate on a student team to complete assigned tasks.
- 2(i) Discover and digest information from the internet, the literature, and interviews about assigned civil engineering subjects.

CE EN 103 : Engineering Mechanics--Statics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 112; or MATH 111 & MATH 119; or concurrent enrollment.

DESCRIPTION: Concepts of mechanics: force systems in equilibrium, resultants, friction, centroids, utilization of vector algebra, simple trusses, shear and bending moment diagrams, moments of inertia.

**Course Outcomes**

- Be able to manipulate basic engineering units in both the International and US Customary Systems of Units in engineering analysis and be able to convert between the two.

Be able to perform basic vector operations using standard vector notation.
- Be able to conceptualize and draw a conventional free-body diagram which identifies and applies all known and unknown forces.
- Understand the nature of forces(s) and their manipulation in engineering analysis, including moments, couples, transmissibility and resultants.
- Understand the conditions for equilibrium for both a particle and a rigid body.
- Be able to determine the axial forces in the members of a statically determinant truss.
- Be able to calculate the center of gravity for 2 and 3 dimensional rigid bodies.
- Be able to both calculate and draw diagrams for the internal shear forces and bending moments in straight, statically determinant beams.
- Understand the nature of friction and be able to solve problems involving friction and shear on horizontal and inclined planes.
- Be able to use calculus to compute centroids of lines, areas and volumes.
- Demonstrate competence in basic engineering analysis.

CE EN 112 : Engineering Drafting with CAD Applications. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Civil engineering or technology education major status

DESCRIPTION: Structural and component drafting, emphasizing computer-automated (CAD) systems. Concepts include applied and descriptive geometry, multiview representation, sectional views, dimensional practices, and axonometric sketching.

**Course Outcomes**

- An understanding of fundamental drafting concepts and manual drafting techniques
- An understanding of CAD-based drafting techniques
- An ability and skills for preparing technical drawings manually and by using AutoCAD
- An ability to work in a team to complete a term project and produce a technical report
- An ability to communicate with team members and produce an effective, well organized oral presentation
- An understanding of Building Information Modeling (BIM) and its application in engineering
- An ability to use BIM software to develop structural models for analysis
- An ability to present structural data in a collaborative environment

CE EN 113 : Engineering Measurements. (3:2:3)

WHEN TAUGHT: Fall; Spring

RECOMMENDED: Math 111 or knowledge of trigonometry.

DESCRIPTION: Measurement of horizontal and vertical distances and angles to locate engineering projects including profiles, plane and topographical mapping, site layout, and earthwork. Introduction to GIS and mapping for surveying projects.

**Course Outcomes**

- Make order of magnitude estimates, assess reasonableness of solutions, and report appropriate levels of numerical accuracy
- Understand basic coordinate geometry functions and how they are used in surveying to reduce field measurements to useable quantities for design and analysis
- Make accurate horizontal and vertical angle and horizontal and vertical distance measurements
- Operate a total station and make plans for their use in engineering projects
- Close a horizontal traverse by computing distances, azimuths, bearings, accuracy, latitudes and departures and their accompanying adjustments to produce accurate coordinate locations
- Operate Global Positioning System (GPS) devices for mapping purposes
- Understand the concepts between geographic and projected coordinate systems and the relationship of locally surveyed information to these global systems
- Use basic functions of a Geographic Information System (GIS) to develop appropriately scaled and referenced maps of their surveyed data
- Take measurements for and develop a topographic map
- Design and layout horizontal and vertical alignments of highways

CE EN 200A : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CE EN 100A & CE EN 100B & CE EN 101

DESCRIPTION: Activities of civil engineering; principles and methods involved in solving civil engineering problems.

NOTE: College Lecture attendance required.

**Course Outcomes**

- 1(i) Continue developing an understanding of the process required to become a professional engineer
- 2(i) Continue developing an understanding of the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- 3(d) Work in and begin leanring how to lead teams in civil engineering related projects that benefit the community
- 4(f) Continue developing an understanding of ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Continue developing an understanding of contemporary issues in civil engineering as illustrated by projects presented by practicing engineers

CE EN 200B : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CE EN 100A & CE EN 100B & CE EN 101

DESCRIPTION: Activities of civil engineering; principles and methods involved in solving civil engineering problems.

NOTE: College Lecture attendance required.

**Course Outcomes**

- 1(i) Continue developing an understanding of the process required to become a professional engineer
- 2(i) Continue developing an understanding of the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- 3(d) Work in and begin learning how to lead teams in civil engineering related projects that benefit the community
- 4(f) Continue developing an understanding of the ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Continue developing an understanding of contemporary issues in civil engineering as illustrated by projects presented by practicing engineers

CE EN 203 : Engineering Mechanics--Mechanics of Materials. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CE EN 103

DESCRIPTION: Fundamental concepts of elastic stress and strain, including transformations and stress-strain relations; beam/column theories (axial, flexure, torsion, and shear loads and deformations); shear and bending moment relationships; column stability; and cylindrical and spherical pressure vessels.

**Course Outcomes**

- Students will be able to calculate and transform axial stress (e.g., Mohr's Circle), shear stress, bearing stress, thermal stress, bending stress, and combined stress.
- Students will be able to calculate strain, transform strain (e.g., Mohr's Circle), apply stress-strain relations (e.g., Hooke's Law), and solve statically indeterminate problems.
- Students will be able to analyze deflections due to axial, torsion, bending, and shear loads, and manipulate relations between shear and bending moment.
- Students will be able to design beams and columns to carry specified axial, flexure, and shear loads, and predict their deformation and elastic stability (i.e., buckling).
- Students will be able to predict stresses in pressure vessels.

CE EN 204 : Engineering Mechanic--Dynamics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CE EN 103

DESCRIPTION: Concepts of dynamics applied to particles, systems of particles, rigid bodies, vibration systems, and nonrigid particles systems.

**Course Outcomes**

- 1 (a) Understand the kinematics of particles and be able to perform rectilinear and curvilinear analysis of particle motion described in appropriate coordinate systems.
- 2 (a) Understand Newton's Laws of Motion and be able to write and solve the equations of motion for particles and systems of particles in appropriate coordinate systems.
- 3 (e) Understand the principles of Work and Energy and Impulse and Momentum as they apply to particles and systems of particles and be able to solve problems appropriate thereto.
- 4 (e) Be able to determine the motion of rigid bodies in translation and rotation about a fixed axis and to understand the principles associate with general plane motion.
- 5 (e) Be able to apply the principles of Force and Acceleration, Work and Energy, and Impulse and Momentum to rigid bodies and to solve problems appropriate thereto.
- 6 (e) Understand the basic concepts of one-degree-of-freedom vibration and to solve simiple problems related to such motion.

CE EN 270 : Computational Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 113; or concurrent enrollment.

DESCRIPTION: Computational techniques for solving civil engineering problems.

**Course Outcomes**

- Be able to utilize computer science concepts such as how information is stored in a computer in a digital format to calculate data size and data transfer rates.
- Be able to utilize the full range of IT resources available to students in the BYU College of Engineering and Technology.
- Be able to design and edit web pages in HTML format.
- Be able to create sophisticated and professsional Microsoft Powerpoint presentations, including use of themes and animation.
- Be able to use Microsoft Word to develop complex, lengthy technical documents, utilizing advanced features such as cross referencing and auto-generated tables of contents and figures.
- Be able to use the basic and advanced features in Microsoft Excel including formulas, relative vs. absolute referencing, naming cells, vlookup, IF function, validation, custom formatting, array formulas, charts, goal seek, and the Solver add-on to solve civil engineering problems.
- Be able to record and use macros to automate frequently-used tasks in Excel or to explore what VB code is associated with the task.
- Be able to reference cells and ranges in VB to either extract information from cells or write information to cells.
- Be able to add controls to a spreadsheet and associate those controls with VB code.
- Be able to use the MsgBox and InputBox objects in VB to present information to users or to prompt for input.
- Be able to use objects in VB programming, including properties and methods and be able to explore and research new object classes when necessary.
- Be able to use IF statements and conditional expressions to control the flow of logic in VB code.
- Be able to use each of the looping strategies in VB to encode iterative programming logic.
- Be able to allocate and use arrays in visual basic to process vectors, matrices, tables, and lists of data.

- Be able to use the debugging utilities in VB to identify and correct logical errors in your code.
- Be able to design and code custom functions in VB that can be called from Excel formulas or from other places in your VB code.
- Be able to develop custom subs to perform specific tasks in VB or modify subs created by recorded macros to make the macros powerful or applicable in a variety of applications.
- Be able to trap on a variety of different types of events and execute VB code in response to those events.
- Be able to utilize the VB string functions in order to manipulate text.
- Be able to create custom forms and associate those forms with an excel workbook.

CE EN 300A : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Fall
PREREQUISITE: CE EN 200A & CE EN 200B
DESCRIPTION: Technical and professional activities in civil engineering.
NOTE: College Lecture attendance required.

**Course Outcomes**

- (i) Continue developing an understanding of the process required to become a professional engineer
- 2(i) Continue developing an understanding of the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- 3(d) Work in and continue learning how to lead teams in civil engineering related projects that benefit the community
- 4(f) Continue developing an understanding of the ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Continue developing an understanding of contemporary issues in civil engineering as illustrated by projects presented by practicing engineers

CE EN 300B : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Winter
PREREQUISITE: CE EN 200A & CE EN 200B
DESCRIPTION: Technical and professional activities in civil engineering.
NOTE: College Lecture attendance required.

**Course Outcomes**

- 1(i) Continue developing an understanding of the process required to become a professional engineer
- 2(i) Continue developing an understanding of the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- 3(d) Work in and continue learning how to lead teams in civil engineering related projects that benefit the community
- 4(f) Continue developing an understanding of the ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Continue developing an understanding of contemporary issues in civil engineering as illustrated by projects presented by practicing engineers

CE EN 304 : Civil Engineering Materials: Metals, Woods, and Composites. (1.5:2:3)

PREREQUISITE: CE EN 203 & CE EN 270 & STAT 201
DESCRIPTION: Molecular basis and mechanical behavior of civil engineering structural materials; failure theories; laboratory testing.

**Course Outcomes**

- Be able to extract basic material properties of wood, aluminum and steel from simple mechanical tests.
- Observe and understand the failure mechanisms of isotropic and orthotropic materials.
- Understand basic characteristics of fiber-reinforced plastic composite materials.
- Be able to apply the maximum normal stress, maximum shear stress, and octahedral shear stress failure theories.

CE EN 306 : Civil Engineering Materials: Concrete, Masonry, and Asphalt. (1.5:2:3)

PREREQUISITE: CE EN 203 & CE EN 270 & STAT 201; Eng T 231 or concurrent enrollment.
DESCRIPTION: Composition, engineering behavior, and construction of concrete, masonry, and asphalt; laboratory testing.

**Course Outcomes**

- Understand properties, behavior, and use of aggregates.
- Understand manufacturing, properties, behavior, and use of portland cement.
- Understand production, properties, placement, behavior, and use of portland cement concrete.
- Understand production, properties, placement, behavior, and use of masonry units.
- Understand manufacturing, properties, behavior, and use of asphalt cement.
- Understand production, properties, placement, behavior, and use of asphalt concrete.
- Be able to perform selected laboratory test procedures on aggregate-based materials.
- Be able to analyze and interpret experimental laboratory test data.
- Be able to prepare professional technical reports documenting laboratory investigations of material properties.

CE EN 321 : Structural Analysis. (3:3:0)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: CE EN 203 & CE EN 270; or concurrent enrollment.
DESCRIPTION: Methods of statics. Influence line diagrams. Method of virtual work. Plastic hinge analysis. Flexibility (force) method, stiffness (displacement) method, and moment distribution method for analysis of indeterminate beams, trusses, and frames. Introduction to computer structural

analysis.

**Course Outcomes**

- 1(a) Apply Newton's Laws of force equilibrium to determine axial forces, shear forces, and bending moments in statically determinate beams, trusses, frames, arches, and cables.
- 2(a) Apply calculus and the principle of virtual work to determine displacements in statically determinate beams, trusses, and frames.
- 3(e) Use appropriate assumptions to perform approximate analysis and plastic hinge analysis of statically indeterminate beams and frames.
- 4(e) Critically place live loads on beams, trusses, and frames using influence line diagrams.
- 5(e) Identify symmetry, antisymmetry, degrees of indeterminacy, and degrees of freedom in beams, trusses, and frames.
- 6(n) Define basic structural engineering terminology.
- 7(n) Analyze statically indeterminate beams, trusses, and frames by the flexibility method.
- 8(n) Analyze beams, trusses, and frames by the stiffness method.
- 9(n) Analyze beams and frames by moment distribution.
- 10(n) Analyze beams, trusses, and frames with commercial structural analysis software.

CE EN 332 : Hydraulics and Fluid Flow Theory. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CE EN 204 & CE EN 270 & ENG T 231; or concurrent enrollment.

DESCRIPTION: Fluid properties, fluid statics and dynamics, viscous flow, boundary layers, concepts of pipe and open-channel flow.

**Course Outcomes**

- 1(p) Be able to setup, perform, evaluate and report on several elementary hydraulic experiments, including: static pressure force, impulse forces from a fluid jet, energy losses in pipe flow, minor energy losses in pipe systems, and flow over weirs in open channels.
- 2(a) Be able to perform basic calculations for static pressures and forces in fluids.
- 3(a) Understand conservation of mass, energy, and momentum principles as applied to fluid flow situations, and be able to apply them to flow analysis problems.
- 4(e) Understand the concepts of drag and lift and be able to apply both to solve introductory problems of forces and dynamics.
- 5(e) Understand alternate standard approaches and formulas, and be able to analyze and design pressure pipe systems.
- 6(p) Understand standard approach and formulas, and be able to analyze and design open-channel flow systems.
- 7(p) Understand the basic elements of pump and turbine flow, and be able to analyze and select the pump needed for situations involving fluid pumping.

CE EN 341 : Elementary Soil Mechanics. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CE EN 203 & CE EN 270; CE En 332 or concurrent enrollment. Geol 330 or concurrent enrollment.

DESCRIPTION: Determination of stresses in soils, soil strength, consolidation, and settlement. Applications in fluid flow, lateral earth pressure, bearing pressure, and slope stability.

**Course Outcomes**

- 2. (g) Communicate results of geotechnical tests effectively and explain their meaning in a clear and concise manner.
- 1. (b) Perform basic laboratory tests on soils including seive analysi, Atterberg limits, compaction, direct shear, triaxial shear and consolidation. Be able to perform the basic calculations associated wtih laboratory tests on soils.
- 3. (m) Perform fundamental calculations and analyses including weight-volumen relationships and soil classification. Understand influence of soi structure and mineralogy on soil behavior.
- 4. (m) Understand basic principles of flow through porous media including Darcy's law, the equation of continuity, seepage forces and flow nets.
- 5. (m) Understand how stresses are transferred through soils. Compute both geostatic stress (total stress, effective stress, and pore pressures) and induced stresses due to point, line and area loads.
- 6. (m) Understand basic consolidation theory. Compute the amoun of settlement and the time required for settlement under a given load.
- 7. (m) Understand shear strength principles including Mohr-Coloumb failure criterion. Perform basic caluclations related to shear strength analyis.
- 8. (m) Analyze lateral earth pressures under at-rest, active and passive conditions.
- 9. (m) Perform bearing capacity analysis for spread footings of various shapes. Understand how bearing capacity equations are used in foundation design.

CE EN 351 : Environmental Engineering. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 105

DESCRIPTION: Environmental concerns, problems, and evaluation methodology; pollution control and engineering management approaches; material balance and separations; reactor design.

**Course Outcomes**

- Be able to setup and solve material balance calculations for environmental engineering problems.
- Understand zero, first, and second order reactions equations and be able to solve simple problems using these concepts. Understand half-life and doubling time and how it applies to reactor design.
- Understand and solve problems using mixed-batch, plug-flow, and completely mixed mixing models. Solve simple design problems for mix-batch, plug-flow, and completly mixed flow reactors.
- Understand and solve simple problems of energy balance. This will include units of meausre, conversion, energy equivalance, and power production.
- Understand the concept of an ecosystem. This includes material and energy flows.

- Understand basic water quality measures: dissolved oxygen, oxygen demand, solids, nitrogen, and bacteria measurements. Be introduced to water quality standards for drinking water, effluents, and surface waters.
- Understand and solve basic engineering problems related to water treatment processes including softening, coagulation and floculation, settling, filtration, and disinfection.
- Understand and solve basic engineering problems related to waste water treatment. This will include understanding the basic unit operations: preliminary and primary treatment, secondary treatment, tertiary treatment, and sludge treatment and disposal. Understand and be able to solve basic engineering problems related to activated sludge systems, including reactor design and solids separation.
- Understand the basic processes and issues related to air quality, this includes major air pollutants, sources of air pollution, and air quality standards.
- Understand the basic issues and regulations related to hazardous and radioactive waste. This includes legal definitions and approaches.

CE EN 361 : Introduction to Transportation Engineering. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CE EN 113 & CE EN 270; Eng T 231, Stat 201; or concurrent enrollment.

DESCRIPTION: Transportation system characteristics, traffic engineering and operaton, transportation planning, geometric design, pavement design, transportation safety, freight, public transport, sustainable transportation.

**Course Outcomes**

- 1(o) An understanding of the history of the development of transportation in the United States and that the transportation modes and networks available in a community significantly influence the way the community develop.
- 2(h) An ability to approach transportation problems, especially traffic congestion on highways, from a systems point of view, as an interaction between land use and transportation systems, not just as the problem related to highways. This competency is all inclusive, including public transportation, freight, and sustainability.
- 3(b) An ability to conduct activities to measure traffic stream characteristics (volume, speed, and density) and an ability to analyze field data to estimate values for traffic stream parameters, including hypothesis tests.
- 4(b) An ability to build a standard traffic flow model (based on the Greenshields Model) to fit observed traffic data and an understanding of the randomness of traffic flow characteristics.
- 5(b) An understanding of the concept of level of service (LOS) and capacity and an ability to evaluate the performance of basic roadway segments using standard procedures based on this concept.
- 6(o) An understanding of the four steps in the traditional travel demand modeling process, the two-way relationship between land use and transportation, and how the travel demand modeling fits into the transportation-planning process.
- 7(b) An understanding of the highway safety improvement program and an ability to determine standard safety evaluation parameters.
- 8(b) An understanding of the dynamic interaction of the driver, roadway, and vehicle, and an ability to evaluate and design roadway sections for safe stopping sight distance.
- 9(b) An ability to determine key dimensions of horizontal and vertical alignments of roadway sections using safe stopping sight distance and the concept of superelevation and an ability to calculate the appropriate distance for passing/no-passing zones for a rural two-lane road.
- 10(c) An ability to determine when an intersection warrants the installation of a traffic signal, an ability to design signal settings for intersections so that drivers will not face a dilemma zone, and an understanding that congestion and associated delays are societal costs.
- 11(c) An understanding of pavement structures and their characteristics and an ability to design bituminous pavements using the AASHTO method that requires knowledge of traffic engineering, pavement material characteristics, and economics.
- 12(o) An understanding of rail transit service in a corridor with respect to station spacing and vehicle capabilities, an ability to calculate changes in transit ridership in response to changes in fare or service (elasticity) and an ability to measure and compare the performance of public transportation operations.
- 13(o) An understanding of the role of freight movement in the economy and an ability to explain why certain commodities tend to move on specific transport modes.
- 14(h) An ability to describe what sustainable transportation is and how it can be supported, and an ability to explain the impacts of traffic congestion on a corridor or in a community.
- 15(d) An ability to lead and function on multidisciplinary teams and (g) An ability to communicate in a team environment and an ability to compose professional documents in a clear, concise, and effective manner.

CE EN 400A : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 300A & CE EN 300B

DESCRIPTION: Technical and professional activities in civil engineering.

NOTE: College Lecture attendance required.

**Course Outcomes**

- 1(i) Understand the process required to become a professional engineer
- 2(i) Understand the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- 3(d) Work in and lead teams in civil engineering related projects that benefit the community
- 4(f) Understand ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Understand contemporary issues in civil engineering as illustrated by projects presented by practicing engineers

CE EN 400B : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 300A & CE EN 300B

DESCRIPTION: Technical and professional activities in civil engineering.

NOTE: College Lecture attendance required.

**Course Outcomes**

- 1(i) Understand the process required to become a professional engineer
- 2(i) Understand the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- 3(d) Work in and lead teams in civil engineering related projects that benefit the community
- 4(f) Understand ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Understand contemporary issues in civil engineering as illustrated by projects presented by practicing engineers.

**Note:** Students must be enrolled in seminar each semester from the time the major is declared until graduation, beginning with 100A/B and continuing through 400A/B. Transfer students, or students joining the major from another department, should start with 100 A/B and then see the Dept. Undergraduate Advisor for future placement.

2. Complete one course from the following:

CE EN 421 : Structural Steel Design. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 304 & CE EN 321

DESCRIPTION: Compression and tension of steel members, beams, and beam-columns. Elastic and inelastic lateral-torsional buckling. Structural fasteners. Emphasizes LFRD.

**Course Outcomes**

- 1(n) Students will understand the theory behind, and have a working familiarity of, the AISC specification.
- 2(c) Students will be able to design steel tension members.
- 3(c) Students will be able to design steel compression members.
- 4(n) Students will be able to design steel beams and composite beams.
- 5(n) Students will be able to design steel beam-columns.
- 6(n) Students will be able to design concentrically loaded bolted and welded connections.
- 7(l) Students will be able to explain some concepts in business management and public policy.

CE EN 424 : Reinforced Concrete Design. (3:3:0)

WHEN TAUGHT: Fall; Spring Even Yrs.

PREREQUISITE: CE EN 304 & CE EN 306 & CE EN 321

DESCRIPTION: Theory and design of reinforced concrete, including columns, beams, slabs, and footings; elastic and ultimate-strength methods of analysis.

**Course Outcomes**

- 424.1 (n) - Be able to design reinforced concrete beams subjected to transverse loading.
- 424.2 (n) - Be able to design reinforced concrete one way slabs subjected to transverse loading.
- 424.3 (n) - Be able to design reinforced concrete short columns subjected to axial and flexural loading.
- 424.4 (n) - Be able to design reinforced concrete spread square footings subjected to axial loadings.
- 424.5 (c) - Be able to design a simple reinforced concrete structural system.
- 424.6 (c) - Have a working familiarity with the ACI code.
- 424.7 (l) - Be able to communicate in a team environment.

3. Complete one course from the following:

CE EN 431 : Hydrology. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: CE EN 332

DESCRIPTION: Waters of the earth, their occurrence, circulation, and distribution. Relationships among precipitation, evaporation, infiltration, transpiration, groundwater, and stream runoff.

**Course Outcomes**

- 1(p). Understand and apply climatological principles relating to the hydrologic cycle and its occurrence and interaction with the biosphere of the earth.
- 2(p). Understand and solve problems for precipitation/runoff situations; including generation of the flow rates at desired points in a watershed.
- 3(c). Design and make calculations of flowrate hydrographs, reservoir storage, and water demand relationships in a stream.
- 4(p). Understand and be able to make calculations related to groundwater flow, well flow analysis and design, and drainage of saturated soils.
- 5(l). Design and apply statistical methods to generate hydrologic intensity and frequency distributions.

CE EN 433 : Hydraulic Engineering. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CE EN 332

DESCRIPTION: Application of fluid mechanics principles to analysis and design of hydraulic structures and systems.

**Course Outcomes**

- 1(p). Apply energy and momentum principles to fluid flow situations, and be able to solve problems for forces in static and moving fluids.
- 2(p). Apply standard energy approaches and formulas, and be able to solve for and design pressure pipe

systems.
- 3(p). Apply standard aproaches and formulas, and be able to solve for and design open-channel flow systems.
- 4(l). Understand the basic elements of pump and turbine flow, and be able to analyze and select the pump needed for pressurizing situations.
- 5(c). Generate and apply the analytical and design approaches to common water facilities such as culverts, spillways, pipe networks, sewer systems, canals, and scour and sediment transport.

4. Complete one course from the following:

CE EN 471A : Civil Engineering Practice. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: 12 credit hours from CE En 304, 306, 321, 332, 341, 351, 361; or concurrent enrollment.

DESCRIPTION: Cash-flow diagrams. Present worth and annual payments comparison of engineering alternatives. Sustainability of engineering projects in terms of environmental, social, and economic impact (triple-bottom-line). Teamwork and leadership development. Response to a request for proposal (RFP) to develop a culminating design project.

**Course Outcomes**

There are no course outcomes available

CE EN 471B : Civil Engineering Practice. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: 12 credit hours from CE En 304, 306, 321, 332, 341, 351, 361; or concurrent enrollment.

DESCRIPTION: Cash-flow diagrams. Present worth and annual payments comparison of engineering alternatives. Sustainability of engineering projects in terms of environmental, social, and economic impact (triple-bottom-line). Teamwork and leadership development. Economic, political, and cultural impact of globalization on civil engineering in the USA and other countries. Research and triple-bottom-line evaluation of specific civil engineering projects throughout the world.

**Course Outcomes**

- 1(h) Perform a triple bottom line analysis of a civil engineering project by evaluating social, environmental, and economic impact.
- 2(i) Learn about an existing civil engineering project by gathering and organizing information from published literature and the internet.
- 3(j) Understand the changing roles of the USA and another country in the modern world in both contemporary society and civil engineering.
- 4(l) Explain the time value of money, construct cash-flow diagrams, and perform present worth or annual payments analysis of alternatives.

5. Complete one of the following options:

**Either**

MATH 302 : Mathematics for Engineering 1. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Math 113.

DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

MATH 303 : Mathematics for Engineering 2. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 302

DESCRIPTION: ODEs, Laplace transforms, Fourier series, PDEs.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For a more detailed course description, visit Math 303 Wiki.

**Or**

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

RECOMMENDED: Math 290.

DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed

information visit the Math 313 Wiki page.

: Honors Elementary Linear Algebra. (3:3:1)

**Course Outcomes**

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 313.

DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

MATH 334 : Ordinary Differential Equations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 113 and Math 313.

DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

6. Complete the following supporting courses:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this

knowledge to their own writing tasks.

ENG T 231 : Foundations of Global Leadership. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Foundational principles and practices of individual and organizational leadership in a global context from an integrated moral, technical and social perspective. Emphasis on developing integrity, valuing and leveraging diversity, acquiring and applying leadership skills.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Able to define integrity, and demonstrate understanding of how it applies to their lives and how to develop it through practice.
- Able to demonstrate familiarity with the code of ethics that corresponds to their profession.
- Able to describe a procedure for making and implementing ethical decisions and effectively apply the procedure to ethical problems of practical interest.
- Able to understand and use a model to describe their own personality type and/or preferences.
- Able to describe what it means to be self-aware and how self-awareness applies to leadership, ethical behavior and global awareness.
- Able to define and effectively practice key interpersonal skills and indicate how they can be cultivated.
- Able to describe a team development process.
- Able to value the diversity that individuals bring to a team setting and use those skills to improve team performance.
- Able to formulate a strategy and develop a plan, consistent with a vision, to accomplish a team project
- Able to define globalization, put it in an historical context and identify some key positive and negative outcomes attributed to globalization
- Able to develop an appreciation for other cultures and an understanding of how cultural factors and other forms of diversity influence communication, teamwork, and the practice of technical disciplines across the globe.
- Able to demonstrate technical understanding of a few global issues and think critically regarding the wise use of technology relative to these issues.

GEOL 330 : Geology for Engineers. (3:2:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Geological processes and materials bearing on engineering practices. Field trips.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.4. Understand the structural and engineering aspects of these materials.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.3. Understand geological hazards and engineering concerns related to the operation of the tectonic system.
- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin, distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the role of human activity in climate change.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series;

parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 121 or equivalent. Calculus.

DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

7. Complete 4 technical elective courses from the following (note: a course taken as a major requirement course may not double count as a technical elective course):

CE EN 414 : Engineering Applications of GIS. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Senior status.

DESCRIPTION: Introduction to GIS concepts. Data acquisition and GIS database formulation. Applications of GIS to civil engineering.

**Course Outcomes**

- Integrate topics from various civil engineering disciplines to solve realistic problems
- Obtain and evaluate appropriate input information from databases, handbooks, correlation, experiments

and literature
- Know where to locate, and how to prepare geographic datasets for use in a GIS
- Use GIS tools for spatial analysis, understanding and design of engineering systems
- Produce professional maps and technical reports from geographic data for use in written and oral presentations
- Customize, or use customized scripts to solve engineering-specific problems with GIS
- Compose professional documents in a clear, concise, and effective manner

CE EN 421 : Structural Steel Design. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 304 & CE EN 321

DESCRIPTION: Compression and tension of steel members, beams, and beam-columns. Elastic and inelastic lateral-torsional buckling. Structural fasteners. Emphasizes LFRD.

**Course Outcomes**

- 1(n) Students will understand the theory behind, and have a working familiarity of, the AISC specification.
- 2(c) Students will be able to design steel tension members.
- 3(c) Students will be able to design steel compression members.
- 4(n) Students will be able to design steel beams and composite beams.
- 5(n) Students will be able to design steel beam-columns.
- 6(n) Students will be able to design concentrically loaded bolted and welded connections.
- 7(l) Students will be able to explain some concepts in business management and public policy.

**Or**

CE EN 424 : Reinforced Concrete Design. (3:3:0)

WHEN TAUGHT: Fall; Spring Even Yrs.

PREREQUISITE: CE EN 304 & CE EN 306 & CE EN 321

DESCRIPTION: Theory and design of reinforced concrete, including columns, beams, slabs, and footings; elastic and ultimate-strength methods of analysis.

**Course Outcomes**

- 424.1 (n) - Be able to design reinforced concrete beams subjected to transverse loading.
- 424.2 (n) - Be able to design reinforced concrete one way slabs subjected to transverse loading.
- 424.3 (n) - Be able to design reinforced concrete short columns subjected to axial and flexural loading.
- 424.4 (n) - Be able to design reinforced concrete spread square footings subjected to axial loadings.
- 424.5 (c) - Be able to design a simple reinforced concrete structural system.
- 424.6 (c) - Have a working familiarity with the ACI code.
- 424.7 (l) - Be able to communicate in a team environment.

CE EN 427 : International Megastructures. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: CE EN 321 & CE EN 471B; instructor's consent.

DESCRIPTION: Skyscraper analysis and design. Introduction to analysis and design of suspension, cable-stayed, arch, and prestressed girder bridges. Economic, social, and environmental design criteria for megastructures. International experience to study megastructures in China or elsewhere. Interaction with professionals.

**Course Outcomes**

- 1(g) Identify and present innovative ideas in the design/construction/use of remarkable megastructures.
- 2(c) Design preliminary member sizes for a skyscraper and megabridges with realistic loads and constraints.
- 3(h) Propose and model a sustainable design for a tall building to be built at a particular site.
- 4(d) Participate on a student design team and interact with design professionals.
- 5(j) Experience the culture, land, and megastructures of China.

CE EN 431 : Hydrology. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: CE EN 332

DESCRIPTION: Waters of the earth, their occurrence, circulation, and distribution. Relationships among precipitation, evaporation, infiltration, transpiration, groundwater, and stream runoff.

**Course Outcomes**

- 1(p). Understand and apply climatological principles relating to the hydrologic cycle and its occurrence and interaction with the biosphere of the earth.
- 2(p). Understand and solve problems for precipitation/runoff situations; including generation of the flow rates at desired points in a watershed.
- 3(c). Design and make calculations of flowrate hydrographs, reservoir storage, and water demand relationships in a stream.
- 4(p). Understand and be able to make calculations related to groundwater flow, well flow analysis and design, and drainage of saturated soils.
- 5(l). Design and apply statistical methods to generate hydrologic intensity and frequency distributions.

**Or**

CE EN 433 : Hydraulic Engineering. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CE EN 332

DESCRIPTION: Application of fluid mechanics principles to analysis and design of hydraulic structures and systems.

**Course Outcomes**

- 1(p). Apply energy and momentum principles to fluid flow situations, and be able to solve problems for forces in static and moving fluids.
- 2(p). Apply standard energy approaches and formulas, and be able to solve for and design pressure pipe systems.
- 3(p). Apply standard aproaches and formulas, and be able to solve for and design open-channel flow systems.
- 4(l). Understand the basic elements of pump and turbine flow, and be able to analyze and select the pump needed for pressurizing situations.
- 5(c). Generate and apply the analytical and design approaches to common water facilities such as culverts, spillways, pipe networks, sewer systems, canals, and scour and sediment transport.

CE EN 439 : Latin America Study Abroad in Water Resources. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 431; or CE EN 433; CE En 471B or concurrent enrollment. Instructor's consent.

DESCRIPTION: BYU students team with engineers and engineering students from Latin American countries such as Mexico and the Dominican Republic to work on water resources projects of consequence. Collaboration with Latin American teams occurs electronically through the semester with 7-10 day culminating visit to the country assigned.

**Course Outcomes**

There are no course outcomes available

CE EN 461 : Geometric Design of Highways. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 113 & CE EN 361

DESCRIPTION: Designing visual aspects of highways: highway classification, design controls and criteria, design elements, vertical and horizontal alignment, cross section, intersections, interchanges, capacity analysis.

**Course Outcomes**

- 1 (o) An ability to apply to highway geometric design the knowledge that critical components of the traffic system – drivers, vehicles, roads and highways, physical environment, and traffic control devises – interact to form traffic streams.
- 2 (e) An ability to apply the concept of capacity and level of service to performance evaluation, design, and planning of freeways, two-lane two-way highways, urban streets, and intersections.
- 3 (k) An ability to reason and use mathematical models for highway capacity and level of service estimation included in the Highway Capacity Manual.
- 4 (k) An ability to use the Highway Capacity Software for performance evaluation, designing, and planning of freeways, two-lane two-way highways, urban streets, and intersections.
- 5 (k) An ability to apply the concepts behind highway geometric design to the highway geometric design of a location assigned for the term project.
- 6 (k) An ability to use proper tables and figures in A Policy on Geometric Design of Highways and Streets in Geometric Design of Highways and Streets to assignment problems, exams, and a term project design.
- 7 (k) An ability to use Autodesk Civil 3D to design a highway and an intersection for the location assigned in the term project, including importing digital design data, triangulating the terrain data, creating profile, designing vertical and horizontal alignments, preparing a cross section assembly, and creating a corridor and an intersection.
- 8 (g) An ability to prepare a technical report summarizing the tasks that the team members have done in the design of a highway and an intersection assigned for the term project.
- 9 (g) An ability to prepare a presentation file summarizing the tasks the team members have done in the design a highway and an intersection assigned for the term project AND present it as a team.
- 10 (o) An ability to use professionally terms pertaining to highway geometric design in assignments, exams, and a term project.

CE EN 467 : International Megacities. (3:3:0)

WHEN TAUGHT: Spring Odd Yrs.

PREREQUISITE: CE EN 361 & CE EN 471B; and instructor's consent.

DESCRIPTION: Transportation planning and analysis of public transportation, airports, high-speed rail, pedestrians, water transportation, freight, and highway systems of international megacities achieved through international experience, research, professional interactions, and an evaluation of safety, policy, and sustainability.

**Course Outcomes**

There are no course outcomes available

CE EN 472 : Civil Engineering Design. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 471A

DESCRIPTION: Civil engineering culminating design experience based on the knowledge and skills acquired in earlier course work and incorporating appropriate engineering standards and multiple realistic

constraints.

**Course Outcomes**

- 1(c). Understand and apply conception, formulation, analysis and search for solutions to civil engineering design problems. Be able to integrate topics from various civil engineering disciplines to solve problems with multiple realistic constraints.
- 2(d). Be able to communicate in a team environment. Be able work effectively in groups through presentations and written documents.
- 3(g). Understand basic principles of personal communication including conversational and interviewing skills. Be able to compose effective professional documents and make well-organized oral presentations.
- 4(h). Understand how civil engineering problems may be affected by cultural, societal, political and environmental concerns. Understand basic concepts of engineering economic analyses.

CE EN 500 : (CE En-Me En) Design and Materials Applications. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 372; or CE EN 321; or equivalent.

DESCRIPTION: Applied and residual stress; materials selection; static, impact, and fatigue strength; fatigue damage; surface treatments; elastic deflection and stability--all as applied to mechanical design.

**Course Outcomes**

- Understand how materials selection in design can be based on a variety of materials properties.
- Understand effects of materials structure and properties on design and choices for static, impact, fatigue, elastic, and anelastic behavior.
- Be familiar with important techniques used to modify enfineering properties of a boad range of materials, such as metals, polymers, ceramics, composites, and biomaterials.
- Understand the necessary analysis to design for various material failure mechanisms.

CE EN 501 : (CE En-MeEn) Stress Analysis and Design of Mechanical Structures. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: CE EN 321; or ME EN 372; or equivalent.

DESCRIPTION: Stress analysis and deflection of structures; general bending and torsion with computer applications to mechanical and aerospace structure design.

**Course Outcomes**

- Calculate the deflection of and stress in multi-material beams under force, moment, or temperature loads.
- Understand the principles of stress and strain, including principle stress and strain, in general three-dimensional structures.
- Calculate the deflections and stress in torsion bars of arbirary cross section.
- Calculate the deflections and stress in beams in unsymmetric bending.

CE EN 503 : (CE En-Me En) Plasticity and Fracture. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 203 & ME EN 250 & MATH 303; Senior standing or instructor's consent.

DESCRIPTION: Tensor algebra; stress and deformation tensors; relationships between dislocation slip, yielding, plastic constitutive behavior, and microstructure development; cracks and linear elastic fracture mechanics.

**Course Outcomes**

- Identify and describe the influence of crystal structure and material defects on tensile and fracture properties.
- Describe the effects of a stress concentration as well as its influence on the fracture and fatigue life of a structural member.
- Describe the principles of the Griffith Crack Criteria and its application to brittle materials, and its extension to ductile materials.
- Describe the Failure Design Philosophy and apply it to materials selection in an engineering application.
- Predict the life of a structural member of known material properties given the loading conditions and a known flaw size.
- Describe the impact of various microstructure features on tensile, fracture and fatigue properties.
- Select an appropriate material class given functional requirements, fatigue and fracture.

CE EN 504 : (CE En-Me En) Computer Structural Analysis and Optimization. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 321; or ME EN 372; or equivalent; linear algebra.

DESCRIPTION: Matrix stiffness method for 1D, 2D, and 3D skeletal structure classes. Implementing the matrix stiffness method as a computer program. Nonlinear second-order structural analysis. Structural optimization techniques including stress-ratio method, gradient-based methods, and genetic algorithms.

**Course Outcomes**

- 1) Construct global and local member stiffness matrices and force vectors for any skeletal class and any distributed loading.
- 2) Construct structure matrices and vectors for both force and support displacement loads exploiting symmetry/antisymmetry and deformation assumptions.
- 3) Construct member displacement vectors and free-body diagrams for any skeletal class.
- 4) Write down the basic organization and calling structure of a structural analysis program, and complete

the pseudo-code for structure level routines.
- 5) Derive first/second order equilibrium/compatibility equations, buckling loads/displacements, and structure elastic/geometric stiffness matrices for small trusses and single-member frames.
- 6) Determine the number of FLOPS and perform the calculations for matrix-vector operations including triangularization, backsubstitution, Newton-Raphson iteration, and inverse iteration.
- 7) Determine the number of FLOPS and perform the calculations for stress ratio optimization and exhaustive search, and construct design space plots if possible.
- 8) Determine the number of FLOPS and perform the calculations for finite difference / virtual work sensitivity analysis, Kuhn-Tucker condition evaluation, and optimality criteria algorithm.
- 9) Determine the number of FLOPS and perform the calculations for genetic algorithms with penalty/segregation fitness, tournament/roulette selection, point/uniform/blend crossover, dynamic mutation, and ranking/scoring/maximin fitness.
- 10) Prepare input for linear analysis, nonlinear pushover analysis, gradient-based size optimization, and genetic-based size/shape/topology optimization programs for plane frames.

CE EN 505 : Portland Cement Concrete Mixture Design and Analysis. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 306; or equivalent.

DESCRIPTION: Properties and testing of freshly mixed and hardened concrete and constituent materials; concrete mixture design and analysis; concrete construction practices; laboratory experimentation.

**Course Outcomes**

- Characterize properties of concrete materials.
- Design concrete mixtures.
- Measure properties of fresh concrete.
- Measure properties of hardened concrete.
- Understand proper concrete construction practices.
- Understand mechanisms of concrete deterioration.

CE EN 506 : (CE En-Me En) Continuum Mechanics and Finite Elements. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE En 321 or Me En 372 or equivalent.

DESCRIPTION: Equilibrium, constitutive, and compatibility equations; closed-form solutions from elasticity; finite element theory, programming, and usage; membrane, axisymmetric, and solid elements. Application to heat transfer, fluid mechanics, and seepage.

**Course Outcomes**

- 1) Derive mass/momentum/energy equilibrium equations and constitutive equations for isotropic Hookean solids and Newtonian fluids, and specialize them to get Navier/Stokes/Laplace equations.
- 2) Calculate stress traction, normal/shear stresses, principal stresses, and stress failure criteria for a given state of stress, and calculate displacements and strains for a given state of deformation.
- 3) Transform equations between expanded, matrix, and indicial notation, and between rectangular and cylindrical coordinates.
- 4) Degenerate 3D elasticity equations for 2D problem classes and Saint-Venant torsion using appropriate assumptions, and derive biharmonic or Laplace equations.
- 5) State the problem class, boundary conditions, and method of solution for classical elasticity problems and seismic wave problems.
- 6) Calculate displacements and stresses from given elasticity closed-form solutions including general solution to I-sections under torsion with or without warping restraint.
- 7) Construct the weighted integral to obtain formulas for element stiffness matrix and force vector given the governing differential equations of a problem class.
- 8) Calculate the system stiffness matrix, force vector, and displacement vector for a particular problem, and calculate element results.
- 9) Construct Lagrange/serendipity/triangle shape functions in terms of natural coordinates, and use isoparametric transformations and Gaussian quadrature to evaluate element stiffness.
- 10) Execute a finite element program and assess results on a patch test and on problems with known closed form solutions.

CE EN 508 : (CE En-Me En) Structural Vibrations. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 321; or ME EN 372; or equivalent.

DESCRIPTION: Dynamic analysis of single degree-of-freedom, discrete multi-degree-of-freedom, and continuous systems. Applications include aerospace, civil structures, and mechanical components.

**Course Outcomes**

- 1. Students will be able to determine the response of single-degree-of-freedom (SDOF) systems in free and forced vibration, with and without damping.
- 2. Students will be able to determine the response of multi-degree-of-freedom and continuous systems in free and forced vibration, with and without damping.
- 3. Students will be able to apply the theory of structural vibrations to problems in Civil or Mechanical Engineering.

CE EN 521 : Seismic-Resistant Steel Buildings. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 421; or equivalent.

DESCRIPTION: Background and development of UBC seismic provisions; design of ductile braced frames and steel moment resisting frames; design of diaphragms and collectors.

**Course Outcomes**

- 1. Students will understand lateral load paths in buildings and be able to compute forces in diaphragms, collectors, and frames.
- 2. Students will understand the theory behind modern seismic provisions for buildings.
- 3. Students will be able to appropriately size and detail members in special moment resisting frames (SMRFs), special concentrically braced frames (SCBFs), and buckling-restrained braced frames (BRBFs).
- 4. Students will know how to use modern analysis tools to analyze buildings under earthquake loading.

CE EN 523 : (CE En-Me En) Aircraft Structures. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE En 304 or Me En 250 or equivalent. CE En 321 or Me En 372 or equivalent.

DESCRIPTION: Requirements, objectives, loads, materials, and tools for design of airframe structures; static behavior of thin-wall structures; durability and damage tolerance; certification and testing. Airframe component team design project.

**Course Outcomes**

- Students will understand and be able to apply industry philosophies and critical criteria that drive the design and govern the certification of aircraft structures.
- Students will be able to analyze the in-plane (compression, shear, stability) and out-of-plane (bending, torsion, transverse shear) behavior (stresses, deflections, margins of safety) of structural elements (beams, columns, thin plates, open and closed sections, etc.) prevalent in aircraft.
- Students will understand important issues required for certification of aircraft structures (regulations, loads, fatigue, damage tolerance).

CE EN 525 : Bridge Structures. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 421 & CE EN 424; or equivalent.

DESCRIPTION: Design of composite, continuous beam, and girder bridges, including piers, abutments, floor systems, and bearings; field trips to observe bridge construction and fabrication.

**Course Outcomes**

- Explain the world's history of bridges.
- Explain the USA's surface transportation law.
- Explain the USA's Code of Federal Regulations applicability to bridges.
- Explain the USA's bridge design philosophy.
- Explain the USA's bridge design specifications.
- Explain the loads that a bridge sustains and how they are distributed.
- Explain the elements of a bridge and how they are constructed.
- Explain current innovation in bridge design and construction.
- Read and understand bridge project contract documents including plans, specifications, and estimates.
- Design a bridge's structure type, width, span, and vertical clearance.
- Design a bridge's reinforced concrete deck.
- Design a bridge's prestressed conrete girders.
- Design a bridge's welded-steel plate girders.

CE EN 528 : Masonry Design. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: CE EN 424; or equivalent.

DESCRIPTION: Introduction to analysis, design, and construction of masonry structures. Compressive, tensile, flexural, and shear behavior of masonry structural components.

**Course Outcomes**

- Be able to design masonry beams subjected to transverse loading
- Be able to design masonry columns, piers, and walls for axial and flexural loading
- Be able to specify anchorage requirements and design bolt connections
- Have a working familiarity with the building code requirements and specifications for masonry structures

CE EN 529 : Timber Design. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: CE EN 304 & CE EN 321 & CE EN 421; or equivalents.

DESCRIPTION: Timber species, composition, and grades; design of beams, straight and tapered glue-lam girders, columns, connections, trusses, shear walls, and structural systems.

**Course Outcomes**

- Be able to design timber beams subjected to transverse loading
- Be able to design timber tension and compression members subjected to axial and flexural loading
- Be able to design vertical and horizontal diaphragms subjected to in plane and out of plane loading
- Be able to design simple connections with nails, staples, bolts, and lag screws
- Have a working familiarity with the National Design Specification for Wood Construction

CE EN 531 : Principles of Hydrologic Modeling (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 431; or equivalent.

DESCRIPTION: Advanced hydrologic and hydraulic principles with an emphasis on modeling for the purpose of planning and designing draining, flood control, and other water resource facilities.

**Course Outcomes**

- Apply fundamental principles of hydrology in hydrologic and hydraulic models
- Know how to apply different hydrologic modeling formulation to solve design and analysis problems
- Know where to find digital and other data resources required for hydrologic model development
- Understand the limitations and uses of traditional lumped parameter models as well as more advanced physics based models
- Interpret and describe hydrologic modeling results in written reports
- Work together with teammates to develop hydrologic models
- Learn modern engineering software tools like the Watershed Modeling System (WMS) that process digital data and prepare model inputs

CE EN 535 : Hydraulic Design of Channels and Control Structures. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 433; or equivalent.

DESCRIPTION: Design of water conveyance channels and control structures, including siphons, chutes, weirs, flumes, dams, spillways, and outlet works.

**Course Outcomes**

- Students will be able to solve problems requiring fundamental and more advanced mathematical theories.
- Students will be able to design basic hydraulic structures including cost estimates and environmental impacts.
- Students will prepare professional-level quality reports.

CE EN 540 : Geo-Environmental Engineering. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 341 & CE EN 351; or equivalents. CE En 471A or 471 B or concurrent enrollment or instructor's consent.

DESCRIPTION: Hazardous waste statutes and regulations; introduction to hazardous waste treatment, storage, disposal, and monitoring techniques. Geotechnical aspects of environmental engineering. Topics include municipal and hazardous solid waste landfill design and characterization and remediation techniques for contaminated soil and groundwater.

**Course Outcomes**

- Be able to produce a preliminary design of a landfill. This inlcudes understanding regulations, chemical fate and transport, geotechnical design methods, and project planning issues.
- Be able to communicate the design and design decisions to a non-specialist but technical audiance. This will include communicating the reasons for basic assumptions and why they were made.

CE EN 542 : Foundation Engineering. (3:3:0)

WHEN TAUGHT: Fall; Spring Even Yrs.

PREREQUISITE: CE En 341 or equivalent.

DESCRIPTION: Soil investigation, bearing capacity and settlement, design of spread footings, combined footings, mat foundations, pile foundations, and drilled shafts.

**Course Outcomes**

- 1. Estimate the settlement within a compressible soil layer due to applied loads from fill, embankent and buildings
- 2. Estimate the time-settlement relationships for soils due to applied loads. Use design approaches for accelerating consolidation rate (e.g. wick drains and surcharging)
- 3. Determine the allowable soil bearing pressure for spread footings on saturated clays and sand giving consideration to shear failure and settlement
- 4. Design square and rectangular reinforced concrete footings
- 5. Design combined reinforced concrete foundatiosn using both conventional approaches and elastic methods (beam on an elastic foundation).
- 6. Design reinforced concrete mat foundations using both the conventional method and elastic methods (e.g. finite element models)
- 7. Estimate the single pile capacity and group pile capacity for piles in sand and clay
- 8. Estimate the settlement of a pile group in saturated clay
- 9. Compute the capacity of drilled shafts in clay and sand. Understand critical components of construction that influence capacity.
- 10. Characterize a subsurface profile using insitu techniques and determine the most suitable foundation type to support a given structure.

CE EN 544 : Seepage and Slope Stability Analysis. (3:3:0)

PREREQUISITE: CE EN 341; or equivalent.

DESCRIPTION: Seepage and slope stability analysis of earth dams, levees, excavations, embankments, and natural slopes; construction dewatering, numerical methods, shear strength of soils, limit equilibrium method.

**Course Outcomes**

- Be able to apply Darcy's law to solve basic problems related to flow through porous media.
- Understand the governing equations for 2D and 3D groundwater flow, including what simplifying assumptions are used in the derivation of the equations.
- Be able to create and interpret graphical solutions (flow nets) to the governing equations.
- Be able to apply analytical solutions to the governing equations, including well equations.
- Be able to apply analytical solutions to construction dewatering problems.
- Understand the finite difference solution and be able to create finite difference solutions in Excel.

- Understand how the finite element method works and how the finite element equations are formulated.
- Be able to apply finite element software to solve complex seepage analysis problems.
- Understand the basic concepts of the limit equilibrium method of slope stability.
- Be able to apply slope stability charts for simple problems.
- Be able to apply slope stability software (such as UTEXAS) for common slope stablility problems.
- Be able to solve special cases of slope stability including, reinforced slopes, rapid drawdown, and seismic conditions.

CE EN 545 : Geotechnical Analysis of Earthquake Phenomena. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 321 & CE EN 341; or equivalents.

DESCRIPTION: Earthquake magnitude and intensity; design ground motions, elementary dynamics of structures; response spectra; building code provisions; liquefaction and ground failure.

**Course Outcomes**

- 1. Understand the origin of earthquakes and the nature of seismic waves; characterize faults and seismic sources; quantify the "size" of an earthquake in terms of magnitude and intensity; quantify earthquake ground motions in terms of engineering parameters.
- 2. Use attenuation relationships to predict ground motions; perform deterministic and probabilistic seismic hazard analyses
- 3. Determine the dynamic response of single-degree-of-freedom structures subject to base shaking; understand, develop and apply response spectra
- 4. Perform site response analyses; understand the effect of different soil types on ground response and damping
- 5. Understand the philosophy and general seismic design provisions found in design codes developed/distributed as part of the National Earthquake Hazard Reduction Program (NEHRP) and the International Building Code (IBC)
- 6. Understand the mechanism associated with liquefaction and ground failure; perform liquefaction triggering, lateral spread, and settlement analyses.
- 7. Evaluate seismic slope stability and deformation; estimate seismic earth pressures

CE EN 547 : Groundwater Modeling. (3:3:0)

PREREQUISITE: CE EN 341; or equivalent.

DESCRIPTION: Computer simulation of groundwater flow systems; modeling theory, numerical methods, data management, boundary conditions, calibration, and stochastic analysis.

**Course Outcomes**

- Be able to apply Darcy's law to solve basic problems related to flow through porous media.
- Understand the governing equations for 2D and 3D groundwater flow, including what simplifying assumptions are used in the derivation of the equations.
- Be able to develop conceptual models of groundwater flow systems, including properly formulated boundary conditions.
- Understand the basic structure and organization of the MODFLOW model.
- Be able to select the appropriate MODFLOW packages for a particular problem and develop the package input.
- Understand issues related to MODFLOW solvers and be able to solve common instability issues.
- Be able to apply GIS data to develop regional groundwater simulations with MODFLOW.
- Be able to calibrate groundwater models using both manual approaches and automated tools such as the PEST code.
- Be able to analyze flow directions using particle tracking.
- Be able to perform stochastic simulations and analyze uncertainty.
- Be able to perform transient simulations.
- Be able to do basic groundwater analysis tasks in ArcGIS.

CE EN 551 : Water Treatment Facilities Design. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 351; or equivalent.

DESCRIPTION: Evaluation, selection, and design of water treatment facilities.

**Course Outcomes**

- Understand the concepts and theories governing water treatment unit operation and process design and operation
- Design water treatment unit operations and processes
- Setup, perform, and evaluate experiments necessary to design water treatment processes
- Communicate effectively through the preparation of reports and technical papers.
- Read and understand water treatment related technical literature

CE EN 555 : Environmental Chemistry. (3:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 351; or equivalent.

DESCRIPTION: Chemical theory and calculation supporting analysis of major organic and inorganic constituents in environmental engineering, focusing on theoretical understanding of the chemical processes.

**Course Outcomes**

- Understand and solve basic physical chemistry problems involving ReDox, Gas Law, and actvity.
- Be able to setup and solve the mathmatical formulations of equilibrium concepts for dilute aquatic systems
- Understand the basic concepts and be able to setup problems to use standard chemical speciation programs for dilute aquatic solutions.
- Be exposed to and experiance field sampling and analysis methods. Be able to communicate the results

and analysis.

CE EN 562 : Traffic Engineering: Characteristics and Operations. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 361; or equivalent.

DESCRIPTION: Traffic stream characteristics, traffic flow theory, traffic control devices, capacity and level of service, warrants, signal timing and optimization, signal coordination.

**Course Outcomes**

- 1 (o) An understanding of types of traffic control devices and their meanings and the importance of communication between traffic engineer and driver.
- 2 (o) An understanding three fundamental traffic flow characteristics (speed, density and flow rate) and the relationships among them.
- 3 (b) An ability to conduct descriptive statistics on traffic flow characteristics data and to conduct a means test on two samples or conduct a chi-square test to evaluate a hypothesis on an underlying distribution.
- 4 (o) An ability to measure in the field, or at a remote station, and reduce raw traffic flow characteristics data for subsequent statistical analyses or modeling.
- 5 (b) An ability to conduct different types of volume studies and analyze their characteristics such as peaking and seasonal changes and an ability to estimate demand for and capacity of the facility under study.
- 6 (b) An understanding of the difference between space mean speed and time mean speed and ability to conduct speed, travel time, and signalized intersection delay studies study.
- 7 (o) An understanding of the importance of safety on highways and of the way highway crash data are collected and stored for statistical analyses and an ability to analyze crash data to identify statistically “hot spots” that require further evaluations and to conduct statistical analyses to evaluate the effectiveness of crash countermeasures on reduction of crashes.
- 8 (c) An understanding of basic concepts of capacity and level of service used for analyzing the performance of uninterrupted flow highway facilities.
- 9 (c) An ability to conduct capacity and level of service analysis for basic freeway and multilane highways, both manually and using the Highway Capacity Software and to evaluate the performance of such segments and determine possible improvements required for maintaining or improving the conditions of such segments.
- 10 (c) An understanding of the concepts of capacity and level of service for complex ramp area traffic flow and an ability to conduct capacity and level of service analysis for such facilities both manually and using the Highway Capacity Software.
- 11 (o) An understanding of the functions of signing and marking and their use on freeways and rural highways.
- 12 (c) An understanding of the hierarchy of intersection control (Basic rules of the road, Yield and stop control, and Signals) and an ability to perform a signal warrant analysis using the method found in the MUTCD.
- 13 (c) An understanding of basic principles of intersection signalization including: Discharge headways, saturation flow rates, and lost times; Allocation of time and the critical-lane concept; The concept of left-turn equivalency; and Delay as a measure of service quality, and an ability to determine these values given data of prevailing conditions.
- 14 (c) An understanding of the key steps involved in signal design and timing including: Development of a safe and effective phase plan and sequence; Determination of vehicular signal needs; and Determination of pedestrian signal needs, and an ability to going through these steps to design and timing of pretimed signals.
- 15 (c) An understanding of the fundamental concept of actuated signals and the mechanism of changing green time allocation to all approaches depending on approach traffic demand and an ability to design phase sequences and timing signal indications manually and using signal timing software programs.
- 16 (c) An understanding of the concept of analyzing capacity and level of service using the models presented in the Highway Capacity Manual 2010 and an ability to carry out the computations presented in the HCM manually and using the Highway Capacity Software 2010.
- 17 (h) An understanding of the concept of coordinating multiple signals on arterials and in a network by manipulating offsets of signals and an ability to determine optimal offsets, optimal phase sequence, and optimal green time allocation and an ability to coordinate multiple signals on arterials manually (simples systems) and using a signal optimization software program.
- 18 (g) An ability to express technical ideas in a written format and an ability to compose professional documents in a clear, concise, and effective manner

CE EN 563 : Pavement Design. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE En 306 and 341 and 361; or equivalents. CE En 471A or 471B or concurrent enrollment.

DESCRIPTION: Design, construction, evaluation, maintenance, and rehabilitation of flexible and rigid pavements; influence of traffic and environmental factors; mechanistic analysis of pavement structures using computer software.

**Course Outcomes**

- Understand concepts of pavement performance
- Characterize traffic loads for pavement design and analysis
- Characterize strength and durability of pavement materials
- Understand and account for climatic factors in pavement design and analysis
- Understand pavement construction procedures
- Design flexible and rigid pavements using standard methods
- Understand mechanisms of pavement deterioration and identify distress types
- Provide pavement condition assessments
- Recommend pavement preservation techniques
- Conduct mechanistic analyses of pavement structures using computer software

CE EN 565 : Urban Transportation Planning. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 361; or instructor's consent.

DESCRIPTION: Urban transportation planning and decision making, intermodal transportation, land-use transportation interrelationships, transportation demand modeling, site impact analysis, sustainable transportation; livable cities.

**Course Outcomes**

- Learn and understand the four steps of urban transportation demand forecasting including: 1) trip generation, 2) trip distribution, 3) mode choice, and 4) trip assignment.
- Be able to identify and understand the difference between "urban transportation planning" and "site planning."
- Be familiar with travel demand management (TDM) measures.
- Read Transportation for Livable Cities and become familiar with issues affecting the direction of our transportation facilities.
- Learn how to communicate transportation planning ideas effectively and write a technical paper on a transportation planning topic.
- Become familiar with the demand forecasting process using QRSII and GNE software.

CE EN 570 : (CE En-Me En) Computer-Aided Engineering Software Development. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Me En 373 or C programming.

DESCRIPTION: Programming methods for the development of engineering software. Data structures, architecture, libraries, and graphical user interfaces, with applications to CAD systems.

**Course Outcomes**

- Ability to develop complex algorithms.
- Ability to convert algorithms into a commonly used computer language.
- Ability to create interactive scientific visualizations of complex data.
- Ability to create graphical user interfaces that facilitate ease of use.

CE EN 572 : (CE En-Me En) Computer-Aided Geometric Design. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Proficiency in C programming.

DESCRIPTION: Mathematical theory of free-form curves and surfaces and solid geometric modeling. Bezier and B-spline curve and surface theory, parametric and implicit forms, intersection algorithms, topics in computer algebra, and free-form deformation. Several programming projects.

**Course Outcomes**

- Understand the theory, properties, and algorithms for Bezier curves: de Casteljau algorithm, degree elevation, hodographs, curve intersection algorithms, convex hull property, variationa diminishing property, rational Bezier curves, explicit Bezier curves.
- Understand polar form, the de Boor algorithm, the Boehm algorithm, knot intervals.
- Understand tensor product Bezier and B-Spline surfaces, including the de Casteljau algorithm, partial derivatives, parametric continuity, tesselation.

CE EN 575 : (CE En-Me En) Optimization Techniques in Engineering. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 302; C, C++, or similar computer language.

DESCRIPTION: Application of computer optimization techniques to constrained engineering design. Theory and application of unconstrained and constrained nonlinear algorithms. Genetic algorithms. Robust design methods.

**Course Outcomes**

- Define and use optimization terminology and concepts, including concepts of analysis space and design space.
- Apply optimization methods to engineering problems, including developing a model, defining an optimization problem, applying optimization methods, exploring the solution and interpreting results.
- Understand and apply unconstrained optimization theory for continuous problems, including the necessary and sufficient conditions and steepest descent, Newton's method, conjugate gradient and quasi-Newton methods. Understand basic theorems of quasi-Newton methods.
- Understand and apply discrete optimization algorithms, including branch and bound, exhaustive search and simulated annealing.
- Develop and apply Genetic algorithms.
- Understand and apply constrained optimization theory for continuous problems, including the Kuhn-Tucker conditions and generalized reduced gradient and sequential quadratic programming methods.
- Apply optimization techniques to determine a robust design.
- Have some familiarity with optimization software.

CE EN 594R : Selected Problems in Civil and Environmental Engineering. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

There are no course outcomes available

**Note:** At least 1 of the 4 technical elective courses must be a culminating design experience:

CE EN 427 : International Megastructures. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: CE EN 321 & CE EN 471B; instructor's consent.

DESCRIPTION: Skyscraper analysis and design. Introduction to analysis and design of suspension, cable-stayed, arch, and prestressed girder bridges. Economic, social, and environmental design criteria for megastructures. International experience to study megastructures in China or elsewhere. Interaction with professionals.

**Course Outcomes**

- 1(g) Identify and present innovative ideas in the design/construction/use of remarkable megastructures.
- 2(c) Design preliminary member sizes for a skyscraper and megabridges with realistic loads and constraints.
- 3(h) Propose and model a sustainable design for a tall building to be built at a particular site.
- 4(d) Participate on a student design team and interact with design professionals.
- 5(j) Experience the culture, land, and megastructures of China.

CE EN 439 : Latin America Study Abroad in Water Resources. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 431; or CE EN 433; CE En 471B or concurrent enrollment. Instructor's consent.

DESCRIPTION: BYU students team with engineers and engineering students from Latin American countries such as Mexico and the Dominican Republic to work on water resources projects of consequence. Collaboration with Latin American teams occurs electronically through the semester with 7-10 day culminating visit to the country assigned.

**Course Outcomes**

There are no course outcomes available

CE EN 472 : Civil Engineering Design. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 471A

DESCRIPTION: Civil engineering culminating design experience based on the knowledge and skills acquired in earlier course work and incorporating appropriate engineering standards and multiple realistic constraints.

**Course Outcomes**

- 1(c). Understand and apply conception, formulation, analysis and search for solutions to civil engineering design problems. Be able to integrate topics from various civil engineering disciplines to solve problems with multiple realistic constraints.
- 2(d). Be able to communicate in a team environment. Be able work effectively in groups through presentations and written documents.
- 3(g). Understand basic principles of personal communication including conversational and interviewing skills. Be able to compose effective professional documents and make well-organized oral presentations.
- 4(h). Understand how civil engineering problems may be affected by cultural, societal, political and environmental concerns. Understand basic concepts of engineering economic analyses.

**Note:** 1 of the 4 technical elective courses may come from:

ENG T 497R : Global Engineering Outreach Projects. (.5-3:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Engineering or technology major enrolled in upper-division major courses; instructor's consent.

DESCRIPTION: Humanitarian-based engineering and technology project development involving multi-disciplinary teams.

**Course Outcomes**

- Gain experience in the design process that includes innovative problem solving skills applied to the design and implementation of global projects in developing regions of the world in the context of real needs, constraints, and opportunities.
- Demonstrate an appreciation for global aspects of engineering, including social and technical constraints related to design and the importance of sustainability.
- Demonstrate effective teamwork and leadership skills and an appreciation for other disciplines both within and outside of engineering as they work together on interdisciplinary teams.
- Demonstrate effective oral and written communication skills in the reporting of work, particularly to entities or individuals in countries in which projects are implemented.
- Gain experience in how to be involved in social innovation as they progress through their careers.

ME EN 321 : Thermodynamics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 113; Concurrent enrollment in Math 303 or 334.

DESCRIPTION: Fundamentals of thermal energy and work; principle of state, conservation of mass, conservation of energy, increase of entropy principle; application to thermal and mechanical processes.

**Course Outcomes**

- 1. Engineering Math – Each student can apply the mathematical principles required to develop and solve mathematical models – consisting of both algebraic and differential equations – that are based on the energy and entropy equations and to evaluate the properties used in these equations.
- 2. Thermodynamic Systems – Each student can select an appropriate system (control mass or control volume) and identify the heat, work and mass flow interactions occurring between the system and its surroundings in order to build thermodynamic models and analyze thermodynamic systems and processes.
- 3. Thermodynamic Properties and State – Each student can use thermodynamic properties and the state postulate in order to fix the state of a thermodynamic system. Each student can distinguish between point functions (thermodynamic properties) and path functions (heat, work and entropy generation) in order to describe thermodynamic processes. Each student can use phase diagrams in order to illustrate isobaric, isometric, isothermal, isentropic, isenthalpic or other thermodynamic processes.
- 4. Obtaining Thermodynamic Property Values – Each student can properly characterize a thermodynamic system as either an ideal gas, an incompressible substance or a saturated liquid-vapor mixture in order to identify appropriate property relationships. Each student can use equations of state, charts or tables in order to obtain values of thermodynamic properties.
- 5. Conservation of Mass and Energy – Each student can implement the principle of conservation of mass and conservation of energy in order to build models of open and closed thermodynamic systems undergoing transient and steady processes.
- 6. Principle of Increasing Entropy - Each student can identify irreversibilities in order to determine whether a process may be approximated as reversible. Each student understands the increase of entropy principle, and can use the entropy equation in order to model open and closed systems undergoing transient and steady processes.
- 7. Classical Analysis of Engineering Devices and Processes – Each student can describe the hardware, the operation, the purpose, and the approximations typically used to build thermodynamic models of common engineering devices and processes. Examples of common engineering devices are turbines, compressors, pumps, nozzles, diffusers, valves and heat exchangers. Examples of common processes are restrained compression, restrained expansion, and the charging and discharging of a tank.
- 8. Each student can list the processes and devices that comprise the ideal Otto, Diesel and Brayton gas power cycles and the ideal Rankine steam power cycle. Each student can build thermodynamic models in order to analyze and evaluate these cycles and to draw conclusions regarding the performance of these cycles.
- 9. Each student can list the processes that comprise the ideal refrigeration cycles and can build thermodynamic models of these cycles in order to analyze, evaluate and draw conclusions regarding their performance.

*Hours include courses that may fulfill university core requirements.

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# Civil and Environmental Engineering (CE En)

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## Undergraduate Courses

### 100-Level Courses

CE EN 100A : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Activities of civil engineering; principles and methods involved in solving civil engineering problems.

NOTE: College Lecture attendance required.

**Course Outcomes**

- 1(i) Begin to understand the process required to become a professional engineer
- 2(i) Begin to understand the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- Begin to learn how to work in teams on civil engineering related projects that benefit the community.
- 4(f) Begin to understand ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Begin to understand contemporary issues in civil engineering as illustrated by projects presented by practicing engineers

CE EN 100B : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Winter

DESCRIPTION: Activities of civil engineering; principles and methods involved in solving civil engineering problems.

NOTE: College Lecture attendance required.

**Course Outcomes**

- 5(j) Begin to understand contemporary issues in civil engineering as illustrated by projects presented by practicing engineers
- 2(i) Begin to understand the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- 3(d) Begin to learn how to work in teams in civil engineering related projects that benefit the community
- 4(f) Begin to understand ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Begin to understand contemporary issues in civil engineering as illustrated by projects presented by practicing engineers

CE EN 101 : Introduction to Civil and Environmental Engineering. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to what civil and environmental engineering is all about. Careers in the profession. Courses and curriculum of the major. Freshman projects and teamwork.

**Course Outcomes**

- 1(d) Participate on a student team to complete assigned tasks.
- 2(i) Discover and digest information from the internet, the literature, and interviews about assigned civil engineering subjects.

CE EN 103 : Engineering Mechanics--Statics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 112; or MATH 111 & MATH 119; or concurrent enrollment.

DESCRIPTION: Concepts of mechanics: force systems in equilibrium, resultants, friction, centroids, utilization of vector algebra, simple trusses, shear and bending moment diagrams, moments of inertia.

**Course Outcomes**

- Be able to manipulate basic engineering units in both the International and US Customary Systems of Units in engineering analysis and be able to convert between the two.
- Be able to perform basic vector operations using standard vector notation.
- Be able to conceptualize and draw a conventional free-body diagram which identifies and applies all known and unknown forces.
- Understand the nature of forces(s) and their manipulation in engineering analysis, including moments, couples,

transmissibility and resultants.
- Understand the conditions for equilibrium for both a particle and a rigid body.
- Be able to determine the axial forces in the members of a statically determinant truss.
- Be able to calculate the center of gravity for 2 and 3 dimensional rigid bodies.
- Be able to both calculate and draw diagrams for the internal shear forces and bending moments in straight, statically determinant beams.
- Understand the nature of friction and be able to solve problems involving friction and shear on horizontal and inclined planes.
- Be able to use calculus to compute centroids of lines, areas and volumes.
- Demonstrate competence in basic engineering analysis.

CE EN 112 : Engineering Drafting with CAD Applications. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Civil engineering or technology education major status

DESCRIPTION: Structural and component drafting, emphasizing computer-automated (CAD) systems. Concepts include applied and descriptive geometry, multiview representation, sectional views, dimensional practices, and axonometric sketching.

**Course Outcomes**

- An understanding of fundamental drafting concepts and manual drafting techniques
- An understanding of CAD-based drafting techniques
- An ability and skills for preparing technical drawings manually and by using AutoCAD
- An ability to work in a team to complete a term project and produce a technical report
- An ability to communicate with team members and produce an effective, well organized oral presentation
- An understanding of Building Information Modeling (BIM) and its application in engineering
- An ability to use BIM software to develop structural models for analysis
- An ability to present structural data in a collaborative environment

CE EN 113 : Engineering Measurements. (3:2:3)

WHEN TAUGHT: Fall; Spring

RECOMMENDED: Math 111 or knowledge of trigonometry.

DESCRIPTION: Measurement of horizontal and vertical distances and angles to locate engineering projects including profiles, plane and topographical mapping, site layout, and earthwork. Introduction to GIS and mapping for surveying projects.

**Course Outcomes**

- Make order of magnitude estimates, assess reasonableness of solutions, and report appropriate levels of numerical accuracy
- Understand basic coordinate geometry functions and how they are used in surveying to reduce field measurements to useable quantities for design and analysis
- Make accurate horizontal and vertical angle and horizontal and vertical distance measurements
- Operate a total station and make plans for their use in engineering projects
- Close a horizontal traverse by computing distances, azimuths, bearings, accuracy, latitudes and departures and their accompanying adjustments to produce accurate coordinate locations
- Operate Global Positioning System (GPS) devices for mapping purposes
- Understand the concepts between geographic and projected coordinate systems and the relationship of locally surveyed information to these global systems
- Use basic functions of a Geographic Information System (GIS) to develop appropriately scaled and referenced maps of their surveyed data
- Take measurements for and develop a topographic map
- Design and layout horizontal and vertical alignments of highways

CE EN 199R : Academic Internship. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Student acquires professional experiences in the discipline.
- Student demonstrates professional communication skills (report).
- Student demonstrates the ability to use reflective thinking to convert professional experience into academic understanding.

### 200-Level Courses

CE EN 200A : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CE EN 100A & CE EN 100B & CE EN 101

DESCRIPTION: Activities of civil engineering; principles and methods involved in solving civil engineering problems.

NOTE: College Lecture attendance required.

**Course Outcomes**

- 1(i) Continue developing an understanding of the process required to become a professional engineer
- 2(i) Continue developing an understanding of the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- 3(d) Work in and begin leanring how to lead teams in civil engineering related projects that benefit the community
- 4(f) Continue developing an understanding of ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Continue developing an understanding of contemporary issues in civil engineering as illustrated by projects presented by practicing engineers

CE EN 200B : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CE EN 100A & CE EN 100B & CE EN 101

DESCRIPTION: Activities of civil engineering; principles and methods involved in solving civil engineering problems.

NOTE: College Lecture attendance required.

**Course Outcomes**

- 1(i) Continue developing an understanding of the process required to become a professional engineer
- 2(i) Continue developing an understanding of the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- 3(d) Work in and begin learning how to lead teams in civil engineering related projects that benefit the community
- 4(f) Continue developing an understanding of the ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Continue developing an understanding of contemporary issues in civil engineering as illustrated by projects presented by practicing engineers

CE EN 203 : Engineering Mechanics--Mechanics of Materials. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CE EN 103

DESCRIPTION: Fundamental concepts of elastic stress and strain, including transformations and stress-strain relations; beam/column theories (axial, flexure, torsion, and shear loads and deformations); shear and bending moment relationships; column stability; and cylindrical and spherical pressure vessels.

**Course Outcomes**

- Students will be able to calculate and transform axial stress (e.g., Mohr's Circle), shear stress, bearing stress, thermal stress, bending stress, and combined stress.
- Students will be able to calculate strain, transform strain (e.g., Mohr's Circle), apply stress-strain relations (e.g., Hooke's Law), and solve statically indeterminate problems.
- Students will be able to analyze deflections due to axial, torsion, bending, and shear loads, and manipulate relations between shear and bending moment.
- Students will be able to design beams and columns to carry specified axial, flexure, and shear loads, and predict their deformation and elastic stability (i.e., buckling).
- Students will be able to predict stresses in pressure vessels.

CE EN 204 : Engineering Mechanic--Dynamics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CE EN 103

DESCRIPTION: Concepts of dynamics applied to particles, systems of particles, rigid bodies, vibration systems, and nonrigid particles systems.

**Course Outcomes**

- 1 (a) Understand the kinematics of particles and be able to perform rectilinear and curvilinear analysis of particle motion described in appropriate coordinate systems.
- 2 (a) Understand Newton's Laws of Motion and be able to write and solve the equations of motion for particles and systems of particles in appropriate coordinate systems.
- 3 (e) Understand the principles of Work and Energy and Impulse and Momentum as they apply to particles and systems of particles and be able to solve problems appropriate thereto.
- 4 (e) Be able to determine the motion of rigid bodies in translation and rotation about a fixed axis and to understand the principles associate with general plane motion.
- 5 (e) Be able to apply the principles of Force and Acceleration, Work and Energy, and Impulse and Momentum to rigid bodies and to solve problems appropriate thereto.
- 6 (e) Understand the basic concepts of one-degree-of-freedom vibration and to solve simiple problems related to such motion.

CE EN 270 : Computational Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 113; or concurrent enrollment.

DESCRIPTION: Computational techniques for solving civil engineering problems.

**Course Outcomes**

- Be able to utilize computer science concepts such as how information is stored in a computer in a digital format to calculate data size and data transfer rates.
- Be able to utilize the full range of IT resources available to students in the BYU College of Engineering and Technology.
- Be able to design and edit web pages in HTML format.
- Be able to create sophisticated and professsional Microsoft Powerpoint presentations, including use of themes and animation.
- Be able to use Microsoft Word to develop complex, lengthy technical documents, utilizing advanced features such as cross referencing and auto-generated tables of contents and figures.
- Be able to use the basic and advanced features in Microsoft Excel including formulas, relative vs. absolute referencing, naming cells, vlookup, IF function, validation, custom formatting, array formulas, charts, goal seek, and the Solver add-on to solve civil engineering problems.
- Be able to record and use macros to automate frequently-used tasks in Excel or to explore what VB code is associated with the task.
- Be able to reference cells and ranges in VB to either extract information from cells or write information to cells.
- Be able to add controls to a spreadsheet and associate those controls with VB code.
- Be able to use the MsgBox and InputBox objects in VB to present information to users or to prompt for input.
- Be able to use objects in VB programming, including properties and methods and be able to explore and research new object classes when necessary.
- Be able to use IF statements and conditional expressions to control the flow of logic in VB code.

- Be able to use each of the looping strategies in VB to encode iterative programming logic.
- Be able to allocate and use arrays in visual basic to process vectors, matrices, tables, and lists of data.
- Be able to use the debugging utilities in VB to identify and correct logical errors in your code.
- Be able to design and code custom functions in VB that can be called from Excel formulas or from other places in your VB code.
- Be able to develop custom subs to perform specific tasks in VB or modify subs created by recorded macros to make the macros powerful or applicable in a variety of applications.
- Be able to trap on a variety of different types of events and execute VB code in response to those events.
- Be able to utilize the VB string functions in order to manipulate text.
- Be able to create custom forms and associate those forms with an excel workbook.

**300-Level Courses**

CE EN 300A : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Fall
PREREQUISITE: CE EN 200A & CE EN 200B
DESCRIPTION: Technical and professional activities in civil engineering.
NOTE: College Lecture attendance required.

**Course Outcomes**

- (i) Continue developing an understanding of the process required to become a professional engineer
- 2(i) Continue developing an understanding of the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- 3(d) Work in and continue learning how to lead teams in civil engineering related projects that benefit the community
- 4(f) Continue developing an understanding of the ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Continue developing an understanding of contemporary issues in civil engineering as illustrated by projects presented by practicing engineers

CE EN 300B : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Winter
PREREQUISITE: CE EN 200A & CE EN 200B
DESCRIPTION: Technical and professional activities in civil engineering.
NOTE: College Lecture attendance required.

**Course Outcomes**

- 1(i) Continue developing an understanding of the process required to become a professional engineer
- 2(i) Continue developing an understanding of the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- 3(d) Work in and continue learning how to lead teams in civil engineering related projects that benefit the community
- 4(f) Continue developing an understanding of the ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Continue developing an understanding of contemporary issues in civil engineering as illustrated by projects presented by practicing engineers

CE EN 304 : Civil Engineering Materials: Metals, Woods, and Composites. (1.5:2:3)

PREREQUISITE: CE EN 203 & CE EN 270 & STAT 201
DESCRIPTION: Molecular basis and mechanical behavior of civil engineering structural materials; failure theories; laboratory testing.

**Course Outcomes**

- Be able to extract basic material properties of wood, aluminum and steel from simple mechanical tests.
- Observe and understand the failure mechanisms of isotropic and orthotropic materials.
- Understand basic characteristics of fiber-reinforced plastic composite materials.
- Be able to apply the maximum normal stress, maximum shear stress, and octahedral shear stress failure theories.

CE EN 306 : Civil Engineering Materials: Concrete, Masonry, and Asphalt. (1.5:2:3)

PREREQUISITE: CE EN 203 & CE EN 270 & STAT 201; Eng T 231 or concurrent enrollment.
DESCRIPTION: Composition, engineering behavior, and construction of concrete, masonry, and asphalt; laboratory testing.

**Course Outcomes**

- Understand properties, behavior, and use of aggregates.
- Understand manufacturing, properties, behavior, and use of portland cement.
- Understand production, properties, placement, behavior, and use of portland cement concrete.
- Understand production, properties, placement, behavior, and use of masonry units.
- Understand manufacturing, properties, behavior, and use of asphalt cement.
- Understand production, properties, placement, behavior, and use of asphalt concrete.
- Be able to perform selected laboratory test procedures on aggregate-based materials.
- Be able to analyze and interpret experimental laboratory test data.
- Be able to prepare professional technical reports documenting laboratory investigations of material properties.

CE EN 321 : Structural Analysis. (3:3:0)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: CE EN 203 & CE EN 270; or concurrent enrollment.
DESCRIPTION: Methods of statics. Influence line diagrams. Method of virtual work. Plastic hinge analysis. Flexibility (force) method, stiffness (displacement) method, and moment distribution method for analysis of indeterminate beams, trusses, and

frames. Introduction to computer structural analysis.

**Course Outcomes**

- 1(a) Apply Newton's Laws of force equilibrium to determine axial forces, shear forces, and bending moments in statically determinate beams, trusses, frames, arches, and cables.
- 2(a) Apply calculus and the principle of virtual work to determine displacements in statically determinate beams, trusses, and frames.
- 3(e) Use appropriate assumptions to perform approximate analysis and plastic hinge analysis of statically indeterminate beams and frames.
- 4(e) Critically place live loads on beams, trusses, and frames using influence line diagrams.
- 5(e) Identify symmetry, antisymmetry, degrees of indeterminacy, and degrees of freedom in beams, trusses, and frames.
- 6(n) Define basic structural engineering terminology.
- 7(n) Analyze statically indeterminate beams, trusses, and frames by the flexibility method.
- 8(n) Analyze beams, trusses, and frames by the stiffness method.
- 9(n) Analyze beams and frames by moment distribution.
- 10(n) Analyze beams, trusses, and frames with commercial structural analysis software.

CE EN 332 : Hydraulics and Fluid Flow Theory. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CE EN 204 & CE EN 270 & ENG T 231; or concurrent enrollment.

DESCRIPTION: Fluid properties, fluid statics and dynamics, viscous flow, boundary layers, concepts of pipe and open-channel flow.

**Course Outcomes**

- 1(p) Be able to setup, perform, evaluate and report on several elementary hydraulic experiments, including: static pressure force, impulse forces from a fluid jet, energy losses in pipe flow, minor energy losses in pipe systems, and flow over weirs in open channels.
- 2(a) Be able to perform basic calculations for static pressures and forces in fluids.
- 3(a) Understand conservation of mass, energy, and momentum principles as applied to fluid flow situations, and be able to apply them to flow analysis problems.
- 4(e) Understand the concepts of drag and lift and be able to apply both to solve introductory problems of forces and dynamics.
- 5(e) Understand alternate standard approaches and formulas, and be able to analyze and design pressure pipe systems.
- 6(p) Understand standard approach and formulas, and be able to analyze and design open-channel flow systems.
- 7(p) Understand the basic elements of pump and turbine flow, and be able to analyze and select the pump needed for situations involving fluid pumping.

CE EN 341 : Elementary Soil Mechanics. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CE EN 203 & CE EN 270; CE En 332 or concurrent enrollment. Geol 330 or concurrent enrollment.

DESCRIPTION: Determination of stresses in soils, soil strength, consolidation, and settlement. Applications in fluid flow, lateral earth pressure, bearing pressure, and slope stability.

**Course Outcomes**

- 2. (g) Communicate results of geotechnical tests effectively and explain their meaning in a clear and concise manner.
- 1. (b) Perform basic laboratory tests on soils including seive analysi, Atterberg limits, compaction, direct shear, triaxial shear and consolidation. Be able to perform the basic calculations associated wtih laboratory tests on soils.
- 3. (m) Perform fundamental calculations and analyses including weight-volumen relationships and soil classification. Understand influence of soi structure and mineralogy on soil behavior.
- 4. (m) Understand basic principles of flow through porous media including Darcy's law, the equation of continuity, seepage forces and flow nets.
- 5. (m) Understand how stresses are transferred through soils. Compute both geostatic stress (total stress, effective stress, and pore pressures) and induced stresses due to point, line and area loads.
- 6. (m) Understand basic consolidation theory. Compute the amoun of settlement and the time required for settlement under a given load.
- 7. (m) Understand shear strength principles including Mohr-Coloumb failure criterion. Perform basic caluclations related to shear strength analyis.
- 8. (m) Analyze lateral earth pressures under at-rest, active and passive conditions.
- 9. (m) Perform bearing capacity analysis for spread footings of various shapes. Understand how bearing capacity equations are used in foundation design.

CE EN 351 : Environmental Engineering. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 105

DESCRIPTION: Environmental concerns, problems, and evaluation methodology; pollution control and engineering management approaches; material balance and separations; reactor design.

**Course Outcomes**

- Be able to setup and solve material balance calculations for environmental engineering problems.
- Understand zero, first, and second order reactions equations and be able to solve simple problems using these concepts. Understand half-life and doubling time and how it applies to reactor design.
- Understand and solve problems using mixed-batch, plug-flow, and completely mixed mixing models. Solve simple design problems for mix-batch, plug-flow, and completly mixed flow reactors.
- Understand and solve simple problems of energy balance. This will include units of meausre, conversion, energy equivalance, and power production.
- Understand the concept of an ecosystem. This includes material and energy flows.
- Understand basic water quality measures: dissolved oxygen, oxygen demand, solids, nitrogen, and bacteria measurements. Be introduced to water quality standards for drinking water, effluents, and surface waters.

- Understand and solve basic engineering problems related to water treatment processes including softening, coagulation and floculation, settling, filtration, and disinfection.
- Understand and solve basic engineering problems related to waste water treatment. This will include understanding the basic unit operations: preliminary and primary treatment, secondary treatment, tertiary treatment, and sludge treatment and disposal. Understand and be able to solve basic engineering problems related to activated sludge systems, including reactor design and solids separation.
- Understand the basic processes and issues related to air quality, this includes major air pollutants, sources of air pollution, and air quality standards.
- Understand the basic issues and regulations related to hazardous and radioactive waste. This includes legal definitions and approaches.

CE EN 361 : Introduction to Transportation Engineering. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CE EN 113 & CE EN 270; Eng T 231, Stat 201; or concurrent enrollment.

DESCRIPTION: Transportation system characteristics, traffic engineering and operaton, transportation planning, geometric design, pavement design, transportation safety, freight, public transport, sustainable transportation.

**Course Outcomes**

- 1(o) An understanding of the history of the development of transportation in the United States and that the transportation modes and networks available in a community significantly influence the way the community develop.
- 2(h) An ability to approach transportation problems, especially traffic congestion on highways, from a systems point of view, as an interaction between land use and transportation systems, not just as the problem related to highways. This competency is all inclusive, including public transportation, freight, and sustainability.
- 3(b) An ability to conduct activities to measure traffic stream characteristics (volume, speed, and density) and an ability to analyze field data to estimate values for traffic stream parameters, including hypothesis tests.
- 4(b) An ability to build a standard traffic flow model (based on the Greenshields Model) to fit observed traffic data and an understanding of the randomness of traffic flow characteristics.
- 5(b) An understanding of the concept of level of service (LOS) and capacity and an ability to evaluate the performance of basic roadway segments using standard procedures based on this concept.
- 6(o) An understanding of the four steps in the traditional travel demand modeling process, the two-way relationship between land use and transportation, and how the travel demand modeling fits into the transportation-planning process.
- 7(b) An understanding of the highway safety improvement program and an ability to determine standard safety evaluation parameters.
- 8(b) An understanding of the dynamic interaction of the driver, roadway, and vehicle, and an ability to evaluate and design roadway sections for safe stopping sight distance.
- 9(b) An ability to determine key dimensions of horizontal and vertical alignments of roadway sections using safe stopping sight distance and the concept of superelevation and an ability to calculate the appropriate distance for passing/no-passing zones for a rural two-lane road.
- 10(c) An ability to determine when an intersection warrants the installation of a traffic signal, an ability to design signal settings for intersections so that drivers will not face a dilemma zone, and an understanding that congestion and associated delays are societal costs.
- 11(c) An understanding of pavement structures and their characteristics and an ability to design bituminous pavements using the AASHTO method that requires knowledge of traffic engineering, pavement material characteristics, and economics.
- 12(o) An understanding of rail transit service in a corridor with respect to station spacing and vehicle capabilities, an ability to calculate changes in transit ridership in response to changes in fare or service (elasticity) and an ability to measure and compare the performance of public transportation operations.
- 13(o) An understanding of the role of freight movement in the economy and an ability to explain why certain commodities tend to move on specific transport modes.
- 14(h) An ability to describe what sustainable transportation is and how it can be supported, and an ability to explain the impacts of traffic congestion on a corridor or in a community.
- 15(d) An ability to lead and function on multidisciplinary teams and (g) An ability to communicate in a team environment and an ability to compose professional documents in a clear, concise, and effective manner.

### 400-Level Courses

CE EN 400C : Civil and Environmental Engineering Online Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Instructor's consent.

DESCRIPTION: Technical and professional activities in civil engineering. Available online.

NOTE: College Lecture attendance required.

**Course Outcomes**

- Develop an understanding of professional and ethical responsibility, and their relationship with faith.
- Develop an ability to lead and function on multidisciplinary teams.
- Develop a recognition of the need for, and an ability to engage in life-long learning, professional licensure, and service.

CE EN 400B : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 300A & CE EN 300B

DESCRIPTION: Technical and professional activities in civil engineering.

NOTE: College Lecture attendance required.

**Course Outcomes**

- 1(i) Understand the process required to become a professional engineer
- 2(i) Understand the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- 3(d) Work in and lead teams in civil engineering related projects that benefit the community
- 4(f) Understand ethical behavior in civil engineering and be able to cite examples of good ethical behavior.

5(j) Understand contemporary issues in civil engineering as illustrated by projects presented by practicing engineers.

CE EN 400A : Civil and Environmental Engineering Seminar. (.5:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 300A & CE EN 300B

DESCRIPTION: Technical and professional activities in civil engineering.

NOTE: College Lecture attendance required.

**Course Outcomes**

- 1(i) Understand the process required to become a professional engineer
- 2(i) Understand the importance of lifelong learning and know how to obtain learning experiences that will benefit their future careers
- 3(d) Work in and lead teams in civil engineering related projects that benefit the community
- 4(f) Understand ethical behavior in civil engineering and be able to cite examples of good ethical behavior.
- 5(j) Understand contemporary issues in civil engineering as illustrated by projects presented by practicing engineers

CE EN 414 : Engineering Applications of GIS. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Senior status.

DESCRIPTION: Introduction to GIS concepts. Data acquisition and GIS database formulation. Applications of GIS to civil engineering.

**Course Outcomes**

- Integrate topics from various civil engineering disciplines to solve realistic problems
- Obtain and evaluate appropriate input information from databases, handbooks, correlation, experiments and literature
- Know where to locate, and how to prepare geographic datasets for use in a GIS
- Use GIS tools for spatial analysis, understanding and design of engineering systems
- Produce professional maps and technical reports from geographic data for use in written and oral presentations
- Customize, or use customized scripts to solve engineering-specific problems with GIS
- Compose professional documents in a clear, concise, and effective manner

CE EN 421 : Structural Steel Design. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 304 & CE EN 321

DESCRIPTION: Compression and tension of steel members, beams, and beam-columns. Elastic and inelastic lateral-torsional buckling. Structural fasteners. Emphasizes LFRD.

**Course Outcomes**

- 1(n) Students will understand the theory behind, and have a working familiarity of, the AISC specification.
- 2(c) Students will be able to design steel tension members.
- 3(c) Students will be able to design steel compression members.
- 4(n) Students will be able to design steel beams and composite beams.
- 5(n) Students will be able to design steel beam-columns.
- 6(n) Students will be able to design concentrically loaded bolted and welded connections.
- 7(l) Students will be able to explain some concepts in business management and public policy.

CE EN 424 : Reinforced Concrete Design. (3:3:0)

WHEN TAUGHT: Fall; Spring Even Yrs.

PREREQUISITE: CE EN 304 & CE EN 306 & CE EN 321

DESCRIPTION: Theory and design of reinforced concrete, including columns, beams, slabs, and footings; elastic and ultimate-strength methods of analysis.

**Course Outcomes**

- 424.1 (n) - Be able to design reinforced concrete beams subjected to transverse loading.
- 424.2 (n) - Be able to design reinforced concrete one way slabs subjected to transverse loading.
- 424.3 (n) - Be able to design reinforced concrete short columns subjected to axial and flexural loading.
- 424.4 (n) - Be able to design reinforced concrete spread square footings subjected to axial loadings.
- 424.5 (c) - Be able to design a simple reinforced concrete structural system.
- 424.6 (c) - Have a working familiarity with the ACI code.
- 424.7 (l) - Be able to communicate in a team environment.

CE EN 427 : International Megastructures. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: CE EN 321 & CE EN 471B; instructor's consent.

DESCRIPTION: Skyscraper analysis and design. Introduction to analysis and design of suspension, cable-stayed, arch, and prestressed girder bridges. Economic, social, and environmental design criteria for megastructures. International experience to study megastructures in China or elsewhere. Interaction with professionals.

**Course Outcomes**

- 1(g) Identify and present innovative ideas in the design/construction/use of remarkable megastructures.
- 2(c) Design preliminary member sizes for a skyscraper and megabridges with realistic loads and constraints.
- 3(h) Propose and model a sustainable design for a tall building to be built at a particular site.
- 4(d) Participate on a student design team and interact with design professionals.
- 5(j) Experience the culture, land, and megastructures of China.

CE EN 431 : Hydrology. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: CE EN 332

DESCRIPTION: Waters of the earth, their occurrence, circulation, and distribution. Relationships among precipitation, evaporation, infiltration, transpiration, groundwater, and stream runoff.

**Course Outcomes**

- 1(p). Understand and apply climatological principles relating to the hydrologic cycle and its occurrence and interaction with the biosphere of the earth.
- 2(p). Understand and solve problems for precipitation/runoff situations; including generation of the flow rates at desired points in a watershed.
- 3(c). Design and make calculations of flowrate hydrographs, reservoir storage, and water demand relationships in a stream.
- 4(p). Understand and be able to make calculations related to groundwater flow, well flow analysis and design, and drainage of saturated soils.
- 5(l). Design and apply statistical methods to generate hydrologic intensity and frequency distributions.

CE EN 433 : Hydraulic Engineering. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CE EN 332

DESCRIPTION: Application of fluid mechanics principles to analysis and design of hydraulic structures and systems.

**Course Outcomes**

- 1(p). Apply energy and momentum principles to fluid flow situations, and be able to solve problems for forces in static and moving fluids.
- 2(p). Apply standard energy approaches and formulas, and be able to solve for and design pressure pipe systems.
- 3(p). Apply standard aproaches and formulas, and be able to solve for and design open-channel flow systems.
- 4(l). Understand the basic elements of pump and turbine flow, and be able to analyze and select the pump needed for pressurizing situations.
- 5(c). Generate and apply the analytical and design approaches to common water facilities such as culverts, spillways, pipe networks, sewer systems, canals, and scour and sediment transport.

CE EN 439 : Latin America Study Abroad in Water Resources. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 431; or CE EN 433; CE En 471B or concurrent enrollment. Instructor's consent.

DESCRIPTION: BYU students team with engineers and engineering students from Latin American countries such as Mexico and the Dominican Republic to work on water resources projects of consequence. Collaboration with Latin American teams occurs electronically through the semester with 7-10 day culminating visit to the country assigned.

**Course Outcomes**

There are no course outcomes available

CE EN 461 : Geometric Design of Highways. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 113 & CE EN 361

DESCRIPTION: Designing visual aspects of highways: highway classification, design controls and criteria, design elements, vertical and horizontal alignment, cross section, intersections, interchanges, capacity analysis.

**Course Outcomes**

- 1 (o) An ability to apply to highway geometric design the knowledge that critical components of the traffic system – drivers, vehicles, roads and highways, physical environment, and traffic control devises – interact to form traffic streams.
- 2 (e) An ability to apply the concept of capacity and level of service to performance evaluation, design, and planning of freeways, two-lane two-way highways, urban streets, and intersections.
- 3 (k) An ability to reason and use mathematical models for highway capacity and level of service estimation included in the Highway Capacity Manual.
- 4 (k) An ability to use the Highway Capacity Software for performance evaluation, designing, and planning of freeways, two-lane two-way highways, urban streets, and intersections.
- 5 (k) An ability to apply the concepts behind highway geometric design to the highway geometric design of a location assigned for the term project.
- 6 (k) An ability to use proper tables and figures in A Policy on Geometric Design of Highways and Streets in Geometric Design of Highways and Streets to assignment problems, exams, and a term project design.
- 7 (k) An ability to use Autodesk Civil 3D to design a highway and an intersection for the location assigned in the term project, including importing digital design data, triangulating the terrain data, creating profile, designing vertical and horizontal alignments, preparing a cross section assembly, and creating a corridor and an intersection.
- 8 (g) An ability to prepare a technical report summarizing the tasks that the team members have done in the design of a highway and an intersection assigned for the term project.
- 9 (g) An ability to prepare a presentation file summarizing the tasks the team members have done in the design a highway and an intersection assigned for the term project AND present it as a team.
- 10 (o) An ability to use professionally terms pertaining to highway geometric design in assignments, exams, and a term project.

CE EN 467 : International Megacities. (3:3:0)

WHEN TAUGHT: Spring Odd Yrs.

PREREQUISITE: CE EN 361 & CE EN 471B; and instructor's consent.

DESCRIPTION: Transportation planning and analysis of public transportation, airports, high-speed rail, pedestrians, water transportation, freight, and highway systems of international megacities achieved through international experience, research, professional interactions, and an evaluation of safety, policy, and sustainability.

**Course Outcomes**

There are no course outcomes available

CE EN 471A : Civil Engineering Practice. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: 12 credit hours from CE En 304, 306, 321, 332, 341, 351, 361; or concurrent enrollment.

DESCRIPTION: Cash-flow diagrams. Present worth and annual payments comparison of engineering alternatives. Sustainability of engineering projects in terms of environmental, social, and economic impact (triple-bottom-line). Teamwork and leadership development. Response to a request for proposal (RFP) to develop a culminating design project.

**Course Outcomes**

There are no course outcomes available

CE EN 471B : Civil Engineering Practice. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: 12 credit hours from CE En 304, 306, 321, 332, 341, 351, 361; or concurrent enrollment.

DESCRIPTION: Cash-flow diagrams. Present worth and annual payments comparison of engineering alternatives. Sustainability of engineering projects in terms of environmental, social, and economic impact (triple-bottom-line). Teamwork and leadership development. Economic, political, and cultural impact of globalization on civil engineering in the USA and other countries. Research and triple-bottom-line evaluation of specific civil engineering projects throughout the world.

**Course Outcomes**

- 1(h) Perform a triple bottom line analysis of a civil engineering project by evaluating social, environmental, and economic impact.
- 2(i) Learn about an existing civil engineering project by gathering and organizing information from published literature and the internet.
- 3(j) Understand the changing roles of the USA and another country in the modern world in both contemporary society and civil engineering.
- 4(l) Explain the time value of money, construct cash-flow diagrams, and perform present worth or annual payments analysis of alternatives.

CE EN 472 : Civil Engineering Design. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 471A

DESCRIPTION: Civil engineering culminating design experience based on the knowledge and skills acquired in earlier course work and incorporating appropriate engineering standards and multiple realistic constraints.

**Course Outcomes**

- 1(c). Understand and apply conception, formulation, analysis and search for solutions to civil engineering design problems. Be able to integrate topics from various civil engineering disciplines to solve problems with multiple realistic constraints.
- 2(d). Be able to communicate in a team environment. Be able work effectively in groups through presentations and written documents.
- 3(g). Understand basic principles of personal communication including conversational and interviewing skills. Be able to compose effective professional documents and make well-organized oral presentations.
- 4(h). Understand how civil engineering problems may be affected by cultural, societal, political and environmental concerns. Understand basic concepts of engineering economic analyses.

CE EN 493R : Civil and Environmental Engineering Practicum. (1-18:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- An ability to identify, formulate, and solve engineering problems
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

CE EN 498R : Directed Studies in Civil and Environmental Engineering. (1-18:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- An ability to identify, formulate, and solve engineering problems
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

## 500-Level Graduate Courses (available to advanced undergraduates)

CE EN 500 : (CE En-Me En) Design and Materials Applications. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 372; or CE EN 321; or equivalent.

DESCRIPTION: Applied and residual stress; materials selection; static, impact, and fatigue strength; fatigue damage; surface treatments; elastic deflection and stability--all as applied to mechanical design.

**Course Outcomes**

- Understand how materials selection in design can be based on a variety of materials properties.
- Understand effects of materials structure and properties on design and choices for static, impact, fatigue, elastic, and anelastic behavior.
- Be familiar with important techniques used to modify enfineering properties of a boad range of materials, such as metals, polymers, ceramics, composites, and biomaterials.
- Understand the necessary analysis to design for various material failure mechanisms.

CE EN 501 : (CE En-MeEn) Stress Analysis and Design of Mechanical Structures. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: CE EN 321; or ME EN 372; or equivalent.

DESCRIPTION: Stress analysis and deflection of structures; general bending and torsion with computer applications to mechanical and aerospace structure design.

**Course Outcomes**

- Calculate the deflection of and stress in multi-material beams under force, moment, or temperature loads.
- Understand the principles of stress and strain, including principle stress and strain, in general three-dimensional structures.
- Calculate the deflections and stress in torsion bars of arbirary cross section.
- Calculate the deflections and stress in beams in unsymmetric bending.

CE EN 503 : (CE En-Me En) Plasticity and Fracture. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 203 & ME EN 250 & MATH 303; Senior standing or instructor's consent.

DESCRIPTION: Tensor algebra; stress and deformation tensors; relationships between dislocation slip, yielding, plastic constitutive behavior, and microstructure development; cracks and linear elastic fracture mechanics.

**Course Outcomes**

- Identify and describe the influence of crystal structure and material defects on tensile and fracture properties.
- Describe the effects of a stress concentration as well as its influence on the fracture and fatigue life of a structural member.
- Describe the principles of the Griffith Crack Criteria and its application to brittle materials, and its extension to ductile materials.
- Describe the Failure Design Philosophy and apply it to materials selection in an engineering application.
- Predict the life of a structural member of known material properties given the loading conditions and a known flaw size.
- Describe the impact of various microstructure features on tensile, fracture and fatigue properties.
- Select an appropriate material class given functional requirements, fatigue and fracture.

CE EN 504 : (CE En-Me En) Computer Structural Analysis and Optimization. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 321; or ME EN 372; or equivalent; linear algebra.

DESCRIPTION: Matrix stiffness method for 1D, 2D, and 3D skeletal structure classes. Implementing the matrix stiffness method as a computer program. Nonlinear second-order structural analysis. Structural optimization techniques including stress-ratio method, gradient-based methods, and genetic algorithms.

**Course Outcomes**

- 1) Construct global and local member stiffness matrices and force vectors for any skeletal class and any distributed loading.
- 2) Construct structure matrices and vectors for both force and support displacement loads exploiting symmetry/antisymmetry and deformation assumptions.
- 3) Construct member displacement vectors and free-body diagrams for any skeletal class.
- 4) Write down the basic organization and calling structure of a structural analysis program, and complete the pseudo-code for structure level routines.
- 5) Derive first/second order equilibrium/compatibility equations, buckling loads/displacements, and structure elastic/geometric stiffness matrices for small trusses and single-member frames.
- 6) Determine the number of FLOPS and perform the calculations for matrix-vector operations including triangularization, backsubstitution, Newton-Raphson iteration, and inverse iteration.
- 7) Determine the number of FLOPS and perform the calculations for stress ratio optimization and exhaustive search, and construct design space plots if possible.
- 8) Determine the number of FLOPS and perform the calculations for finite difference / virtual work sensitivity analysis, Kuhn-Tucker condition evaluation, and optimality criteria algorithm.
- 9) Determine the number of FLOPS and perform the calculations for genetic algorithms with penalty/segregation fitness, tournament/roulette selection, point/uniform/blend crossover, dynamic mutation, and ranking/scoring/maximin fitness.
- 10) Prepare input for linear analysis, nonlinear pushover analysis, gradient-based size optimization, and genetic-based size/shape/topology optimization programs for plane frames.

CE EN 505 : Portland Cement Concrete Mixture Design and Analysis. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 306; or equivalent.

DESCRIPTION: Properties and testing of freshly mixed and hardened concrete and constituent materials; concrete mixture design and analysis; concrete construction practices; laboratory experimentation.

**Course Outcomes**

- Characterize properties of concrete materials.
- Design concrete mixtures.
- Measure properties of fresh concrete.
- Measure properties of hardened concrete.
- Understand proper concrete construction practices.
- Understand mechanisms of concrete deterioration.

CE EN 506 : (CE En-Me En) Continuum Mechanics and Finite Elements. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE En 321 or Me En 372 or equivalent.

DESCRIPTION: Equilibrium, constitutive, and compatibility equations; closed-form solutions from elasticity; finite element theory, programming, and usage; membrane, axisymmetric, and solid elements. Application to heat transfer, fluid mechanics, and seepage.

**Course Outcomes**

- 1) Derive mass/momentum/energy equilibrium equations and constitutive equations for isotropic Hookean solids and Newtonian fluids, and specialize them to get Navier/Stokes/Laplace equations.
- 2) Calculate stress traction, normal/shear stresses, principal stresses, and stress failure criteria for a given state of stress, and calculate displacements and strains for a given state of deformation.
- 3) Transform equations between expanded, matrix, and indicial notation, and between rectangular and cylindrical coordinates.
- 4) Degenerate 3D elasticity equations for 2D problem classes and Saint-Venant torsion using appropriate assumptions, and derive biharmonic or Laplace equations.
- 5) State the problem class, boundary conditions, and method of solution for classical elasticity problems and seismic wave problems.
- 6) Calculate displacements and stresses from given elasticity closed-form solutions including general solution to I-sections under torsion with or without warping restraint.
- 7) Construct the weighted integral to obtain formulas for element stiffness matrix and force vector given the governing differential equations of a problem class.
- 8) Calculate the system stiffness matrix, force vector, and displacement vector for a particular problem, and calculate element results.
- 9) Construct Lagrange/serendipity/triangle shape functions in terms of natural coordinates, and use isoparametric transformations and Gaussian quadrature to evaluate element stiffness.
- 10) Execute a finite element program and assess results on a patch test and on problems with known closed form solutions.

CE EN 508 : (CE En-Me En) Structural Vibrations. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 321; or ME EN 372; or equivalent.

DESCRIPTION: Dynamic analysis of single degree-of-freedom, discrete multi-degree-of-freedom, and continuous systems. Applications include aerospace, civil structures, and mechanical components.

**Course Outcomes**

- 1. Students will be able to determine the response of single-degree-of-freedom (SDOF) systems in free and forced vibration, with and without damping.
- 2. Students will be able to determine the response of multi-degree-of-freedom and continuous systems in free and forced vibration, with and without damping.
- 3. Students will be able to apply the theory of structural vibrations to problems in Civil or Mechanical Engineering.

CE EN 521 : Seismic-Resistant Steel Buildings. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 421; or equivalent.

DESCRIPTION: Background and development of UBC seismic provisions; design of ductile braced frames and steel moment resisting frames; design of diaphragms and collectors.

**Course Outcomes**

- 1. Students will understand lateral load paths in buildings and be able to compute forces in diaphragms, collectors, and frames.
- 2. Students will understand the theory behind modern seismic provisions for buildings.
- 3. Students will be able to appropriately size and detail members in special moment resisting frames (SMRFs), special concentrically braced frames (SCBFs), and buckling-restrained braced frames (BRBFs).
- 4. Students will know how to use modern analysis tools to analyze buildings under earthquake loading.

CE EN 523 : (CE En-Me En) Aircraft Structures. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE En 304 or Me En 250 or equivalent. CE En 321 or Me En 372 or equivalent.

DESCRIPTION: Requirements, objectives, loads, materials, and tools for design of airframe structures; static behavior of thin-wall structures; durability and damage tolerance; certification and testing. Airframe component team design project.

**Course Outcomes**

- Students will understand and be able to apply industry philosophies and critical criteria that drive the design and govern the certification of aircraft structures.

- Students will be able to analyze the in-plane (compression, shear, stability) and out-of-plane (bending, torsion, transverse shear) behavior (stresses, deflections, margins of safety) of structural elements (beams, columns, thin plates, open and closed sections, etc.) prevalent in aircraft.
- Students will understand important issues required for certification of aircraft structures (regulations, loads, fatigue, damage tolerance).

CE EN 525 : Bridge Structures. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 421 & CE EN 424; or equivalent.

DESCRIPTION: Design of composite, continuous beam, and girder bridges, including piers, abutments, floor systems, and bearings; field trips to observe bridge construction and fabrication.

**Course Outcomes**

- Explain the world's history of bridges.
- Explain the USA's surface transportation law.
- Explain the USA's Code of Federal Regulations applicability to bridges.
- Explain the USA's bridge design philosophy.
- Explain the USA's bridge design specifications.
- Explain the loads that a bridge sustains and how they are distributed.
- Explain the elements of a bridge and how they are constructed.
- Explain current innovation in bridge design and construction.
- Read and understand bridge project contract documents including plans, specifications, and estimates.
- Design a bridge's structure type, width, span, and vertical clearance.
- Design a bridge's reinforced concrete deck.
- Design a bridge's prestressed conrete girders.
- Design a bridge's welded-steel plate girders.

CE EN 528 : Masonry Design. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: CE EN 424; or equivalent.

DESCRIPTION: Introduction to analysis, design, and construction of masonry structures. Compressive, tensile, flexural, and shear behavior of masonry structural components.

**Course Outcomes**

- Be able to design masonry beams subjected to transverse loading
- Be able to design masonry columns, piers, and walls for axial and flexural loading
- Be able to specify anchorage requirements and design bolt connections
- Have a working familiarity with the building code requirements and specifications for masonry structures

CE EN 529 : Timber Design. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: CE EN 304 & CE EN 321 & CE EN 421; or equivalents.

DESCRIPTION: Timber species, composition, and grades; design of beams, straight and tapered glue-lam girders, columns, connections, trusses, shear walls, and structural systems.

**Course Outcomes**

- Be able to design timber beams subjected to transverse loading
- Be able to design timber tension and compression members subjected to axial and flexural loading
- Be able to design vertical and horizontal diaphragms subjected to in plane and out of plane loading
- Be able to design simple connections with nails, staples, bolts, and lag screws
- Have a working familiarity with the National Design Specification for Wood Construction

CE EN 531 : Principles of Hydrologic Modeling (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 431; or equivalent.

DESCRIPTION: Advanced hydrologic and hydraulic principles with an emphasis on modeling for the purpose of planning and designing draining, flood control, and other water resource facilities.

**Course Outcomes**

- Apply fundamental principles of hydrology in hydrologic and hydraulic models
- Know how to apply different hydrologic modeling formulation to solve design and analysis problems
- Know where to find digital and other data resources required for hydrologic model development
- Understand the limitations and uses of traditional lumped parameter models as well as more advanced physics based models
- Interpret and describe hydrologic modeling results in written reports
- Work together with teammates to develop hydrologic models
- Learn modern engineering software tools like the Watershed Modeling System (WMS) that process digital data and prepare model inputs

CE EN 535 : Hydraulic Design of Channels and Control Structures. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 433; or equivalent.

DESCRIPTION: Design of water conveyance channels and control structures, including siphons, chutes, weirs, flumes, dams, spillways, and outlet works.

**Course Outcomes**

- Students will be able to solve problems requiring fundamental and more advanced mathematical theories.
- Students will be able to design basic hydraulic structures including cost estimates and environmental impacts.
- Students will prepare professional-level quality reports.

CE EN 540 : Geo-Environmental Engineering. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 341 & CE EN 351; or equivalents. CE En 471A or 471 B or concurrent enrollment or instructor's consent.

DESCRIPTION: Hazardous waste statutes and regulations; introduction to hazardous waste treatment, storage, disposal, and monitoring techniques. Geotechnical aspects of environmental engineering. Topics include municipal and hazardous solid waste landfill design and characterization and remediation techniques for contaminated soil and groundwater.

**Course Outcomes**

- Be able to produce a preliminary design of a landfill. This inlcudes understanding regulations, chemical fate and transport, geotechnical design methods, and project planning issues.
- Be able to communicate the design and design decisions to a non-specialist but technical audiance. This will include communicating the reasons for basic assumptions and why they were made.

CE EN 542 : Foundation Engineering. (3:3:0)

WHEN TAUGHT: Fall; Spring Even Yrs.

PREREQUISITE: CE En 341 or equivalent.

DESCRIPTION: Soil investigation, bearing capacity and settlement, design of spread footings, combined footings, mat foundations, pile foundations, and drilled shafts.

**Course Outcomes**

- 1. Estimate the settlement within a compressible soil layer due to applied loads from fill, embankent and buildings
- 2. Estimate the time-settlement relationships for soils due to applied loads. Use design approaches for accelerating consolidation rate (e.g. wick drains and surcharging)
- 3. Determine the allowable soil bearing pressure for spread footings on saturated clays and sand giving consideration to shear failure and settlement
- 4. Design square and rectangular reinforced concrete footings
- 5. Design combined reinforced concrete foundatiosn using both conventional approaches and elastic methods (beam on an elastic foundation).
- 6. Design reinforced concrete mat foundations using both the conventional method and elastic methods (e.g. finite element models)
- 7. Estimate the single pile capacity and group pile capacity for piles in sand and clay
- 8. Estimate the settlement of a pile group in saturated clay
- 9. Compute the capacity of drilled shafts in clay and sand. Understand critical components of construction that influence capacity.
- 10. Characterize a subsurface profile using insitu techniques and determine the most suitable foundation type to support a given structure.

CE EN 544 : Seepage and Slope Stability Analysis. (3:3:0)

PREREQUISITE: CE EN 341; or equivalent.

DESCRIPTION: Seepage and slope stability analysis of earth dams, levees, excavations, embankments, and natural slopes; construction dewatering, numerical methods, shear strength of soils, limit equilibrium method.

**Course Outcomes**

- Be able to apply Darcy's law to solve basic problems related to flow through porous media.
- Understand the governing equations for 2D and 3D groundwater flow, including what simplifying assumptions are used in the derivation of the equations.
- Be able to create and interpret graphical solutions (flow nets) to the governing equations.
- Be able to apply analytical solutions to the governing equations, including well equations.
- Be able to apply analytical solutions to construction dewatering problems.
- Understand the finite difference solution and be able to create finite difference solutions in Excel.
- Understand how the finite element method works and how the finite element equations are formulated.
- Be able to apply finite element software to solve complex seepage analysis problems.
- Understand the basic concepts of the limit equilibrium method of slope stability.
- Be able to apply slope stability charts for simple problems.
- Be able to apply slope stability software (such as UTEXAS) for common slope stablility problems.
- Be able to solve special cases of slope stability including, reinforced slopes, rapid drawdown, and seismic conditions.

CE EN 545 : Geotechnical Analysis of Earthquake Phenomena. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 321 & CE EN 341; or equivalents.

DESCRIPTION: Earthquake magnitude and intensity; design ground motions, elementary dynamics of structures; response spectra; building code provisions; liquefaction and ground failure.

**Course Outcomes**

- 1. Understand the origin of earthquakes and the nature of seismic waves; characterize faults and seismic sources; quantify the "size" of an earthquake in terms of magnitude and intensity; quantify earthquake ground motions in terms of engineering parameters.
- 2. Use attenuation relationships to predict ground motions; perform deterministic and probabilistic seismic hazard analyses
- 3. Determine the dynamic response of single-degree-of-freedom structures subject to base shaking; understand, develop and apply response spectra
- 4. Perform site response analyses; understand the effect of different soil types on ground response and

damping
- 5. Understand the philosophy and general seismic design provisions found in design codes developed/distributed as part of the National Earthquake Hazard Reduction Program (NEHRP) and the International Building Code (IBC)
- 6. Understand the mechanism associated with liquefaction and ground failure; perform liquefaction triggering, lateral spread, and settlement analyses.
- 7. Evaluate seismic slope stability and deformation; estimate seismic earth pressures

CE EN 547 : Groundwater Modeling. (3:3:0)

PREREQUISITE: CE EN 341; or equivalent.

DESCRIPTION: Computer simulation of groundwater flow systems; modeling theory, numerical methods, data management, boundary conditions, calibration, and stochastic analysis.

**Course Outcomes**

- Be able to apply Darcy's law to solve basic problems related to flow through porous media.
- Understand the governing equations for 2D and 3D groundwater flow, including what simplifying assumptions are used in the derivation of the equations.
- Be able to develop conceptual models of groundwater flow systems, including properly formulated boundary conditions.
- Understand the basic structure and organization of the MODFLOW model.
- Be able to select the appropriate MODFLOW packages for a particular problem and develop the package input.
- Understand issues related to MODFLOW solvers and be able to solve common instability issues.
- Be able to apply GIS data to develop regional groundwater simulations with MODFLOW.
- Be able to calibrate groundwater models using both manual approaches and automated tools such as the PEST code.
- Be able to analyze flow directions using particle tracking.
- Be able to perform stochastic simulations and analyze uncertainty.
- Be able to perform transient simulations.
- Be able to do basic groundwater analysis tasks in ArcGIS.

CE EN 551 : Water Treatment Facilities Design. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 351; or equivalent.

DESCRIPTION: Evaluation, selection, and design of water treatment facilities.

**Course Outcomes**

- Understand the concepts and theories governing water treatment unit operation and process design and operation
- Design water treatment unit operations and processes
- Setup, perform, and evaluate experiments necessary to design water treatment processes
- Communicate effectively through the preparation of reports and technical papers.
- Read and understand water treatment related technical literature

CE EN 555 : Environmental Chemistry. (3:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 351; or equivalent.

DESCRIPTION: Chemical theory and calculation supporting analysis of major organic and inorganic constituents in environmental engineering, focusing on theoretical understanding of the chemical processes.

**Course Outcomes**

- Understand and solve basic physical chemistry problems involving ReDox, Gas Law, and actvity.
- Be able to setup and solve the mathmatical formulations of equilibrium concepts for dilute aquatic systems
- Understand the basic concepts and be able to setup problems to use standard chemical speciation programs for dilute aquatic solutions.
- Be exposed to and experiance field sampling and analysis methods. Be able to communicate the results and analysis.

CE EN 562 : Traffic Engineering: Characteristics and Operations. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 361; or equivalent.

DESCRIPTION: Traffic stream characteristics, traffic flow theory, traffic control devices, capacity and level of service, warrants, signal timing and optimization, signal coordination.

**Course Outcomes**

- 1 (o) An understanding of types of traffic control devices and their meanings and the importance of communication between traffic engineer and driver.
- 2 (o) An understanding three fundamental traffic flow characteristics (speed, density and flow rate) and the relationships among them.
- 3 (b) An ability to conduct descriptive statistics on traffic flow characteristics data and to conduct a means test on two samples or conduct a chi-square test to evaluate a hypothesis on an underlying distribution.
- 4 (o) An ability to measure in the field, or at a remote station, and reduce raw traffic flow characteristics data for subsequent statistical analyses or modeling.
- 5 (b) An ability to conduct different types of volume studies and analyze their characteristics such as peaking and seasonal changes and an ability to estimate demand for and capacity of the facility under study.
- 6 (b) An understanding of the difference between space mean speed and time mean speed and ability to conduct speed, travel time, and signalized intersection delay studies study.
- 7 (o) An understanding of the importance of safety on highways and of the way highway crash data are collected and stored for statistical analyses and an ability to analyze crash data to identify statistically “hot spots” that require further evaluations and to conduct statistical analyses to evaluate the effectiveness of crash countermeasures on reduction of crashes.

- 8 (c) An understanding of basic concepts of capacity and level of service used for analyzing the performance of uninterrupted flow highway facilities.
- 9 (c) An ability to conduct capacity and level of service analysis for basic freeway and multilane highways, both manually and using the Highway Capacity Software and to evaluate the performance of such segments and determine possible improvements required for maintaining or improving the conditions of such segments.
- 10 (c) An understanding of the concepts of capacity and level of service for complex ramp area traffic flow and an ability to conduct capacity and level of service analysis for such facilities both manually and using the Highway Capacity Software.
- 11 (o) An understanding of the functions of signing and marking and their use on freeways and rural highways.
- 12 (c) An understanding of the hierarchy of intersection control (Basic rules of the road, Yield and stop control, and Signals) and an ability to perform a signal warrant analysis using the method found in the MUTCD.
- 13 (c) An understanding of basic principles of intersection signalization including: Discharge headways, saturation flow rates, and lost times; Allocation of time and the critical-lane concept; The concept of left-turn equivalency; and Delay as a measure of service quality, and an ability to determine these values given data of prevailing conditions.
- 14 (c) An understanding of the key steps involved in signal design and timing including: Development of a safe and effective phase plan and sequence; Determination of vehicular signal needs; and Determination of pedestrian signal needs, and an ability to going through these steps to design and timing of pretimed signals.
- 15 (c) An understanding of the fundamental concept of actuated signals and the mechanism of changing green time allocation to all approaches depending on approach traffic demand and an ability to design phase sequences and timing signal indications manually and using signal timing software programs.
- 16 (c) An understanding of the concept of analyzing capacity and level of service using the models presented in the Highway Capacity Manual 2010 and an ability to carry out the computations presented in the HCM manually and using the Highway Capacity Software 2010.
- 17 (h) An understanding of the concept of coordinating multiple signals on arterials and in a network by manipulating offsets of signals and an ability to determine optimal offsets, optimal phase sequence, and optimal green time allocation and an ability to coordinate multiple signals on arterials manually (simples systems) and using a signal optimization software program.
- 18 (g) An ability to express technical ideas in a written format and an ability to compose professional documents in a clear, concise, and effective manner

CE EN 563 : Pavement Design. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE En 306 and 341 and 361; or equivalents. CE En 471A or 471B or concurrent enrollment.

DESCRIPTION: Design, construction, evaluation, maintenance, and rehabilitation of flexible and rigid pavements; influence of traffic and environmental factors; mechanistic analysis of pavement structures using computer software.

**Course Outcomes**

- Understand concepts of pavement performance
- Characterize traffic loads for pavement design and analysis
- Characterize strength and durability of pavement materials
- Understand and account for climatic factors in pavement design and analysis
- Understand pavement construction procedures
- Design flexible and rigid pavements using standard methods
- Understand mechanisms of pavement deterioration and identify distress types
- Provide pavement condition assessments
- Recommend pavement preservation techniques
- Conduct mechanistic analyses of pavement structures using computer software

CE EN 565 : Urban Transportation Planning. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 361; or instructor's consent.

DESCRIPTION: Urban transportation planning and decision making, intermodal transportation, land-use transportation interrelationships, transportation demand modeling, site impact analysis, sustainable transportation; livable cities.

**Course Outcomes**

- Learn and understand the four steps of urban transportation demand forecasting including: 1) trip generation, 2) trip distribution, 3) mode choice, and 4) trip assignment.
- Be able to identify and understand the difference between “urban transportation planning” and “site planning.”
- Be familiar with travel demand management (TDM) measures.
- Read Transportation for Livable Cities and become familiar with issues affecting the direction of our transportation facilities.
- Learn how to communicate transportation planning ideas effectively and write a technical paper on a transportation planning topic.
- Become familiar with the demand forecasting process using QRSII and GNE software.

CE EN 570 : (CE En-Me En) Computer-Aided Engineering Software Development. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Me En 373 or C programming.

DESCRIPTION: Programming methods for the development of engineering software. Data structures, architecture, libraries, and graphical user interfaces, with applications to CAD systems.

**Course Outcomes**

- Ability to develop complex algorithms.
- Ability to convert algorithms into a commonly used computer language.
- Ability to create interactive scientific visualizations of complex data.
- Ability to create graphical user interfaces that facilitate ease of use.

CE EN 572 : (CE En-Me En) Computer-Aided Geometric Design. (3:3:0)

WHEN Fall

TAUGHT:

PREREQUISITE: Proficiency in C programming.

DESCRIPTION: Mathematical theory of free-form curves and surfaces and solid geometric modeling. Bezier and B-spline curve and surface theory, parametric and implicit forms, intersection algorithms, topics in computer algebra, and free-form deformation. Several programming projects.

**Course Outcomes**

- Understand the theory, properties, and algorithms for Bezier curves: de Casteljau algorithm, degree elevation, hodographs, curve intersection algorithms, convex hull property, variationa diminishing property, rational Bezier curves, explicit Bezier curves.
- Understand polar form, the de Boor algorithm, the Boehm algorithm, knot intervals.
- Understand tensor product Bezier and B-Spline surfaces, including the de Casteljau algorithm, partial derivatives, parametric continuity, tesselation.

CE EN 575 : (CE En-Me En) Optimization Techniques in Engineering. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 302; C, C++, or similar computer language.

DESCRIPTION: Application of computer optimization techniques to constrained engineering design. Theory and application of unconstrained and constrained nonlinear algorithms. Genetic algorithms. Robust design methods.

**Course Outcomes**

- Define and use optimization terminology and concepts, including concepts of analysis space and design space.
- Apply optimization methods to engineering problems, including developing a model, defining an optimization problem, applying optimization methods, exploring the solution and interpreting results.
- Understand and apply unconstrained optimization theory for continuous problems, including the necessary and sufficient conditions and steepest descent, Newton's method, conjugate gradient and quasi-Newton methods. Understand basic theorems of quasi-Newton methods.
- Understand and apply discrete optimization algorithms, including branch and bound, exhaustive search and simulated annealing.
- Develop and apply Genetic algorithms.
- Understand and apply constrained optimization theory for continuous problems, including the Kuhn-Tucker conditions and generalized reduced gradient and sequential quadratic programming methods.
- Apply optimization techniques to determine a robust design.
- Have some familiarity with optimization software.

CE EN 594R : Selected Problems in Civil and Environmental Engineering. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

There are no course outcomes available

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Civil and Environmental Engineering Department Home**

**Majors**

- BS in Civil Engineering

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**Faculty**

# Civil and Environmental Engineering Faculty

Show All
Hide All

## Professors

Balling, Richard Jack

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1978
BS, University of Utah, 1978
MS, University of California, Berkeley, 1979
PhD, University of California, Berkeley, 1982

Hotchkiss, Rollin H.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1976
MS, Utah State University, 1979
PhD, University of Minnesota, 1989

Jensen, David W.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Massachusetts Institute of Technology, 1981
PhD, Massachusetts Institute of Technology, 1986

Jones, Norman L.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, University of Texas, Austin, 1988
PhD, University of Texas, Austin, 1990

Miller, A. Woodruff

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BES, Brigham Young University, 1969
MS, Stanford University, 1970
ENG, Stanford University, 1972
PhD, Stanford University, 1975

Nelson, Everett James

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1989
MS, Brigham Young University, 1990
PhD, Brigham Young University, 1994

Rollins, Kyle

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor

**DEGREES:** BS, Brigham Young University, 1982
PhD, University of California, Berkeley, 1987

Saito, Mitsuru

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, University of Virginia, 1983
PhD, Purdue University, West Lafayette, 1988

## Associate Professors

Ames, Daniel P.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1996
MS, Utah State University, 1998
PhD, Utah State University, 2002

Borup, Michael Brett

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Humboldt State University, 1980
MS, Utah State University, 1983
PhD, Clemson University, 1985

Fonseca, Fernando S.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1987
MS, Brigham Young University, 1988
PhD, University of Illinois, Urbana, 1997

Guthrie, William Spencer

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1998
MS, Texas A&M University, 1999
PhD, Texas A&M University, 2002

Richards, Paul William

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 2000
MS, University of California, San Diego, 2003
PhD, University of California, San Diego, 2004

Schultz, Grant George

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1995
PhD, Texas A&M University, 2003

Williams, Gustavious Paul

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1987
PhD, Northwestern University, 1994

# Assistant Professors

Franke, Kevin William

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Utah State University, 2004
MS, University of Washington, 2005
PhD, Brigham Young University, 2011

Scott, Michael A.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Civil and Environmental Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2005
MS, Brigham Young University, 2006
MS, University of Texas at Austin, 2008
PhD, University of Texas at Austin, 2011

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**Electrical and Computer Engineering Department Home**

**Majors**

- BS in Computer Engineering
- BS in Electrical Engineering

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**Faculty**

# Electrical and Computer Engineering

Brent Nelson, Chair
459 CB, (801) 422-4012

Janalyn Mergist, Undergraduate Major Advisor
459 CB (801) 422-4012

Ira A. Fulton College of Engineering and Technology Advisement Center
242 CB, (801) 422-4325

## Admission to Degree Program

The degree programs in the Department of Electrical and Computer Engineering are open enrollment.

## The Discipline

Electrical and Computer Engineering is one of the most exciting, diverse, and forward-looking disciplines offered at the university. Contemporary society is in the midst of an information revolution, created in large part from the fruits of electrical and computer engineering. Electrical and computer engineers have been primary contributors to the astonishing developments in communication, computer, and network technology. They have designed devices and systems that have a significant impact on manufacturing, medicine, transportation, and environmental monitoring. Smart phones, tablets, digital cameras, high definition television, solar power, microprocessors, lasers, unmanned air vehicles, medical imaging systems, and autonomous robotic systems are all examples of devices and systems designed by electrical and computer engineers. Innovations that flow out of electrical and computer engineering sustain the national economy and improve the quality of life for people throughout the world. In the future, society will look to electrical and computer engineers to address grand challenges ranging from sustainable and efficient energy to health care technologies and global communications networks.

The Department of Electrical and Computer Engineering at Brigham Young University offers accredited degrees in Electrical Engineering and Computer Engineering. Electrical Engineering focuses on microelectronics, electromagnetics, electronic circuits, wireless communications, signal processing, biomedical applications, photonics, and controls. Computer Engineering focuses on the design of digital computing devices and systems and involves hardware and software, operating systems, digital logic, real-time systems, and computer vision. Both programs combine fundamental principles with hands-on learning, including an innovative Junior Core experience that integrates classroom knowledge with project-based learning.

## Career Opportunities

Electrical and computer engineers are among the most actively recruited students graduating from a four-year program. Baccalaureate engineers typically start their careers as members of project teams with one or more of the following responsibilities: designing digital, analog, or opto-electronic circuits; creating or testing application-specific software; testing components or systems; or providing technical support for sales. Later on, many engineers find themselves pursuing managerial careers, starting their own companies, or even managing entrepreneurial funds. Top graduates are also well received by medical schools, law schools, and professional and management programs.

The BS curriculum for both the electrical engineering and computer engineering degrees is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc. (ABET).

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Computer Engineering** (Program Outcomes)
**BS in Electrical Engineering** (Program Outcomes)

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Electrical and Computer Engineering
PhD in Electrical and Computer Engineering

For more information see the BYU 2014–2015 Graduate Catalog.

## General Information

Students are strongly encouraged to seek advisement early in their studies to ensure effective course scheduling. Contact the college advisement center (264 CB) or the department (459 CB). Students should enroll in EC En 191 in their first year of study at BYU.

In both undergraduate degree programs offered in the department, students are required to pass prerequisite courses in the major with a grade of C– or better before taking follow-on courses.

**Professional Registration.** The Electrical and Computer Engineering Department provides the option for graduates to become registered professional engineers. General qualifications for becoming registered are explained in the Ira A. Fulton College of Engineering and Technology section of this catalog. This status is vital to engineering practice in the public sector and to much consulting work. The basic electrical and computer engineering program outlined in this department prepares graduates to successfully complete the Fundamentals of Engineering (FE) examination. Students who wish to become registered as professional engineers are advised to discuss this matter with an advisor from the department soon after admission to the professional program.

**Program Educational Objectives.** The BYU Electrical and Computer Engineering programs prepare graduates to:

1. Apply knowledge in service to community and family and engage in lifelong learning through personal study and continuing education.
2. Develop a fulfilling profession which may include employment in industry or academia, technology-based entrepreneurship, and postgraduate study in engineering or other disciplines.
3. Make innovative contributions to science and technology and serve in responsible positions of leadership.
4. Be examples of faith, character, and high professional ethics.

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**Majors**

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# BS in Computer Engineering (92–93 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Learning Outcomes

1. **Fundamentals:** An ability to apply knowledge of mathematics (differential, integral, and multivariate calculus; linear algebra; complex variables; differential equations; discrete math; and probability), science (Newtonian mechanics; electricity and magnetism; and introductory chemistry), computer fundamentals (programming languages; computer organization; and software/hardware interfaces), and engineering science (signals and systems, electromagnetics, and electronic devices).
2. **Experiments and data analysis:** An ability to design and conduct experiments, as well as to analyze and interpret data.
3. **System design:** An ability to design a system component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
4. **Teamwork:** An ability to function on multi-disciplinary teams.
5. **Leadership:** An understanding of principles of leadership and project management.
6. **Engineering problems:** An ability to identify, formulate, and solve engineering problems.
7. **Ethics:** An understanding of professional and ethical responsibility.
8. **Communication skills:** An ability to communicate effectively.
9. **Broad education:** The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
10. **Lifelong learning:** A recognition of the need for, and an ability to engage in life-long learning.
11. **Contemporary issues:** A knowledge of contemporary issues.
12. **Techniques, skills, and tools:** An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following prerequisite courses:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

2. Complete the following supporting courses:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

**Or**

CHEM 111 : Principles of Chemistry. (4:3:3)

OFFERED: Honors also.

WHEN TAUGHT: Fall

PREREQUISITE: Math 110 or equivalent.

RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.

DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.

NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

: Honors Principles of Chemistry.

**Course Outcomes**

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

C S 235 : Data Structures and Algorithms. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 142

DESCRIPTION: Fundamental data structures and algorithms of computer science; basic algorithm analysis; recursion; sorting and searching; lists, stacks, queues, trees, hashing; object-oriented data abstraction.

**Course Outcomes**

- Use the fundamental data types of computing (lists, stacks, queues, priority queues, sets, maps, trees, etc.).
- Understand the major techniques for implementing the fundamental data types (linked lists, binary search trees, hashing, heaps, etc.) and implement several of them.
- Properly use and select data structures from language-provided data-structure libraries.
- Apply basic algorithm analysis.
- Understand how recursion works and write programs using recursion to solve problems.
- Make informed decisions about which sorting and searching algorithms to use in specific circumstances.
- Write programs that require ~500 lines of code.

C S 236 : Discrete Structures. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: C S 235

DESCRIPTION: Introduction to grammars and parsing; predicate and propositional logic; proof techniques; sets, functions, relations, relational data model; graphs and graph algorithms.

**Course Outcomes**

- Understand and be conversant with basic discrete mathematical structures (finite state machines, regular expressions, grammars, propositional calculus, proof techniques, predicate calculus, sets, relations, functions, graphs).Write complex programs by using mathematical concepts as the basis for solving programming problems (finite state machines for lexical analysis; grammars for parsing; propositional and predicate calculus for logic programming; sets and algebras for relational databases; algebras, graphs, and topological sorting for optimizing datalog query processing).Incrementally build sophisticated programs by a systematic design process based on discrete mathematics.Design a solution for a programming problem and justify the design as one that is maintainable and extendable by other programmers who understand and are conversant with discrete mathematical structures.
- Demonstrate ability to build large programs by writing and integrating code from a diverse spectrum of program components.

C S 240 : Advanced Programming Concepts. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 236

DESCRIPTION: Advanced software development with an object-oriented focus. Design, implementation, and testing of several large programs in a Java and Linux environment using current technologies.

**Course Outcomes**

- a. Use coding, testing, and debugging strategies. b. Follow basic object-oriented design concepts.
- Write programs in an Object Oriented programming language using inheritance, polymorphism and class hierarchies.
- Use the Linux programming environment to execute basic commands and to run the compiler, linker, debugger, memory checker, and profiler.
- Demonstrate the aptitude and work ethic necessary to succeed in computer science.

ENGL 312 : Persuasive Writing. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Expository and persuasive writing focusing on practical reasons for evaluating audiences, generating and structuring an argument, and making stylistic decisions. Library research paper.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Create an appropriate ethos in both writing and speaking.
- Analyze the parts of an argument; evaluate them in terms of the intended audience; and generate a reasonable argument for a specific audience.Anticipate and effectively respond to audience objections and counterarguments.

**Or**

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

ENG T 231 : Foundations of Global Leadership. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Foundational principles and practices of individual and organizational leadership in a global context from an integrated moral, technical and social perspective. Emphasis on developing integrity, valuing and leveraging diversity, acquiring and applying leadership skills.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Able to define integrity, and demonstrate understanding of how it applies to their lives and how to develop it through practice.
- Able to demonstrate familiarity with the code of ethics that corresponds to their profession.
- Able to describe a procedure for making and implementing ethical decisions and effectively apply the procedure to ethical problems of practical interest.
- Able to understand and use a model to describe their own personality type and/or preferences.
- Able to describe what it means to be self-aware and how self-awareness applies to leadership, ethical behavior and global awareness.
- Able to define and effectively practice key interpersonal skills and indicate how they can be cultivated.
- Able to describe a team development process.
- Able to value the diversity that individuals bring to a team setting and use those skills to improve team performance.
- Able to formulate a strategy and develop a plan, consistent with a vision, to accomplish a team project
- Able to define globalization, put it in an historical context and identify some key positive and negative outcomes attributed to globalization
- Able to develop an appreciation for other cultures and an understanding of how cultural factors and other forms of diversity influence communication, teamwork, and the practice of technical disciplines across the globe.
- Able to demonstrate technical understanding of a few global issues and think critically regarding the wise use of technology relative to these issues.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
RECOMMENDED: Math 290.
DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

: Honors Elementary Linear Algebra. (3:3:1)

**Course Outcomes**

MATH 334 : Ordinary Differential Equations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 113 and Math 313.
DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

3. Complete the following:

EC EN 191 : New Student Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Overview of electrical and computer engineering with group and individual design projects.

**Course Outcomes**

- Understand the discipline of electrical and computer engineering and its many roles in the modern technological world.

EC EN 220 : Fundamentals of Digital Systems. (3:3:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: C S 142 or concurrent enrollment.
DESCRIPTION: Digital logic: theory, design, and implementation of combinational and sequential logic. Laboratory experience in construction of digital logic circuits.

**Course Outcomes**

- Ability to design, minimize, and analyze a combinational network
- Ability to design and analyze a sequential network.
- Ability to design and test a digital system that includes I/O, state machines and combinational networks.
- Ability to design major components of a simple microprocessor.
- Ability to use schematic capture tools.

EC EN 240 : Circuit Analysis and Laboratory. (4:3:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MATH 113 & PHSCS 220; Average of B or better in completed Math and Physics courses, or advisor approval.
DESCRIPTION: Analysis of electric circuits including transients, sinusoidal steady-state, and power. Includes labs.
NOTE: Fee.

**Course Outcomes**

- Application of complex variables to AC steady state circuit analysis.???
- Application of algebra, linear algebra, and circuit equivalencies to DC circuit analysis.???
- Application of differential equations to transient analysis of RC and RL circuits.???
- Application of algebra, linear algebra, and circuit equivalencies to AC circuit analysis.???
- Ability to design, analyze, and demonstrate a working integrated stereo audio amplifier system.
- Ability to use oscilloscopes, function generators, and DC power supplies in an applied design/debug environment.

EC EN 320 : Digital System Design. (4:3:3)

WHEN TAUGHT: Winter
PREREQUISITE: EC EN 220 & EC EN 240
DESCRIPTION: Advanced digital design, including hardware description languages, electrical properties of digital circuits, synchronous and asynchronous circuits, computer arithmetic, and interfacing to external circuitry.

**Course Outcomes**

- Ability to describe a digital system in VHDL.

- Ability to simulate and debug a digital system described in VHDL.
- Ability to read and interpret a data sheet.
- Ability to implement logic using an FPGA.
- Ability to synchronize asynchronous inputs into a synchronous system and analyze the MTBF.

EC EN 330 : Introduction to Embedded System Programming. (4:3:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C S 235 & EC EN 220

DESCRIPTION: Understanding the hardware-software interface in an embedded system. Using C and assembly language in device-driver design. Software interfacing to peripherals. Performance and memory issues. Hardware interrupt programming.

**Course Outcomes**

- Ability to read and interpret device specifications
- Ability to write efficient interrupt service routines
- Ability to write software to communicate with peripherals
- Ability to understand basic microprocessor architecture
- Ability to organize software in a complex embedded application
- Ability to write a user manual for an embedded application

EC EN 340 : Electronic Circuit Design 1. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 240

DESCRIPTION: Analysis and design of electronic circuits with an emphasis on amplifier gain and frequency response.

**Course Outcomes**

- Ability to apply electronic device models to the solution of a circuit problem.???
- Ability to relate circuit theory to practice.???
- Ability to understand and develop circuit designs in a professional manner.â ¨
- Ability to document engineering/experimental results and to write summary reports.
- Ability to use specialized circuit analysis techniques including approximate equivalent circuits.â ¨
- Ability to use oscilloscopes, function generators, and DC power supplies.
- Ability to use Spice

EC EN 370 : (EC En - Math 431) Probability Theory. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: MATH 313

DESCRIPTION: Axiomatic probability theory, conditional probability, discrete / continuous random variables, expectation, conditional expectation, moments, functions of random variables, multivariate distributions, laws of large numbers, central limit theorem.

**Course Outcomes**

- A basic understanding of probabilistic reasoning and the foundations of probability theory: sample spaces, event algebras, classical probability, and Kolmogorov's axioms.
- An understanding of random variables, distribution functions, probability mass functions, and probability density functions, including the uniform, binomial, Poisson, exponential, and Gaussian distributions.
- An understanding of multivariate distributions, independence, conditioning, and functions of random variables, including the ability to compute expectations, moments, and correlation functions.
- An understanding of characteristic functions and their relationship to linear transformations and independence.
- An understanding of convergence concepts, including the central limit theorem and the law of large numbers.
- The ability to apply probability theory to the analysis of engineering systems.

EC EN 380 : Signals and Systems. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 240 & MATH 334

DESCRIPTION: Time and frequency domain analysis of discrete or continuous systems subjected to periodic or nonperiodic input signals.

**Course Outcomes**

- Application of integral calculus, differential equations, complex variables, to transform analysis of a continuous-time LTI system.
- Application of integral calculus, differential equations, complex variables, to transform analysis of a discrete-time LTI system.
- Application of integral calculus to solve continuous-time convolution problems.
- Application of discrete math to solve discrete-time convolution problems.
- Ability to use Matlab or similar tools to analyze, model, simulate, and experiment with linear systems.
- Ability to interpret and synthesize signals and systems in both the time and frequency domains.
- Ability to recognize the mathematical properties of signals and systems including linearity, time invariance, causality, stability, etc.
- An understanding of the consequences and principles associated with digitally sampling and reconstructing analog signals.

EC EN 390 : Junior Team Design Project. (3:1.0:6)

WHEN Winter

TAUGHT:
PREREQUISITE: EC EN 330 & EC EN 340 & EC EN 380
DESCRIPTION: Culminating design experience based on skills learned in junior-level courses. Students works in teams to plan, design, and test a project based on the integration of components built in other classes.

**Course Outcomes**

- Ability to complete a significant culminating design that draws upon the knowledge gained in prerequisite and concurrently enrolled course.
- Ability to assign and accept leadership responsibilities on a team.
- Ability to define, understand, and participate in team decision making processes.
- Ability to take high level, customer requirements, identify from them the specifications a solution must meet, and formulate those specifications as an engineering problem.
- Ability to combine new technology with custom built components
- Ability to apply safety issues to engineering hardware.

EC EN 391 : Junior Seminar. (.5:1:0)

WHEN TAUGHT: Fall
PREREQUISITE: EC EN 240 & ENG T 231
DESCRIPTION: Seminars and colloquia on current topics in electrical and computer engineering, as well as ethics, contemporary issues, and life-long learning.
NOTE: Attendance and some writing are required.

**Course Outcomes**

- An understanding of professional ethics.
- Ability to use the library, internet, etc. to learn about recent developments in a particular technical field.
- Knowledge of recent developments in a particular technical field.

EC EN 490 : Team Design Project. (4:2:6)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: EC EN 340 & EC EN 380; selected 400-level EC En courses, depending on project.
DESCRIPTION: Culminating design experience based on skills learned in advanced technical courses. Students work in teams to plan, design, test, and demonstrate a major project.

**Course Outcomes**

- Ability to define, understand, and participate in team decision making processes.
- Ability to produce and maintain the necessary control documents on a design team.
- Ability to establish and follow ground rules governing team behavior.
- Ability to give an oral presentation describing a technical design.
- Ability to understand the expectations from other members on a team.
- Ability to assign and accept leadership responsibilities on a team.
- Ability to understand the different skill sets each team member brings to a team.
- Ability to understand the expectations (regarding participation) of each team member.
- Ability to complete a significant culminating design that draws upon the knowledge gained in prerequisite courses.
- Ability to give an oral presentation describing team progress during a design review.
- An understanding of the principles of leadership and project management.
- Ability to produce a written report describing a technical design.
- Ability to take high level, customer requirements, identify from them the specifications a solution must meet, and formulate those specifications as an engineering problem.
- Ability to maintain a team portfolio documenting the design process.
- Ability to read, interpret, and use published design standards as a part of the design process.

4. Complete at least 16 hours from the following advanced technical program and technical electives:
   - Complete at least two of the following courses:

EC EN 424 : Computer Systems. (4:3:3)

WHEN TAUGHT: Winter
PREREQUISITE: EC EN 330
DESCRIPTION: Machine-level representations of programs and data, processor architecture, program performance optimizaton, memory hierarchies, virtual memory, linking, exceptions.

**Course Outcomes**

There are no course outcomes available

EC EN 425 : Real-Time Operating Systems. (4:3:3)

WHEN TAUGHT: Fall
PREREQUISITE: EC EN 324; or EC EN 330
DESCRIPTION: Hardware/software interface, real-time kernel internals, implementation of high-level language constructs, issues in real-time application software development.

**Course Outcomes**

- Ability to apply C and assembly programming languages and knowledge of the hardware/software interface to the design and implementation of a real-time kernel.
- Ability to design and implement a real-time application.
- Ability to design and implement a real-time kernel.
- Ability to use C programs, compilers, and debuggers in the design and implementation of real-

time application software.
- Ability to write interrupt service routines.
- Ability to use a real-time operating system as a tool in the development of real-time application software.

EC EN 427 : Embedded Systems. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 320 & EC EN 324; or EC EN 320 & EC EN 330

DESCRIPTION: Interfacing digital hardware components to an embedded system processor. Developing the hardware-software interface. Developing application software. Using C and assembly language in device-driver design, monitor-debugger, and real-time kernel. Lab.

**Course Outcomes**

- Ability to design a bus-based digital I/O device.
- System design project integrating custom bus-based digital I/O device.
- Ability to interface to a processor or I/O bus.
- Ability to read and interpret device specifications (data sheets) in order to integrate a device within a microprocessor based system.
- Ability to use DMA for a high-bandwidth I/O device.

EC EN 451 : Introduction to Digital VLSI Circuits. (4:3:5)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 320 & EC EN 340

DESCRIPTION: Design of very large-scale integrated circuits for digital systems. CAD tools used extensively to simulate the design and create and verify mask circuits.

**Course Outcomes**

- Ability to analyze CMOS circuits.
- Ability to translate digital logic to CMOS circuits to achieve desired behavior and performance requirements.
- Ability to perform CMOS layout.
- Ability to use eCAD tools for CMOS design.
- Ability to characterize timing and noise in CMOS circuits.

- Complete remaining course hours selected from the following:
  1. Additional courses listed in item 4a above or other 400-level electrical and computer engineering courses, not including 490 or 493R.
  2. Any of the following:

C S 340 : Software Design and Testing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 240

DESCRIPTION: Principles of software design, design patterns, design representation, refactoring. Principles of software quality assurance and testing. Development and testing tools.

**Course Outcomes**

- Articulate the principles of effective software design.
- Know when and how to apply various design patterns.
- Demonstrate how to effectively document and communicate software designs.
- Understand what quality assurance is, know how to build quality into software using review techniques, and demonstrate quality evaluation through testing.
- Use a variety of software development tools, including IDEs, automation tools, static analysis tools, source code control systems, unit testing tools, and documentation tools.
- Work effectively in a group to produce quality software using 1-5 above.

C S 345 : Operating Systems Design. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 224 & C S 240

DESCRIPTION: Principles and concepts of operating systems design and the implementation of an operating system.

**Course Outcomes**

- Describe the basic components of an operating system and their role in implementations for general purpose, real-time, and embedded applications.
- Define the concepts of processes, threads, asynchronous signals and competitive system resource allocation.
- Show how a shell works.
- Explain what multi-tasking is and outline standard scheduling algorithms for multi-tasking.
- Discuss mutual exclusion principles and their use in concurrent programming, including semaphore construction and resource allocation.
- Give an overview of system memory management.
- Explain how file systems are implemented.
- Discuss the features and strengths of various contemporary operating systems.
- Implement a functional, pre-emptive, multi-tasking operating system written in C, including a shell, scheduler, file manager, memory manager, and synchronization components.

C S 360 : Internet Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240

DESCRIPTION: Internet application programming, including sockets, threads, CGI, database, e-commerce, Web services.

**Course Outcomes**

- Design and implement a variety of client-server and web applications.
- Analyze the performance of a web server, write convincingly to support your conclusions and give an oral report to describe your findings.
- Implement a web server using processes, semaphores, threads, sockets and signals.
- Use a set of web programming languages to implement an application.
- Use security to protect their web application.

C S 428 : Software Engineering. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: C S 340

DESCRIPTION: Analysis, design, implementation, and testing of significant software systems.

**Course Outcomes**

- Demonstrate the ability to work in a group on a significant project
- Demonstrate practices that result in quality software
- Demonstrate an understanding of how ethics impact software development

C S 431 : Algorithmic Languages and Compilers. (3:3:0)

PREREQUISITE: C S 340

DESCRIPTION: Formal description of algorithmic languages and techniques used in their compilation: semantics, ambiguities, procedures, replication, iteration, recursion.

**Course Outcomes**

- Implement a fully functional compiler for a subset of the Java language that targets an embedded microprocess.
- Apply patterns and common data structures to compiler constructrion including tree traversal, graph algorithms, and proof systems.
- Students are able to synthesis algorithms and techniques from compiler constructor to other problem domains.
- Students have a sound mental model of how an abstract high level language is systematically transformed into a low-level machine langauge or byte code. Students are able to use that understanding to write better application code.

C S 452 : Database Modeling Concepts. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 240

DESCRIPTION: Database models: relational, deductive, object-oriented. Integrity constraints, query languages, database design.

**Course Outcomes**

- Be able to use a variety of commercial query languages (SQL, XQuery, SPARQL), both stand-alone and embeded in high-level programming languages. Know how relational algebra and relational calculus provide a basis for commercial query languages.
- Understand performance issues and optimization strategies. This includes query rewriting, secondary storage characteristics, and access strategies.
- Be able to design and develop relational database applications. This includes conceptual modeling and normalization theory.
- Be familiar with some of the current challenges facing database professionals.

C S 455 : Computer Graphics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 355 & MATH 313

DESCRIPTION: Interactive computer graphics systems programming and architecture.

**Course Outcomes**

- Students will be proficient in basic computer graphics algorithms such as modeling, trnasformations and rendering.Students will design and code solutions to several programming problems in graphics using algorithms and data structures.In addition, sutudents will use these techniques to program a large semester project.

C S 456 : Introduction to User Interface Software. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 256 & C S 355; or C S 301R & C S 355

DESCRIPTION: Introduction to software architectures and techniques for graphical user interfaces. Input devices, windowing systems, event-driven programming, interactive geometry.

**Course Outcomes**

- Understand and apply the following:Multiple mechanisms for receiving information from people and presenting information to people.The geometry of basic shapes and how to use the geometry to solve basic interaction problems.Algorithms for user interface layout management.Models for specifying and evaluating user input dialogs.

C S 460 : Computer Communications and Networking. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: C S 360

DESCRIPTION: Introduction to data communications and computer networking. Communications fundamentals, computer networks, software, architecture, telecommunications, regulation, standards.

**Course Outcomes**

- Understand the principles of the Internet architecture
- Understand how the Internet works, from the transport layer down to the physical layer
- Gain hands-on experience with implementing and simulating transport, routing, and MAC protocols, leading to a deeper understanding of these critical Internet components
- Be capable of reading and understanding research papers in the area of computer networking
- Demonstrate the ability to effectively conduct, describe and report on an experimental research project in the area of computer networking

C S 462 : Large-Scale Distributed System Design. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: C S 340 & C S 360

DESCRIPTION: Designing and implementing client-server enterprise applications. Web servers, application servers, database connectivity, remote procedure calls, transactions, messaging, directory, naming services, threads, security, data formats.

**Course Outcomes**

- Enterprise Web application development

C S 465 : Computer Security. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 360 or concurrent enrollment.

DESCRIPTION: Introduction to computer security fundamentals: confidentiality, integrity, authentication, and access control. Secret key and public key cryptography, network security protocols, viruses, and fire walls.

**Course Outcomes**

- Implement a cryptographic algorithm from a standards specification.
- Demonstrate how attackers compromise real-world systems, and then show how to prevent these attacks.

C S 470 : Introduction to Artificial Intelligence. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C S 312 & MATH 313 & STAT 121; or instructor's consent.

DESCRIPTION: Introduction to core areas of artifical intelligence; intelligent agents, problem solving and search, knowledge-based systems and inference, planning, uncertainty, learning, and perception.

**Course Outcomes**

- from business, medicine, robotics, gaming, and machine learning
- Does it require basic control?Does it involve uncertain reasoning?Does it have a simple goal, sophisticated utility, or multiple attributes?Does it require sequential choice or planning?How may decision makers are involved?
- What is the internal representation?What performance criteria are relevant?What is the nature of the environment?What are the actuators?What are the sensors?What are the agent's utilities?How is uncertainty represented?
- Uninformed, informed, constraint-satisfaction, hill-climbing, and stochastic (e.g., genetic algorithms) searchMarkov provesses, Bayes rule, Bayes nets, Hidden Markov Models, Grid Filters, and Kalman FiltersExpected utility theoryMulti-attribute utility theorySequential choice under uncertainty: value and policy iterationMinimax solutions from game theory: alpha-beta pruning
- Determine whether your solution is correctExpress the quality of your solutionValue the need to communicate your solution to others

C S 478 : Tools for Machine Learning and Data Mining. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: C S 312 & MATH 313 & STAT 121

DESCRIPTION: Machine learning and data mining models and other mechanisms allowing computers to learn and find knowledge from data.

**Course Outcomes**

- Take your computer to school
- You will be able to recognize when machine learning and data mining tools are applicable.
- You will be able to plan and execute successful machine learning and data mining projects, including selecting an adequate process for your specific task and avoiding the main data mining pitfalls.

C S 484 : Parallel Processing. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 360

DESCRIPTION: Theoretical and practical study of parallel processing including multi-core, fine-grained, and clustered architectures, parallel programming languages, and parallel algorithms.

**Course Outcomes**

- Use multiple processors to solve a problem faster
- Understand the metrics that are used to evaluate effective applications.

EC EN 360 : Electromagnetic Fields and Waves. (4:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 314 & MATH 334 & EC EN 240

DESCRIPTION: Analysis of transmission lines and electromagnetic waves including the development and application of Maxwell's equations.

**Course Outcomes**

- Application of differential equations to wave propagation.
- Application of integral multivariate calculus to solve for electromagnetic fields.
- Application of complex variables to phasor solutions of wave equations.
- Ability to analyze the interaction of electromagnetic fields with structures and materials.

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 313.

DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

3. 500-level EC En or Computer Science courses.
4. Other courses as approved by the department.

**Note:** Contact the Electrical and Computer Engineering Department for current information about added and/or deleted courses, as well as information about when courses are offered.

*Hours include courses that may fulfill university core requirements.

## Show all Electrical and Computer Engineering Courses

**Ira A. Fulton College of Engineering and Technology Home**

**Electrical and Computer Engineering Department Home**

**Majors**

- BS in Computer Engineering
- BS in Electrical Engineering

**Course Information**

- Electrical and Computer Engineering Courses

**Faculty**

# BS in Electrical Engineering (92–93 hours*)

Show All Course Descriptions
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## Learning Outcomes

1. **Fundamentals:** An ability to apply knowledge of mathematics (differential, integral, and multivariate calculus; linear algebra; complex variables; differential equations; discrete math; and probability), science (Newtonian mechanics; electricity and magnetism; and introductory chemistry), computer fundamentals (programming languages; computer organization; and software/hardware interfaces), and engineering science (signals and systems, electromagnetics, and electronic devices).
2. **Experiments and data analysis:** An ability to design and conduct experiments, as well as to analyze and interpret data.
3. **System design:** An ability to design a system component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
4. **Teamwork:** An ability to function on multi-disciplinary teams.
5. **Leadership:** An understanding of principles of leadership and project management.
6. **Engineering problems:** An ability to identify, formulate, and solve engineering problems.
7. **Ethics:** An understanding of professional and ethical responsibility.
8. **Communication skills:** An ability to communicate effectively.
9. **Broad education:** The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
10. **Lifelong learning:** A recognition of the need for, and an ability to engage in life-long learning.
11. **Contemporary issues:** A knowledge of contemporary issues.
12. **Techniques, skills, and tools:** An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following prerequisite courses:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

2. Complete the following supporting courses:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

**Or**

CHEM 111 : Principles of Chemistry. (4:3:3)

OFFERED: Honors also.

WHEN TAUGHT: Fall

PREREQUISITE: Math 110 or equivalent.

RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.

DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.

NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

: Honors Principles of Chemistry.

**Course Outcomes**

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

C S 235 : Data Structures and Algorithms. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 142

DESCRIPTION: Fundamental data structures and algorithms of computer science; basic algorithm analysis; recursion; sorting and searching; lists, stacks, queues, trees, hashing; object-oriented data abstraction.

**Course Outcomes**

- Use the fundamental data types of computing (lists, stacks, queues, priority queues, sets, maps, trees, etc.).
- Understand the major techniques for implementing the fundamental data types (linked lists, binary search trees, hashing, heaps, etc.) and implement several of them.
- Properly use and select data structures from language-provided data-structure libraries.
- Apply basic algorithm analysis.
- Understand how recursion works and write programs using recursion to solve problems.
- Make informed decisions about which sorting and searching algorithms to use in specific circumstances.
- Write programs that require ~500 lines of code.

ENGL 312 : Persuasive Writing. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Expository and persuasive writing focusing on practical reasons for evaluating audiences, generating and structuring an argument, and making stylistic decisions. Library research paper.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Create an appropriate ethos in both writing and speaking.
- Analyze the parts of an argument; evaluate them in terms of the intended audience; and generate a reasonable argument for a specific audience.Anticipate and effectively respond to audience objections and counterarguments.

**Or**

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.

- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

ENG T 231 : Foundations of Global Leadership. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Foundational principles and practices of individual and organizational leadership in a global context from an integrated moral, technical and social perspective. Emphasis on developing integrity, valuing and leveraging diversity, acquiring and applying leadership skills.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Able to define integrity, and demonstrate understanding of how it applies to their lives and how to develop it through practice.
- Able to demonstrate familiarity with the code of ethics that corresponds to their profession.
- Able to describe a procedure for making and implementing ethical decisions and effectively apply the procedure to ethical problems of practical interest.
- Able to understand and use a model to describe their own personality type and/or preferences.
- Able to describe what it means to be self-aware and how self-awareness applies to leadership, ethical behavior and global awareness.
- Able to define and effectively practice key interpersonal skills and indicate how they can be cultivated.
- Able to describe a team development process.
- Able to value the diversity that individuals bring to a team setting and use those skills to improve team performance.
- Able to formulate a strategy and develop a plan, consistent with a vision, to accomplish a team project
- Able to define globalization, put it in an historical context and identify some key positive and negative outcomes attributed to globalization
- Able to develop an appreciation for other cultures and an understanding of how cultural factors and other forms of diversity influence communication, teamwork, and the practice of technical disciplines across the globe.
- Able to demonstrate technical understanding of a few global issues and think critically regarding the wise use of technology relative to these issues.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

RECOMMENDED: Math 290.

DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

: Honors Elementary Linear Algebra. (3:3:1)

**Course Outcomes**

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 313.

DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

MATH 334 : Ordinary Differential Equations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 113 and Math 313.
DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

3. Complete the following:

EC EN 191 : New Student Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Overview of electrical and computer engineering with group and individual design projects.

**Course Outcomes**

- Understand the discipline of electrical and computer engineering and its many roles in the modern technological world.

EC EN 220 : Fundamentals of Digital Systems. (3:3:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: C S 142 or concurrent enrollment.
DESCRIPTION: Digital logic: theory, design, and implementation of combinational and sequential logic. Laboratory experience in construction of digital logic circuits.

**Course Outcomes**

- Ability to design, minimize, and analyze a combinational network
- Ability to design and analyze a sequential network.
- Ability to design and test a digital system that includes I/O, state machines and combinational networks.
- Ability to design major components of a simple microprocessor.
- Ability to use schematic capture tools.

EC EN 240 : Circuit Analysis and Laboratory. (4:3:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MATH 113 & PHSCS 220; Average of B or better in completed Math and Physics courses, or advisor approval.
DESCRIPTION: Analysis of electric circuits including transients, sinusoidal steady-state, and power. Includes labs.
NOTE: Fee.

**Course Outcomes**

- Application of complex variables to AC steady state circuit analysis.???
- Application of algebra, linear algebra, and circuit equivalencies to DC circuit analysis.???
- Application of differential equations to transient analysis of RC and RL circuits.???
- Application of algebra, linear algebra, and circuit equivalencies to AC circuit analysis.???
- Ability to design, analyze, and demonstrate a working integrated stereo audio amplifier system.
- Ability to use oscilloscopes, function generators, and DC power supplies in an applied design/debug environment.

EC EN 330 : Introduction to Embedded System Programming. (4:3:3)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: C S 235 & EC EN 220
DESCRIPTION: Understanding the hardware-software interface in an embedded system. Using C and assembly language in device-driver design. Software interfacing to peripherals. Performance and memory issues. Hardware interrupt programming.

**Course Outcomes**

- Ability to read and interpret device specifications
- Ability to write efficient interrupt service routines
- Ability to write software to communicate with peripherals
- Ability to understand basic microprocessor architecture
- Ability to organize software in a complex embedded application
- Ability to write a user manual for an embedded application

EC EN 340 : Electronic Circuit Design 1. (4:3:3)

WHEN TAUGHT: Fall
PREREQUISITE: EC EN 240
DESCRIPTION: Analysis and design of electronic circuits with an emphasis on amplifier gain and frequency response.

**Course Outcomes**

- Ability to apply electronic device models to the solution of a circuit problem.???
- Ability to relate circuit theory to practice.???
- Ability to understand and develop circuit designs in a professional manner.â ¨
- Ability to document engineering/experimental results and to write summary reports.
- Ability to use specialized circuit analysis techniques including approximate equivalent circuits.â ¨
- Ability to use oscilloscopes, function generators, and DC power supplies.

Ability to use Spice

EC EN 360 : Electromagnetic Fields and Waves. (4:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 314 & MATH 334 & EC EN 240

DESCRIPTION: Analysis of transmission lines and electromagnetic waves including the development and application of Maxwell's equations.

**Course Outcomes**

- Application of differential equations to wave propagation.
- Application of integral multivariate calculus to solve for electromagnetic fields.
- Application of complex variables to phasor solutions of wave equations.
- Ability to analyze the interaction of electromagnetic fields with structures and materials.

EC EN 370 : (EC En - Math 431) Probability Theory. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: MATH 313

DESCRIPTION: Axiomatic probability theory, conditional probability, discrete / continuous random variables, expectation, conditional expectation, moments, functions of random variables, multivariate distributions, laws of large numbers, central limit theorem.

**Course Outcomes**

- A basic understanding of probabilistic reasoning and the foundations of probability theory: sample spaces, event algebras, classical probability, and Kolmogorov's axioms.
- An understanding of random variables, distribution functions, probability mass functions, and probability density functions, including the uniform, binomial, Poisson, exponential, and Gaussian distributions.
- An understanding of multivariate distributions, independence, conditioning, and functions of random variables, including the ability to compute expectations, moments, and correlation functions.
- An understanding of characteristic functions and their relationship to linear transformations and independence.
- An understanding of convergence concepts, including the central limit theorem and the law of large numbers.
- The ability to apply probability theory to the analysis of engineering systems.

EC EN 380 : Signals and Systems. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 240 & MATH 334

DESCRIPTION: Time and frequency domain analysis of discrete or continuous systems subjected to periodic or nonperiodic input signals.

**Course Outcomes**

- Application of integral calculus, differential equations, complex variables, to transform analysis of a continuous-time LTI system.
- Application of integral calculus, differential equations, complex variables, to transform analysis of a discrete-time LTI system.
- Application of integral calculus to solve continuous-time convolution problems.
- Application of discrete math to solve discrete-time convolution problems.
- Ability to use Matlab or similar tools to analyze, model, simulate, and experiment with linear systems.
- Ability to interpret and synthesize signals and systems in both the time and frequency domains.
- Ability to recognize the mathematical properties of signals and systems including linearity, time invariance, causality, stability, etc.
- An understanding of the consequences and principles associated with digitally sampling and reconstructing analog signals.

EC EN 390 : Junior Team Design Project. (3:1.0:6)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 330 & EC EN 340 & EC EN 380

DESCRIPTION: Culminating design experience based on skills learned in junior-level courses. Students works in teams to plan, design, and test a project based on the integration of components built in other classes.

**Course Outcomes**

- Ability to complete a significant culminating design that draws upon the knowledge gained in prerequisite and concurrently enrolled course.
- Ability to assign and accept leadership responsibilities on a team.
- Ability to define, understand, and participate in team decision making processes.
- Ability to take high level, customer requirements, identify from them the specifications a solution must meet, and formulate those specifications as an engineering problem.
- Ability to combine new technology with custom built components
- Ability to apply safety issues to engineering hardware.

EC EN 391 : Junior Seminar. (.5:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 240 & ENG T 231

DESCRIPTION: Seminars and colloquia on current topics in electrical and computer engineering, as well as ethics,

contemporary issues, and life-long learning.

NOTE: Attendance and some writing are required.

**Course Outcomes**

- An understanding of professional ethics.
- Ability to use the library, internet, etc. to learn about recent developments in a particular technical field.
- Knowledge of recent developments in a particular technical field.

EC EN 490 : Team Design Project. (4:2:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EC EN 340 & EC EN 380; selected 400-level EC En courses, depending on project.

DESCRIPTION: Culminating design experience based on skills learned in advanced technical courses. Students work in teams to plan, design, test, and demonstrate a major project.

**Course Outcomes**

- Ability to define, understand, and participate in team decision making processes.
- Ability to produce and maintain the necessary control documents on a design team.
- Ability to establish and follow ground rules governing team behavior.
- Ability to give an oral presentation describing a technical design.
- Ability to understand the expectations from other members on a team.
- Ability to assign and accept leadership responsibilities on a team.
- Ability to understand the different skill sets each team member brings to a team.
- Ability to understand the expectations (regarding participation) of each team member.
- Ability to complete a significant culminating design that draws upon the knowledge gained in prerequisite courses.
- Ability to give an oral presentation describing team progress during a design review.
- An understanding of the principles of leadership and project management.
- Ability to produce a written report describing a technical design.
- Ability to take high level, customer requirements, identify from them the specifications a solution must meet, and formulate those specifications as an engineering problem.
- Ability to maintain a team portfolio documenting the design process.
- Ability to read, interpret, and use published design standards as a part of the design process.

4. Complete at least 20 hours from the following advanced technical program and technical electives:
   - Complete 16 hours from the following:

EC EN 320 : Digital System Design. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 220 & EC EN 240

DESCRIPTION: Advanced digital design, including hardware description languages, electrical properties of digital circuits, synchronous and asynchronous circuits, computer arithmetic, and interfacing to external circuitry.

**Course Outcomes**

- Ability to describe a digital system in VHDL.
- Ability to simulate and debug a digital system described in VHDL.
- Ability to read and interpret a data sheet.
- Ability to implement logic using an FPGA.
- Ability to synchronize asynchronous inputs into a synchronous system and analyze the MTBF.

EC EN 443 : Communication and Power Circuits. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 340

DESCRIPTION: Introduction to amplitude modulation, frequency modulation, and phase modulation circuits. Modulators, mixers, detectors, and the phase-locked loop. Power amplifier stage and orcillator design.

**Course Outcomes**

- Ability to use differential calculus for circuit optimization.
- Ability to apply probability theory to noisy circuits.
- Ability to conduct lab experiments with electronic communication circuits.
- Ability to design mixers, modulators, and power stages.
- Ability to write lab reports.
- Ability to use Spice.

EC EN 445 : Introduction to Mixed-Signal VLSI. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 340

DESCRIPTION: VLSI circuit design emphasizing mixed-signal circuits such as D/A and A/D converters, phase-locked loops, S/H circuits. Associated laboratory provides layout-design experience.

**Course Outcomes**

- An understanding of modern VLSI processes and how this processing relates to circuit performance.
- Ability to conduct lab experiments with A/D and D/A converters.
- Ability to design a mixed-signal IC in CMOS including ADC or DAC chips
- Ability to write lab reports.

- Ability to work with design, verification, and CAD tools
- Ability to use Spice including advanced features.

EC EN 450 : Introduction to Semiconductor Devices. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 340

DESCRIPTION: Physics of electronic and optical solid state devices; includes semiconductor materials, bipolar and FET device physics and modeling, optical properties of semiconductors, and lasers.

**Course Outcomes**

- Application of basic physical processes to model p-n junctions.
- Application of differential equations to charge transport in semiconducting material.
- Application of the physical properties of device building blocks (pn junctions, metal semiconductor interfaces, MOS structures) to model MOSFET operation.
- Application of basic microfabrication processes to design semiconductor device fabrication process flows.

EC EN 452 : Experiments in Integrated Circuit Development. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: ECEn 450 or concurrent enrollment.

DESCRIPTION: Measurements of key silicon properties and fabrication of integrated circuits.

**Course Outcomes**

- Ability to analyze and interpret data measured from fabricated devices.
- Ability to design processes for fabrication of MOSFET devices.
- Ability to use modern microelectronics fabrication equipment.

EC EN 462 : Electromagnetic Radiation and Propagation. (2:3:1)

PREREQUISITE: EC EN 360

DESCRIPTION: Electromagnetic and optical theory including guided wave theory, modes, propagation in materials, radiation analysis, antenna analysis, and aperture diffraction.

**Course Outcomes**

- Application of vector differential and integral equation methods to EM analysis.
- Ability to analyze wave propagation in materials and guiding structures.
- Ability to model electromagnetic fields and systems using numerical algorithms and interpret results physically.

EC EN 464 : Wireless Communication Circuits. (2:3:1)

PREREQUISITE: ECEn 462 or instructor's consent.

DESCRIPTION: Analysis, design, and fabrication of RF/microwave passive circuit structures, amplifiers, oscillators, and mixers. System concepts, including stability, gain, and noise figure.

**Course Outcomes**

- Ability to function in groups to design and test microwave systems.
- Facility with microwave passive and active structures.
- Ability to simulate microwave systems and components.

EC EN 466 : Introduction to Optical Engineering. (2:3:1)

PREREQUISITE: EC EN 462

DESCRIPTION: Introduces principles and practices of optical engineering including optical communications system and components.

**Course Outcomes**

- Application of differential equations to solve metallic and dielectric waveguide problems.
- Application of integral calculus to solve diffraction problems.
- Application of linear algebra to find propagation characteristics in anisotropic media.
- Ability to apply modern optical test equipment to measure optical communication system parameters.

EC EN 483 : (EC En-Me En 431) Design of Control Systems. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 380; or ME EN 335

DESCRIPTION: Classical frequency response and time domain design of control systems. State-variable control and computer simulation of control systems.

**Course Outcomes**

- The ability to develop (nonlinear) mathematical models of complex dynamic systems.
- The ability to simplify those models into linear transfer function and state space representations.
- The ability to develop design specifications for physical systems with sensing and actuation limits.
- The ability to design PID controllers for systems described by linear time-invariant models.
- The ability to use loopshaping techniques to design frequency domain controllers for systems described by linear time-invariant models.
- The ability to design observer-based controllers for systems described by linear time-invariant

models.

EC EN 485 : Introduction to Digital Communication Theory. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 370 & EC EN 380

DESCRIPTION: Analysis and design of digital communications systems in AWGN: signal space concepts, modulation, matched filter and correlation detection, synchronization, performance. Computer-based design exercises.

**Course Outcomes**

- An understanding of the relationship between the Fourier transform of continuous-time signal and the DTFT of its samples.
- Application of linear algebra in describing digital modulation using the constellation representation.
- Application of probability and statistics to bit error rate analysis of digital communication systems.
- Ability to design the parameters of a PLL loop filter to meet given performance specifications.
- Ability to apply matched filter techniques to detection.
- Ability to simulate digital communication systems using Simulink and Matlab.

EC EN 487 : Introduction to Discrete-Time Signal Processing. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 370 & EC EN 380

DESCRIPTION: Digital signal processing, fast Fourier transforms, digital filter design, spectrum analysis. Applications in speech processing, SONAR, communications, etc.

**Course Outcomes**

- Ability to apply principles of probablity theory for analysis and numerical estimation of power spectral densities.
- Ability to use basic DSP functions and algorithms (i.e., FIR filters, IIR filters, polyphase systems, windows, FFTs, etc.) to formulate and solve engineering problems.
- Ability to perform experiments with real-world signals and DSP systems, including discrete-time filters, spectrum analyzer, acoustic direction finding, etc.
- Ability to use software tools such as Matlab (R) to design, implement, and debug DSP functions.
- Application of integral calculus, discrete math, and complex variables, and transform theory to discrete-time signal processing.

- Complete remaining course hours selected from the following:
  1. Additional courses listed in item 4a above.
  2. Any of the following:

C S 236 : Discrete Structures. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: C S 235

DESCRIPTION: Introduction to grammars and parsing; predicate and propositional logic; proof techniques; sets, functions, relations, relational data model; graphs and graph algorithms.

**Course Outcomes**

- Understand and be conversant with basic discrete mathematical structures (finite state machines, regular expressions, grammars, propositional calculus, proof techniques, predicate calculus, sets, relations, functions, graphs).Write complex programs by using mathematical concepts as the basis for solving programming problems (finite state machines for lexical analysis; grammars for parsing; propositional and predicate calculus for logic programming; sets and algebras for relational databases; algebras, graphs, and topological sorting for optimizing datalog query processing).Incrementally build sophisticated programs by a systematic design process based on discrete mathematics.Design a solution for a programming problem and justify the design as one that is maintainable and extendable by other programmers who understand and are conversant with discrete mathematical structures.
- Demonstrate ability to build large programs by writing and integrating code from a diverse spectrum of program components.

C S 240 : Advanced Programming Concepts. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 236

DESCRIPTION: Advanced software development with an object-oriented focus. Design, implementation, and testing of several large programs in a Java and Linux environment using current technologies.

**Course Outcomes**

- a. Use coding, testing, and debugging strategies. b. Follow basic object-oriented design concepts.
- Write programs in an Object Oriented programming language using inheritance, polymorphism and class hierarchies.
- Use the Linux programming environment to execute basic commands and to run the compiler, linker, debugger, memory checker, and profiler.

- Demonstrate the aptitude and work ethic necessary to succeed in computer science.

C S 340 : Software Design and Testing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 240

DESCRIPTION: Principles of software design, design patterns, design representation, refactoring. Principles of software quality assurance and testing. Development and testing tools.

**Course Outcomes**

- Articulate the principles of effective software design.
- Know when and how to apply various design patterns.
- Demonstrate how to effectively document and communicate software designs.
- Understand what quality assurance is, know how to build quality into software using review techniques, and demonstrate quality evaluation through testing.
- Use a variety of software development tools, including IDEs, automation tools, static analysis tools, source code control systems, unit testing tools, and documentation tools.
- Work effectively in a group to produce quality software using 1-5 above.

C S 345 : Operating Systems Design. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 224 & C S 240

DESCRIPTION: Principles and concepts of operating systems design and the implementation of an operating system.

**Course Outcomes**

- Describe the basic components of an operating system and their role in implementations for general purpose, real-time, and embedded applications.
- Define the concepts of processes, threads, asynchronous signals and competitive system resource allocation.
- Show how a shell works.
- Explain what multi-tasking is and outline standard scheduling algorithms for multi-tasking.
- Discuss mutual exclusion principles and their use in concurrent programming, including semaphore construction and resource allocation.
- Give an overview of system memory management.
- Explain how file systems are implemented.
- Discuss the features and strengths of various contemporary operating systems.
- Implement a functional, pre-emptive, multi-tasking operating system written in C, including a shell, scheduler, file manager, memory manager, and synchronization components.

C S 360 : Internet Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240

DESCRIPTION: Internet application programming, including sockets, threads, CGI, database, e-commerce, Web services.

**Course Outcomes**

- Design and implement a variety of client-server and web applications.
- Analyze the performance of a web server, write convincingly to support your conclusions and give an oral report to describe your findings.
- Implement a web server using processes, semaphores, threads, sockets and signals.
- Use a set of web programming languages to implement an application.
- Use security to protect their web application.

C S 428 : Software Engineering. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: C S 340

DESCRIPTION: Analysis, design, implementation, and testing of significant software systems.

**Course Outcomes**

- Demonstrate the ability to work in a group on a significant project
- Demonstrate practices that result in quality software
- Demonstrate an understanding of how ethics impact software development

C S 431 : Algorithmic Languages and Compilers. (3:3:0)

PREREQUISITE: C S 340

DESCRIPTION: Formal description of algorithmic languages and techniques used in their compilation: semantics, ambiguities, procedures, replication, iteration, recursion.

**Course Outcomes**

- Implement a fully functional compiler for a subset of the Java language that targets an embedded microprocess.
- Apply patterns and common data structures to compiler constructrion including tree traversal, graph algorithms, and proof systems.
- Students are able to synthesis algorithms and techniques from compiler constructor to other problem domains.

- Students have a sound mental model of how an abstract high level language is systematically transformed into a low-level machine langauge or byte code. Students are able to use that understanding to write better application code.

C S 452 : Database Modeling Concepts. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 240

DESCRIPTION: Database models: relational, deductive, object-oriented. Integrity constraints, query languages, database design.

**Course Outcomes**

- Be able to use a variety of commercial query languages (SQL, XQuery, SPARQL), both stand-alone and embeded in high-level programming languages. Know how relational algebra and relational calculus provide a basis for commercial query languages.
- Understand performance issues and optimization strategies. This includes query rewriting, secondary storage characteristics, and access strategies.
- Be able to design and develop relational database applications. This includes conceptual modeling and normalization theory.
- Be familiar with some of the current challenges facing database professionals.

C S 455 : Computer Graphics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 355 & MATH 313

DESCRIPTION: Interactive computer graphics systems programming and architecture.

**Course Outcomes**

- Students will be proficient in basic computer graphics algorithms such as modeling, trnasformations and rendering.Students will design and code solutions to several programming problems in graphics using algorithms and data structures.In addition, sutudents will use these techniques to program a large semester project.

C S 456 : Introduction to User Interface Software. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 256 & C S 355; or C S 301R & C S 355

DESCRIPTION: Introduction to software architectures and techniques for graphical user interfaces. Input devices, windowing systems, event-driven programming, interactive geometry.

**Course Outcomes**

- Understand and apply the following:Multiple mechanisms for receiving information from people and presenting information to people.The geometry of basic shapes and how to use the geometry to solve basic interaction problems.Algorithms for user interface layout management.Models for specifying and evaluating user input dialogs.

C S 460 : Computer Communications and Networking. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: C S 360

DESCRIPTION: Introduction to data communications and computer networking. Communications fundamentals, computer networks, software, architecture, telecommunications, regulation, standards.

**Course Outcomes**

- Understand the principles of the Internet architecture
- Understand how the Internet works, from the transport layer down to the physical layer
- Gain hands-on experience with implementing and simulating transport, routing, and MAC protocols, leading to a deeper understanding of these critical Internet components
- Be capable of reading and understanding research papers in the area of computer networking
- Demonstrate the ability to effectively conduct, describe and report on an experimental research project in the area of computer networking

C S 462 : Large-Scale Distributed System Design. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: C S 340 & C S 360

DESCRIPTION: Designing and implementing client-server enterprise applications. Web servers, application servers, database connectivity, remote procedure calls, transactions, messaging, directory, naming services, threads, security, data formats.

**Course Outcomes**

- Enterprise Web application development

C S 465 : Computer Security. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 360 or concurrent enrollment.

DESCRIPTION: Introduction to computer security fundamentals: confidentiality, integrity, authentication, and access control. Secret key and public key cryptography, network security protocols, viruses, and fire walls.

**Course Outcomes**

- Implement a cryptographic algorithm from a standards specification.
- Demonstrate how attackers compromise real-world systems, and then show how to prevent these attacks.

C S 470 : Introduction to Artificial Intelligence. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C S 312 & MATH 313 & STAT 121; or instructor's consent.

DESCRIPTION: Introduction to core areas of artifical intelligence; intelligent agents, problem solving and search, knowledge-based systems and inference, planning, uncertainty, learning, and perception.

**Course Outcomes**

- from business, medicine, robotics, gaming, and machine learning
- Does it require basic control?Does it involve uncertain reasoning?Does it have a simple goal, sophisticated utility, or multiple attributes?Does it require sequential choice or planning?How may decision makers are involved?
- What is the internal representation?What performance criteria are relevant?What is the nature of the environment?What are the actuators?What are the sensors?What are the agent's utilities?How is uncertainty represented?
- Uninformed, informed, constraint-satisfaction, hill-climbing, and stochastic (e.g., genetic algorithms) searchMarkov provesses, Bayes rule, Bayes nets, Hidden Markov Models, Grid Filters, and Kalman FiltersExpected utility theoryMulti-attribute utility theorySequential choice under uncertainty: value and policy iterationMinimax solutions from game theory: alpha-beta pruning
- Determine whether your solution is correctExpress the quality of your solutionValue the need to communicate your solution to others

C S 478 : Tools for Machine Learning and Data Mining. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: C S 312 & MATH 313 & STAT 121

DESCRIPTION: Machine learning and data mining models and other mechanisms allowing computers to learn and find knowledge from data.

**Course Outcomes**

- Take your computer to school
- You will be able to recognize when machine learning and data mining tools are applicable.
- You will be able to plan and execute successful machine learning and data mining projects, including selecting an adequate process for your specific task and avoiding the main data mining pitfalls.

EC EN 424 : Computer Systems. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 330

DESCRIPTION: Machine-level representations of programs and data, processor architecture, program performance optimizaton, memory hierarchies, virtual memory, linking, exceptions.

**Course Outcomes**

There are no course outcomes available

EC EN 425 : Real-Time Operating Systems. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 324; or EC EN 330

DESCRIPTION: Hardware/software interface, real-time kernel internals, implementation of high-level language constructs, issues in real-time application software development.

**Course Outcomes**

- Ability to apply C and assembly programming languages and knowledge of the hardware/software interface to the design and implementation of a real-time kernel.
- Ability to design and implement a real-time application.
- Ability to design and implement a real-time kernel.
- Ability to use C programs, compilers, and debuggers in the design and implementation of real-time application software.
- Ability to write interrupt service routines.
- Ability to use a real-time operating system as a tool in the development of real-time application software.

EC EN 427 : Embedded Systems. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 320 & EC EN 324; or EC EN 320 & EC EN 330

DESCRIPTION: Interfacing digital hardware components to an embedded system processor. Developing the hardware-software interface. Developing application software. Using C and assembly language in device-driver design, monitor-debugger, and real-time kernel. Lab.

**Course Outcomes**

- Ability to design a bus-based digital I/O device.
- System design project integrating custom bus-based digital I/O device.
- Ability to interface to a processor or I/O bus.
- Ability to read and interpret device specifications (data sheets) in order to integrate a device within a microprocessor based system.
- Ability to use DMA for a high-bandwidth I/O device.

EC EN 451 : Introduction to Digital VLSI Circuits. (4:3:5)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 320 & EC EN 340

DESCRIPTION: Design of very large-scale integrated circuits for digital systems. CAD tools used extensively to simulate the design and create and verify mask circuits.

**Course Outcomes**

- Ability to analyze CMOS circuits.
- Ability to translate digital logic to CMOS circuits to achieve desired behavior and performance requirements.
- Ability to perform CMOS layout.
- Ability to use eCAD tools for CMOS design.
- Ability to characterize timing and noise in CMOS circuits.

MATH 341 : Theory of Analysis 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Math 113 and Math 290.

DESCRIPTION: Rigorous treatment of calculus of a single real variable: topology, order, completeness of real numbers; continuity, differentiability, integrability, and convergence of functions.

**Course Outcomes**

- The main purpose of this course is to provide students with an understanding of the real number system and of real-valued functions of a single real variable, with the focus being on the theoretical and logical foundations of single-variable calculus. A secondary purpose of this course is to reinforce students' prior training in discovering and writing valid mathematical proofs.For more detailed information visit the Math 341 Wiki.

MATH 342 : Theory of Analysis 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 313 & MATH 341

DESCRIPTION: Rigorous treatment of calculus of several real variables; metric spaces, geometry and topology of Euclidean space, differentiation implicity function theorem, integration on sets and manifolds.

**Course Outcomes**

- Math 342 is the multivariable sequel to Math 341. Itprovides a rigorous treatment of multivariable calculus. Unlike the case with Math 341, Math 342 students are not required to have had an introductory course in the subject matter, so Math 342 needs to treat both computation and theory in some depth.For more detailed information visit the Math 342 Wiki entry.

MATH 352 : Introduction to Complex Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 290; Math 341 or concurrent enrollment.

DESCRIPTION: Complex algebra, analytic functions, integration in the complex plane, infinite series, theory of residues, conformal mapping.

**Course Outcomes**

- This course is aimed at graduates majoring in mathematical and physical sciences and engineering. In addition to being an important branch of mathematics in its own right, complex analysis is an important tool for differential equations (ordinary and partial), algebraic geometry and number theory. Thus it is a core requirement for all mathematics majors. It contributes to all the expected learning outcomes of the Mathematics BS degree.For more detailed information visit the Math 352 Wiki page.
- Students will master complex numbers, limits, analytic functions, elementary functions in the complex plane, contour integrals, Taylor series, Laurent series, isolated singularities, residue theory and applications, and conformal mappings.

MATH 355 : Graph Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 313
DESCRIPTION: Maps, graphs and digraphs, coloring problems, applications.

**Course Outcomes**

- Graphs, trees, pathes and cycles, connectedness, chromatic number, planarity conditions, genus of a graph, the Five Color Theorem. Students should also be aware of Kuratowsky's Theorem, and the Four Color Theorem. If there is time, it is good to do the proof of Kuratowski's Theorem. For more detailed information visit the Math 355 Wiki page.

MATH 371 : Abstract Algebra 1. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MATH 290 & MATH 313
DESCRIPTION: Groups, group homomorphisms, rings, ideals, and polynomials.

**Course Outcomes**

- This course is aimed at undergraduate mathematics and mathematics education majors. It is a first course in abstract algebra. In addition to being an important branch of mathematics in its own right, abstract algebra is now an essential tool in number theory, geometry, topology, and, to a lesser extent, analysis. Thus it is a core requirement for all mathematics majors. Outside of mathematics, algebra also has applications in cryptography, coding theory, quantum chemistry, and physics. For more detailed information visit the Math 371 Wiki page.

MATH 372 : Abstract Algebra 2. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: MATH 371
DESCRIPTION: Fields, Galois theory, solvability of polynomials by radicals.

**Course Outcomes**

- Students should achieve mastery of the topics listed in the minimal learning outcomes on the Math 372 Wiki page. This means that they should know all relevant definitions, correct statements of the major theorems (including their hypotheses and limitations), and examples and non-examples of the various concepts. The students should be able to demonstrate their mastery by solving non-trivial problems related to these concepts, and by proving simple (but non-trivial) theorems about the below concepts, related to, but not identical to, statements proven by the text or instructor.

MATH 411 : Numerical Methods. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: MATH 334
DESCRIPTION: Iterative solvers for linear systems, eigenvalue, eigenvector approximations, numerical solutions to nonlinear systems, numerical techniques for initial and boundary value problems, elementary solvers for PDEs.

**Course Outcomes**

- Students should be able to describe, derive, and implement the numerical methods listed on the Math 411 Wiki page. They should be able to explain the advantages and disadvantages of each method. They should understand error analysis and be able to make practical decisions based on the outcomes of that analysis.

MATH 447 : Introduction to Partial Differential Equations. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: MATH 303; or MATH 314 & MATH 334
DESCRIPTION: Boundary value problems; transform methods; Fourier series; Bessel functions; Legendre polynomials.

**Course Outcomes**

- The main purpose of this course is to teach students how to solve the canonical linear second-order partial differential equations on simple domains. Secondarily, students should be introduced to the theory concerning the validity of such solutions.For more detailed information visit the Math 447 Wiki page.

MATH 450 : Combinatorics. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: MATH 371
DESCRIPTION: Permutations, combinations, recurrence relations, applications.

**Course Outcomes**

- Permutations and combinations basics, including the Pigeonhole Principle, binomial coefficients and the Binomial Theorem, Stirling's Approximation, Inclusion/exclusion, Generating functions and recurrence relations (rational functions), Groups, permutations and counting problems -- Polya's Theorem. For more detailed information visit the Math 450 Wiki page.

MATH 487 : Number Theory. (3:3:0)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: MATH 371

DESCRIPTION: Foundations; congruences; quadratic reciprocity; unique factorization, prime distribution or Diophantine equations.

**Course Outcomes**

- Students should know all relevant definitions, correct statements of the major theorems (including their hypotheses and limitations), and examples and non-examples of the various concepts The students should be able to demonstrate their mastery by solving non-trivial problems related to these concepts, and by proving simple (but non-trivial) theorems about the below concepts, related to, but not identical to, statements proven by the text or instructor. For more detailed information visit the Math 487 Wiki page.

PHSCS 222 : Modern Physics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHSCS 123 & PHSCS 220; Phscs 121 or equivalent.

DESCRIPTION: Quantum physics, atoms, molecules, condensed matter, nuclei, elementary particles, and selected topics in contemporary physics.

**Course Outcomes**

- Demonstrate their understanding of the fundamental postulates and principles of special relativity and quantum mechanics.
- Apply the principles of quantum mechanics to predict the results of measurements in simple systems such as a free particle, simple potential wells, and central potentials.
- Solve problems and answer conceptual questions applying the principles of quantum mechanics and special relativity to topics in modern physics such as atomic physics, molecular physics, the physics of solids, statistical physics, nuclear physics, radioactivity, and particle physics.

3. 500-level EC En, C S, or Math courses.
4. Other engineering, mathematics, physics, or computer science courses as specified or courses as approved by the Electrical and Computer Engineering Department.

**Note:** Contact the Electrical and Computer Engineering Department for current information about added and/or deleted courses, as well as information about when courses are offered.

*Hours include courses that may fulfill university core requirements.

## Show all Electrical and Computer Engineering Courses

**Ira A. Fulton College of Engineering and Technology Home**

**Electrical and Computer Engineering Department Home**

**Majors**

- BS in Computer Engineering
- BS in Electrical Engineering

**Course Information**

- Electrical and Computer Engineering Courses

**Faculty**

# Electrical and Computer Engineering (EC En)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

EC EN 191 : New Student Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of electrical and computer engineering with group and individual design projects.

**Course Outcomes**

- Understand the discipline of electrical and computer engineering and its many roles in the modern technological world.

EC EN 199R : Academic Internship. (.5-3:ARR:ARR)

PREREQUISITE: Department chair's and internship coordinator's consent.

DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Student acquires professional experiences in the discipline.
- Student demonstrates professional communication skills (report).
- Student demonstrates the ability to use reflective thinking to convert professional experience into academic understanding.

### 200-Level Courses

EC EN 220 : Fundamentals of Digital Systems. (3:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 142 or concurrent enrollment.

DESCRIPTION: Digital logic: theory, design, and implementation of combinational and sequential logic. Laboratory experience in construction of digital logic circuits.

**Course Outcomes**

- Ability to design, minimize, and analyze a combinational network
- Ability to design and analyze a sequential network.
- Ability to design and test a digital system that includes I/O, state machines and combinational networks.
- Ability to design major components of a simple microprocessor.
- Ability to use schematic capture tools.

EC EN 240 : Circuit Analysis and Laboratory. (4:3:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 113 & PHSCS 220; Average of B or better in completed Math and Physics courses, or advisor approval.

DESCRIPTION: Analysis of electric circuits including transients, sinusoidal steady-state, and power. Includes labs.

NOTE: Fee.

**Course Outcomes**

- Application of complex variables to AC steady state circuit analysis.???
- Application of algebra, linear algebra, and circuit equivalencies to DC circuit analysis.???
- Application of differential equations to transient analysis of RC and RL circuits.???
- Application of algebra, linear algebra, and circuit equivalencies to AC circuit analysis.???
- Ability to design, analyze, and demonstrate a working integrated stereo audio amplifier system.
- Ability to use oscilloscopes, function generators, and DC power supplies in an applied design/debug environment.

### 300-Level Courses

EC EN 301 : Elements of Electrical Engineering. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PHSCS 220 & MATH 303; or PHSCS 220 & MATH 334
DESCRIPTION: Linear electric circuits, computer organization, and logic circuits for nonmajors.
NOTE: Fee.

**Course Outcomes**

- Understand and apply basic principles of electronic circuits.

EC EN 320 : Digital System Design. (4:3:3)

WHEN TAUGHT: Winter
PREREQUISITE: EC EN 220 & EC EN 240
DESCRIPTION: Advanced digital design, including hardware description languages, electrical properties of digital circuits, synchronous and asynchronous circuits, computer arithmetic, and interfacing to external circuitry.

**Course Outcomes**

- Ability to describe a digital system in VHDL.
- Ability to simulate and debug a digital system described in VHDL.
- Ability to read and interpret a data sheet.
- Ability to implement logic using an FPGA.
- Ability to synchronize asynchronous inputs into a synchronous system and analyze the MTBF.

EC EN 330 : Introduction to Embedded System Programming. (4:3:3)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: C S 235 & EC EN 220
DESCRIPTION: Understanding the hardware-software interface in an embedded system. Using C and assembly language in device-driver design. Software interfacing to peripherals. Performance and memory issues. Hardware interrupt programming.

**Course Outcomes**

- Ability to read and interpret device specifications
- Ability to write efficient interrupt service routines
- Ability to write software to communicate with peripherals
- Ability to understand basic microprocessor architecture
- Ability to organize software in a complex embedded application
- Ability to write a user manual for an embedded application

EC EN 340 : Electronic Circuit Design 1. (4:3:3)

WHEN TAUGHT: Fall
PREREQUISITE: EC EN 240
DESCRIPTION: Analysis and design of electronic circuits with an emphasis on amplifier gain and frequency response.

**Course Outcomes**

- Ability to apply electronic device models to the solution of a circuit problem.???
- Ability to relate circuit theory to practice.???
- Ability to understand and develop circuit designs in a professional manner.â ¨
- Ability to document engineering/experimental results and to write summary reports.
- Ability to use specialized circuit analysis techniques including approximate equivalent circuits.â ¨
- Ability to use oscilloscopes, function generators, and DC power supplies.
- Ability to use Spice

EC EN 360 : Electromagnetic Fields and Waves. (4:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: MATH 314 & MATH 334 & EC EN 240
DESCRIPTION: Analysis of transmission lines and electromagnetic waves including the development and application of Maxwell's equations.

**Course Outcomes**

- Application of differential equations to wave propagation.
- Application of integral multivariate calculus to solve for electromagnetic fields.
- Application of complex variables to phasor solutions of wave equations.
- Ability to analyze the interaction of electromagnetic fields with structures and materials.

EC EN 370 : (EC En - Math 431) Probability Theory. (3:3:0)

WHEN TAUGHT: Winter; Spring
PREREQUISITE: MATH 313
DESCRIPTION: Axiomatic probability theory, conditional probability, discrete / continuous random variables, expectation, conditional expectation, moments, functions of random variables, multivariate distributions, laws of large numbers, central limit theorem.

**Course Outcomes**

- A basic understanding of probabilistic reasoning and the foundations of probability theory: sample spaces, event algebras, classical probability, and Kolmogorov's axioms.
- An understanding of random variables, distribution functions, probability mass functions, and probability density functions, including the uniform, binomial, Poisson, exponential, and Gaussian distributions.
- An understanding of multivariate distributions, independence, conditioning, and functions of random variables,

including the ability to compute expectations, moments, and correlation functions.
- An understanding of characteristic functions and their relationship to linear transformations and independence.
- An understanding of convergence concepts, including the central limit theorem and the law of large numbers.
- The ability to apply probability theory to the analysis of engineering systems.

EC EN 380 : Signals and Systems. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 240 & MATH 334

DESCRIPTION: Time and frequency domain analysis of discrete or continuous systems subjected to periodic or nonperiodic input signals.

**Course Outcomes**

- Application of integral calculus, differential equations, complex variables, to transform analysis of a continuous-time LTI system.
- Application of integral calculus, differential equations, complex variables, to transform analysis of a discrete-time LTI system.
- Application of integral calculus to solve continuous-time convolution problems.
- Application of discrete math to solve discrete-time convolution problems.
- Ability to use Matlab or similar tools to analyze, model, simulate, and experiment with linear systems.
- Ability to interpret and synthesize signals and systems in both the time and frequency domains.
- Ability to recognize the mathematical properties of signals and systems including linearity, time invariance, causality, stability, etc.
- An understanding of the consequences and principles associated with digitally sampling and reconstructing analog signals.

EC EN 390 : Junior Team Design Project. (3:1.0:6)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 330 & EC EN 340 & EC EN 380

DESCRIPTION: Culminating design experience based on skills learned in junior-level courses. Students works in teams to plan, design, and test a project based on the integration of components built in other classes.

**Course Outcomes**

- Ability to complete a significant culminating design that draws upon the knowledge gained in prerequisite and concurrently enrolled course.
- Ability to assign and accept leadership responsibilities on a team.
- Ability to define, understand, and participate in team decision making processes.
- Ability to take high level, customer requirements, identify from them the specifications a solution must meet, and formulate those specifications as an engineering problem.
- Ability to combine new technology with custom built components
- Ability to apply safety issues to engineering hardware.

EC EN 391 : Junior Seminar. (.5:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 240 & ENG T 231

DESCRIPTION: Seminars and colloquia on current topics in electrical and computer engineering, as well as ethics, contemporary issues, and life-long learning.

NOTE: Attendance and some writing are required.

**Course Outcomes**

- An understanding of professional ethics.
- Ability to use the library, internet, etc. to learn about recent developments in a particular technical field.
- Knowledge of recent developments in a particular technical field.

### 400-Level Courses

EC EN 424 : Computer Systems. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 330

DESCRIPTION: Machine-level representations of programs and data, processor architecture, program performance optimizaton, memory hierarchies, virtual memory, linking, exceptions.

**Course Outcomes**

There are no course outcomes available

EC EN 425 : Real-Time Operating Systems. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 324; or EC EN 330

DESCRIPTION: Hardware/software interface, real-time kernel internals, implementation of high-level language constructs, issues in real-time application software development.

**Course Outcomes**

- Ability to apply C and assembly programming languages and knowledge of the hardware/software interface to the design and implementation of a real-time kernel.

- Ability to design and implement a real-time application.
- Ability to design and implement a real-time kernel.
- Ability to use C programs, compilers, and debuggers in the design and implementation of real-time application software.
- Ability to write interrupt service routines.
- Ability to use a real-time operating system as a tool in the development of real-time application software.

EC EN 427 : Embedded Systems. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 320 & EC EN 324; or EC EN 320 & EC EN 330

DESCRIPTION: Interfacing digital hardware components to an embedded system processor. Developing the hardware-software interface. Developing application software. Using C and assembly language in device-driver design, monitor-debugger, and real-time kernel. Lab.

**Course Outcomes**

- Ability to design a bus-based digital I/O device.
- System design project integrating custom bus-based digital I/O device.
- Ability to interface to a processor or I/O bus.
- Ability to read and interpret device specifications (data sheets) in order to integrate a device within a microprocessor based system.
- Ability to use DMA for a high-bandwidth I/O device.

EC EN 443 : Communication and Power Circuits. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 340

DESCRIPTION: Introduction to amplitude modulation, frequency modulation, and phase modulation circuits. Modulators, mixers, detectors, and the phase-locked loop. Power amplifier stage and orcillator design.

**Course Outcomes**

- Ability to use differential calculus for circuit optimization.
- Ability to apply probability theory to noisy circuits.
- Ability to conduct lab experiments with electronic communication circuits.
- Ability to design mixers, modulators, and power stages.
- Ability to write lab reports.
- Ability to use Spice.

EC EN 445 : Introduction to Mixed-Signal VLSI. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 340

DESCRIPTION: VLSI circuit design emphasizing mixed-signal circuits such as D/A and A/D converters, phase-locked loops, S/H circuits. Associated laboratory provides layout-design experience.

**Course Outcomes**

- An understanding of modern VLSI processes and how this processing relates to circuit performance.
- Ability to conduct lab experiments with A/D and D/A converters.
- Ability to design a mixed-signal IC in CMOS including ADC or DAC chips
- Ability to write lab reports.
- Ability to work with design, verification, and CAD tools
- Ability to use Spice including advanced features.

EC EN 450 : Introduction to Semiconductor Devices. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 340

DESCRIPTION: Physics of electronic and optical solid state devices; includes semiconductor materials, bipolar and FET device physics and modeling, optical properties of semiconductors, and lasers.

**Course Outcomes**

- Application of basic physical processes to model p-n junctions.
- Application of differential equations to charge transport in semiconducting material.
- Application of the physical properties of device building blocks (pn junctions, metal semiconductor interfaces, MOS structures) to model MOSFET operation.
- Application of basic microfabrication processes to design semiconductor device fabrication process flows.

EC EN 451 : Introduction to Digital VLSI Circuits. (4:3:5)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 320 & EC EN 340

DESCRIPTION: Design of very large-scale integrated circuits for digital systems. CAD tools used extensively to simulate the design and create and verify mask circuits.

**Course Outcomes**

- Ability to analyze CMOS circuits.
- Ability to translate digital logic to CMOS circuits to achieve desired behavior and performance requirements.
- Ability to perform CMOS layout.
- Ability to use eCAD tools for CMOS design.

Ability to characterize timing and noise in CMOS circuits.

EC EN 452 : Experiments in Integrated Circuit Development. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: ECEn 450 or concurrent enrollment.

DESCRIPTION: Measurements of key silicon properties and fabrication of integrated circuits.

**Course Outcomes**

- Ability to analyze and interpret data measured from fabricated devices.
- Ability to design processes for fabrication of MOSFET devices.
- Ability to use modern microelectronics fabrication equipment.

EC EN 455 : VLSI Testing. (1:0:3)

PREREQUISITE: EC EN 451; or EC EN 445

DESCRIPTION: Testing of ICs designed previous semester in ECEn 451 or ECEn 445. Topics in VLSI-testable circuit designs.

**Course Outcomes**

No outcomes are available at this time.

EC EN 462 : Electromagnetic Radiation and Propagation. (2:3:1)

PREREQUISITE: EC EN 360

DESCRIPTION: Electromagnetic and optical theory including guided wave theory, modes, propagation in materials, radiation analysis, antenna analysis, and aperture diffraction.

**Course Outcomes**

- Application of vector differential and integral equation methods to EM analysis.
- Ability to analyze wave propagation in materials and guiding structures.
- Ability to model electromagnetic fields and systems using numerical algorithms and interpret results physically.

EC EN 464 : Wireless Communication Circuits. (2:3:1)

PREREQUISITE: ECEn 462 or instructor's consent.

DESCRIPTION: Analysis, design, and fabrication of RF/microwave passive circuit structures, amplifiers, oscillators, and mixers. System concepts, including stability, gain, and noise figure.

**Course Outcomes**

- Ability to function in groups to design and test microwave systems.
- Facility with microwave passive and active structures.
- Ability to simulate microwave systems and components.

EC EN 466 : Introduction to Optical Engineering. (2:3:1)

PREREQUISITE: EC EN 462

DESCRIPTION: Introduces principles and practices of optical engineering including optical communications system and components.

**Course Outcomes**

- Application of differential equations to solve metallic and dielectric waveguide problems.
- Application of integral calculus to solve diffraction problems.
- Application of linear algebra to find propagation characteristics in anisotropic media.
- Ability to apply modern optical test equipment to measure optical communication system parameters.

EC EN 483 : (EC En-Me En 431) Design of Control Systems. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 380; or ME EN 335

DESCRIPTION: Classical frequency response and time domain design of control systems. State-variable control and computer simulation of control systems.

**Course Outcomes**

- The ability to develop (nonlinear) mathematical models of complex dynamic systems.
- The ability to simplify those models into linear transfer function and state space representations.
- The ability to develop design specifications for physical systems with sensing and actuation limits.
- The ability to design PID controllers for systems described by linear time-invariant models.
- The ability to use loopshaping techniques to design frequency domain controllers for systems described by linear time-invariant models.
- The ability to design observer-based controllers for systems described by linear time-invariant models.

EC EN 485 : Introduction to Digital Communication Theory. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 370 & EC EN 380

DESCRIPTION: Analysis and design of digital communications systems in AWGN: signal space concepts, modulation, matched filter and correlation detection, synchronization, performance. Computer-based design exercises.

**Course Outcomes**

- An understanding of the relationship between the Fourier transform of continuous-time signal and the DTFT of its samples.

- Application of linear algebra in describing digital modulation using the constellation representation.
- Application of probability and statistics to bit error rate analysis of digital communication systems.
- Ability to design the parameters of a PLL loop filter to meet given performance specifications.
- Ability to apply matched filter techniques to detection.
- Ability to simulate digital communication systems using Simulink and Matlab.

EC EN 487 : Introduction to Discrete-Time Signal Processing. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 370 & EC EN 380

DESCRIPTION: Digital signal processing, fast Fourier transforms, digital filter design, spectrum analysis. Applications in speech processing, SONAR, communications, etc.

**Course Outcomes**

- Ability to apply principles of probablity theory for analysis and numerical estimation of power spectral densities.
- Ability to use basic DSP functions and algorithms (i.e., FIR filters, IIR filters, polyphase systems, windows, FFTs, etc.) to formulate and solve engineering problems.
- Ability to perform experiments with real-world signals and DSP systems, including discrete-time filters, spectrum analyzer, acoustic direction finding, etc.
- Ability to use software tools such as Matlab (R) to design, implement, and debug DSP functions.
- Application of integral calculus, discrete math, and complex variables, and transform theory to discrete-time signal processing.

EC EN 490 : Team Design Project. (4:2:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EC EN 340 & EC EN 380; selected 400-level EC En courses, depending on project.

DESCRIPTION: Culminating design experience based on skills learned in advanced technical courses. Students work in teams to plan, design, test, and demonstrate a major project.

**Course Outcomes**

- Ability to define, understand, and participate in team decision making processes.
- Ability to produce and maintain the necessary control documents on a design team.
- Ability to establish and follow ground rules governing team behavior.
- Ability to give an oral presentation describing a technical design.
- Ability to understand the expectations from other members on a team.
- Ability to assign and accept leadership responsibilities on a team.
- Ability to understand the different skill sets each team member brings to a team.
- Ability to understand the expectations (regarding participation) of each team member.
- Ability to complete a significant culminating design that draws upon the knowledge gained in prerequisite courses.
- Ability to give an oral presentation describing team progress during a design review.
- An understanding of the principles of leadership and project management.
- Ability to produce a written report describing a technical design.
- Ability to take high level, customer requirements, identify from them the specifications a solution must meet, and formulate those specifications as an engineering problem.
- Ability to maintain a team portfolio documenting the design process.
- Ability to read, interpret, and use published design standards as a part of the design process.

EC EN 493R : Special Topics in Electrical and Computer Engineering. (.5-4:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Topics vary. Recent developments in electrical and computer engineering.

**Course Outcomes**

- Ability to understand and apply a diverse range of special topics in electrical and computer engineering.

## 500-Level Graduate Courses (available to advanced undergraduates)

EC EN 521 : Introduction to Algorithm Design. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 235 and 236 and EC En 324; or equivalents.

DESCRIPTION: Algorithm analysis, data structures, sorting and searching, graph traversal, weighted graph algorithms, combinational search and heuristic methods, dynamic programming, approximation algorithms, designing algorithms.

**Course Outcomes**

There are no course outcomes available

EC EN 522R : Special Topics in Computer Systems. (.5-3:ARR:ARR)

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- Understand special topics in computer systems

EC EN 523 : Computer System Reliability. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: EC En 320, 324, 370.

DESCRIPTION: Analysis, modeling, and design of reliable, fault-tolerant computing systems.

**Course Outcomes**

There are no course outcomes available

EC EN 528 : Computer Architecture. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: EC En 424 or equivalent.

DESCRIPTION: Architectural analysis and design of computer systems: instruction-level parallelism, memory hierarchy, instruction sets, low-power architecture.

**Course Outcomes**

There are no course outcomes available

EC EN 541 : Active and Passive Filter Design. (3:3:0)

PREREQUISITE: ECEn 340, 380; or equivalents.

DESCRIPTION: Design methods for electronic filters based on passive components, active components, and integrated circuit components.

**Course Outcomes**

- Learn the relationship between transfer function pole and zero locations in the Laplace plane and the frequency response of the circuit.
- Learn the form of transfer function to lead to Butterworth, Chebyshev,and linear phase filters.
- Be able to design passive LC filters with prescribed transfer functions.
- Learn how to use active circuits, resistors, and capacitors to create desired filter responses with no inductors.
- Become familiar with the latest integrated circuit active synthesis methods.

EC EN 542R : Special Topics in Electronics. (.5-3:ARR:ARR)

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- Understand special topics in electronics

EC EN 543 : CMOS Amplifier Design. (3:3:0)

PREREQUISITE: ECEn 443 or 445 or equivalent.

DESCRIPTION: Factors affecting performance of MOS devices in analog applications. Design of MOS amplifiers, buffers, and comparators.

**Course Outcomes**

- Understand MOSFET operation at an advanced level.
- Learn how to design components used such as current mirrors in CMOS amplifier design.
- Learn the basic op amp configurations.
- Understand the frequency response and stability problems of op amps.
- Learn how to compensate op amps to improve stability.

EC EN 548 : Analog CMOS Circuit Design. (3:3:0)

PREREQUISITE: ECEn 443 or 445 or equivalent.

DESCRIPTION: Design of CMOS comparators, wideband amplifiers, bandgap references; multipliers, PTAT generators, charge-transfer amplifiers, chopper-stabilized amplifiers, and advanced D/A and A/D CMOS architectures.

**Course Outcomes**

- Learn how to characterize comparators, wideband amplifiers, bandgap references, multipliers, PTAT generators, charge transfer amplifiers, and advanced D/A and A/D circuits.
- Learn how to design comparators, references, charge-transfer amplifiers, and D/A and A/D circuits.
- Understand the differences between the BJT Gilbert multiplier and the CMOS Gilbert-like multiplier.

EC EN 549 : VLSI Communication Circuit Design. (3:3:0)

PREREQUISITE: ECEn 443 or 445 or equivalent.

DESCRIPTION: Frequency synthesizers; low-jitter, voltage-controlled oscillators; high Q circuits; clock regeneration; phase-locked loops; frequency discriminators; and radio-on-a-chip concepts.

**Course Outcomes**

- Understand the challenges of designing modern wireless circuits such as wireless local area networks, cell phones, Bluetooth, and other systems.
- Learn the various architectures of wireless transceivers suited to MOSFET circuit design.
- Learn the modulation methods and bandwidth requirements for wireless transceivers.
- Understand the technical specifications that characterize modern wireless systems.
- Learn how to implement components of wireless systems using MOSFET integrated circuits.

EC EN 550 : (EC En-Me En) Microelectromechanical Systems (MEMS). (3:3:0)

PREREQUISITE: EC En 450 or Me En 372 or equivalent.

DESCRIPTION: Design, fabrication, and applications of MEMS. Mechanical properties governing their design and reliability and the processing technologies used to fabricate them.

**Course Outcomes**

- Use mechanics principles to analyze the mechanical performance of microsystems.
- Be familiar with the tools and processes used in micromachining of microelectromechanical systems (MEMS).
- Use principles of physics to analyze and design MEMS, including sensors and actuators.

EC EN 555 : Optoelectronic Devices. (3:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: ECEn 450 or equivalent or instructor's consent.

DESCRIPTION: Design, operation, and fabrication of modern optoelectronic devices, including photodiodes, photovoltaics, LEDs, and lasers.

**Course Outcomes**

- Use principles of physics to analyze and design the following optoelectronic components – LEDs, lasers, photodiodes, and photovoltaics.
- Be familiar with the tools and processes used in fabricating the following optoelectronic components - LEDs, lasers, photodiodes, and photovoltaics.
- Understand metrics of optoelectronics devices and be able to incorporate them into systems for optimal performance.

EC EN 560 : Electromagnetic Wave Theory. (3:3:0)

PREREQUISITE: EC En 462 or equivalent.

DESCRIPTION: Principles and methods of modern electromagnetic wave theory: anisotropic media, dyadic green functions, Huygen's principle, contour integration methods, asymptotic integration. Applications in radiation and scattering.

**Course Outcomes**

- Ability to analyze propagation in media.
- Ability to use Green's function to model radiation.
- Ability to apply electromagnetic theorems to boundary value problems.

EC EN 562 : Optical Communication Components and Systems. (3:3:0)

PREREQUISITE: EC En 462, 466; or equivalents.

DESCRIPTION: Fiber-optic communication system components and their operating and performance characteristics.

**Course Outcomes**

- Learn the fundamental properties of optical fiber channels, sources and detectors.
- Design an optical fiber system while considering the bandwidth, distance required, and expense.
- Examine a topic of current interest in optical systems and make an oral presentation to the class.
- Become familiar with the modern test and evaluation tools for fiber optic systems, including the OTDR Time Domain Reflectometer (OTDR), Optical Spectrum Analyzer (OSA), and Optical Oscilloscopes for eye diagram analysis.

EC EN 563 : Applied Computational Electromagnetics. (3:3:0)

PREREQUISITE: EC En 462 or equivalent.

DESCRIPTION: Current theory and practice in numerically solving Maxwell's equations for antenna and circuit design and radar-scattering prediction.

**Course Outcomes**

- Ability to implement and apply numerical methods including finite differences, method of moments, and finite element method.

EC EN 564 : Radar and Communication Systems. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: EC En 464 or 485; EC En 360 or 462; or instructor's consent.

DESCRIPTION: Design and performance of radar and communication systems: radar equation ambiguity functions, modulation, signal detection, link budgets, spread spectrum, system design, and performance trade-offs.

**Course Outcomes**

- Understand the basic concepts in modern surveillance radar and satellite telecommunication systems including the radar ambiguity function, modulation, signal detection, link budgets, spread spectrum, and system design.
- Understand design and system performance tradeoffs for such systems.
- Practice applying system performance and tradeoff techniques for the design of radars and satellite telecommunication systems
- Communicate design and analysis concepts.
- Research practical systems.
- Write original reports about practical radar and satellite systems.

EC EN 568 : Microwave Remote Sensing. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Emphasis on space-borne remote sensing of the earth's atmosphere, land, and oceans. Primary methods and applications for both active (radar) and passive (radiometry).

**Course Outcomes**

- Understand design and system performance tradeoffs for microwave sensors.
- Understand and experience applications of remote sensing.
- Practice applying system performance and tradeoff techniques for the design of radars and satellite telecommunication systems.
- Conduct original research in the application of remote sensing.
- Communicate research results.
- Research practical systems.
- Write an original report about a sensor system.

EC EN 576 : Medical Imaging and Image Reconstruction. (3:3.0:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: EC EN 360 & EC EN 370 & EC EN 380

DESCRIPTION: Fundamentals of medical imaging modalities (x-ray, CT, ultrasound, and MRI) from a signals and systems perspective, magnetic resonance physics, medical image reconstruction methods (backprojection, partial-Fourier techniques, parallel imaging, compressed sensing).

**Course Outcomes**

There are no course outcomes available

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Electrical and Computer Engineering Department Home**

**Ira A. Fulton College of Engineering and Technology Home**

**Electrical and Computer Engineering Department Home**

**Majors**

- BS in Computer Engineering
- BS in Electrical Engineering

**Course Information**

- Electrical and Computer Engineering Courses

**Faculty**

# Electrical and Computer Engineering Faculty

Show All
Hide All

## Professors

Archibald, James K.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, University of Washington, 1983
PhD, University of Washington, 1987

Beard, Randal W.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1991
MS, Rensselaer Polytechnic Institute, 1993
MS, Rensselaer Polytechnic Institute, 1994
PhD, Rensselaer Polytechnic Institute, 1995

Comer, David John
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, San Jose State University, 1961
MS, University of California, Berkeley, 1962
PhD, Washington State University, 1966

Hawkins, Aaron R.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, California Institute of Technology, 1994
MS, University of California, Santa Barbara, 1996
PhD, University of California, Santa Barbara, 1998

Hutchings, Brad L.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1984
MS, University of Utah, 1987
PhD, University of Utah, 1992

Jeffs, Brian Dean
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
MS, Brigham Young University, 1982
PhD, University of Southern California, 1989

Jensen, Michael Allen
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990

MS, Brigham Young University, 1991
PhD, University of California, Los Angeles, 1994

Lee, Dah Jye
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, National Taiwan University of Science and Technology, 1984
MS, Texas Tech University, 1987
PhD, Texas Tech University, 1990
MBA, Shenandoah University, 1999

Long, David G.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, Brigham Young University, 1983
PhD, University of Southern California, 1989

Nelson, Brent Edwin
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1981
MS, University of Utah, 1983
PhD, University of Utah, 1984

Nordin, Gregory P.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1984
MS, University of California, Los Angeles, 1986
PhD, University of Southern California, 1992

Rice, Michael
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Louisiana Tech University, 1987
PhD, Georgia Institute of Technology, 1991

Selfridge, Richard H.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, California State University, Sacramento, 1978
MS, University of California, Davis, 1980
PhD, University of California, Davis, 1984

Stirling, Wynn Clair
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1969
MS, University of Utah, 1971
PhD, Stanford University, 1983

Warnick, Karl F.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1994
PhD, Brigham Young University, 1997

Wirthlin, Michael Joseph
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1992
PhD, Brigham Young University, 1997

## Associate Professors

Bangerter, Neal K.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Associate Professor
**DEGREES:** BS, University of California, Berkeley, 1995
MS, Stanford University, 2001
PhD, Stanford University, 2004

Penry, David Aaron

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Associate Professor
**DEGREES:** MS, Case Western Reserve University, 1992
BSE, Case Western Reserve University, 1992
MBA, Ohio State University, 1994
MA, Princeton University, 2002
PhD, Princeton University, 2006

Schultz, Stephen Marshall

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1994
PhD, Georgia Institute of Technology, 1999

Wilde, Doran Kenneth

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1978
MS, Oregon State University, 1994
PhD, Oregon State University, 1995

## Assistant Professors

Mazzeo, Brian A.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Massachusetts Institute of Technology, 2005
PhD, University of Cambridge, 2008

Smalley, Daniel E.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Electrical and Computer Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Massachusetts Institute of Technology, 2006
MEng, Massachusetts Institute of Technology, 2006
MS, Massachusetts Institute of Technology, 2008
PhD, Massachusetts Institute of Technology, 2013

# Engineering and Technology

Alan R. Parkinson, Dean
270 CB, (801) 422-4326

**Ira A. Fulton College of Engineering and Technology Home**

**Engineering and Technology Home**

**Course Information**

- Engineering and Technology Courses

# Engineering and Technology (Eng T)

Show All Course Descriptions
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## Undergraduate Courses

### 100-Level Courses

ENG T 199R : Weidman Center Global Internship. (.5:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Consent of Weidman Center Director.

DESCRIPTION: Provides students international technical work experience under the guidance of an industry supervisor.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

ENG T 231 : Foundations of Global Leadership. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Foundational principles and practices of individual and organizational leadership in a global context from an integrated moral, technical and social perspective. Emphasis on developing integrity, valuing and leveraging diversity, acquiring and applying leadership skills.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Able to define integrity, and demonstrate understanding of how it applies to their lives and how to develop it through practice.
- Able to demonstrate familiarity with the code of ethics that corresponds to their profession.
- Able to describe a procedure for making and implementing ethical decisions and effectively apply the procedure to ethical problems of practical interest.
- Able to understand and use a model to describe their own personality type and/or preferences.
- Able to describe what it means to be self-aware and how self-awareness applies to leadership, ethical behavior and global awareness.
- Able to define and effectively practice key interpersonal skills and indicate how they can be cultivated.
- Able to describe a team development process.
- Able to value the diversity that individuals bring to a team setting and use those skills to improve team performance.
- Able to formulate a strategy and develop a plan, consistent with a vision, to accomplish a team project
- Able to define globalization, put it in an historical context and identify some key positive and negative outcomes attributed to globalization
- Able to develop an appreciation for other cultures and an understanding of how cultural factors and other forms of diversity influence communication, teamwork, and the practice of technical disciplines across the globe.
- Able to demonstrate technical understanding of a few global issues and think critically regarding the wise use of technology relative to these issues.

ENG T 295R : Engineering Math Refresher. (0:3:0)

DESCRIPTION: Review of basic techniques of algebra, trigonometry, differential calculus, integral calculus, and series and sequences in preparation for engineering mathematics, ordinary differential equations, and multivariable calculus.

**Course Outcomes**

There are no course outcomes available

### 400-Level Courses

ENG T 480 : Globalization in Engineering and Technology. (3:3:0)

OFFERED: Study Abroad.

WHEN TAUGHT: Spring

PREREQUISITE: Engineering or technology major enrolled in upper-division major courses; instructor's consent.

DESCRIPTION: Definition of globalization and the driving forces. How globalization is changing the practice of engineering and the

development of technology. Study through classroom and industrial site visits.

**Course Outcomes**

- The students' knowledge of globalization as it relates to the practice of engineering, innovation, manufacturing, and research in their chosen field.
- The students' knowledge of globalization as it affects the environment, international trade and finance, and cultures.
- The students' ability to argue the major points related to globalization (listed in the two points above). In each case, there are multiple views on the subject which they should be familiar with.
- The students' ability to discuss foreign engineers regarding globalization and their companies' activities in the foreign country.

ENG T 497R : Global Engineering Outreach Projects. (.5-3:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Engineering or technology major enrolled in upper-division major courses; instructor's consent.

DESCRIPTION: Humanitarian-based engineering and technology project development involving multi-disciplinary teams.

**Course Outcomes**

- Gain experience in the design process that includes innovative problem solving skills applied to the design and implementation of global projects in developing regions of the world in the context of real needs, constraints, and opportunities.
- Demonstrate an appreciation for global aspects of engineering, including social and technical constraints related to design and the importance of sustainability.
- Demonstrate effective teamwork and leadership skills and an appreciation for other disciplines both within and outside of engineering as they work together on interdisciplinary teams.
- Demonstrate effective oral and written communication skills in the reporting of work, particularly to entities or individuals in countries in which projects are implemented.
- Gain experience in how to be involved in social innovation as they progress through their careers.

## 500-Level Graduate Courses (available to advanced undergraduates)

ENG T 595R : Special Topics in Engineering and Technology. (.5-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Special topics in engineering and technology that relate to current research areas or issues related to industry.

**Course Outcomes**

- Learn and apply concepts and/or prictices in a specialized area.

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**Mechanical Engineering Department Home**

**Majors**

- BS in Mechanical Engineering

**Course Information**

- Mechanical Engineering (Me En) Courses

**Faculty**

# Mechanical Engineering

R. Daniel Maynes, Chair
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http://me.byu.edu

Ira A. Fulton College of Engineering and Technology Advisement Center
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## Admission to Degree Program

The degree program in the Department of Mechanical Engineering carries special enrollment limitations. Please see Professional Program Acceptance below and the college advisement center for specific details.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 of the required 45 credit hours of Mechanical Engineering courses (Me En courses) must be earned in residence on the BYU campus
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Mechanical Engineering** (Program Outcomes)

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Mechanical Engineering
PhD in Mechanical Engineering

For more information see the BYU 2014–2015 Graduate Catalog.

## The Discipline

Mechanical engineers work with concepts, ideas, and products that are primarily mechanical or energy related. Mechanical engineering is a broad discipline that prepares a person to contribute in a wide range of fields such as aerospace, computer graphics, power generation, machine tools, petroleum, agricultural and construction equipment, medicine, government, and all types of transportation. A mechanical engineer may work in research, design, analysis, manufacturing, testing, operations, sales, or management. Engineers use critical problem-solving methods and basic principles of mathematics and science to creatively solve problems.

## Educational Objectives

The Brigham Young University Department of Mechanical Engineering bachelor of science program pursues the following objectives:

1. Teach the fundamental concepts of math, science, and mechanical engineering to produce graduates who demonstrate technical excellence and provide service to their profession, community, family, and church.
2. Instill a desire and ability to learn continuously, both through study and faith, to enable graduates to meet the changing demands of their profession and personal life.
3. Provide practical and open-ended engineering experiences to develop graduates who think independently and demonstrate leadership and creativity.
4. Engage students in activities to produce graduates who communicate and work effectively and ethically with people of diverse backgrounds.

## Program Outcomes

To assure that these objectives are reached, the department has articulated twelve outcomes of the BS program. Each student graduating from this program is expected to have:

1. A basic understanding of fundamental physical phenomena and governing principles.

2. The ability to develop and solve mathematical models of fundamental physical phenomena and apply them to predict the behavior of engineering systems.
3. The ability to use engineering principles to design an innovative system, component, or process to meet desired needs.
4. The expertise to plan and conduct an experimental program and evaluate the results.
5. The ability to use modern engineering tools and techniques in engineering practice.
6. An understanding of manufacturing processes and planning.
7. Effective oral and written communication skills.
8. The ability to work with and lead others to accomplish goals.
9. An appreciation of history, philosophy, literature, science, and the fine arts and how they influence the culture and behavior of societies.
10. Personal behavior demonstrating and practicing high moral and ethical standards.
11. The ability to practice engineering in a global environment.
12. A desire for and commitment to lifelong learning and service.

All courses in the curriculum are designed to help achieve these outcomes.

The curriculum in mechanical engineering is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc. (ABET).

## Career Opportunities

A bachelor of science degree in mechanical engineering provides widely recognized professional training for careers in industry, government, and other areas. Most industrial companies hire some mechanical engineers. Companies that make mechanical or energy-related products may hire mostly mechanical engineers. As a result, many mechanical engineering positions are available worldwide. Mechanical engineers have job opportunities in companies involved in such areas as aircraft and spacecraft design; manufacturing processes; product safety and reliability; solar energy; electronic equipment packaging and cooling; power plant design; jet, train, truck, and automobile engines; environmental protection; artificial intelligence; robotics; medical and hospital equipment; new material development and applications; and technical writing. Increasing numbers of positions utilize foreign language experience.

A graduate in mechanical engineering is prepared for advanced studies in the field as well as in a variety of other disciplines, including law, medicine, and business administration. Perhaps most important to graduates are the problem-solving strategies and thinking processes acquired in the study of mechanical engineering that help one to succeed in any area of endeavor.

## General Information

Any student may choose to major in mechanical engineering and to enroll in all classes in the preprofessional program (items 1 and 2 under BS Mechanical Engineering Major Requirements).

## Professional Program Acceptance

Students must be accepted into the professional program before they may take the professional Me En core or technical electives (items 4 and 5 in major requirements). To apply, students must have completed the following five courses at a college or university with an accredited engineering program (neither AP nor concurrent enrollment credit meet this requirement):

1. Phscs 123.
2. One course (the first college course taken) from the mathematics core (item 2 in the major requirements).
3. Me En 172.
4. CE En 103.
5. Me En 191.

Acceptance is based on the GPA from the courses listed above. The GPA cut-off is determined by fixing the number of students admitted to the program and will vary from year to year. The current limit of students admitted per year is 160 and the GPA cut-off for the past year was 3.40. Both the limit and GPA cut-off are subject to change.

Only one repeat of each course is allowed for purposes of determining professional program acceptance. If a student has taken more than four professional application courses or has repeated any of these courses, only the grades of each of the first four courses taken or the highest grade when a course is retaken will be considered. Transfer students from institutions that do not have accredited engineering programs will be considered for provisional admission for one semester based on transferred courses but will be retained or denied based on four courses taken at BYU. The courses used will be the next four courses on the engineering flow chart following courses 1-4 listed above.

Normal application deadlines are July 1, October 1, and February 1. Applications from transfer students who have been admitted to the university may be considered at other times.

Professional program application forms are available in the major department and also online.

## Academic Standards and Continuance

On gaining acceptance into the professional program, students must maintain a minimum university cumulative grade point average of 2.0. No more than 6 credit hours of grades below C– in major courses (including pre-professional and professional program courses) may be applied toward graduation. A professional program course (a required course not included in pre-professional program) may not be retaken more than once.

**Ira A. Fulton College of Engineering and Technology Home**

**Mechanical Engineering Department Home**

**Majors**

- BS in Mechanical Engineering

**Course Information**

- Mechanical Engineering (Me En) Courses

**Faculty**

# BS in Mechanical Engineering (101.5–102.5 hours*)

Show All Course Descriptions
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*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center or the department office for information regarding requirements for admission to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following basic science core:

BIO 100 : Principles of Biology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Introductory course for general education students.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.
DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.
NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 121 or equivalent. Calculus.
DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: MATH 113; Phscs 121 or equivalent.
DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

**Note:** Students without high school physics should start with Phscs 121.

2. Complete one of the following mathematics core sequences:
   a. MATH 112 : Calculus 1. (4:5:0)
   OFFERED: Honors also.
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 302 : Mathematics for Engineering 1. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Math 113.
DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

MATH 303 : Mathematics for Engineering 2. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MATH 302
DESCRIPTION: ODEs, Laplace transforms, Fourier series, PDEs.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For a more detailed course description, visit Math 303 Wiki.

   b. MATH 112 : Calculus 1. (4:5:0)
   OFFERED: Honors also.
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
RECOMMENDED: Math 290.
DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

: Honors Elementary Linear Algebra. (3:3:1)

**Course Outcomes**

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 313.
DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

MATH 334 : Ordinary Differential Equations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 113 and Math 313.
DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

3. Complete the following preprofessional engineering courses:

CE EN 103 : Engineering Mechanics--Statics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 112; or MATH 111 & MATH 119; or concurrent enrollment.

DESCRIPTION: Concepts of mechanics: force systems in equilibrium, resultants, friction, centroids, utilization of vector algebra, simple trusses, shear and bending moment diagrams, moments of inertia.

**Course Outcomes**

- Be able to manipulate basic engineering units in both the International and US Customary Systems of Units in engineering analysis and be able to convert between the two.
- Be able to perform basic vector operations using standard vector notation.
- Be able to conceptualize and draw a conventional free-body diagram which identifies and applies all known and unknown forces.
- Understand the nature of forces(s) and their manipulation in engineering analysis, including moments, couples, transmissibility and resultants.
- Understand the conditions for equilibrium for both a particle and a rigid body.
- Be able to determine the axial forces in the members of a statically determinant truss.
- Be able to calculate the center of gravity for 2 and 3 dimensional rigid bodies.
- Be able to both calculate and draw diagrams for the internal shear forces and bending moments in straight, statically determinant beams.
- Understand the nature of friction and be able to solve problems involving friction and shear on horizontal and inclined planes.
- Be able to use calculus to compute centroids of lines, areas and volumes.
- Demonstrate competence in basic engineering analysis.

CE EN 203 : Engineering Mechanics--Mechanics of Materials. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CE EN 103

DESCRIPTION: Fundamental concepts of elastic stress and strain, including transformations and stress-strain relations; beam/column theories (axial, flexure, torsion, and shear loads and deformations); shear and bending moment relationships; column stability; and cylindrical and spherical pressure vessels.

**Course Outcomes**

- Students will be able to calculate and transform axial stress (e.g., Mohr's Circle), shear stress, bearing stress, thermal stress, bending stress, and combined stress.
- Students will be able to calculate strain, transform strain (e.g., Mohr's Circle), apply stress-strain relations (e.g., Hooke's Law), and solve statically indeterminate problems.
- Students will be able to analyze deflections due to axial, torsion, bending, and shear loads, and manipulate relations between shear and bending moment.
- Students will be able to design beams and columns to carry specified axial, flexure, and shear loads, and predict their deformation and elastic stability (i.e., buckling).
- Students will be able to predict stresses in pressure vessels.

CE EN 204 : Engineering Mechanic--Dynamics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CE EN 103

DESCRIPTION: Concepts of dynamics applied to particles, systems of particles, rigid bodies, vibration systems, and nonrigid particles systems.

**Course Outcomes**

- 1 (a) Understand the kinematics of particles and be able to perform rectilinear and curvilinear analysis of particle motion described in appropriate coordinate systems.
- 2 (a) Understand Newton's Laws of Motion and be able to write and solve the equations of motion for particles and systems of particles in appropriate coordinate systems.
- 3 (e) Understand the principles of Work and Energy and Impulse and Momentum as they apply to particles and systems of particles and be able to solve problems appropriate thereto.
- 4 (e) Be able to determine the motion of rigid bodies in translation and rotation about a fixed axis and to understand the principles associate with general plane motion.
- 5 (e) Be able to apply the principles of Force and Acceleration, Work and Energy, and Impulse and Momentum to rigid bodies and to solve problems appropriate thereto.
- 6 (e) Understand the basic concepts of one-degree-of-freedom vibration and to solve simiple problems related to such motion.

EC EN 301 : Elements of Electrical Engineering. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PHSCS 220 & MATH 303; or PHSCS 220 & MATH 334

DESCRIPTION: Linear electric circuits, computer organization, and logic circuits for nonmajors.

NOTE: Fee.

**Course Outcomes**

- Understand and apply basic principles of electronic circuits.

ME EN 172 : Engineering Graphics--Principles and Applications. (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Engineering and technology major status.

DESCRIPTION: Comprehensive applications of CAD-based national (ANSI) and international (ISO) graphics

standards, including coordinate and geometric dimensioning and tolerancing practices, manufacturing, and product verification procedures.

**Course Outcomes**

- 1. Understand both surface and solid modeling techniques found in a modern commercial CAD package.
- 2. Create a CAD model of basic machine components and assemblies.
- 3. Design and create CAD models of average to complex mechanical components.
- 4. Create, read and understand engineering drawings composed of multiple views with standard dimensioning and tolerancing nomenclature.
- 5. Create, read and understand engineering drawings that contain geometric dimensioning and tolerancing symbology.
- 6. Understand the approaches and processes used in component and assembly modeling, i.e. top-down and bottom-up design.
- 7. Collaborate with teammates to learn how to apply CAD tools to the modeling projects.
- 8. Learn about design and engineering processes in a global context.

ME EN 191 : New Student Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Topics of special interest to new mechanical engineering majors.
NOTE: Required of all first-semester freshman and transfer students.

**Course Outcomes**

- 1. Students are aware of the 12 basic outcomes of the mechanical engineering program at BYU.
- 2. Gain a perspective of the many career opportunities and specialties in mechanical engineering.
- 3. Explain what it means to be responsible for one's own education and to be an independent learner, including familiarity with the aims of a BYU education.
- 4. Students are aware that there are design processes that engineers follow to meet needs.
- 5. Students can explain that mechanical engineers are involved with fabricating and manufacturing products.
- 6. Learn the importance of developing good communication skills.
- 7. Become aware that working effectively in teams is a vital skill for an engineer.
- 8. Discuss the role of an internship in developing engineering skills and career goals, including how to search for a job using a number of resources.
- 9. Students are aware that mechanical engineering takes place within the context of society and is driven by factors such as market demands, economics, safety, and societal needs.

4. Complete the following professional mechanical engineering core:

ME EN 250 : Science of Engineering Materials. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: CHEM 105
DESCRIPTION: Principles and properties of solid materials and their behavior as applied to engineering.

**Course Outcomes**

- 1. Describe the functional behaviors of the primary classes of materials (metals, ceramics, polymers, composites).
- 2. Predict material properties based on atomic structure and defects.
- 3. Apply the lever rule to binary phase diagrams.
- 4. Model the stress-strain diagram and describe the mechanisms for altering it for the various classes of materials.
- 5. Describe the kinetics of diffusion and the process of nucleation and growth as they affect transformation products.
- 6. Describe common degradation and failure processes for each basic class of materials.
- 7. Select an appropriate material class given functional requirements.

ME EN 282 : Manufacturing Processes. (3:2:3)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: ME EN 250
DESCRIPTION: Common manufacturing processes, including technological limitations and economic considerations. Influence of product design on process selection and manufacturing efficiency.

**Course Outcomes**

- 1. Demonstrate an understanding of the impact of manufacturing capability on society.
- 2. Recognize and develop a familiarity with a variety of manufacturing processes and how they are classified. Demonstrate understanding of the physical phenomena involved in how various families of manufacturing processes work.
- 3. Identify characteristics and capabilities of various manufacturing processes so that recommendations for process selection plans can be made. Recommend process parameters for various manufacturing processes. Identify materials and/or their properties that would be appropriate for successful use with various manufacturing processes.
- 4. Identify cause and effect relationships for various manufacturing process parameters so that inferences from process data can be made to obtain desired process results.
- 5. Make practical design recommendations to improve the manufacturability of component parts based on manufacturing process knowledge.
- 6. Perform various manufacturing processes with real process equipment in order to begin to develop good engineering, judgment about the capability of various processes, and the development of process plans.
- 7. Work successfully in teams on an assigned design and build project.
- 8. Write professional quality engineering reports on manufacturing processes and projects. Communicate professional quality responses to open-ended manufacturing process questions.

ME EN 312 : Fluid Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: ME EN 321; Concurrent enrollment in Me En 363, 373.

DESCRIPTION: Physics and modeling of fluid flow; fluid statics, dimensional analysis, momentum, internal and external viscous flow, compressible flow, and fluid machinery.

**Course Outcomes**

- 1. Understand viscosity as a fluid property and be able to compute shear stress involving Newtonian fluids. Understand the different types of fluids and the phenomena of surface tension and cavitation.
- 2. Understand the variation in pressure, and determine pressure at a point in a static gas or liquid. Be able to compute hydrostatic forces on fully and partially submerged surfaces, and be able to determine the location of the center of pressure.
- 3. Understand field variables and be able to evaluate the local, convective, and total acceleration in flowing fluids. Recognize Lagrangian and Eulerian frames of reference.
- 4. Understand pressure distributions normal to, and parallel to, streamlines in flowing fluids. Be able to appropriately apply Bernoulli's principle to fluid dynamic situations and recognize the limitations of this principle.
- 5. Be able to derive the integral form of the conservation of mass principle from the Reynolds Transport Theorem and appropriately apply it to steady and unsteady flow situations with uniform or two-dimensional velocity distributions. Recognize and be able to utilize the differential form of conservation of mass.
- 6. Be able to derive the integral form of the linear momentum principle from the Reynolds Transport Theorem and apply global force/momentum balances for stationary and constant velocity frames of reference with uniform or two-dimensional velocity distributions. Recognize the Navier-Stokes equations and solve them for simplified viscous flows.
- 7. Be able to determine appropriate dimensionless variables for a given dynamical situation. Understand the usefulness in presenting experimental data using dimensional analysis. Predict prototype analysis based on similitude and understand the pitfalls of modeling.
- 8. Understand the mechanical energy equation and be able to apply it to laminar and turbulent flow with minor and major losses through pipe networks.
- 9. Understand and predict velocity distributions and boundary layer growth for flat plate boundary layers with laminar or turbulent flow. Understand flow separation, be able to predict skin friction and pressure drag for laminar and turbulent flows, and describe methods of drag reduction.

ME EN 321 : Thermodynamics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 113; Concurrent enrollment in Math 303 or 334.

DESCRIPTION: Fundamentals of thermal energy and work; principle of state, conservation of mass, conservation of energy, increase of entropy principle; application to thermal and mechanical processes.

**Course Outcomes**

- 1. Engineering Math – Each student can apply the mathematical principles required to develop and solve mathematical models – consisting of both algebraic and differential equations – that are based on the energy and entropy equations and to evaluate the properties used in these equations.
- 2. Thermodynamic Systems – Each student can select an appropriate system (control mass or control volume) and identify the heat, work and mass flow interactions occurring between the system and its surroundings in order to build thermodynamic models and analyze thermodynamic systems and processes.
- 3. Thermodynamic Properties and State – Each student can use thermodynamic properties and the state postulate in order to fix the state of a thermodynamic system. Each student can distinguish between point functions (thermodynamic properties) and path functions (heat, work and entropy generation) in order to describe thermodynamic processes. Each student can use phase diagrams in order to illustrate isobaric, isometric, isothermal, isentropic, isenthalpic or other thermodynamic processes.
- 4. Obtaining Thermodynamic Property Values – Each student can properly characterize a thermodynamic system as either an ideal gas, an incompressible substance or a saturated liquid-vapor mixture in order to identify appropriate property relationships. Each student can use equations of state, charts or tables in order to obtain values of thermodynamic properties.
- 5. Conservation of Mass and Energy – Each student can implement the principle of conservation of mass and conservation of energy in order to build models of open and closed thermodynamic systems undergoing transient and steady processes.
- 6. Principle of Increasing Entropy - Each student can identify irreversibilities in order to determine whether a process may be approximated as reversible. Each student understands the increase of entropy principle, and can use the entropy equation in order to model open and closed systems undergoing transient and steady processes.
- 7. Classical Analysis of Engineering Devices and Processes – Each student can describe the hardware, the operation, the purpose, and the approximations typically used to build thermodynamic models of common engineering devices and processes. Examples of common engineering devices are turbines, compressors, pumps, nozzles, diffusers, valves and heat exchangers. Examples of common processes are restrained compression, restrained expansion, and the charging and discharging of a tank.
- 8. Each student can list the processes and devices that comprise the ideal Otto, Diesel and Brayton gas power cycles and the ideal Rankine steam power cycle. Each student can build thermodynamic models in order to analyze and evaluate these cycles and to draw conclusions regarding the performance of these cycles.
- 9. Each student can list the processes that comprise the ideal refrigeration cycles and can build thermodynamic models of these cycles in order to analyze, evaluate and draw conclusions regarding their performance.

ME EN 335 : Dynamic System Modeling and Analysis. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: ME EN 363 & ME EN 373 & CE EN 204

DESCRIPTION: Formulating mathematical models for mechanical, electrical, fluid, and combined systems; numerical solution of motion equations; first- and second-order systems, frequency response, and transfer functions.

**Course Outcomes**

- 1. Students should have a knowledge of fundamental systems concepts required to develop lumped element models for basic mechanical systems, including inertia, compliance, dissipation, and power sources, and obtain equations of motion for linear motion and fixed-axis rotation.
- 2. Students should have a knowledge of fundamental systems concepts required to develop lumped element models for basic electrical systems, including inductance, capacitance, resistance, power sources and amplifiers.
- 3. Students should have a knowledge of fundamental systems concepts required to develop lumped element models for basic fluid systems, including inertance, capacitance, resistance, and pumps.
- 4. Students should have a knowledge of fundamental concepts of multi-domain modeling of electromechanical and fluid/mechanical systems and be able to develop lumped element models of these mixed systems.
- 5. Students should know how to place equations of motion into state variable form, and to develop a simulation for basic non linear and linear systems using Matlab or some other simulation software.
- 6. Students should know how to manipulate a system of linear differential equations to obtain transfer functions and poles.
- 7. Students should know how to interpret poles to define natural frequencies, damping ratios, time constants, and the natural response, step response, and impulse response of a system.
- 8. Students should understand the concept of frequency response. They should understand the relationship between transfer functions and frequency response, and should be able to obtain frequency response plots for their system models using Matlab.

ME EN 340 : Heat Transfer. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ME EN 312

DESCRIPTION: Fundamentals of heat transfer; basics of conduction, convection, and radiation; mass transfer by analogy; heat exchangers; computer applications to practical design and analysis problems.

**Course Outcomes**

- 1. Conservation Principles – Each student can apply conservation of mass and energy to a control volume or a control surface in order to build models of heat transfer processes and systems.
- 2. Engineering Math – Each student can apply appropriate mathematical techniques in order to solve models built using the basic concepts and fundamental laws of heat transfer.
- 3. Fundamentals of Conduction - Each student can describe the phenomenological origin of Fourier's law and can use it in conjunction with the principle of conservation of energy in order to develop the general heat diffusion equation. Each student can solve one-dimensional, steady-state problems using the heat diffusion equation and appropriate boundary conditions.
- 4. Extended Surfaces - Each student can implement the fundamentals of conduction in order to analyze extended surfaces. Each student can use fin performance parameters in order to evaluate fins or fin arrays.
- 5. Two-dimensional conduction - Each student can describe the analytical and numerical methods commonly used in order to analyze two-dimensional, steady state heat conduction. Each student can use finite difference methods in order to solve two-dimensional, steady state heat transfer problems.
- 6. Transient Conduction - Each student can implement the lumped capacitance method, one-dimensional analytical solutions and transient finite difference methods in order to analyze transient heat transfer problems.
- 7. Fundamentals of Convection - Each student can describe the physical phenomena associated with convection and use non-dimensional parameters to analyze convection heat transfer. Each student can implement Newton's law of cooling in order to calculate local and global convective heat fluxes.
- 8. Methodology for a Convection Analysis - Each student can use empirical correlations in order to analyze external and internal, forced and free convection problems.
- 9. Fundamentals of Radiation - Each student can describe the physical mechanisms involved in radiation heat transfer. Each student can apply models of these mechanisms to obtain radiative fluxes and radiative properties in order perform energy balance on surfaces.
- 10. Radiative Surface Exchange - Each student can calculate total, hemispherical radiative properties of real surfaces from their spectral, directional counterparts and evaluate the radiative heat exchange between surfaces and in diffuse, gray enclosures.

ME EN 363 : Elementary Instrumentation. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ENG T 231 & MATH 303 & EC EN 301; or ENG T 231 & MATH 314 & EC EN 301; Concurrent enrollment in Engl 316.

DESCRIPTION: Fundamentals of mechanical measuring systems; sensors, signal conditioning, statistical error analysis, dynamic response, standards.

**Course Outcomes**

- 1. Students should have a knowledge of fundamental concepts of measurement including accuracy, precision, bias error, random error, DC offset, static sensitivity (DC gain), etc. Students should be able to calibrate (statically) a measurement system.
- 2. Students should understand the concept of time and frequency response as it applies to measurement systems. Students should understand the fundamentals of first- and second-order systems and should be able to characterize the behavior of such systems through the measurement of the time constant, natural frequency, and damping ratio.
- 3. Students should be familiar with the fundamental theory and techniques of data acquisition and signal conditioning. Students should understand the sampling process, how aliasing can occur, and how to prevent aliasing with analog prefilters. Students should be able to use a Wheatstone bridge to condition signals from variable resistance devices. Students should be able to construct basic signal conditioning circuits using op-amps and electrical components (e.g., voltage divider, amplifier, differential amplifier, low-pass filter).
- 4. Through laboratory exercises and projects, students should gain hands-on familiarity with a variety of transducers, such as strain gages, thermocouples, and optical sensors. Students should understand the governing principles of their operation and how they influence their behavior.
- 5. Students should know basic statistical analysis principles that apply to measurement. Students should be able to apply concepts of infinite statistics to characterize large populations of measurement data. Similarly, they should be able to apply concepts of finite statistics to small samples of measurement data. Students should be able to apply least-squares analysis for curve-fitting purposes.

- 6. Students should be able to perform a basic uncertainty analysis for a measurement system. This includes the ability to perform a design-stage uncertainty analysis for a component of a sensor system, the ability to apply root-sum-of-squares methods to estimate uncertainty for multi-component systems, and the ability to determine how uncertainties are propagated in a calculated result.
- 7. Students should gain experience in documenting experimental work. Students should learn how to write a memo report and a full formal report.

ME EN 372 : Mechanical System Design Fundamentals. (3:2:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CE EN 203 & ME EN 282; Concurrent enrollment in Me En 373.

DESCRIPTION: Static and dynamic stress and failure analysis for mechanical systems.

**Course Outcomes**

- 1. Draw a free body diagram of a structure or machine component. Show the loads and calculate the reactions. Draw shear moment diagrams.
- 2. Calculate stresses in machine components due to combined loadings.
- 3. Estimate the deflection of structural members under combined loading.
- 4. Select an appropriate static failure theory for a brittle or ductile material and apply it to predict failure loads and safety factors for various geometries and loading conditions.
- 5. Analyze the stresses in pressure vessels, press fits, curved beams, bolts, and bolted joints.
- 6. Calculate buckling predictions for statically loaded compression members.
- 7. Construct S-N and Goodman diagrams for cyclically loaded members, calculate mean and alternating stresses and predict safety factors for infinite or finite life.
- 8. Examine failed members and diagnose the cause of failure. Describe the probable loading and governing material behavior.
- 9. Design machine members to prevent static, dynamic or fatigue failure. Integrate several components in a system to meet design requirements.
- 10. Gain experience using commercial FEA software to create models of simple structures and machine components. Solve these models to determine deflections and stresses, and understand how to interpret the results for engineering application.

ME EN 373 : Introduction to Scientific Computing and Computer-Aided Engineering. (3:2:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 113; Concurrent enrollment in Math 302 or 314.

DESCRIPTION: Computer programming for engineers taught in context of solving physical systems using numerical methods. Student will program solutions using the C++ language, spreadsheets, symbolic solvers, etc.

**Course Outcomes**

- 1. Understand the role of numerical solutions in the engineering process of design and analysis. Understand how integers and real numbers are stored inside the computer. Understand the limitations associated with numerical solutions, including accuracy due to approximations and round-off error.
- 2. Find roots of equations using various modern numerical methods.
- 3. Solve linear systems of equations using Gauss elimination, LU decomposition and/or matrix inversion. Understand the concept of matrix condition number.
- 4. Be able to implement basic curve fitting algorithms, including least-squares regression.
- 5. Implement forward and central difference methods for approximating derivatives; estimate round-off and truncation error
- 6. Implement the trapezoidal rule and Simpson's 1/3 rule for numerical integration.
- 7. Solve simple ordinary differential equations (initial value and boundary value problems) using basic numerical techniques.
- 8. Using C , write programs which use control statements and looping constructs, employ 1D and 2D arrays, call functions, and read and write to data files. Understand classes and pointers at a basic level.
- 9. Use commercially available software packages, including Excel and MATLAB, to perform basic numerical tasks (calculate equations, graph data, perform curve-fitting, solve linear systems of equations, and manipulate matrices).
- 10. Use computer programs to solve simple engineering problems, and write technical memos to explain the procedures and results of laboratory exercises.

ME EN 475 : Integrated Product and Process Design 1. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 363 & ME EN 372 & ME EN 373; or EC EN 340 & EC EN 370 & EC EN 380; or ENG T 231 & MFG 340 & MFG 355; Senior standing (fewer than 30 hours remaining in the program) in mechanical engineering, manufacturing engineering technology, industrial design, or related disciplines with instructor's consent.

DESCRIPTION: Comprehensive two-semester design experience from conception to manufacturing planning and prototype. Product development process. Economic and manufacturing considerations. Intellectual property assignment agreement required.

NOTE: MeEn 475 and 476 must be taken in consecutive fall and winter semesters.

**Course Outcomes**

- 1. Understand the six stages of development through which each product passes.
- 2. Understand how the product information (requirement information and design information) evolves through the stages of development.
- 3. Understand how a purposeful network of design activities is used to cause the product information to evolve.
- 4. Understand how acceptance tests are used to ensure the transferability and quality of the product information throughout the stages of development.
- 5. Understand how product development processes can be customized for specific development projects.
- 6. Develop skills in project planning, idea generation, prototyping, developing engineering models, and engineering reporting and presentations.
- 7. Understand how to work within organizational policies to accomplish important goals.
- 8. Demonstrate the ability to use effective team processes, communication, and conflict resolution skills

to enhance synergy on a project team.

ME EN 476 : Integrated Product and Process Design 2. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 363 & ME EN 372 & ME EN 373; or EC EN 340 & EC EN 370 & EC EN 380; or ENG T 231 & MFG 340 & MFG 355; Senior standing (fewer than 30 hours remaining in the program) in mechanical engineering, manufacturing engineering technology, industrial design, or related disciplines with instructor's consent.

DESCRIPTION: Comprehensive two-semester design experience from conception to manufacturing planning and prototype. Product development process. Economic and manufacturing considerations. Intellectual property assignment agreement required.

NOTE: MeEn 475 and 476 must be taken in consecutive fall and winter semesters.

**Course Outcomes**

- 1. Develop skills in product development economics and engineering drawing review and checking.
- 2. Develop and demonstrate basic understanding in at least two Design for X areas, such as Design for Manufacturing and Design for Sustainability.
- 3. Develop and demonstrate basic skills with at least two design tools, such as optimization, design of experiments, and sketching.
- 4. Understand real world applications of development methods from development case studies and product development professionals.
- 5. Demonstrate the ability to use effective team processes, communication, and conflict resolution skills to enhance synergy on a project team.
- 6. Apply the understanding and skills from Me En 475 and the other outcomes from Me En 476 while working with a project sponsor in a team setting to produce desirable and transferable product information, through design, building, and acceptance testing.

5. Complete the following supporting courses:

ENG T 231 : Foundations of Global Leadership. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Foundational principles and practices of individual and organizational leadership in a global context from an integrated moral, technical and social perspective. Emphasis on developing integrity, valuing and leveraging diversity, acquiring and applying leadership skills.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Able to define integrity, and demonstrate understanding of how it applies to their lives and how to develop it through practice.
- Able to demonstrate familiarity with the code of ethics that corresponds to their profession.
- Able to describe a procedure for making and implementing ethical decisions and effectively apply the procedure to ethical problems of practical interest.
- Able to understand and use a model to describe their own personality type and/or preferences.
- Able to describe what it means to be self-aware and how self-awareness applies to leadership, ethical behavior and global awareness.
- Able to define and effectively practice key interpersonal skills and indicate how they can be cultivated.
- Able to describe a team development process.
- Able to value the diversity that individuals bring to a team setting and use those skills to improve team performance.
- Able to formulate a strategy and develop a plan, consistent with a vision, to accomplish a team project
- Able to define globalization, put it in an historical context and identify some key positive and negative outcomes attributed to globalization
- Able to develop an appreciation for other cultures and an understanding of how cultural factors and other forms of diversity influence communication, teamwork, and the practice of technical disciplines across the globe.
- Able to demonstrate technical understanding of a few global issues and think critically regarding the wise use of technology relative to these issues.

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.

- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

6. Complete 15 hours (five courses) of technical electives.

The purpose of these courses is to strengthen the engineering education of the student by a) deepening the student's understanding of engineering and/or science fundamentals, b) helping the student learn to apply engineering fundamentals in specific areas of interest, and/or c) helping the student to develop critical skills related to engineering practice.

The technical electives are normally 400-level or higher mechanical engineering courses, but other courses may be used as long as the following requirements are met:

- At least three courses (9 credit hours) must be in mechanical engineering.
- No courses may be below the 300 level.
- A maximum of 3 credit hours in Me En 497R or other independent project courses may be applied to meet technical elective requirements.
- All courses must be of an acceptable level from mechanical engineering, civil engineering, chemical engineering, computer engineering, electrical engineering, mathematics, statistics, physics, chemistry, or computer science; or be on the approved elective list in the department office. If a student wishes to count a course outside these areas as an elective, approval must be granted *before* the course is taken. Approval is requested by submitting a one-page petition to the department undergraduate committee that lists all of the proposed electives and demonstrates how the proposed exception meets the purposes described above.
- No course used to satisfy other major requirements for graduation may be used as an elective.

- *General Elective Option*

  Complete a total of 15 elective hours from the following:

  1. Complete a minimum of 9 hours from 400- or 500-level mechanical engineering courses.
  2. Complete a maximum of 6 hours of acceptable electives outside of mechanical engineering.

- *Manufacturing Option*

  The Society of Manufacturing Engineers has identified four areas of competency for manufacturing engineering as follows: (1) materials and manufacturing processes; (2) process, assembly and product engineering; (3) manufacturing competitiveness; and (4) manufacturing systems design.

  An option in manufacturing engineering is available. It may be completed by taking the following 15 hours of technical electives:

  1. Complete 3 hours from the following:

     ME EN 585 : Manufacturing Competitiveness: Quality and Productivity. (3:3:0)

     WHEN TAUGHT: Winter Odd Yrs.

     PREREQUISITE: ME EN 282

     DESCRIPTION: Production strategies to improve quality, decrease cost, and increase throughput to create market advantage; effective production management systems; applying quality improvement tools to process data; theory of constraints and lean

production.

**Course Outcomes**

- Understand the essential elements for having a productive, profitable factory.
- Understand the metrics used to quantify the performance of a factory, and be able to assess this performance.
- Learn how important variability is in reducing quality and productivity, and find ways to minimize variability and its effects.
- Learn methods of modeling production systems in order to predict probable performance.
- Understand appropriate use of statistical techniques for identifying special cause and common cause variation in order to respond appropriately.
- Communicate the basis and justification of a production system improvement project in oral and written form.

MFG 532 : Manufacturing Systems. (3:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: Mfg 480 or instructor's consent.

DESCRIPTION: Analyzing lean manufacturing systems. Numerous examples and case studies from industry demonstrating principles of lean production, inventory management, and lean distribution. Project with a local company to gain confidence with these principles in an industrial setting.

**Course Outcomes**

- Students will understand and be able to apply principles of lean manufacturing in a production environment.

2. Complete 3 hours from the following:

ME EN 482 : Manufacturing Systems Analysis and Design. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: MeEn 250, 282; or equivalents.

DESCRIPTION: Analysis, synthesis, and control of processing and assembly operations; mathematical modeling of manufacturing processes; systems integration; applying conservation principles to processing and assembly operations.

**Course Outcomes**

- Students will apply fundamental mathematical models to understand and estimate material behavior in manufacturing processes.
- Students will be able to estimate the force and power (energy/time) requirements to process conventional parts, using modern tools and machines.
- Students will understand the importance of and tools used in electronics manufacturing.
- Students will understand the control processes used in Flexible Manufacturing Centers and Systems.
- Students will be able to select and review technical paper(s) relating to a course subject area, digest relevant course information, and correlate the results with the mathematical models discussed in the course, also rendering good judgment as to whether the paper is useful to modern manufacturing methods.

ME EN 486 : Automation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Determining appropriate levels of manufacturing automation based on economics and productivity. Elements of automation, including sensors, robots, conveyors, and part feeders.

**Course Outcomes**

- Students will understand and apply fundamental approaches to the control of automated production processes and be able to understand the limitations of automation in modern factories.
- Each student will select a topic area in advanced automation and demonstrate current specifications/capabilities knowledge of this area, both to the instructor and to the other class students.
- Students will understand automation methodologies and the components and equipment used to control advanced factory processes through advanced on-line labs.
- Students will design and simulate automation processes using a simulation and control system and thus understand the power of simulation in evaluating potential automation solutions to manufacturing problems.

ME EN 537 : Advanced Mechanisms, Robotics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 437; or equivalent.

DESCRIPTION: Kinematics and dynamics of advanced mechanisms, such as robots, with computer simulation of mechanism motion.

**Course Outcomes**

- Students will learn most common robot applications, terminology, and limitations.
- Students will be exposed to and be able to exercise basic robot design and motion concepts, both mathematically and in practical labs, such as homogeneous transformation

used in forward and inverse kinematics, and robot trajectory generation.
- Students will learn how to use a teach pendant and how to program a robot.
- Students will differentiate between joint space and Cartesian space and the mathematical methods used to move from one space to the other.
- Students will compare the kinematics of emerging parallel mechanisms to those of more conventional serial mechanisms.
- Students will apply robot simulation to preliminary design of robot-centered work-cells.

3. Complete 3 hours from the following:

ME EN 452 : Intermediate Materials. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: ME EN 250 & ME EN 372

DESCRIPTION: Mechanical behavior of engineering materials including metals, plastics, ceramics, and composites.

**Course Outcomes**

- Extract and interpret key features (e.g., Young's modulus, yield strength, tensile strength, and ductility, true stress, true strain) from engineering stress-strain curves.
- Gain a basic understanding of the microstructural basis for properties in crystalline and polymeric materials, and how microstructure may be altered in ways that are advantageous to mechanical design.
- Acquire knowledge of the energetic basis for interaction of dislocations with other dislocations, point defects and precipitate phases, and its exploitation in strain, grain size, solid solution, and precipitate hardening mechanisms.
- Obtain an awareness of the energetic principles of mechanical failure of metals, and its basis in elastic/plastic localization phenomena, and how to protect designs from failure.
- Be able to integrate core competencies 1.-4. to tackle engineering design problems.

ME EN 456 : Composite Material Design. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 250

DESCRIPTION: Macro- and micro-mechanical analysis and design of uni- and multidirectional composite materials.

**Course Outcomes**

- Develop an understanding of the role of constituents in overall response of composite lamina (micromechanics).
- Develop an understanding of how a set of laminae with different orientations affect the overall laminate properties and response (macromechanics).
- Analyze elastic and strength properties, and elastic response, of orthotropic and anisotropic materials having both continuous and discontinuous reinforcements.
- Use Classical Lamination Theory to assess the role of ply orientation on overall axial, bending and twisting elastic deformation of laminates under applied loads.
- Use failure theories for multiaxial loading to determine if a laminate composite will fail for known loading and use this knowledge to design failure resistant structures.

ME EN 477 : Design for Manufacture and Assembly. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MeEn 282, 372; or equivalent.

DESCRIPTION: Design practice for manufacturing considerations. Surface finish, tolerances, GD&T, and inspection and gaging principles. Application of computer-aided tolerancing and inspection.

**Course Outcomes**

- Become familiar with common machining and production processes and their capabilities. Specify appropriate dimensional tolerances and surface finish for given applications based on a knowledge of machine capabilities and standard charts.
- Gain familiarity with manufacturing feature control practice using geometric dimensioning and tolerancing principles. Application of GD&T to assemblies.
- Experience with electronic and computer-based inspection equipment. Understand how functional gages are designed and used for inspection and part acceptance.Understand the role of datums in design, production and inspection.
- Apply statistical tolerancing techniques to model stackup in assemblies. Learn techniques for establishing optimum tolerances for each assembly, based on the processes, geometry and materials.
- Learn how to model process variations in 1-D and 2-D assemblies and predict the effect on critical features, product performance, and quality levels.
- Learn how to account for dimensional, GD&T, and kinematic variations in an assembly model, both statistically and worst case.
- Recognize the competing tolerance requirements between production processes, design performance and overall cost.
- Develop an overall perspective of computer applications in design for manufacturing.

ME EN 558 : Metallurgy. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: ME EN 250; or instructor's consent.

DESCRIPTION: Fundamental principles of physical metallurgy and their application to design.

**Course Outcomes**

- Describe common material characterization techniques and their strengths and limitations.
- Describe the interactions of point and line defects and their effects on mechanical properties.
- Be able to draw, describe and use phase diagrams associated with commonly used engineering materials.
- Describe/model the evolution of microstructure under non-steady state conditions.
- Model non-steady state diffusion in solid materials and predict the difference as a function of time, temperature and species.
- Describe the thermodynamics and prevalence of both homogeneous and heterogeneous nucleation.
- Describe the effect of nucleation and growth kinetics on isothermal transformations.
- Describe the theory behind the different hardening mechanisms of solid materials.

ME EN 584 : Manufacturing Process Machine Design. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: ME EN 372; or equivalent.

DESCRIPTION: Applying machine design principles to manufacturing process machines and tooling; integrating machine elements; precision machine design. Designing and analyzing the effects of loading, combined stresses, and deflections on machine process capability. Sensors applied to process machines.

**Course Outcomes**

- Independently learn about a process to make recommendations for changes in the design of a process machine in order to improve the machine's performance capabilities.
- Make recommendations for use of specialized components for the design and development of manufacturing equipment based on sound analysis and good engineering judgment.
- Identify cause and effect relationships between manufacturing process parameters and the machine capabilities that perform these manufacturing processes.
- Recommend the selection of manufacturing process machines to perform various manufacturing processes.
- Do individual research and learning and synergistically, as part of a team, teach what they have learned to others in a professional manner.

4. Complete 3 additional hours from the manufacturing electives list.
5. Complete 3 additional hours from the mechanical engineering general elective list.

When combined with required courses for all mechanical engineering majors related to manufacturing, namely Me En 250, 282, 475/476, and Stat 201, this option provides a strong foundation in manufacturing engineering.

*Hours include courses that may fulfill university core requirements.

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# Mechanical Engineering (Me En)

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## Undergraduate Courses

### 100-Level Courses

ME EN 172 : Engineering Graphics--Principles and Applications. (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Engineering and technology major status.

DESCRIPTION: Comprehensive applications of CAD-based national (ANSI) and international (ISO) graphics standards, including coordinate and geometric dimensioning and tolerancing practices, manufacturing, and product verification procedures.

**Course Outcomes**

- 1. Understand both surface and solid modeling techniques found in a modern commercial CAD package.
- 2. Create a CAD model of basic machine components and assemblies.
- 3. Design and create CAD models of average to complex mechanical components.
- 4. Create, read and understand engineering drawings composed of multiple views with standard dimensioning and tolerancing nomenclature.
- 5. Create, read and understand engineering drawings that contain geometric dimensioning and tolerancing symbology.
- 6. Understand the approaches and processes used in component and assembly modeling, i.e. top-down and bottom-up design.
- 7. Collaborate with teammates to learn how to apply CAD tools to the modeling projects.
- 8. Learn about design and engineering processes in a global context.

ME EN 191 : New Student Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Topics of special interest to new mechanical engineering majors.

NOTE: Required of all first-semester freshman and transfer students.

**Course Outcomes**

- 1. Students are aware of the 12 basic outcomes of the mechanical engineering program at BYU.
- 2. Gain a perspective of the many career opportunities and specialties in mechanical engineering.
- 3. Explain what it means to be responsible for one's own education and to be an independent learner, including familiarity with the aims of a BYU education.
- 4. Students are aware that there are design processes that engineers follow to meet needs.
- 5. Students can explain that mechanical engineers are involved with fabricating and manufacturing products.
- 6. Learn the importance of developing good communication skills.
- 7. Become aware that working effectively in teams is a vital skill for an engineer.
- 8. Discuss the role of an internship in developing engineering skills and career goals, including how to search for a job using a number of resources.
- 9. Students are aware that mechanical engineering takes place within the context of society and is driven by factors such as market demands, economics, safety, and societal needs.

ME EN 199R : Academic Internship. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Consent of both department chair and cooperative education coordinator.

DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Student acquires professional experiences in the discipline.
- Student demonstrates professional communication skills (report).
- Student demonstrates the ability to use reflective thinking to convert professional experience into academic understanding.

### 200-Level Courses

ME EN 250 : Science of Engineering Materials. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105

DESCRIPTION: Principles and properties of solid materials and their behavior as applied to engineering.

**Course Outcomes**

- 1. Describe the functional behaviors of the primary classes of materials (metals, ceramics, polymers, composites).
- 2. Predict material properties based on atomic structure and defects.
- 3. Apply the lever rule to binary phase diagrams.
- 4. Model the stress-strain diagram and describe the mechanisms for altering it for the various classes of materials.
- 5. Describe the kinetics of diffusion and the process of nucleation and growth as they affect transformation products.
- 6. Describe common degradation and failure processes for each basic class of materials.
- 7. Select an appropriate material class given functional requirements.

ME EN 282 : Manufacturing Processes. (3:2:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: ME EN 250

DESCRIPTION: Common manufacturing processes, including technological limitations and economic considerations. Influence of product design on process selection and manufacturing efficiency.

**Course Outcomes**

- 1. Demonstrate an understanding of the impact of manufacturing capability on society.
- 2. Recognize and develop a familiarity with a variety of manufacturing processes and how they are classified. Demonstrate understanding of the physical phenomena involved in how various families of manufacturing processes work.
- 3. Identify characteristics and capabilities of various manufacturing processes so that recommendations for process selection plans can be made. Recommend process parameters for various manufacturing processes. Identify materials and/or their properties that would be appropriate for successful use with various manufacturing processes.
- 4. Identify cause and effect relationships for various manufacturing process parameters so that inferences from process data can be made to obtain desired process results.
- 5. Make practical design recommendations to improve the manufacturability of component parts based on manufacturing process knowledge.
- 6. Perform various manufacturing processes with real process equipment in order to begin to develop good engineering, judgment about the capability of various processes, and the development of process plans.
- 7. Work successfully in teams on an assigned design and build project.
- 8. Write professional quality engineering reports on manufacturing processes and projects. Communicate professional quality responses to open-ended manufacturing process questions.

### 300-Level Courses

ME EN 312 : Fluid Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: ME EN 321; Concurrent enrollment in Me En 363, 373.

DESCRIPTION: Physics and modeling of fluid flow; fluid statics, dimensional analysis, momentum, internal and external viscous flow, compressible flow, and fluid machinery.

**Course Outcomes**

- 1. Understand viscosity as a fluid property and be able to compute shear stress involving Newtonian fluids. Understand the different types of fluids and the phenomena of surface tension and cavitation.
- 2. Understand the variation in pressure, and determine pressure at a point in a static gas or liquid. Be able to compute hydrostatic forces on fully and partially submerged surfaces, and be able to determine the location of the center of pressure.
- 3. Understand field variables and be able to evaluate the local, convective, and total acceleration in flowing fluids. Recognize Lagrangian and Eulerian frames of reference.
- 4. Understand pressure distributions normal to, and parallel to, streamlines in flowing fluids. Be able to appropriately apply Bernoulli's principle to fluid dynamic situations and recognize the limitations of this principle.
- 5. Be able to derive the integral form of the conservation of mass principle from the Reynolds Transport Theorem and appropriately apply it to steady and unsteady flow situations with uniform or two-dimensional velocity distributions. Recognize and be able to utilize the differential form of conservation of mass.
- 6. Be able to derive the integral form of the linear momentum principle from the Reynolds Transport Theorem and apply global force/momentum balances for stationary and constant velocity frames of reference with uniform or two-dimensional velocity distributions. Recognize the Navier-Stokes equations and solve them for simplified viscous flows.
- 7. Be able to determine appropriate dimensionless variables for a given dynamical situation. Understand the usefulness in presenting experimental data using dimensional analysis. Predict prototype analysis based on similitude and understand the pitfalls of modeling.
- 8. Understand the mechanical energy equation and be able to apply it to laminar and turbulent flow with minor and major losses through pipe networks.
- 9. Understand and predict velocity distributions and boundary layer growth for flat plate boundary layers with laminar or turbulent flow. Understand flow separation, be able to predict skin friction and pressure drag for laminar and turbulent flows, and describe methods of drag reduction.

ME EN 321 : Thermodynamics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 113; Concurrent enrollment in Math 303 or 334.

DESCRIPTION: Fundamentals of thermal energy and work; principle of state, conservation of mass, conservation of energy, increase of entropy principle; application to thermal and mechanical processes.

**Course Outcomes**

- 1. Engineering Math – Each student can apply the mathematical principles required to develop and solve mathematical models – consisting of both algebraic and differential equations – that are based on the energy and entropy equations and to evaluate the properties used in these equations.
- 2. Thermodynamic Systems – Each student can select an appropriate system (control mass or control volume) and identify the heat, work and mass flow interactions occurring between the system and its surroundings in order to build thermodynamic models and analyze thermodynamic systems and processes.
- 3. Thermodynamic Properties and State – Each student can use thermodynamic properties and the state postulate in order to fix the state of a thermodynamic system. Each student can distinguish between point functions (thermodynamic properties) and path functions (heat, work and entropy generation) in order to describe thermodynamic processes. Each student can use phase diagrams in order to illustrate isobaric, isometric, isothermal, isentropic, isenthalpic or other thermodynamic processes.
- 4. Obtaining Thermodynamic Property Values – Each student can properly characterize a thermodynamic system as either an ideal gas, an incompressible substance or a saturated liquid-vapor mixture in order to identify appropriate property relationships. Each student can use equations of state, charts or tables in order to obtain values of thermodynamic properties.
- 5. Conservation of Mass and Energy – Each student can implement the principle of conservation of mass and conservation of energy in order to build models of open and closed thermodynamic systems undergoing transient and steady processes.
- 6. Principle of Increasing Entropy - Each student can identify irreversibilities in order to determine whether a process may be approximated as reversible. Each student understands the increase of entropy principle, and can use the entropy equation in order to model open and closed systems undergoing transient and steady processes.
- 7. Classical Analysis of Engineering Devices and Processes – Each student can describe the hardware, the operation, the purpose, and the approximations typically used to build thermodynamic models of common engineering devices and processes. Examples of common engineering devices are turbines, compressors, pumps, nozzles, diffusers, valves and heat exchangers. Examples of common processes are restrained compression, restrained expansion, and the charging and discharging of a tank.
- 8. Each student can list the processes and devices that comprise the ideal Otto, Diesel and Brayton gas power cycles and the ideal Rankine steam power cycle. Each student can build thermodynamic models in order to analyze and evaluate these cycles and to draw conclusions regarding the performance of these cycles.
- 9. Each student can list the processes that comprise the ideal refrigeration cycles and can build thermodynamic models of these cycles in order to analyze, evaluate and draw conclusions regarding their performance.

ME EN 335 : Dynamic System Modeling and Analysis. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: ME EN 363 & ME EN 373 & CE EN 204

DESCRIPTION: Formulating mathematical models for mechanical, electrical, fluid, and combined systems; numerical solution of motion equations; first- and second-order systems, frequency response, and transfer functions.

**Course Outcomes**

- 1. Students should have a knowledge of fundamental systems concepts required to develop lumped element models for basic mechanical systems, including inertia, compliance, dissipation, and power sources, and obtain equations of motion for linear motion and fixed-axis rotation.
- 2. Students should have a knowledge of fundamental systems concepts required to develop lumped element models for basic electrical systems, including inductance, capacitance, resistance, power sources and amplifiers.
- 3. Students should have a knowledge of fundamental systems concepts required to develop lumped element models for basic fluid systems, including inertance, capacitance, resistance, and pumps.
- 4. Students should have a knowledge of fundamental concepts of multi-domain modeling of electromechanical and fluid/mechanical systems and be able to develop lumped element models of these mixed systems.
- 5. Students should know how to place equations of motion into state variable form, and to develop a simulation for basic non linear and linear systems using Matlab or some other simulation software.
- 6. Students should know how to manipulate a system of linear differential equations to obtain transfer functions and poles.
- 7. Students should know how to interpret poles to define natural frequencies, damping ratios, time constants, and the natural response, step response, and impulse response of a system.
- 8. Students should understand the concept of frequency response. They should understand the relationship between transfer functions and frequency response, and should be able to obtain frequency response plots for their system models using Matlab.

ME EN 340 : Heat Transfer. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ME EN 312

DESCRIPTION: Fundamentals of heat transfer; basics of conduction, convection, and radiation; mass transfer by analogy; heat exchangers; computer applications to practical design and analysis problems.

**Course Outcomes**

- 1. Conservation Principles – Each student can apply conservation of mass and energy to a control volume or a control surface in order to build models of heat transfer processes and systems.
- 2. Engineering Math – Each student can apply appropriate mathematical techniques in order to solve models built using the basic concepts and fundamental laws of heat transfer.
- 3. Fundamentals of Conduction - Each student can describe the phenomenological origin of Fourier's law and can use it in conjunction with the principle of conservation of energy in order to develop the general heat diffusion equation. Each student can solve one-dimensional, steady-state problems using the heat diffusion equation and appropriate boundary conditions.
- 4. Extended Surfaces - Each student can implement the fundamentals of conduction in order to analyze extended surfaces. Each student can use fin performance parameters in order to evaluate fins or fin arrays.
- 5. Two-dimensional conduction - Each student can describe the analytical and numerical methods commonly used in order to analyze two-dimensional, steady state heat conduction. Each student can use finite difference methods in order to solve two-dimensional, steady state heat transfer problems.
- 6. Transient Conduction - Each student can implement the lumped capacitance method, one-dimensional analytical solutions and transient finite difference methods in order to analyze transient heat transfer problems.
- 7. Fundamentals of Convection - Each student can describe the physical phenomena associated with convection and use non-dimensional parameters to analyze convection heat transfer. Each student can implement

Newton's law of cooling in order to calculate local and global convective heat fluxes.
- 8. Methodology for a Convection Analysis - Each student can use empirical correlations in order to analyze external and internal, forced and free convection problems.
- 9. Fundamentals of Radiation - Each student can describe the physical mechanisms involved in radiation heat transfer. Each student can apply models of these mechanisms to obtain radiative fluxes and radiative properties in order perform energy balance on surfaces.
- 10. Radiative Surface Exchange - Each student can calculate total, hemispherical radiative properties of real surfaces from their spectral, directional counterparts and evaluate the radiative heat exchange between surfaces and in diffuse, gray enclosures.

ME EN 363 : Elementary Instrumentation. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ENG T 231 & MATH 303 & EC EN 301; or ENG T 231 & MATH 314 & EC EN 301; Concurrent enrollment in Engl 316.

DESCRIPTION: Fundamentals of mechanical measuring systems; sensors, signal conditioning, statistical error analysis, dynamic response, standards.

**Course Outcomes**

- 1. Students should have a knowledge of fundamental concepts of measurement including accuracy, precision, bias error, random error, DC offset, static sensitivity (DC gain), etc. Students should be able to calibrate (statically) a measurement system.
- 2. Students should understand the concept of time and frequency response as it applies to measurement systems. Students should understand the fundamentals of first- and second-order systems and should be able to characterize the behavior of such systems through the measurement of the time constant, natural frequency, and damping ratio.
- 3. Students should be familiar with the fundamental theory and techniques of data acquisition and signal conditioning. Students should understand the sampling process, how aliasing can occur, and how to prevent aliasing with analog prefilters. Students should be able to use a Wheatstone bridge to condition signals from variable resistance devices. Students should be able to construct basic signal conditioning circuits using op-amps and electrical components (e.g., voltage divider, amplifier, differential amplifier, low-pass filter).
- 4. Through laboratory exercises and projects, students should gain hands-on familiarity with a variety of transducers, such as strain gages, thermocouples, and optical sensors. Students should understand the governing principles of their operation and how they influence their behavior.
- 5. Students should know basic statistical analysis principles that apply to measurement. Students should be able to apply concepts of infinite statistics to characterize large populations of measurement data. Similarly, they should be able to apply concepts of finite statistics to small samples of measurement data. Students should be able to apply least-squares analysis for curve-fitting purposes.
- 6. Students should be able to perform a basic uncertainty analysis for a measurement system. This includes the ability to perform a design-stage uncertainty analysis for a component of a sensor system, the ability to apply root-sum-of-squares methods to estimate uncertainty for multi-component systems, and the ability to determine how uncertainties are propagated in a calculated result.
- 7. Students should gain experience in documenting experimental work. Students should learn how to write a memo report and a full formal report.

ME EN 372 : Mechanical System Design Fundamentals. (3:2:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CE EN 203 & ME EN 282; Concurrent enrollment in Me En 373.

DESCRIPTION: Static and dynamic stress and failure analysis for mechanical systems.

**Course Outcomes**

- 1. Draw a free body diagram of a structure or machine component. Show the loads and calculate the reactions. Draw shear moment diagrams.
- 2. Calculate stresses in machine components due to combined loadings.
- 3. Estimate the deflection of structural members under combined loading.
- 4. Select an appropriate static failure theory for a brittle or ductile material and apply it to predict failure loads and safety factors for various geometries and loading conditions.
- 5. Analyze the stresses in pressure vessels, press fits, curved beams, bolts, and bolted joints.
- 6. Calculate buckling predictions for statically loaded compression members.
- 7. Construct S-N and Goodman diagrams for cyclically loaded members, calculate mean and alternating stresses and predict safety factors for infinite or finite life.
- 8. Examine failed members and diagnose the cause of failure. Describe the probable loading and governing material behavior.
- 9. Design machine members to prevent static, dynamic or fatigue failure. Integrate several components in a system to meet design requirements.
- 10. Gain experience using commercial FEA software to create models of simple structures and machine components. Solve these models to determine deflections and stresses, and understand how to interpret the results for engineering application.

ME EN 373 : Introduction to Scientific Computing and Computer-Aided Engineering. (3:2:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 113; Concurrent enrollment in Math 302 or 314.

DESCRIPTION: Computer programming for engineers taught in context of solving physical systems using numerical methods. Student will program solutions using the C++ language, spreadsheets, symbolic solvers, etc.

**Course Outcomes**

- 1. Understand the role of numerical solutions in the engineering process of design and analysis. Understand how integers and real numbers are stored inside the computer. Understand the limitations associated with numerical solutions, including accuracy due to approximations and round-off error.
- 2. Find roots of equations using various modern numerical methods.
- 3. Solve linear systems of equations using Gauss elimination, LU decomposition and/or matrix inversion. Understand the concept of matrix condition number.
- 4. Be able to implement basic curve fitting algorithms, including least-squares regression.
- 5. Implement forward and central difference methods for approximating derivatives; estimate round-off and truncation error

- 6. Implement the trapezoidal rule and Simpson's 1/3 rule for numerical integration.
- 7. Solve simple ordinary differential equations (initial value and boundary value problems) using basic numerical techniques.
- 8. Using C , write programs which use control statements and looping constructs, employ 1D and 2D arrays, call functions, and read and write to data files. Understand classes and pointers at a basic level.
- 9. Use commercially available software packages, including Excel and MATLAB, to perform basic numerical tasks (calculate equations, graph data, perform curve-fitting, solve linear systems of equations, and manipulate matrices).
- 10. Use computer programs to solve simple engineering problems, and write technical memos to explain the procedures and results of laboratory exercises.

**400-Level Courses**

ME EN 412 : Applications of Fluid Dynamics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 312

DESCRIPTION: One-dimensional compressible flow, shocks, expansions, nozzles; turbomachinery design and performance; pumps, compressors, fans, and turbines; introduction to CFD with applications.

**Course Outcomes**

- Students will be able to apply integral analysis methods, conservation of mass, and linear momentum laws to formulate and solve fluid problems.
- Students will be able to formulate and solve introductory incompressible wave phenomena (e.g., phase speed, group speed, wave spectrum, deep and shallow water, etc.)
- Students will be capable of knowing how to set up solutions to compressible flow problems, and be introduced to the basic solutions.
- Students will understand how surface tension affects fluid flows and how it affects the governing equations as a boundary condition.
- Students will learn about empirical methods to solve lift and drag of external flow fields.
- Students will gain a basic understanding of how lift and drag can be calculated numerically.

ME EN 415 : Applied Aerodynamics and Flight Mechanics. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: ME EN 312

DESCRIPTION: Modern applied aerodynamics, including performance, stability, and control of aerospace vehicles.

**Course Outcomes**

- Aerodynamic design of an airplane.
- Designing an airplane with specific performance requirements.
- Designing an airplane for stable and controlled flight.
- Designing an airplane propulsion system.
- Airplane structural design.

ME EN 422 : Applied Thermodynamics. (3:3:1)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ME EN 321

DESCRIPTION: Applied engineering thermodynamics including air and steam power cycles, thermodynamic relations, and introduction to combustion and equilibrium chemical reactions.

**Course Outcomes**

- Evaluation of work potential using exergy concepts.
- Creation of gas and vapor power cycles.
- Creation of refrigeration cycles.
- Application of thermodynamic property relations.
- Evaluation of problems involving gas mixtures.
- Analysis of thermodynamic problems involving chemical reactions.

ME EN 425 : Internal Combustion Engines. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 321

DESCRIPTION: Fundamental operating characteristics of internal combustion engines, spark and compression ignition. Thermodynamic cycle analysis, performance and emissions characterization, and dynamometer testing on CFR and production engines.

**Course Outcomes**

- A knowledge of internal combustion engine parts and their functionality.
- The ability to calculate industrial standard internal combustion engine performance metrics.
- An understanding of the internal combustion engine cycle and the ability to create and analyze a zero dimensional thermodynamic model.
- Understand the fundamentals of combustion such as flame temperature, flame stoichiometry, and flame speed and how combustion is coupled to engine performance.
- Understand how the major pollutants of internal combustion engines are formed and controlled.

ME EN 426 : Gas Turbine and Jet Engine Design. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 312 & ME EN 321

DESCRIPTION: Design and synthesis of land-based and aircraft gas turbines utilizing fluid flow and thermodynamic fundamentals. Extensive discussion of turbojet, turbofan, and turboprop engines.

**Course Outcomes**

- Apply basic fluid mechanic and thermodynamic principles to understand how gas turbine engines operate.
- Develop ability to analyze and predict the cycle performance of gas turbine engines.
- Learn the components of gas turbine engines and their purpose. Understand how the performance of individual components contributes to the overall performance of the engine.
- Learn how to analyze and predict the performance of individual gas turbine engine components
- Develop confidence in knowledge of gas turbine engine principles for application in academia or industry.

ME EN 431 : (Me En-EC En 483) Design of Control Systems. (4:3:3)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: ME EN 335; or EC EN 380

DESCRIPTION: Classical frequency response and time domain design of control systems. State variable control and computer simulation of control systems.

**Course Outcomes**

- Ability to use the final value theorem to predict steady state behavior.
- Ability to model dynamic systems using differential equations, transfer functions, and state space equations.
- Ability to design feedback systems using frequency domain techniques.
- Ability to design feedback systems using state space techniques.
- Ability to design feedback control systems to meet desired specifications.
- Ability to simulate dynamic systems using Simulink and Matlab.

ME EN 437 : Kinematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CE EN 204

RECOMMENDED: Me En 373.

DESCRIPTION: Relative motion of links in mechanisms; velocities and accelerations of machine parts; rolling contact; cams; synthesis of mechanisms. Includes computer-aided engineering techniques.

**Course Outcomes**

- 1. Determine the position of mechanisms.
- 2. Analyze the velocity and acceleration of mechanisms.
- 3. Calculate the dynamics of mechanisms.
- 4. Synthesize mechanisms to perform specified tasks.
- 5. Analyze the performance of non-linkage mechanisms such as cams and gears.

ME EN 452 : Intermediate Materials. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: ME EN 250 & ME EN 372

DESCRIPTION: Mechanical behavior of engineering materials including metals, plastics, ceramics, and composites.

**Course Outcomes**

- Extract and interpret key features (e.g., Young's modulus, yield strength, tensile strength, and ductility, true stress, true strain) from engineering stress-strain curves.
- Gain a basic understanding of the microstructural basis for properties in crystalline and polymeric materials, and how microstructure may be altered in ways that are advantageous to mechanical design.
- Acquire knowledge of the energetic basis for interaction of dislocations with other dislocations, point defects and precipitate phases, and its exploitation in strain, grain size, solid solution, and precipitate hardening mechanisms.
- Obtain an awareness of the energetic principles of mechanical failure of metals, and its basis in elastic/plastic localization phenomena, and how to protect designs from failure.
- Be able to integrate core competencies 1.-4. to tackle engineering design problems.

ME EN 456 : Composite Material Design. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 250

DESCRIPTION: Macro- and micro-mechanical analysis and design of uni- and multidirectional composite materials.

**Course Outcomes**

- Develop an understanding of the role of constituents in overall response of composite lamina (micromechanics).
- Develop an understanding of how a set of laminae with different orientations affect the overall laminate properties and response (macromechanics).
- Analyze elastic and strength properties, and elastic response, of orthotropic and anisotropic materials having both continuous and discontinuous reinforcements.
- Use Classical Lamination Theory to assess the role of ply orientation on overall axial, bending and twisting elastic deformation of laminates under applied loads.
- Use failure theories for multiaxial loading to determine if a laminate composite will fail for known loading and use this knowledge to design failure resistant structures.

ME EN 471 : Computer-Aided Engineering Applications. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 172 & ME EN 373 & CE EN 204

DESCRIPTION: Application of computer-aided engineering tools to design; 3-D geometry and solid modeling; applying finite element

analysis, kinematic analysis, and other software to engineering analysis.

**Course Outcomes**

- An understanding of Product Lifecycle Management (PLM) methods and techniques for enabling distributed teams to collaborate on a shared design.
- An understanding of the underlying mathematics of topology optimization, its CAx methods, and the role topology optimization plays in conceptual, preliminary and detail product design.
- An understanding of the mathematics of curves, surfaces and solids, and a mastery of both surface and solid modeling techniques found in a modern commercial CAD package.
- The ability to create robust parametric CAD models of mechanical components and assemblies.
- An understanding of the underlying mathematics of Mass Properties, FEA, CFD, animation and motion analysis; their CAx methods, and the role these methods and applications play in preliminary and detail component and assembly design.
- An understanding of the process for preparing CAD models for Rapid Prototyping.
- Experience practicing team based design engineering.
- An understanding of the following global competencies:a. Experience working in or directing a team of ethnic and cultural diversity.b. Understand cultural influences on product design, manufacture and use.c. Understand how cultural differences affect how engineering tasks are performed.

ME EN 472 : Mechanical Systems Design Applications. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 372

DESCRIPTION: Theory, analysis, and design of mechanical systems and components.

**Course Outcomes**

- Students will gain an increased understanding of failure prevention.
- Students will gain an increased understanding of finite element analysis tools.
- Students will develop an understanding of basic machine components.
- Students will gain experience in mechanical design, including creating documentation.

ME EN 475 : Integrated Product and Process Design 1. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 363 & ME EN 372 & ME EN 373; or EC EN 340 & EC EN 370 & EC EN 380; or ENG T 231 & MFG 340 & MFG 355; Senior standing (fewer than 30 hours remaining in the program) in mechanical engineering, manufacturing engineering technology, industrial design, or related disciplines with instructor's consent.

DESCRIPTION: Comprehensive two-semester design experience from conception to manufacturing planning and prototype. Product development process. Economic and manufacturing considerations. Intellectual property assignment agreement required.

NOTE: MeEn 475 and 476 must be taken in consecutive fall and winter semesters.

**Course Outcomes**

- 1. Understand the six stages of development through which each product passes.
- 2. Understand how the product information (requirement information and design information) evolves through the stages of development.
- 3. Understand how a purposeful network of design activities is used to cause the product information to evolve.
- 4. Understand how acceptance tests are used to ensure the transferability and quality of the product information throughout the stages of development.
- 5. Understand how product development processes can be customized for specific development projects.
- 6. Develop skills in project planning, idea generation, prototyping, developing engineering models, and engineering reporting and presentations.
- 7. Understand how to work within organizational policies to accomplish important goals.
- 8. Demonstrate the ability to use effective team processes, communication, and conflict resolution skills to enhance synergy on a project team.

ME EN 476 : Integrated Product and Process Design 2. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 363 & ME EN 372 & ME EN 373; or EC EN 340 & EC EN 370 & EC EN 380; or ENG T 231 & MFG 340 & MFG 355; Senior standing (fewer than 30 hours remaining in the program) in mechanical engineering, manufacturing engineering technology, industrial design, or related disciplines with instructor's consent.

DESCRIPTION: Comprehensive two-semester design experience from conception to manufacturing planning and prototype. Product development process. Economic and manufacturing considerations. Intellectual property assignment agreement required.

NOTE: MeEn 475 and 476 must be taken in consecutive fall and winter semesters.

**Course Outcomes**

- 1. Develop skills in product development economics and engineering drawing review and checking.
- 2. Develop and demonstrate basic understanding in at least two Design for X areas, such as Design for Manufacturing and Design for Sustainability.
- 3. Develop and demonstrate basic skills with at least two design tools, such as optimization, design of experiments, and sketching.
- 4. Understand real world applications of development methods from development case studies and product development professionals.
- 5. Demonstrate the ability to use effective team processes, communication, and conflict resolution skills to enhance synergy on a project team.
- 6. Apply the understanding and skills from Me En 475 and the other outcomes from Me En 476 while working with a project sponsor in a team setting to produce desirable and transferable product information, through design, building, and acceptance testing.

ME EN 477 : Design for Manufacture and Assembly. (3:3:0)

WHEN Winter

TAUGHT:

PREREQUISITE: MeEn 282, 372; or equivalent.

DESCRIPTION: Design practice for manufacturing considerations. Surface finish, tolerances, GD&T, and inspection and gaging principles. Application of computer-aided tolerancing and inspection.

**Course Outcomes**

- Become familiar with common machining and production processes and their capabilities. Specify appropriate dimensional tolerances and surface finish for given applications based on a knowledge of machine capabilities and standard charts.
- Gain familiarity with manufacturing feature control practice using geometric dimensioning and tolerancing principles. Application of GD&T to assemblies.
- Experience with electronic and computer-based inspection equipment. Understand how functional gages are designed and used for inspection and part acceptance.Understand the role of datums in design, production and inspection.
- Apply statistical tolerancing techniques to model stackup in assemblies. Learn techniques for establishing optimum tolerances for each assembly, based on the processes, geometry and materials.
- Learn how to model process variations in 1-D and 2-D assemblies and predict the effect on critical features, product performance, and quality levels.
- Learn how to account for dimensional, GD&T, and kinematic variations in an assembly model, both statistically and worst case.
- Recognize the competing tolerance requirements between production processes, design performance and overall cost.
- Develop an overall perspective of computer applications in design for manufacturing.

ME EN 482 : Manufacturing Systems Analysis and Design. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: MeEn 250, 282; or equivalents.

DESCRIPTION: Analysis, synthesis, and control of processing and assembly operations; mathematical modeling of manufacturing processes; systems integration; applying conservation principles to processing and assembly operations.

**Course Outcomes**

- Students will apply fundamental mathematical models to understand and estimate material behavior in manufacturing processes.
- Students will be able to estimate the force and power (energy/time) requirements to process conventional parts, using modern tools and machines.
- Students will understand the importance of and tools used in electronics manufacturing.
- Students will understand the control processes used in Flexible Manufacturing Centers and Systems.
- Students will be able to select and review technical paper(s) relating to a course subject area, digest relevant course information, and correlate the results with the mathematical models discussed in the course, also rendering good judgment as to whether the paper is useful to modern manufacturing methods.

ME EN 486 : Automation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Determining appropriate levels of manufacturing automation based on economics and productivity. Elements of automation, including sensors, robots, conveyors, and part feeders.

**Course Outcomes**

- Students will understand and apply fundamental approaches to the control of automated production processes and be able to understand the limitations of automation in modern factories.
- Each student will select a topic area in advanced automation and demonstrate current specifications/capabilities knowledge of this area, both to the instructor and to the other class students.
- Students will understand automation methodologies and the components and equipment used to control advanced factory processes through advanced on-line labs.
- Students will design and simulate automation processes using a simulation and control system and thus understand the power of simulation in evaluating potential automation solutions to manufacturing problems.

ME EN 495R : Mentored Learning for Undergraduate Coursework in Mechanical Engineering. (.5-6:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Selected topics in mechanical engineering.

**Course Outcomes**

There are no course outcomes available

ME EN 497R : Mentored Learning for Undergraduate Projects in Mechanical Engineering. (.5-3::)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Independent learning focused on an engineering project.

**Course Outcomes**

There are no course outcomes available

ME EN 499R : Honors Thesis. (.5-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Understand and apply techniques for finding technical papers related to a research topic.
- Analyze and evaluate previous research to identify known and unknown information.
- In conjunction with a faculty member create a research plan that will generate new information or synthesize

existing information in such a way as to make a contribution to the defined topic.
- Perform experimental or investigational research on the topic including evaluation, analysis, and synthesis of the information collected through experimental or investigational research.
- Complete a written thesis documenting the learned information including editorial review by faculty and revisions by the student.
- Defend the written thesis to a committee of faculty by oral presentation and examination.

## 500-Level Graduate Courses (available to advanced undergraduates)

ME EN 500 : (MeEn-CEEn) Design and Materials Applications. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Ce En 321 or Me En 372; Ce En 203; Me En 250; or equivalents.

RECOMMENDED: Me En 452.

DESCRIPTION: Materials selection in design; effects of materials properties, structure and geometry on performance; process selection and property modification techniques; basics of material failure mechanism.

**Course Outcomes**

- Understand how materials selection in design can be based on a variety of materials properties.
- Understand effects of materials structure and properties on design and choices for static, impact, fatigue, elastic, and anelastic behavior.
- Be familiar with important techniques used to modify engineering properties of a broad range of materials, such as metals, polymers, ceramics, composites, and biomaterials.
- Understand the necessary analysis techniques to design for various material failure mechanisms.

ME EN 501 : (MeEn-CEEn) Stress Analysis and Design of Mechanical Structures. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: ME EN 372; or CE EN 321

DESCRIPTION: Stress analysis and deflection of structures; general bending and torsion, with computer applications to mechanical and aerospace structure design.

**Course Outcomes**

- 1. Calculate the deflections of and stress in multi-material beams under force, moment, or temperature loads.
- 2. Understand the principles of stress and strain, including principal stress and strain, in general three-dimensional structures.
- 3. Calculate the deflections and stress in torsion bars of arbitrary cross section.
- 4. Calculate the deflections and stress in beams in unsymmetric bending.

ME EN 503 : (MeEn-CEEn) Plasticity and Fracture. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 250 & CE EN 203

DESCRIPTION: Tensor algebra; stress and deformation tensors; relationships between dislocation slip, yielding, plastic constitutive behavior, and microstructure development; cracks and linear elastic fracture mechanics.

**Course Outcomes**

- Identify and describe the influence of crystal structure and material defects on tensile and fracture properties.
- Describe the effects of a stress concentration as well as its influence on the fracture and fatigue life of a structural member.
- Describe the principles of the Griffith Crack Criteria and its application to brittle materials, and its extension to ductile materials.
- Describe the Failure Design Philosophy and apply it to materials selection in an engineering application.
- Predict the life of a structural member of known material properties given the loading conditions and a known flaw size.
- Describe the impact of various microstructure features on tensile, fracture and fatigue properties.
- Select an appropriate material class given functional requirements, fatigue and fracture.

ME EN 504 : (Me En-CE En) Computer Structural Analysis and Optimization. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 372 & MATH 302; or ME EN 372 & MATH 313; or CE EN 321 & MATH 313

DESCRIPTION: Matrix stiffness method for 1D, 2D, and 3D skeletal structure classes. Implementing the matrix stiffness method as a computer program. Nonlinear second-order structural analysis. Structural optimization techniques including stress-ratio method, gradient-based methods, and genetic algorithms.

**Course Outcomes**

- Construct global and local member stiffness matrices and force vectors for any skeletal class and any distributed loading.
- Construct structure matrices and vectors for both force and support displacement loads exploiting symmetry/antisymmetry and deformation assumptions.
- Construct member displacement vectors and free-body diagrams for any skeletal class.
- Write down the basic organization and calling structure of a structural analysis program, and complete the pseudo-code for structure level routines.
- Derive first/second order equilibrium/compatibility equations, buckling loads/displacements, and structure elastic/geometric stiffness matrices for small trusses and single-member frames.
- Determine the number of FLOPS and perform the calculations for matrix-vector operations including triangularization, backsubstitution, Newton-Raphson iteration, and inverse iteration.
- Determine the number of FLOPS and perform the calculations for stress ratio optimization and exhaustive search, and construct design space plots if possible.
- Determine the number of FLOPS and perform the calculations for finite difference / virtual work sensitivity

analysis, Kuhn-Tucker condition evaluation, and optimality criteria algorithm.
- Determine the number of FLOPS and perform the calculations for genetic algorithms with penalty/segregation fitness, tournament/roulette selection, point/uniform/blend crossover, dynamic mutation, and ranking/scoring/maximin fitness.
- Prepare input for linear analysis, nonlinear pushover analysis, gradient-based size optimization, and genetic-based size/shape/topology optimization programs for plane frames.

ME EN 505 : Applied Engineering Math. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 303; or MATH 334; or equivalent.

DESCRIPTION: Advanced engineering mathematics that builds a foundation for graduate mechanical engineering courses and research. Topics include tensor analysis, vector calculus, and solution methods for partial differential equations.

**Course Outcomes**

- Use of index or tensor notation in mathematical analysis of the equations that govern continuum mechanics.
- Employing separation of variables to the solution of classical (heat, Laplace, and wave equations) PDE's.
- Applying Fourier transforms and series to the solution of PDE's and analysis of data.
- Applying the principle of superposition to PDE's with nonhomogeneities.
- Solution of PDE's in Cartesian and Cylindrical coordinates.

ME EN 506 : (MeEn-CEEn) Continuum Mechanics and Finite Element Analysis. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 372; or CE EN 321; Math 313 or Math 302.

DESCRIPTION: Equilibrium, constitutive, and compatibility equations; closed-form solutions from elasticity; finite element theory, programming, and usage; membrane, axisymmetric, and solid elements. Application to heat transfer, fluid mechanics, and seepage.

**Course Outcomes**

- Derive mass/momentum/energy equilibrium equations and constitutive equations for isotropic Hookean solids and Newtonian fluids, and specialize them to get Navier/Stokes/Laplace equations.
- Calculate stress traction, normal/shear stresses, principal stresses, and stress failure criteria for a given state of stress, and calculate displacements and strains for a given state of deformation.
- Transform equations between expanded, matrix, and indicial notation, and between rectangular and cylindrical coordinates.
- Degenerate 3D elasticity equations for 2D problem classes and Saint-Venant torsion using appropriate assumptions, and derive biharmonic or Laplace equations.
- State the problem class, boundary conditions, and method of solution for classical elasticity problems and seismic wave problems.
- Calculate displacements and stresses from given elasticity closed-form solutions including general solution to I-sections under torsion with or without warping restraint.
- Construct the weighted integral to obtain formulas for element stiffness matrix and force vector given the governing differential equations of a problem class.
- Calculate the system stiffness matrix, force vector, and displacement vector for a particular problem, and calculate element results.
- Construct Lagrange/serendipity/triangle shape functions in terms of natural coordinates, and use isoparametric transformations and Gaussian quadrature to evaluate element stiffness.
- Execute a finite element program and assess results on a patch test and on problems with known closed form solutions.

ME EN 508 : (Me En-CE En) Structural Vibrations. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CE EN 321; or ME EN 372; CE En 321 or Me En 372 or equivalent.

DESCRIPTION: Dynamic analysis of single degree-of-freedom, discrete multi-degree-of-freedom, and continuous systems. Applications include aerospace, civil structures, and mechanical components.

**Course Outcomes**

No outcomes are available at this time.

ME EN 510 : Compressible Fluid Flow. (3:3:1.5)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 312; Me En 312 or equivalent.

DESCRIPTION: One-dimensional analysis of compressible flow with area change, friction, heat transfer, shock waves, and combined effects, including experimental methods.

**Course Outcomes**

- Understand how to start from governing equations and basic principles to solve problems where it is desired to account for compressibility.
- Learn concepts needed to solve and analyze problems that account for compressibility in both internal and external flow applications.
- Understand characteristics of isentropic flow, normal shock waves, oblique shock waves, Prandtl-Meyer flow, Fanno (friction) flow, Rayleigh (heat transfer) flow, and multidimensional flow.
- Discover applications where compressibility is important, how to solve problems, and analyze results.

ME EN 512 : Intermediate Fluid Dynamics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 312; or instructor's consent, Me En 505 previous or concurrent enrollment.

RECOMMENDED: Me En 505 or equivalent.

DESCRIPTION: Fluid transport properties, review of integral analysis, Navier-Stokes equations, exact and similarity solutions, boundary layers, vorticity, jets and wakes.

**Course Outcomes**

- Advanced ability to employ Integral Methods for modeling fluid flow phenomena.
- Be able to derive the Navier-Stokes equations from an advanced understanding of fluid kinematics.
- Understand a range of solutions and methods to analyze the Navier-Stokes equations for both simplified and complex flow fields.
- Be able to model specific fluid flow phenomena such as creeping flows, laminar boundary layers, shear layers, jets, and wakes.

ME EN 521 : Intermediate Thermodynamics. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: ME EN 321

RECOMMENDED: Me En 422.

DESCRIPTION: Review of first and second law analysis; exergy; equations of state and other thermodynamic relations; properties of mixtures and multiphase systems; chemical reactions and equilibrium.

**Course Outcomes**

- Be able to use the energy equation to analyze and evaluate thermodynamic systems. Be able to creatively use the energy equation in engineering applications.
- Be able to use the exergy equation to analyze and evaluate thermodynamic systems. Be able to creatively use the exergy equation in engineering applications.
- Understand how thermodynamic properties are found and be able to apply equations of state to determine properties.
- Understand the principles for determining equilibrium and apply those principles in gas phase and two-phase two component systems.
- Understand and be aware of principles of statistical thermodynamics.

ME EN 522 : Combustion. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: CHEM 105 & ME EN 340 & ME EN 422; or CH EN 373 & CH EN 376

DESCRIPTION: Introduction to first- and second-law ideal gas combustion systems along with elementary models of homogeneous and heterogeneous premixed and/or diffusion flames.

**Course Outcomes**

- Be able to perform thermodynamic evaluations of combustion processes including heat release, heat of formation, temperature, and equilibrium calculations.
- Understand reaction mechanisms and apply calculations involving chemical kinetic reactions.
- Evaluate simple combustion systems using conservation of mass, energy, and heat transfer.
- Understand the physical phenomena of various flame types and how they can be applied to commercially relevant systems.

ME EN 523 : (Me En-CE En) Aircraft Structures. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 304 & CE EN 321; or ME EN 250 & ME EN 372

DESCRIPTION: Requirements, objectives, loads, materials, and tools for design of airframe structures; static behavior of thin-wall structures; durability and damage tolerance; certification and testing. Airframe component team design project.

**Course Outcomes**

- Students will understand and be able to apply industry philosophies and critical criteria that drive the design and govern the certification of aircraft structures.
- Students will be able to analyze the in-plane (compression, shear, stability) and out-of-plane (bending, torsion, transverse shear) behavior (stresses, deflections, margins of safety) of structural elements (beams, columns, thin plates, open and closed sections, etc.) prevalent in aircraft.
- Students will understand important issues required for certification of aircraft structures (regulations, loads, fatigue, damage tolerance).

ME EN 534 : Dynamics of Mechanical Systems. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 335

DESCRIPTION: Hamiltonian and Lagrangian dynamics, generalized coordinates, linear and angular momentum, Euler angles, rigid-body motions, and gyroscopic effects. Theory taught with applications integrated.

**Course Outcomes**

- Describe two- and three-dimensional kinematics of particles and rigid bodies.
- Derive equations of motion of particles and systems of particles using Newton's laws.
- Derive equations of motion of particles and rigid bodies using the method of Lagrange.
- Derive equations of motion of rigid bodies using Newton-Euler methods.
- Develop numerical solutions of equations of motion to simulate the motion of particles and rigid bodies.

ME EN 535 : Mechanical Vibrations. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 335; or equivalent.

DESCRIPTION: Introduction to energy methods for system modeling, eigenvalues and mode shapes, frequency response, and spectral characterization of vibrations.

**Course Outcomes**

- Students will gain an increased ability to analyze and model free and forced single and multi-degree-of-freedom systems.
- Students will gain an increased ability to apply vibration theory to the design of structures, engineering systems, and devices.
- Students will gain experience in analysis and modeling of continuous systems.

ME EN 537 : Advanced Mechanisms, Robotics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 437; or equivalent.

DESCRIPTION: Kinematics and dynamics of advanced mechanisms, such as robots, with computer simulation of mechanism motion.

**Course Outcomes**

- Students will learn most common robot applications, terminology, and limitations.
- Students will be exposed to and be able to exercise basic robot design and motion concepts, both mathematically and in practical labs, such as homogeneous transformation used in forward and inverse kinematics, and robot trajectory generation.
- Students will learn how to use a teach pendant and how to program a robot.
- Students will differentiate between joint space and Cartesian space and the mathematical methods used to move from one space to the other.
- Students will compare the kinematics of emerging parallel mechanisms to those of more conventional serial mechanisms.
- Students will apply robot simulation to preliminary design of robot-centered work-cells.

ME EN 538 : Compliant Mechanisms. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 372; Me En 475 or concurrent enrollment; or instructor's consent.

DESCRIPTION: Design and analysis of compliant mechanisms and compliant structures. Large-deflection analysis/force displacement relationships; mechanisms synthesis.

**Course Outcomes**

- Understand the fundamentals of compliant mechanisms, including flexibility vs. strength and displacement loads vs. force loads.
- Analyze the large, nonlinear deflections of flexible members.
- Analyze, predict and prevent failure of compliant mechanisms.
- Analyze the force-displacement relationships for compliant mechanisms.
- Design compliant mechanisms for specified tasks.

ME EN 540 : Intermediate Heat and Mass Transfer. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 340; or equivalent; concurrent enrollment in Me En 505.

DESCRIPTION: Analytical approaches to conduction, convection, and radiation heat transfer. Introduction to mass transfer.

**Course Outcomes**

- Each student can develop engineering models of multi-dimensional steady and multi-dimensional transient conduction heat transfer problems.
- Each student can develop engineering models of convection heat transfer problems using analytical approaches based on boundary layer theory when possible or based on empirical Nusselt number correlations when analytical solutions are not possible.
- Each student can develop engineering models of radiation surface exchange problems for both gray and spectrally selective surfaces.
- Each student can develop engineering models of mass transfer by analogy with heat transfer.
- Each student can implement advanced engineering mathematical methods to obtain solutions to models of conduction, convection and radiation heat transfer problems and to mass transfer problems.

ME EN 541 : Computational Fluid Dynamics and Heat Transfer. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 312 & ME EN 340; or instructor's consent.

DESCRIPTION: Fluid dynamics and heat transfer analysis by numerical methods. Theory and implementation of finite difference and finite volume methods.

**Course Outcomes**

- Understand the fundamental concepts and techniques used in the numerical analysis of fluid flow and heat transfer.
- Apply computational verification and validation practices for fluid flow and heat transfer codes.
- Solve 1D diffusion and convection-diffusion fluid flow and heat transfer problems using finite difference and control volume methods.
- Understand concepts of control volume methods for pressure-velocity coupling.
- Have a necessary foundation for setting up and analyzing fluid flow and heat transfer problems using commercial codes.
- Understand the basic concept of the turbulence closure problem and how it leads to turbulence models.

ME EN 550 : (Me En-EC En) Microelectromechanical Systems (MEMS). (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: EC EN 450; or ME EN 372; or equivalent.

DESCRIPTION: Design, fabrication, and applications of MEMS. Mechanical properties governing their design and reliability and the processing technologies used to fabricate them.

**Course Outcomes**

- 1. Use mechanics principles to analyze the mechanical performance of microsystems.
- 2. Be familiar with the tools and processes used in micromaching of microelectromechanical systems (MEMS).
- 3. Use principles of physics to analyze and design MEMS, including sensors and actuators.

ME EN 552 : Neuromechanics of Movement. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 335; or instructor's consent.

DESCRIPTION: Biomechanics and neural control of human movement. Dynamics of neuromusculoskeletal system; human-machine interaction; movement disorders adn assistive/rehabilitative technology; current research techniques.

**Course Outcomes**

There are no course outcomes available

ME EN 555 : Introduction to Biomechanics. (3:3:0.25)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 312 & ME EN 372 & MATH 303; or ME EN 312 & ME EN 372 & MATH 334; or equivalent.

RECOMMENDED: Me En-CE En 506.

DESCRIPTION: Mechanics of biological systems. A continuum mechanics-based approach to the structure, function, mechanical response, and active remodeling of hard and soft tissues of the body.

**Course Outcomes**

- Describe the structure, function, mechanical properties, and active remodeling of hard and soft tissues.
- Describe muscle structure, muscle force sharing, passive and active muscle response.
- Compute skeletal dynamics and joint reaction forces during human locomotion.
- Apply finite deformation analysis to compute soft tissue strains based on marker motion.
- Utilize mechanical engineering principles to evaluate the mechanics of physiologic systems in the human body.
- Develop an approach for resolving ethical dilemmas related to biomedical engineering.

ME EN 558 : Metallurgy. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: ME EN 250; or instructor's consent.

DESCRIPTION: Fundamental principles of physical metallurgy and their application to design.

**Course Outcomes**

- Describe common material characterization techniques and their strengths and limitations.
- Describe the interactions of point and line defects and their effects on mechanical properties.
- Be able to draw, describe and use phase diagrams associated with commonly used engineering materials.
- Describe/model the evolution of microstructure under non-steady state conditions.
- Model non-steady state diffusion in solid materials and predict the difference as a function of time, temperature and species.
- Describe the thermodynamics and prevalence of both homogeneous and heterogeneous nucleation.
- Describe the effect of nucleation and growth kinetics on isothermal transformations.
- Describe the theory behind the different hardening mechanisms of solid materials.

ME EN 561 : (Me En-Phscs) Fundamentals of Acoustics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PHSCS 318; or equivalent; Phscs 461 or concurrent enrollment.

RECOMMENDED: Phscs 318, 321; or equivalents.

DESCRIPTION: Vibrating systems, elastic media, mechanical energy, and radiation. Sound generation, transmission, reflection, and reception.

**Course Outcomes**

- Conceptualize and solve problems in fundamental areas of vibroacoustics, including: strings, rods, membranes, plane and spherical waves, reflection and transmission phenomena, radiation of sources, coupling between sources, waveguides, enclosures, and Helmholtz resonators, physics of human hearing, and nonlinear acoustics.
- Acquire and analyze acoustical data for physical understanding.

ME EN 562 : (Me En-Phscs 660) Acoustic Systems. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 561; or instructor's consent.

DESCRIPTION: Analyzing and modeling electro-mechano-acoustic systems. Transducers, calibration, and acoustical measurements. Sound sources, arrays, coupling, radiation, and directivity. Duct acoustics and acoustic filters.

**Course Outcomes**

- Model and analyze electro-mechano-acoustic systems using various theoretical, numerical, and experimental tools.
- Work independently and collaborate with others on problems involving system modeling and analysis, acoustical measurements, analogous circuits, source radiation, source coupling, arrays, the Kirchhoff-Helmholtz integral theorem, self and mutual radiation impedance, transducers, duct acoustics, electro-mechano-acoustic filters, and energy-based acoustics.

- Develop skills and proficiencies in all of these areas and become aware of key resources for further study.
- Become more effective researchers and designers for future work in academics or industry.

ME EN 570 : (Me En-CE En) Computer-Aided Engineering Software Development. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 373; or C programming.

DESCRIPTION: Programming methods for development of engineering software. Data structures, architecture, libraries, and graphical user interfaces, with applications to CAD systems.

**Course Outcomes**

- Ability to develop complex algorithms.
- Ability to convert algorithms into a commonly used computer language.
- Ability to create interactive scientific visualizations of complex data.
- Ability to create graphical user interfaces that facilitate ease of use.

ME EN 574 : Product Development Automation. (3:3:0)

PREREQUISITE: ME EN 476; Me En 475; or equivalents.

DESCRIPTION: Design automation, network modeling of design systems, mass customization, agent-based methods, transnational design systems. Aerospace, automotive, and consumer product applications.

**Course Outcomes**

- Understand the theory and methods for managing all of the engineering data, IP, product knowledge, etc. used to conceive, model, analyze, produce, maintain, and retire or recycle engineered products.
- Understand how to customize commercial PLM tools to either address deficiencies in their current offerings or to incorporate company-proprietary PLM methods and procedures.
- Learn the process of engineering data mining and engineering process improvement through variant product lifecycle analysis.

ME EN 575 : (Me En-CE En) Optimization Techniques in Engineering. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 302; or MATH 313; C, C++, or similar computer language.

DESCRIPTION: Application of computer optimization techniques to constrained engineering design. Theory and application of unconstrained and constrained nonlinear algorithms. Genetic algorithms. Robust design methods.

**Course Outcomes**

- Define and use optimization terminology and concepts, including concepts of analysis space and design space.
- Apply optimization methods to engineering problems, including developing a model, defining an optimization problem, applying optimization methods, exploring the solution and interpreting results.
- Understand and apply unconstrained optimization theory for continuous problems, including the necessary and sufficient conditions and steepest descent, Newton's method, conjugate gradient and quasi-Newton methods. Understand basic theorems of quasi-Newton methods.
- Understand and apply discrete optimization algorithms, including branch and bound, exhaustive search and simulated annealing.
- Develop and apply Genetic algorithms.
- Understand and apply constrained optimization theory for continuous problems, including the Kuhn-Tucker conditions and generalized reduced gradient and sequential quadratic programming methods.
- Apply optimization techniques to determine a robust design.
- Have some familiarity with optimization software.

ME EN 576 : Product Design. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 475; or instructor's consent.

DESCRIPTION: Emerging design methodology and design strategies for complex systems, including decomposition methods and sensitivity analysis. Advanced CAD/CAE/CAM technologies applied to design.

**Course Outcomes**

- Developing and executing a suitable product development process that meets the specific needs of a product's design or the needs of a specific design environment.

ME EN 578 : CAD/Cam Applications. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 471 & ME EN 570

DESCRIPTION: Principles and practices involved in parametric surface and solid modeling, associativity, NC tool path generation, etc. Construction of complete CAD models for design, analysis, and manufacture.

**Course Outcomes**

- Proficiency in Visual Basic/C/C programming applied to engineering problems.
- Master programmatic wireframe, surface and solid modeling techniques through the use of commercial CAD API toolkits, e.g. CATIA or NX.
- Learn and demonstrate programmatic creation and manipulation of analysis models via CAE API toolkits, e.g. HyperMesh, Nastran, ANSYS, Gambit, Fluent, ADAMS, etc
- Use and program Isight to optimize programmatic CAD/CAE applications.
- Understand database structures and how to programmatically create, access, control, etc. the data.
- Develop a proof-of-concept for an industry or research sponsored application.
- Work in collaboration with fellow teammates to accomplish both the learning of the CAx tools and the executing of the industrial project.

ME EN 579 : Global Product Development. (3:3:0)

OFFERED: Study Abroad only.

PREREQUISITE: ME EN 476; Me En 475 or equivalents; senior or graduate status.

DESCRIPTION: Preparing students to be leaders in globally-influenced product development organizations. Includes visits to U.S. and overseas companies and universities.

**Course Outcomes**

- Understand issues associated with a global product development including developing product needs in unfamiliar cultures, managing distributed design teams and manufacturing at remote and/or distributed sites. Appreciate first-hand how global companies approach these issues.
- Understand design strategies in a global environment.
- Appreciate the challenges in managing product development across different countries, cultures and languages, and how companies apply appropriate tools and processes to address these challenges.
- Understand why outsourcing is such a big deal with companies.
- Understand how globalization affects us.
- Understand the design and manufacturing capabilities of other countries and how companies leverage these capabilities (work with, deal with, manage) in a cross cultural team environment.
- Appreciate the integrated nature of business, engineering, law and other disciplines in a global economy.

ME EN 584 : Manufacturing Process Machine Design. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: ME EN 372; or equivalent.

DESCRIPTION: Applying machine design principles to manufacturing process machines and tooling; integrating machine elements; precision machine design. Designing and analyzing the effects of loading, combined stresses, and deflections on machine process capability. Sensors applied to process machines.

**Course Outcomes**

- Independently learn about a process to make recommendations for changes in the design of a process machine in order to improve the machine's performance capabilities.
- Make recommendations for use of specialized components for the design and development of manufacturing equipment based on sound analysis and good engineering judgment.
- Identify cause and effect relationships between manufacturing process parameters and the machine capabilities that perform these manufacturing processes.
- Recommend the selection of manufacturing process machines to perform various manufacturing processes.
- Do individual research and learning and synergistically, as part of a team, teach what they have learned to others in a professional manner.

ME EN 585 : Manufacturing Competitiveness: Quality and Productivity. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: ME EN 282

DESCRIPTION: Production strategies to improve quality, decrease cost, and increase throughput to create market advantage; effective production management systems; applying quality improvement tools to process data; theory of constraints and lean production.

**Course Outcomes**

- Understand the essential elements for having a productive, profitable factory.
- Understand the metrics used to quantify the performance of a factory, and be able to assess this performance.
- Learn how important variability is in reducing quality and productivity, and find ways to minimize variability and its effects.
- Learn methods of modeling production systems in order to predict probable performance.
- Understand appropriate use of statistical techniques for identifying special cause and common cause variation in order to respond appropriately.
- Communicate the basis and justification of a production system improvement project in oral and written form.

ME EN 595R : Special Topics in Mechanical Engineering. (.5-18:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Departmental consent.

**Course Outcomes**

- Students will develop an understanding of a timely topic in mechanical engineering.
- Students will increase their ability to apply engineering principles through design, experimentation, analysis, or other engineering approaches.
- Students will develop technical communication writing skills through writing a report and/or presenting an oral presentation.

: Topics in Mechanical Design.

**Course Outcomes**

: Topics in Materials.

**Course Outcomes**

: Advanced Dynamics.

**Course Outcomes**

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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# Mechanical Engineering Faculty

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## Professors

Blotter, Jonathan D.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1991
MS, Utah State University, 1993
PhD, Virginia Polytechnic Institute and State University, 1996

Howell, Larry L.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1987
MS, Purdue University, 1991
PhD, Purdue University, 1993

Jensen, Charles Gregory

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 1982
PhD, Purdue University, 1993

Magleby, Spencer P.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** MS, Brigham Young University, 1983
BS, Brigham Young University, 1983
PhD, University of Wisconsin, Madison, 1988

Maynes, Daniel

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1992
MS, Utah State University, 1993
PhD, University of Utah, 1997

McLain, Timothy Wayne

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, Brigham Young University, 1987
PhD, Stanford University, 1995

Nelson, Tracy W.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Ohio State University, 1991
MS, Ohio State University, 1993

PhD, Ohio State University, 1998

Parkinson, Alan Roger
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
MS, University of Illinois, Urbana, 1979
PhD, University of Illinois, Urbana, 1982
MBA, Brigham Young University, 2003

Red, Walter Edward
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS/MA, Rice University, 1965
PhD, Arizona State University, 1972

Sorensen, Carl D.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
PhD, Massachusetts Institute of Technology, 1985

Tree, Dale R.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, Purdue University, 1988
PhD, University of Wisconsin, 1992

Webb, Brent W.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, Brigham Young University, 1982
PhD, Purdue University, 1986

## Associate Professors

Bowden, Anton
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1996
PhD, University of Utah, 2003

Bowman, W. Jerry
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1978
MSE, University of Central Florida, 1982
PHD, Air Force Institute of Technology, 1987

Colton, Mark Bryan
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, University of Utah, 1997
MS, University of Utah, 2001
PhD, University of Utah, 2006

Fullwood, David
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BSc, University of York, 1987

MS, University of Utah, 1989
PhD, University of London, 1992
MS, Brigham Young University, 2005

Gorrell, Steven E.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1988
MS, Virginia Tech, 1990
PhD, Iowa State University, 2001

Jensen, Brian

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Brigham Young University, 1998
MS, University of Michigan, 2004
PhD, University of Michigan, 2004

Jones, Matthew R.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1988
MS, University of Illinois, Urbana, 1990
PhD, University of Illinois, Urbana, 1993

Killpack, Marc

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 2007
MS, Georgia Institute of Technology, 2008
MSc, ENSAM, 2009
PhD, Georgia Institute of Technology, 2013

Mattson, Christopher A.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2001
PhD, Rensselaer Polytechnic Institute, 2003

Thomson, Scott L.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2000
PhD, Purdue University, 2004

## Assistant Professors

Charles, Steven K.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Massachusetts Institute of Technology, 2004
PhD, Harvard-MIT, 2008

Crockett, Julie

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, University of Denver, 2002
MS, University of California, San Diego, 2004
PhD, University of California, San Diego, 2007

Homer, Eric

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2006
MS, Brigham Young University, 2006
PhD, Massachusetts Institute of Technology, 2010

Iverson, Brian D.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2002
MS, Purdue University, 2004
PhD, Purdue University, 2008

Truscott, Tadd

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** Mechanical Engineering
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 2003
PhD, Massachusetts Institute of Technology, 2009

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**Technology and Engineering**

# School of Technology

Richard Fry, Director
265 CTB, (801) 422-6300

Ira A. Fulton College of Engineering and Technology Advisement Center
242 CB, (801) 422-4325

## Admission to Degree Program

Each degree program in the School of Technology has specific enrollment requirements. Please see each program's admission requirements for specific details.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Construction and Facilities Management: Construction Management Emphasis** (Program Outcomes)
**BS in Construction and Facilities Management: Facilities Management Emphasis** (Program Outcomes)
**BFA in Industrial Design** (Program Outcomes)
**BS in Information Technology** (Program Outcomes)
**BS in Manufacturing Engineering Technology** (Program Outcomes)
**BS in Technology and Engineering Education** (Program Outcomes)

**Minor in Information Technology**
**Minor in Manufacturing**

Students should see the School of Technology advisor for help or information specific to the undergraduate programs of the school.

## Graduate Programs and Degrees

MS in Technology

For more information see the BYU 2014–2015 Graduate Catalog.

## General Information

### Financial Support Opportunities

In addition to general university scholarships and student employment, the School of Technology offers scholarships, an academic internship program with industry, and a variety of departmental part-time jobs such as research assistant, new-product developer, lab assistant, paper grader, electronics technician, maintenance assistant, computer operator, etc.

### Academic Internships

An industrial experience/internship in the major before graduation is required. Qualified students enroll in an academic internship, which must be approved before the actual experience. A formal report and employer evaluation are required.

### Transfer Credit

When transferring into the school, students must meet with Beverly Harmon, School of Technology advisor, before registering for classes to evaluate their technical courses and to get help in planning their schedule for completing their remaining course work.

### Extracurricular Activities

Students are encouraged to join student chapters of national professional organizations affiliated with their major area of study. Student interaction, leadership, and career awareness are important to engineering and technology studies. All majors are

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encouraged to not only become members and actively participate in these chapters but also to support field trips, guest speakers, banquets, and program activities.

## Professional Program Acceptance

Students must be accepted into the professional program before they may take upper-division courses in construction management, facility and property management, and industrial design. Construction management and industrial design have additional restrictions that apply to major courses. (See the construction management and the industrial design sections of this catalog that follow.) A professional program application (available at http://sot.et.byu.edu/advisement/applications-/-forms ) must be completed and submitted to 250 SNLB.

## Academic Standards and Continuance

On gaining acceptance into the professional program, students must maintain a minimum university cumulative grade point average of 2.0. A professional program course may not be retaken more than once.

## Student Advising

We strongly encourage students to visit with the School of Technology advisor (250 SNLB) at least every year, and preferably every semester, to ensure that they are making appropriate progress in the program and taking courses in the appropriate sequence.

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**Technology and Engineering**

# Technology (Tech)

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## Undergraduate Courses

### 200-Level Courses

TECH 201 : History of Creativity and Innovation in the Arts, Science, and Technology 1. (3:3:0)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Western civilization from Egyptian antiquity to Renaissance from perspective of changes in civilization enabled by technology. Creativity throughout history. How to improve personal creativity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

TECH 202 : History of Creativity and Innovation in the Arts, Science, and Technology 2. (3:3:0)

WHEN TAUGHT: Winter; Summer

DESCRIPTION: Western civilization from Renaissance to present from perspective of changes in civilization enabled by technology. Creativity throughout history. How to improve personal creativity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

TECH 312 : Exploration in Innovation Design Techniques. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Through a series of hands-on experiences, students explore principles, methods, and tools of innovation and design thinking in technology and engineering.

**Course Outcomes**

- Gain better appreciation and understanding of innovation
- Develop an ability to generate new ideas
- Develop innovation skills to develop ideas into products and processes
- Collaborate as a team to complete a project
- Present ideas and work to the class

## Graduate Courses

For 600-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Technology and Engineering**

# Construction and Facilities Management

Kevin Miller, Program Coordinator
230 SNLB, (801) 422-2021

## The Discipline

Construction management focuses on real estate development and construction project management. It requires technical expertise and the ability to work with a wide variety of industry professionals. Construction management offers careers that require abilities in project management, business management, engineering, architecture and an understanding of construction systems.

Facilities management is the development and management of all types of real estate, facilities, and properties from original design ideas through the life-cycle of the property. This emphasis prepares students to manage: green/sustainable facilities, commercial/multi-family properties; owner/occupant relations. Graduates combine leadership, financial, real estate investment, and facilities and construction knowledge.

## Learning Outcomes

- Communication: The ability to effectively communicate orally, graphically and in writing.
- Moral and Ethical Leadership: Promote moral and ethical leadership in the professional environment.
- Design and Pre-Construction: Develop the ability to influence project design and to manage pre-construction activities.
- Project Management: Understand how to control project schedule, cost, quality, and risk.
- Financial and Property Management: The ability to analyze the risk and feasibility of a real estate project throughout its life-cycle.
- Technical and Professional Competency: Understand and manage technical areas such as mechanical, electrical, and structural systems.
- Safety, Security, Sustainability, and Regulatory Compliance: The ability to create programs and processes which ensure safety, security, sustainability, and regulatory compliance.
- Technology and Innovation: The ability to utilize cutting-edge technologies and to find innovative solutions in the global marketplace.
- Analytical Thinking and Problem Solving: Develop analytical thinking and problem solving abilities that promote life-long learning.
- Experiential Learning: Learning through applied industry experiences and service.

## Career Opportunities

The program has had great placement within the construction and facilities industry. Graduates find employment in a variety of construction and facilities-industry-related positions. Typical position titles for the construction emphasis are project engineer, estimator, superintendent, scheduler, general contractor, safety engineer, project manager, project controller, site analyst, etc. Facilities managers are commonly employed by educational institutions, government agencies, manufacturing facilities, health care networks, sports and entertainment entitites, real estate brokerage and property management, and all types of general businesses.

Alumni find they are qualified for employment in all types of construction and facilities management and related industries.

Graduates are prepared to further their education in architecture, business administration, construction management, facility and property management, law, public administration, and real estate.

## General Information

### High School Preparation

Recommended high school courses include construction, CAD, algebra, trigonometry, physics, and all other courses necessary for admittance to BYU.

### Pre-Architecture Program

Brigham Young University does not have an architecture program, but Construction and Facilities Management provides an excellent preparatory program for a master's degree in architecture. Consult with the School of Technology advisor concerning a pre-architecture program.

### Special Notice

Students receiving C– or lower grades in required courses will be placed on department probationary status.

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**Technology and Engineering**

# BS in Construction and Facilities Management: Construction Management Emphasis (90 hours*)

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## Program Requirements | View MAP | View Program Outcomes

1. Complete the following courses:

ACC 200 : Principles of Accounting. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**
- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

CFM 105 : Introduction to Construction and Facilities Management. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction to construction and facilities management including BIM, estimating, scheduling, and construction calculation methods.
NOTE: Fee.

**Course Outcomes**
There are no course outcomes available

CFM 155 : Construction Modeling. (3:2:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: CFM 105
DESCRIPTION: Developing architectural plans using Building Information Modeling; floor, foundation, plot, elevations, sections, and details. Renderings and other advanced modeling techniques.
NOTE: Fee.

**Course Outcomes**
There are no course outcomes available

CFM 210 : Light Structural Systems. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: CFM 105
DESCRIPTION: Light structural construction using wood and metal framing systems.
NOTE: Fee.

**Course Outcomes**
There are no course outcomes available

CFM 241 : Electrical Systems in Construction. (2:2:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Developing a basic understanding of electrical construction and associated codes to effectively communicate and problem solve with electrical contractors and inspect their work.

**Course Outcomes**

There are no course outcomes available

CFM 311 : Quantity Takeoffs. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CFM 210

DESCRIPTION: Compiling, organizing, and analyzing all the items that influence and contribute to total cost of construction projects emphasizing managing quality control procedures and inspection of finish work. Maximizing estimating effectiveness and efficiency through computer integration.

**Course Outcomes**

There are no course outcomes available

CFM 320 : Mechanical Systems. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CFM 210

DESCRIPTION: Basic plumbing and HVAC principles, materials; installation and application methods. Systems sizing and design, heat loss/gain calculations, and payback analysis. Managing the plumbing and HVAC trades.

**Course Outcomes**

There are no course outcomes available

CFM 385 : Construction Contracts and Law. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Contractual obligations defined, including agency, contract interpretation, performance and liability issues, breach and termination, judicial remedy, and arbitration as applied to the construction industry. Overview of municipal zoning ordinances and codes.

**Course Outcomes**

There are no course outcomes available

CFM 412 : Construction Scheduling and Cost Control. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CFM 311

DESCRIPTION: Planning, scheduling, and monitoring construction projects, including development of critical path networks (CPM and PERT), Gannt bar charts, construction cost control, and reporting practices.

**Course Outcomes**

There are no course outcomes available

CFM 415 : Construction Project Management and Control. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Managing and controlling construction projects. Planning, startup procedures, inspections, progress measurements, field reports, change order and submittal processing, equipment management, and project closeout.

**Course Outcomes**

There are no course outcomes available

CFM 426 : Real Estate Principles and Development. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: FIN 201 & CFM 311; or BUS M 201 & CFM 311

DESCRIPTION: Principles of real estate investments, emphasizing mortgage instruments and development of property from raw land to residential and commercial properties.

**Course Outcomes**

There are no course outcomes available

CFM 445 : Construction Company Operations and Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: FIN 201 & CFM 311; or BUS M 201 & CFM 311
DESCRIPTION: Organizing, controlling, and directing operations of construction companies; financial management, budgeting, cash-flow analysis, purchasing and cost control, and business planning.

**Course Outcomes**

There are no course outcomes available

CFM 460 : Sustainability and Regulatory Building Solutions. (3:3:2)

WHEN TAUGHT: Winter
PREREQUISITE: CFM 155 & CFM 311
DESCRIPTION: Regulatory occupancy codes, safety, security planning and managing and analyzing sustainable building practices.

**Course Outcomes**

There are no course outcomes available

ENG T 231 : Foundations of Global Leadership. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Foundational principles and practices of individual and organizational leadership in a global context from an integrated moral, technical and social perspective. Emphasis on developing integrity, valuing and leveraging diversity, acquiring and applying leadership skills.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Able to define integrity, and demonstrate understanding of how it applies to their lives and how to develop it through practice.
- Able to demonstrate familiarity with the code of ethics that corresponds to their profession.
- Able to describe a procedure for making and implementing ethical decisions and effectively apply the procedure to ethical problems of practical interest.
- Able to understand and use a model to describe their own personality type and/or preferences.
- Able to describe what it means to be self-aware and how self-awareness applies to leadership, ethical behavior and global awareness.
- Able to define and effectively practice key interpersonal skills and indicate how they can be cultivated.
- Able to describe a team development process.
- Able to value the diversity that individuals bring to a team setting and use those skills to improve team performance.
- Able to formulate a strategy and develop a plan, consistent with a vision, to accomplish a team project
- Able to define globalization, put it in an historical context and identify some key positive and negative outcomes attributed to globalization
- Able to develop an appreciation for other cultures and an understanding of how cultural factors and other forms of diversity influence communication, teamwork, and the practice of technical disciplines across the globe.
- Able to demonstrate technical understanding of a few global issues and think critically regarding the wise use of technology relative to these issues.

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Acc 200.
DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

MATH 111 : Trigonometry. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 or equivalent.
DESCRIPTION: Circular functions, triangle relationships, identities, inverse trig functions, trigonometric equations, vectors, complex numbers, DeMoivre's theorem.

**Course Outcomes**

- Students should gain familiarity and proficiency with the basic theorems of trigonometry.For more detailed information, visit the Math 111 Wiki page.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments

- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

2. Complete one course from the following:

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.
DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.
NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

3. Complete the following:

CFM 191 : New Construction and Facilities Management Student Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: A seminar for new students in the Construction and Facilities Management major. Construction and Facilities Management lecture series; learning how to join a competition team, clubs, and find employment while an undergraduate.
NOTE: Required first or second semester for students in the construction and facilities management program. Attendance required.

**Course Outcomes**

There are no course outcomes available

4. Complete four enrollments of the following (cannot be taken the same semester as CFM 191 or 491):

CFM 291R : Undergraduate Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

NOTE: Required each semester for undergraduate majors who are not enrolled in 491R. School lecture series attendance required.

**Course Outcomes**

There are no course outcomes available

5. Complete the following during the next-to-last semester before graduation:

CFM 491 : Senior Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Developing best employment opportunities and strategy; interviewing, sales negotiations, resume and letter writing, and salary negotiations. Report on 300 hours of construction-related work experience.

NOTE: College Lecture attendance required.

**Course Outcomes**

There are no course outcomes available

6. Complete the following:

CE EN 113 : Engineering Measurements. (3:2:3)

WHEN TAUGHT: Fall; Spring

RECOMMENDED: Math 111 or knowledge of trigonometry.

DESCRIPTION: Measurement of horizontal and vertical distances and angles to locate engineering projects including profiles, plane and topographical mapping, site layout, and earthwork. Introduction to GIS and mapping for surveying projects.

**Course Outcomes**

- Make order of magnitude estimates, assess reasonableness of solutions, and report appropriate levels of numerical accuracy
- Understand basic coordinate geometry functions and how they are used in surveying to reduce field measurements to useable quantities for design and analysis
- Make accurate horizontal and vertical angle and horizontal and vertical distance measurements
- Operate a total station and make plans for their use in engineering projects
- Close a horizontal traverse by computing distances, azimuths, bearings, accuracy, latitudes and departures and their accompanying adjustments to produce accurate coordinate locations
- Operate Global Positioning System (GPS) devices for mapping purposes
- Understand the concepts between geographic and projected coordinate systems and the relationship of locally surveyed information to these global systems
- Use basic functions of a Geographic Information System (GIS) to develop appropriately scaled and referenced maps of their surveyed data
- Take measurements for and develop a topographic map
- Design and layout horizontal and vertical alignments of highways

CFM 217 : Concrete and Job-Site Layout. (3:2:3)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Managing the quality, methods, and safety aspects of concrete and masonry construction.

**Course Outcomes**

There are no course outcomes available

CFM 302 : Structures and Strength of Materials Fundamentals. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHSCS 105

DESCRIPTION: Structural mechanics and strength of materials for soils, woods, concrete, and steel applied to practical construction situations.

**Course Outcomes**

There are no course outcomes available

CFM 335 : Construction Equipment and Soils Mechanics. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Basic soil mechanics and subsurface construction theory and practice for foundations of building and engineered facilities. Underpinning, piling, dry and wet excavating, dewatering, cofferdams, caissons, and spread and strip foundations. Lecture, field trips.

**Course Outcomes**

There are no course outcomes available

CFM 345 : Construction Safety Management. (2:2:0)

WHEN TAUGHT: Fall

DESCRIPTION: Safety requirements and responsibilities in construction; cost and impact of accidents; accident investigation; safety inspection; hazards analysis; substance abuse; record keeping.

**Course Outcomes**

There are no course outcomes available

CFM 411 : Pre-Construction Services. (4:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CFM 155 & CFM 210 & CFM 217

DESCRIPTION: Managing preconstruction services including: Building Information Modeling (BIM), competitive bidding strategies, bid analysis, document management, site work, quantity takeoff, and cost estimation.

**Course Outcomes**

There are no course outcomes available

CFM 425 : Construction Accounting. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ACC 200

DESCRIPTION: Cost and managerial accounting topics for construction companies, including break-even analysis, ratio analysis, capital budgeting, job cost systems, master budgets pricing and decision-making, allocating costs.

**Course Outcomes**

No outcomes are available at this time.

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: High school algebra and trigonometry.

RECOMMENDED: Concurrent enrollment in Phscs 107.

DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

7. Complete one of the following:

**Either:**

CFM 416R : Capstone 1. (1:0:1)

PREREQUISITE: CE EN 113 & CFM 241 & CFM 311

DESCRIPTION: Preparation for competition and international capstone projects. Topics include presentation and problem solving skills, business strategy, assessment, and SWAT analysis principles.

**Course Outcomes**

There are no course outcomes available

CFM 417R : Capstone 2 - Competition. (1:0:1)

WHEN TAUGHT: Winter

PREREQUISITE: CFM 416R

DESCRIPTION: Final preparations for student competitions.

**Course Outcomes**

There are no course outcomes available

**Or:**

CFM 416R : Capstone 1. (1:0:1)

PREREQUISITE: CE EN 113 & CFM 241 & CFM 311

DESCRIPTION: Preparation for competition and international capstone projects. Topics include presentation and problem solving skills, business strategy, assessment, and SWAT analysis principles.

**Course Outcomes**

There are no course outcomes available

CFM 418R : Capstone 2 - International. (1:0:1)

PREREQUISITE: CFM 416R

DESCRIPTION: The culmination and application of core construction management curriculum. Project teams design, analyze, manage, and construct an international project.

**Course Outcomes**

There are no course outcomes available

8. Complete one of the following:

CFM 350 : International Construction Practices. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CFM 105

DESCRIPTION: Interacting with international construction professional, including construction terminology, plan reading, metric measurements, estimating, scheduling, and project management practices.

**Course Outcomes**

No outcomes are available at this time.

TMA 150 : Public Speaking. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Principles and methods of public speaking; speaking experiences.

**Course Outcomes**

- Develop analytical listening and observation skills.
- Know how to speak publicly so your audience will really listen and understand.
- Construct and deliver effective extemporaneous public speeches.
- Manage speech anxiety and effective use nonverbal communication to inform, persuade, enlighten, and impact your audience.
- Be able to produce and employ effective visual aids in your presentations.

9. Students in the Construction and Facilities Management program must attend BYU during the spring or summer term, taking two required CFM courses.
10. Students must complete 300 hours of preapproved construction/facilites-related work after declaring the major, and must submit a report during the CFM 491 class.
11. Complete department packet and exit interview.

*Hours include courses that may fulfill university core requirements.

## Show all Construction and Facilities Management (CFM) Courses

**Ira A. Fulton College of Engineering and Technology Home**

**School of Technology Home**

- Technology (Tech) Courses

**Construction and Facilities Management**

Majors

BS in Construction and Facilities Management

Emphases
- Construction Management
- Facilities Management

Course Information
- Construction and Facilties Management (CFM) Courses

**Industrial Design**

Majors
- BFA in Industrial Design

Course Information
- Industrial Design (InDes) Courses

**Information Technology**

Majors
- BS in Information Technology

Minors
- Information Technology

Course Information
- Information Technology (IT) Courses

**Manufacturing Engineering Technology**

Majors
- BS in Manufacturing Engineering Technology

Minors
- Manufacturing

Course Information
- Manufacturing Engineering Technology (Mfg) Courses

**Technology and Engineering**

# BS in Construction and Facilities Management: Facilities Management Emphasis (86 hours*)

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## Program Requirements | View MAP | View Program Outcomes

1. Complete the following courses:

ACC 200 : Principles of Accounting. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**
- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

CFM 105 : Introduction to Construction and Facilities Management. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction to construction and facilities management including BIM, estimating, scheduling, and construction calculation methods.
NOTE: Fee.

**Course Outcomes**
There are no course outcomes available

CFM 155 : Construction Modeling. (3:2:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: CFM 105
DESCRIPTION: Developing architectural plans using Building Information Modeling; floor, foundation, plot, elevations, sections, and details. Renderings and other advanced modeling techniques.
NOTE: Fee.

**Course Outcomes**
There are no course outcomes available

CFM 210 : Light Structural Systems. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: CFM 105
DESCRIPTION: Light structural construction using wood and metal framing systems.
NOTE: Fee.

**Course Outcomes**
There are no course outcomes available

CFM 241 : Electrical Systems in Construction. (2:2:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Developing a basic understanding of electrical construction and associated codes to effectively communicate and problem solve with electrical contractors and inspect their work.

**Course Outcomes**

There are no course outcomes available

CFM 311 : Quantity Takeoffs. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CFM 210

DESCRIPTION: Compiling, organizing, and analyzing all the items that influence and contribute to total cost of construction projects emphasizing managing quality control procedures and inspection of finish work. Maximizing estimating effectiveness and efficiency through computer integration.

**Course Outcomes**

There are no course outcomes available

CFM 320 : Mechanical Systems. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CFM 210

DESCRIPTION: Basic plumbing and HVAC principles, materials; installation and application methods. Systems sizing and design, heat loss/gain calculations, and payback analysis. Managing the plumbing and HVAC trades.

**Course Outcomes**

There are no course outcomes available

CFM 385 : Construction Contracts and Law. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Contractual obligations defined, including agency, contract interpretation, performance and liability issues, breach and termination, judicial remedy, and arbitration as applied to the construction industry. Overview of municipal zoning ordinances and codes.

**Course Outcomes**

There are no course outcomes available

CFM 412 : Construction Scheduling and Cost Control. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CFM 311

DESCRIPTION: Planning, scheduling, and monitoring construction projects, including development of critical path networks (CPM and PERT), Gannt bar charts, construction cost control, and reporting practices.

**Course Outcomes**

There are no course outcomes available

CFM 415 : Construction Project Management and Control. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Managing and controlling construction projects. Planning, startup procedures, inspections, progress measurements, field reports, change order and submittal processing, equipment management, and project closeout.

**Course Outcomes**

There are no course outcomes available

CFM 426 : Real Estate Principles and Development. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: FIN 201 & CFM 311; or BUS M 201 & CFM 311

DESCRIPTION: Principles of real estate investments, emphasizing mortgage instruments and development of property from raw land to residential and commercial properties.

**Course Outcomes**

There are no course outcomes available

CFM 445 : Construction Company Operations and Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: FIN 201 & CFM 311; or BUS M 201 & CFM 311
DESCRIPTION: Organizing, controlling, and directing operations of construction companies; financial management, budgeting, cash-flow analysis, purchasing and cost control, and business planning.

**Course Outcomes**

There are no course outcomes available

CFM 460 : Sustainability and Regulatory Building Solutions. (3:3:2)

WHEN TAUGHT: Winter
PREREQUISITE: CFM 155 & CFM 311
DESCRIPTION: Regulatory occupancy codes, safety, security planning and managing and analyzing sustainable building practices.

**Course Outcomes**

There are no course outcomes available

ENG T 231 : Foundations of Global Leadership. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Foundational principles and practices of individual and organizational leadership in a global context from an integrated moral, technical and social perspective. Emphasis on developing integrity, valuing and leveraging diversity, acquiring and applying leadership skills.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Able to define integrity, and demonstrate understanding of how it applies to their lives and how to develop it through practice.
- Able to demonstrate familiarity with the code of ethics that corresponds to their profession.
- Able to describe a procedure for making and implementing ethical decisions and effectively apply the procedure to ethical problems of practical interest.
- Able to understand and use a model to describe their own personality type and/or preferences.
- Able to describe what it means to be self-aware and how self-awareness applies to leadership, ethical behavior and global awareness.
- Able to define and effectively practice key interpersonal skills and indicate how they can be cultivated.
- Able to describe a team development process.
- Able to value the diversity that individuals bring to a team setting and use those skills to improve team performance.
- Able to formulate a strategy and develop a plan, consistent with a vision, to accomplish a team project
- Able to define globalization, put it in an historical context and identify some key positive and negative outcomes attributed to globalization
- Able to develop an appreciation for other cultures and an understanding of how cultural factors and other forms of diversity influence communication, teamwork, and the practice of technical disciplines across the globe.
- Able to demonstrate technical understanding of a few global issues and think critically regarding the wise use of technology relative to these issues.

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Acc 200.
DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

MATH 111 : Trigonometry. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 or equivalent.
DESCRIPTION: Circular functions, triangle relationships, identities, inverse trig functions, trigonometric equations, vectors, complex numbers, DeMoivre's theorem.

**Course Outcomes**

- Students should gain familiarity and proficiency with the basic theorems of trigonometry.For more detailed information, visit the Math 111 Wiki page.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments

- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

2. Complete one course from the following:

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.
DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.
NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

3. Complete the following:

CFM 191 : New Construction and Facilities Management Student Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: A seminar for new students in the Construction and Facilities Management major. Construction and Facilities Management lecture series; learning how to join a competition team, clubs, and find employment while an undergraduate.
NOTE: Required first or second semester for students in the construction and facilities management program. Attendance required.

**Course Outcomes**

There are no course outcomes available

4. Complete four enrollments of the following (cannot be taken the same semester as CFM 191 or 491):

CFM 291R : Undergraduate Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

NOTE: Required each semester for undergraduate majors who are not enrolled in 491R. School lecture series attendance required.

**Course Outcomes**

There are no course outcomes available

5. Complete the following during the next-to-last semester before graduation:

CFM 491 : Senior Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Developing best employment opportunities and strategy; interviewing, sales negotiations, resume and letter writing, and salary negotiations. Report on 300 hours of construction-related work experience.

NOTE: College Lecture attendance required.

**Course Outcomes**

There are no course outcomes available

6. Complete the following:

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

CFM 110 : Fundamentals of Facility and Property Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of the profession of facility and property managaement, including space regulations, finance, project management, and other current practices.

**Course Outcomes**

There are no course outcomes available

CFM 200 : Healthcare Construction and Facility Engineering. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CFM 110

DESCRIPTION: Hospital facility engineering management focusing on Joint-Commission compliance including infection control, planning, design and construction, life safety, emergency management, and environment of care.

**Course Outcomes**

There are no course outcomes available

CFM 330 : Advanced Mechanical, Electrical, and Plumbing Systems. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: CFM 241 & CFM 320

DESCRIPTION: Understanding and managing large MEP systems; utility infrastructure planning and development, performing system assessments; performing energy, sustainability, and retro-commissioning cost-benefit analysis; understanding system outputs, metering, and costs; code compliance and problem solving.

**Course Outcomes**

There are no course outcomes available

CFM 340 : Operations and Maintenance. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CFM 330

DESCRIPTION: Acquisition, operation, maintenance, and disposal of building systems, structures, permanent interiors, furniture, and equipment; grounds and other exterior elements.

**Course Outcomes**

There are no course outcomes available

CFM 420 : Commercial Real Estate Management. (3:3:0)
PREREQUISITE: CFM 110 & CFM 426
DESCRIPTION: Fundamentals of commercial real estate investment, understanding market influences, contracts and property portfolio management.

**Course Outcomes**
There are no course outcomes available

ORG B 327 : Human Resource Management. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Functions of human resource management: employee selection, wage and salary administration, training and development, employee relations, and human resource planning.

**Course Outcomes**
- Discuss the purpose, roles, frameworks, and activities of HRM within various types of organizations.
- Explain important strategies and methods of effective recruitment, selection, and retention.
- Discuss the primary purposes, criteria, approaches, advantages and disadvantages, issues, and evaluation of performance management.

PWS 103 : Residential Landscape Design. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Design and composition as applied to development of residential grounds.

**Course Outcomes**
- Design residential landscapes that are both funtional and beautiful
- Make better decisions when purchasing plants and landscape construction materials
- Discuss issues and challenges dealing with landscape planning and maintenance.
- Enjoy nature more
- Explain professional opportunities related to landscape design.

7. Complete two credit hours of the following:
   CFM 199R : Technical Internship. (.5-3:0:0)
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: Cooperative education and related technical on-the-job work experience.

   **Course Outcomes**
   There are no course outcomes available

8. Complete three credit hours of the following:
   CFM 399R : Capstone Internship. (1.5-3:0:0)
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   PREREQUISITE: CFM 110; instructor's consent.
   DESCRIPTION: Cooperative education and related facility and property management on-the-job work experience. Project report required for IFMA Facility Management Professional (FMP) designation.

   **Course Outcomes**
   There are no course outcomes available

9. Students in the Construction and Facilities Management program must attend BYU during the spring or summer term, taking two required CFM courses.
10. Students must complete 300 hours of preapproved construction/facilites-related work after declaring the major, and must submit a report during the CFM 491 class.
11. Complete department packet and exit interview.

*Hours include courses that may fulfill university core requirements.

## Show all Construction and Facilities Management (CFM) Courses

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**Construction and Facilities Management**

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**Information Technology**

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- BS in Information Technology

Minors
- Information Technology

Course Information
- Information Technology (IT) Courses

**Manufacturing Engineering Technology**

Majors
- BS in Manufacturing Engineering Technology

Minors
- Manufacturing

Course Information
- Manufacturing Engineering Technology (Mfg) Courses

**Technology and Engineering**

# Construction and Facilities Management (CFM)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

CFM 105 : Introduction to Construction and Facilities Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to construction and facilities management including BIM, estimating, scheduling, and construction calculation methods.

NOTE: Fee.

**Course Outcomes**

There are no course outcomes available

CFM 110 : Fundamentals of Facility and Property Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of the profession of facility and property managaement, including space regulations, finance, project management, and other current practices.

**Course Outcomes**

There are no course outcomes available

CFM 155 : Construction Modeling. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CFM 105

DESCRIPTION: Developing architectural plans using Building Information Modeling; floor, foundation, plot, elevations, sections, and details. Renderings and other advanced modeling techniques.

NOTE: Fee.

**Course Outcomes**

There are no course outcomes available

CFM 191 : New Construction and Facilities Management Student Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: A seminar for new students in the Construction and Facilities Management major. Construction and Facilities Management lecture series; learning how to join a competition team, clubs, and find employment while an undergraduate.

NOTE: Required first or second semester for students in the construction and facilities management program. Attendance required.

**Course Outcomes**

There are no course outcomes available

CFM 199R : Technical Internship. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Cooperative education and related technical on-the-job work experience.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

**Education**

Majors

- BS in Technology and Engineering Education

Course Information

- Technology and Engineering Education (TEE) Courses

**Faculty**

CFM 200 : Healthcare Construction and Facility Engineering. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: CFM 110
DESCRIPTION: Hospital facility engineering management focusing on Joint-Commission compliance including infection control, planning, design and construction, life safety, emergency management, and environment of care.

**Course Outcomes**

There are no course outcomes available

CFM 210 : Light Structural Systems. (3:2:4)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: CFM 105
DESCRIPTION: Light structural construction using wood and metal framing systems.
NOTE: Fee.

**Course Outcomes**

There are no course outcomes available

CFM 217 : Concrete and Job-Site Layout. (3:2:3)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Managing the quality, methods, and safety aspects of concrete and masonry construction.

**Course Outcomes**

There are no course outcomes available

CFM 241 : Electrical Systems in Construction. (2:2:2)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Developing a basic understanding of electrical construction and associated codes to effectively communicate and problem solve with electrical contractors and inspect their work.

**Course Outcomes**

There are no course outcomes available

CFM 291R : Undergraduate Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter
NOTE: Required each semester for undergraduate majors who are not enrolled in 491R. School lecture series attendance required.

**Course Outcomes**

There are no course outcomes available

**300-Level Courses**

CFM 302 : Structures and Strength of Materials Fundamentals. (4:4:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PHSCS 105
DESCRIPTION: Structural mechanics and strength of materials for soils, woods, concrete, and steel applied to practical construction situations.

**Course Outcomes**

There are no course outcomes available

CFM 311 : Quantity Takeoffs. (4:4:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: CFM 210
DESCRIPTION: Compiling, organizing, and analyzing all the items that influence and contribute to total cost of construction projects emphasizing managing quality control procedures and inspection of finish work. Maximizing estimating effectiveness and efficiency through computer integration.

**Course Outcomes**

There are no course outcomes available

CFM 320 : Mechanical Systems. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: CFM 210
DESCRIPTION: Basic plumbing and HVAC principles, materials; installation and application methods. Systems sizing and design, heat loss/gain calculations, and payback analysis. Managing the plumbing and HVAC trades.

**Course Outcomes**

There are no course outcomes available

CFM 330 : Advanced Mechanical, Electrical, and Plumbing Systems. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: CFM 241 & CFM 320

DESCRIPTION: Understanding and managing large MEP systems; utility infrastructure planning and development, performing system assessments; performing energy, sustainability, and retro-commissioning cost-benefit analysis; understanding system outputs, metering, and costs; code compliance and problem solving.

**Course Outcomes**

There are no course outcomes available

CFM 335 : Construction Equipment and Soils Mechanics. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Basic soil mechanics and subsurface construction theory and practice for foundations of building and engineered facilities. Underpinning, piling, dry and wet excavating, dewatering, cofferdams, caissons, and spread and strip foundations. Lecture, field trips.

**Course Outcomes**

There are no course outcomes available

CFM 340 : Operations and Maintenance. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CFM 330

DESCRIPTION: Acquisition, operation, maintenance, and disposal of building systems, structures, permanent interiors, furniture, and equipment; grounds and other exterior elements.

**Course Outcomes**

There are no course outcomes available

CFM 345 : Construction Safety Management. (2:2:0)

WHEN TAUGHT: Fall

DESCRIPTION: Safety requirements and responsibilities in construction; cost and impact of accidents; accident investigation; safety inspection; hazards analysis; substance abuse; record keeping.

**Course Outcomes**

There are no course outcomes available

CFM 350 : International Construction Practices. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CFM 105

DESCRIPTION: Interacting with international construction professional, including construction terminology, plan reading, metric measurements, estimating, scheduling, and project management practices.

**Course Outcomes**

No outcomes are available at this time.

CFM 385 : Construction Contracts and Law. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Contractual obligations defined, including agency, contract interpretation, performance and liability issues, breach and termination, judicial remedy, and arbitration as applied to the construction industry. Overview of municipal zoning ordinances and codes.

**Course Outcomes**

There are no course outcomes available

CFM 399R : Capstone Internship. (1.5-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CFM 110; instructor's consent.

DESCRIPTION: Cooperative education and related facility and property management on-the-job work experience. Project report required for IFMA Facility Management Professional (FMP) designation.

**Course Outcomes**

There are no course outcomes available

**400-Level Courses**

CFM 411 : Pre-Construction Services. (4:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CFM 155 & CFM 210 & CFM 217

DESCRIPTION: Managing preconstruction services including: Building Information Modeling (BIM), competitive bidding strategies, bid analysis, document management, site work, quantity takeoff, and cost estimation.

**Course Outcomes**

There are no course outcomes available

CFM 412 : Construction Scheduling and Cost Control. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CFM 311

DESCRIPTION: Planning, scheduling, and monitoring construction projects, including development of critical path networks (CPM and PERT), Gannt bar charts, construction cost control, and reporting practices.

**Course Outcomes**

There are no course outcomes available

CFM 415 : Construction Project Management and Control. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Managing and controlling construction projects. Planning, startup procedures, inspections, progress measurements, field reports, change order and submittal processing, equipment management, and project closeout.

**Course Outcomes**

There are no course outcomes available

CFM 416R : Capstone 1. (1:0:1)

PREREQUISITE: CE EN 113 & CFM 241 & CFM 311

DESCRIPTION: Preparation for competition and international capstone projects. Topics include presentation and problem solving skills, business strategy, assessment, and SWAT analysis principles.

**Course Outcomes**

There are no course outcomes available

CFM 417R : Capstone 2 - Competition. (1:0:1)

WHEN TAUGHT: Winter

PREREQUISITE: CFM 416R

DESCRIPTION: Final preparations for student competitions.

**Course Outcomes**

There are no course outcomes available

CFM 418R : Capstone 2 - International. (1:0:1)

PREREQUISITE: CFM 416R

DESCRIPTION: The culmination and application of core construction management curriculum. Project teams design, analyze, manage, and construct an international project.

**Course Outcomes**

There are no course outcomes available

CFM 420 : Commercial Real Estate Management. (3:3:0)

PREREQUISITE: CFM 110 & CFM 426

DESCRIPTION: Fundamentals of commercial real estate investment, understanding market influences, contracts and property portfolio management.

**Course Outcomes**

There are no course outcomes available

CFM 425 : Construction Accounting. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ACC 200

DESCRIPTION: Cost and managerial accounting topics for construction companies, including break-even analysis, ratio analysis, capital budgeting, job cost systems, master budgets pricing and decision-making, allocating costs.

**Course Outcomes**

No outcomes are available at this time.

CFM 426 : Real Estate Principles and Development. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: FIN 201 & CFM 311; or BUS M 201 & CFM 311

DESCRIPTION: Principles of real estate investments, emphasizing mortgage instruments and development of property from raw land to residential and commercial properties.

**Course Outcomes**

There are no course outcomes available

CFM 445 : Construction Company Operations and Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: FIN 201 & CFM 311; or BUS M 201 & CFM 311

DESCRIPTION: Organizing, controlling, and directing operations of construction companies; financial management, budgeting, cash-flow analysis, purchasing and cost control, and business planning.

**Course Outcomes**

There are no course outcomes available

CFM 460 : Sustainability and Regulatory Building Solutions. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: CFM 155 & CFM 311

DESCRIPTION: Regulatory occupancy codes, safety, security planning and managing and analyzing sustainable building practices.

**Course Outcomes**

There are no course outcomes available

CFM 491 : Senior Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Developing best employment opportunities and strategy; interviewing, sales negotiations, resume and letter writing, and salary negotiations. Report on 300 hours of construction-related work experience.

NOTE: College Lecture attendance required.

**Course Outcomes**

There are no course outcomes available

CFM 494R : Special Problems in Construction and Facilities Management. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Instructor's consent.

**Course Outcomes**

There are no course outcomes available

## 500-Level Graduate Courses (available to advanced undergraduates)

CFM 555 : Construction Company Financial Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CFM 425 & CFM 445

DESCRIPTION: An in-depth review of management concepts and financial strategies needed to successfully grow and enhance profitability of a construction company. Topics include business entities, budgeting and cash management, finance and investments, accounting, financial statements, cost controls (variance and earned value analysis), real estate investing, taxation, break even analysis and capital budgeting.

**Course Outcomes**

There are no course outcomes available

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**Information Technology**

Majors
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Minors
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- Information Technology (IT) Courses

**Manufacturing Engineering Technology**

Majors
- BS in Manufacturing Engineering Technology

Minors
- Manufacturing

Course Information
- Manufacturing Engineering Technology (Mfg) Courses

**Technology and Engineering**

# Industrial Design

Paul T. Skaggs, Program Coordinator
265 CTB, (801) 422-6300

## Admission to Degree Program

Admission to the foundation level in the industrial design program is gained through an application process. Special enrollment limitations for degree programs will be applied. Please see the School of Technology advisor (250 SNLB) for specific details.

After completion of the foundation level courses as a pre-industrial design major, students may apply for BFA (bachelor of fine arts) candidacy and entrance to the industrial design professional program.

## The Discipline

Industrial design is a blend of art and technology. It focuses on making industrially produced objects that make a specific and appropriate human connection through aesthetics, satisfying needs, and providing meaning. Industrial design requires skills in problem finding and defining, creativity, aesthetics, and idea visualization and communication. Industrial design requires knowledge of human culture and values, product development processes and players, and an understanding of how things work and are made.

## Career Opportunities

Industrial designers specialize in areas such as consumer products, sports and medical equipment, toys, exhibits, furniture, consumer electronics, user experience and design research.

## Learning Outcomes

After completing the industrial design curriculum, graduates should be able to:

- Articulate, apply and critique the application of aesthetic principles
- Understand and apply principles of structured creativity/innovation
- Understand how to evaluate creative ideas
- Understand the basics of how things work and how things are made
- Understand human needs as they relate to products and services
- Communicate ideas both visually and verbally
- Apply basic business practices as they relate to industrial design
- Discuss the basics of design history and identify contemporary issues in industrial design
- Sythesize and apply learning outcomes in the context of a diverse range of design problems

The industrial design program also participates in the interdisciplinary animation degree with the Visual Arts and the Theatre and Media Arts departments. For more information about this degree and its requirements, please see the Visual Arts section of this catalog.

## General Information

### Pre-Major Enrollment

Students applying for the pre-industrial design program must be accepted to Brigham Young University before being considered for the major.

The four pre-industrial design foundation courses must be taken concurrently in either fall or winter semester. Enrollment in these courses is limited. In order to enroll, students must apply and be accepted.

Applications for the pre-industrial design foundation courses must be returned by August 1. Individuals will be notified one week after the deadline and will be informed which semester (fall or winter) they may enroll in foundation courses.

Application forms are available from the School of Technology Advisement website. Go to http://sot.et.byu.edu/advisement, then click on Applications and Forms.

**Note:** Acceptance to the pre-industrial design program cannot be deferred. Individuals who are accepted must register for the foundation courses for their assigned semester. Failure to do so will require reapplication to the pre-industrial design program for the year the student plans to attend.

### Professional Degree Program Enrollment

Admittance into the professional level of the industrial design program is based on three criteria: overall grade point average for the foundation courses, a panel review of a student portfolio, and a student professionalism score. A portfolio is a collection of work based on foundation courses and weighted higher than grade point average and professionalism score.

Portfolios and professional level applications are to be submitted for review by April 25th. Individuals will be notified within a week of the decision of the review committee.

**Education**

Majors

- BS in Technology and Engineering Education

Course Information

- Technology and Engineering Education (TEE) Courses

**Faculty**

Students accepted into the professional level are permitted to enroll in specified courses at the next academic level. Students who have not been accepted in the program may apply again the following year. Students may only take the foundation courses one time.

## Transfer Students

Transfer students applying for admission to the pre-industrial design program must follow the same requirements as students currently enrolled in BYU.

## Department Probationary Status

Students can be placed on probationary status for the following:

1. Inadequate academic performance. For example, receiving a D or E grade in major courses.
2. Unprofessional attitude and lack of commitment.
3. BYU Honor Code violations.

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**Manufacturing Engineering Technology**

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**Technology and Engineering**

# BFA in Industrial Design (73 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center or the School of Technology advisor (250 SNLB) for information regarding requirements for admission to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Meet application criteria for admission into the pre-Industrial Design program.
2. Complete all 100-level foundation courses.
3. Complete a portfolio and application for admission into the Professional program.
4. Complete the following preprofessional requirements:

ENG T 231 : Foundations of Global Leadership. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Foundational principles and practices of individual and organizational leadership in a global context from an integrated moral, technical and social perspective. Emphasis on developing integrity, valuing and leveraging diversity, acquiring and applying leadership skills.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Able to define integrity, and demonstrate understanding of how it applies to their lives and how to develop it through practice.
- Able to demonstrate familiarity with the code of ethics that corresponds to their profession.
- Able to describe a procedure for making and implementing ethical decisions and effectively apply the procedure to ethical problems of practical interest.
- Able to understand and use a model to describe their own personality type and/or preferences.
- Able to describe what it means to be self-aware and how self-awareness applies to leadership, ethical behavior and global awareness.
- Able to define and effectively practice key interpersonal skills and indicate how they can be cultivated.
- Able to describe a team development process.
- Able to value the diversity that individuals bring to a team setting and use those skills to improve team performance.
- Able to formulate a strategy and develop a plan, consistent with a vision, to accomplish a team project
- Able to define globalization, put it in an historical context and identify some key positive and negative outcomes attributed to globalization
- Able to develop an appreciation for other cultures and an understanding of how cultural factors and other forms of diversity influence communication, teamwork, and the practice of technical disciplines across the globe.
- Able to demonstrate technical understanding of a few global issues and think critically regarding the wise use of technology relative to these issues.

INDES 130 : Visual Literacy. (1.5:3:3)

PREREQUISITE: InDes 131, 132, 133 concurrent in the same semester.

DESCRIPTION: Understand basic principles of design aesthetics and their application to two and three dimensional compositions. Develop a design vocabulary used to present, critique, and defend aesthetics.

**Course Outcomes**

- Students should:Understand basic design vocabulary of principles and elements of designUnderstand both 2D and 3D aesthetic principles as they relate to industrial designUnderstand basic visual presentation skills
- Students should be able to:Apply principles of design to create aesthetic 2D and 3D CompositionsApply basic software skills in Adobe Illustrator and PhotoshopDiscuss and critique both 2D and 3D compositions using design terminalogy

INDES 131 : Structured Creativity. (1.5:3:3)

PREREQUISITE: InDes 130, 132, 133 concurrent in the same semester.

DESCRIPTION: Basics of how to evaluate, and applying principles of structured creativity to develop new and useful ideas. Understanding of verbal and visual presentations as a tool for communicating new ideas.

**Course Outcomes**

- Students should:Be able to apply creative thinking methods and toolsApply evaluation tools to determine the value of their ideasApply principles to create unique and useful product, service, or system solutions.Understand principles of presenting compelling and persuasive ideas to others.
- Students should:Understand what is meant by structured creativity.Understand the principles for judging/evaluating creative ideas.Understand the role of Structured Creativity in industrial design.

INDES 132 : Form and Surface Development. (1.5:3:3)

PREREQUISITE: InDes 130, 131, and 133 concurrent in the same semester.

DESCRIPTION: Fundamentals of articulating, exploring, and critiquing the application of aesthetic principles related to geometric and organic form. Opportunities to present, critique, and defend aesthetics.

**Course Outcomes**

- Students should:Understand aesthetic principles as they relate to geometric and organic formsAnalyze formal qualities and articulate formal languages
- Students should be able to:Generate both rough and finished geometric and organic formsRecognize abstract three-dimensional elements in design context

INDES 133 : Visualization Methods. (1.5:3:3)

PREREQUISITE: InDes 130, 131, 132 concurrent in the same semester.

DESCRIPTION: Introduction of rapid visualization sketching techniques as a tool to develop, evaluate, and communicate ideas.

**Course Outcomes**

- Students should:Understand sketching as a skill for thinking about and communicating ideas.Understand their own level of sketching ability and work to improve their ability to sketch.Understand and apply basic sketch presentation techniques.
- Students should be able to:Present ideas clearly and pursuasively using sketching as a tool.

5. Complete the following:

INDES 210 : Intermediate Computer Applications. (3:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: Industrial design core.

DESCRIPTION: Computer software programs relative to design disciplines.

**Course Outcomes**

- Students should:Understand and apply principles of good design intent to develop robust modeled geometry.Understand both solid and surface modeling principles and how of effectively apply them.
- Students should be able to:Use Solidworks and Photoview 360 effectively to develop and communicate ideas.Apply solid modeling to develop 3D parts with: Machining and rapid prototyping.

INDES 214 : Tools, Materials, and Processes for Industrial Design. (2:2:2)

WHEN TAUGHT: Winter

DESCRIPTION: Manufacturing tools, processes, and materials commonly used in product design.

**Course Outcomes**

There are no course outcomes available

INDES 231 : Presentation Methods for Industrial Design 1. (2:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: Industrial design core.

DESCRIPTION: Product presentation methods emphasizing perspective, value, scale, accuracy, and color.

**Course Outcomes**

- Student should:Have an increased appreciation regarding the importance of presentation skills.Understand how to visually represent product materials, colors, and finishes.Understand how to compose a persuasive presentation
- Student will be able to:Apply basic rendering skills including lighting effects, materials, colors, surface finish to rendering and sketches.Explore the difference between analog and digital based rendering techniques
- Benchmarking and critique – looking at the work of others and judging your own work effectively.

INDES 233 : Presentation Methods for Industrial Design 2. (2:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: INDES 231

DESCRIPTION: Continuation of InDes 231.

**Course Outcomes**

- Student will:Understand how to represent complex topics simply, clearly, and concisely in a compelling manner using principles of information organization and effective presentation.Understand digital tools for the development of presentations
- Student will be able to:Produce effective renderings using vector and raster based computer packages.Effectively combine the principles of perspective construction; orthographic projection; lighting theory based on observation and applied in new ways.Develop more complex simulated materials based on the principles of: local color, lighting, surface finish, pattern, texture, and opacity.Adjust, manipulate, combine, and retouch images using Raster based computer

packages.Produce complex presentations for industrial design using both vector and raster based packages in combination.

INDES 340 : Graphics Studies for Industrial Design 1. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: BFA acceptance.

DESCRIPTION: Introduction to graphic skills such as corporate identity, packaging design, logo design, and web/interface design elements.

**Course Outcomes**

- Students should:Understand and apply basic graphic design philosophies, processes, and techniques.Understand basic typography, mechanical production and preparation of finished "comps"Apply principles of graphic design in developing their own collateral.

INDES 388 : Professional Practices of the Designer. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admittance to professional program.

DESCRIPTION: Business aspects of the design profession.

**Course Outcomes**

- Students should:Understand the tools needed for a job search; portfolio and its iterations, resume, and cover letters.Understand and apply principles of networking, contacting, interviewing and negotiating with potential employers.Understand and apply principles of an effecive and compelling portfolio presentation.Understand patents, proposals, contracts, and design briefs.Recognize unethical situations that can arise and how to deal with them.
- Students should be able to:Create and demonstrate effective job hunting skills and materials

TECH 312 : Exploration in Innovation Design Techniques. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Through a series of hands-on experiences, students explore principles, methods, and tools of innovation and design thinking in technology and engineering.

**Course Outcomes**

- Gain better appreciation and understanding of innovation
- Develop an ability to generate new ideas
- Develop innovation skills to develop ideas into products and processes
- Collaborate as a team to complete a project
- Present ideas and work to the class

TEE 200 : Processes and Prototyping with Wood. (3:2:4)

WHEN TAUGHT: Fall; Winter Even Yrs.; Spring Odd Yrs.

DESCRIPTION: Processes for and prototyping with wood and wood-based composites.

NOTE: Fee.

**Course Outcomes**

- Visualization of how components are joined and how to communicate this through drawings and specifications.Properties of wood as a material and how these properties impact design of projects using wood and wood products.Subtractive processes in prototype construction: sawing, shaping, milling, turning, routing, etc.Additive processes in prototype construction: joining, laminating, fastening, etc.Identification, care, and use of hand tools including tools for measuring, layout, sawing, planing, scraping, shaping, clamping, drilling, driving, and sharpening.Set-up and accurate and safe use of woodworking machinery including the jointer, surface planer, table saw, panel saw radial arm saw, power miter saw, bandsaw, thickness sander, mortiser, boring machine, lathe, and drill press.The use of electric, pneumatic, and cordless power hand tools including routers, drills, and sanders.Methods of clamping, gluing, and assembly, sanding, and finishing.Practical problem solving in working with industrial materials, tools, and machines.The importance of caring, hard work, planning, initiative, and patience, in making a project that is well designed, includes quality workmanship, and is nicely finished. Concepts and methods of teaching safe use of woodworking equipment.Basic machine and hand tool maintenance.

6. Complete a minimum of one hour from the following:

INDES 399R : Professional Internship. (1-3:0:0)

PREREQUISITE: School's and faculty advisor's consent.

DESCRIPTION: Work experience in professional design studio evaluated by supervisor.

**Course Outcomes**

- Student acquires professional experiences in Industrial Design.
- Student demonstrates professional communication skills (report).
- Student demonstrates the ability to use reflective thinking to convert professional experience into academic understanding.

7. Complete two registrations of each of the following courses:

INDES 230R : Second Year Studio. (4:4:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Industrial design core.
DESCRIPTION: Industrial design research, analysis, and problem-solving methods.

**Course Outcomes**

There are no course outcomes available

INDES 330R : Third Year Studio. (4:4:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Industrial Design core.

DESCRIPTION: Designer responsibilities, structured and unstructured procedures in problem solving, client relationships, functional relationships, and mechanisms and materials.

**Course Outcomes**

There are no course outcomes available

INDES 430R : Thesis Studio. (4:4:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: INDES 330R

DESCRIPTION: Systems design problems from initial research and analysis to final presentation of working drawings and models, with concern for ergonomics, anthropometries, marketing, user and buyer, production, function, and structure.

**Course Outcomes**

There are no course outcomes available

8. Complete 6 hours from the following:

INDES 399R : Professional Internship. (1-3:0:0)

PREREQUISITE: School's and faculty advisor's consent.

DESCRIPTION: Work experience in professional design studio evaluated by supervisor.

**Course Outcomes**

- Student acquires professional experiences in Industrial Design.
- Student demonstrates professional communication skills (report).
- Student demonstrates the ability to use reflective thinking to convert professional experience into academic understanding.

(3 hours required)

MFG 479 : Innovation and Entrepreneurship. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Develop ideas into a business model. Learn product development. Entrepreneurial concepts and practices. Strategic planning and global competitiveness.

**Course Outcomes**

- Participate effectively on an entrepreneurial founding team
- Evaluate business ideas, opportunities, and plans
- Plan a new business financially
- Understand and apply entrepreneurial terminology to the entrepreneurial and investment ecosystems
- Formulate strategies to overcome common start-up business challenges
- Prepare effectively a written business plan
- Make an effective oral business plan presentation

TEE 251 : Video Production and Nonlinear Editing. (3:2:4)

WHEN TAUGHT: Winter

PREREQUISITE: TEE 125 & TEE 255; or instructor's consent.

DESCRIPTION: Teaching video in education to inspire, communicate, and develop creativity. Fundamentals include planning, storyboarding, camera techniques, composition, assembling, and editing video projects.

**Course Outcomes**

- Provide students an opportunity to gain an understanding of the technical, creative, and cultural, political, economic, and environmental impact of photography, television and film/video media.Expose and train students in contemporary video, film, TV, and photography pre-production, production, and post-production techniques.Expose and train students to effectively use contemporary video, film, TV, and photography tools (i.e., Final Cut Pro, DVD Studio, Studio Code, Adobe Creative Suite, Camera Switcher, HD Video, digital SLR cameras, Celtix [script writing], lighting and audio recording equipment, and so forth).Teach students the primary elements of photography and TV/Film production, which are:1. Principles of audio, including micing techniques and handling of common audio problems.2. Camera placement and operations, including a basic understanding of camera color balancing and various important framing techniques.3. Lighting techniques, including existing light, bounced light and three-point lighting.4. Technical and production differences between standard definition (SDTV) and HDTV/DTV production.5. Elements of effective visual composition. 6. Editing techniques: assembly and insert, on-line and off-line, linear and random access, and the use of time-code.7. A general understanding of the pre-production, production, and post-production stages for both TV and film, including associated audio and video equipment.

TEE 400 : Furniture Design and Advanced Woodworking Processes. (3:2:4)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: TEE 200

DESCRIPTION: Designing several projects and building a significant piece of furniture. Topics include: current and past designers; surface decoration through coloring, texturing, pyrography; models, mock-ups, working drawings; bending, turning, advanced machining.

**Course Outcomes**

- Each candidate possesses a knowledge of and an ability to implement a contemporary technology and engineering education program based on all 20 of the Standards for Technological Literacy developed by the International Technology and Engineering Educators Association (ITEEA).
- Explore furniture design and design and build a significant piece of furniture.Prepare a research report summarizing the life and key contributions of a furniture designer assigned/selected from the list provided and give a brief presentation (five minutes) to the class of your findings.Construct 6 sketch models of possible furniture pieces.Complete thumbnail design sketches of at least 24 pieces of furniture that could be appropriate to build in the class.Complete a working drawing which includes a 3-view orthographic projection drawn to an appropriate scale, and full scale details of all joints and connections of materials (including those containing hardware).If building a chair, a full-scale mock-up is required and will substitute for the primary views of the drawing requirement, full scale details of each joint or connection of materials is still required.Complete a cost estimate using the Estimating Sheet provided.Complete a plan of procedure detailing the sequence to be followed in building your furniture.Using a variety of surface decoration/manipulation techniques make three surface decoration swatches approximately 1/4" x 2" x 5".Design and make two full-scale, completely finished, functioning door or drawer pulls.

Other courses as approved by the Program.

9. Complete the following art history requirement:

INDES 339 : History of Products. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Industrial design core.

DESCRIPTION: Overview of artifacts and products; how they have influenced society from prehistory to present day.

**Course Outcomes**

- Students should:Understand and recognize design styles, movements, thoughts and practice over the last 150 years.Know and understand significant historical and contemporary designers and their design work
- Student will be able to:Be able to engage in meaningful discussions about designApply design languages

10. Complete 9 hours of art history from the following:
    a. Complete one course from the following:

ARTHC 201 : World Civilization to 1500. (3:3:0)

DESCRIPTION: Survey of Western civilization emphasizing the visual arts from ancient Greece to the Gothic period.

**Course Outcomes**

There are no course outcomes available

IHUM 201 : Western Humanities 1: Antiquity to Renaissance. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Western civilization from Greek antiquity to Renaissance from perspective of traditional humanistic values reflected in its arts and ideas. Examines fundamental questions about human experience, formative events in history, and value of important literary and artistic texts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

TECH 201 : History of Creativity and Innovation in the Arts, Science, and Technology 1. (3:3:0)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Western civilization from Egyptian antiquity to Renaissance from perspective of changes in civilization enabled by technology. Creativity throughout history. How to improve personal creativity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

    b. Complete one course from the following:

ARTHC 202 : World Civilization Since 1500. (3:3:0)

DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

IHUM 202 : Western Humanities 2: Renaissance to the Present. (3:3:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Western civilization from Renaissance to present from perspective of traditional humanistic values reflected in its arts and ideas. Examines fundamental questions about human experience, formative events in history, and value of important literary and artistic texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

TECH 202 : History of Creativity and Innovation in the Arts, Science, and Technology 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
DESCRIPTION: Western civilization from Renaissance to present from perspective of changes in civilization enabled by technology. Creativity throughout history. How to improve personal creativity.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

c. Complete one course from the following:
ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 365 : American Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Major figures, monuments, and movements in American architecture from colonial period through "Gilded Age."

**Course Outcomes**
No outcomes are available at this time.

ARTHC 367 : Modern Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical review of roots and evolution of modern architecture.

**Course Outcomes**
No outcomes are available at this time.

SFL 329 : History of Interior Design and Architecture 2. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Furniture, interior design, and architecture from Industrial Revolution to present.

**Course Outcomes**
- Students will identify the popular types of housing styles of 1900-2011. Students will explain how each style was influenced by political and economic factors
- Students will identify the architects that had an impact on the various periods of architecture.
- Students will analyze how the various styles of architecture were influenced by society and culture.

11. Complete one course from the following:

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.

DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.

NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

12. Complete department packet and exit interview.

*Hours include courses that may fulfill university core requirements.

## Show all Industrial Design (InDes) Courses

**Ira A. Fulton College of Engineering and Technology Home**

**School of Technology Home**

- Technology (Tech) Courses

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**Manufacturing Engineering Technology**

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- Manufacturing Engineering Technology (Mfg) Courses

**Technology and Engineering**

# Industrial Design (InDes)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

INDES 130 : Visual Literacy. (1.5:3:3)

PREREQUISITE: InDes 131, 132, 133 concurrent in the same semester.

DESCRIPTION: Understand basic principles of design aesthetics and their application to two and three dimensional compositions. Develop a design vocabulary used to present, critique, and defend aesthetics.

**Course Outcomes**

- Students should:Understand basic design vocabulary of principles and elements of designUnderstand both 2D and 3D aesthetic principles as they relate to industrial designUnderstand basic visual presentation skills
- Students should be able to:Apply principles of design to create aesthetic 2D and 3D CompositionsApply basic software skills in Adobe Illustrator and PhotoshopDiscuss and critique both 2D and 3D compositions using design terminalogy

INDES 131 : Structured Creativity. (1.5:3:3)

PREREQUISITE: InDes 130, 132, 133 concurrent in the same semester.

DESCRIPTION: Basics of how to evaluate, and applying principles of structured creativity to develop new and useful ideas. Understanding of verbal and visual presentations as a tool for communicating new ideas.

**Course Outcomes**

- Students should:Be able to apply creative thinking methods and toolsApply evaluation tools to determine the value of their ideasApply principles to create unique and useful product, service, or system solutions.Understand principles of presenting compelling and persuasive ideas to others.
- Students should:Understand what is meant by structured creativity.Understand the principles for judging/evaluating creative ideas.Understand the role of Structured Creativity in industrial design.

INDES 132 : Form and Surface Development. (1.5:3:3)

PREREQUISITE: InDes 130, 131, and 133 concurrent in the same semester.

DESCRIPTION: Fundamentals of articulating, exploring, and critiquing the application of aesthetic principles related to geometric and organic form. Opportunities to present, critique, and defend aesthetics.

**Course Outcomes**

- Students should:Understand aesthetic principles as they relate to geometric and organic formsAnalyze formal qualities and articulate formal languages
- Students should be able to:Generate both rough and finished geometric and organic formsRecognize abstract three-dimensional elements in design context

INDES 133 : Visualization Methods. (1.5:3:3)

PREREQUISITE: InDes 130, 131, 132 concurrent in the same semester.

DESCRIPTION: Introduction of rapid visualization sketching techniques as a tool to develop, evaluate, and communicate ideas.

**Course Outcomes**

- Students should:Understand sketching as a skill for thinking about and communicating ideas.Understand their own level of sketching ability and work to improve their ability to sketch.Understand and apply basic sketch presentation techniques.
- Students should be able to:Present ideas clearly and pursuasively using sketching as a tool.

### 200-Level Courses

INDES 210 : Intermediate Computer Applications. (3:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: Industrial design core.

DESCRIPTION: Computer software programs relative to design disciplines.

**Course Outcomes**

- Students should:Understand and apply principles of good design intent to develop robust modeled geometry.Understand both solid and surface modeling principles and how of effectively apply them.
- Students should be able to:Use Solidworks and Photoview 360 effectively to develop and communicate ideas.Apply solid modeling to develop 3D parts with: Machining and rapid prototyping.

INDES 214 : Tools, Materials, and Processes for Industrial Design. (2:2:2)

WHEN TAUGHT: Winter

DESCRIPTION: Manufacturing tools, processes, and materials commonly used in product design.

**Course Outcomes**

There are no course outcomes available

INDES 230R : Second Year Studio. (4:4:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Industrial design core.

DESCRIPTION: Industrial design research, analysis, and problem-solving methods.

**Course Outcomes**

There are no course outcomes available

INDES 231 : Presentation Methods for Industrial Design 1. (2:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: Industrial design core.

DESCRIPTION: Product presentation methods emphasizing perspective, value, scale, accuracy, and color.

**Course Outcomes**

- Student should:Have an increased appreciation regarding the importance of presentation skills.Understand how to visually represent product materials, colors, and finishes.Understand how to compose a persuasive presentation
- Student will be able to:Apply basic rendering skills including lighting effects, materials, colors, surface finish to rendering and sketches.Explore the difference between analog and digital based rendering techniques
- Benchmarking and critique – looking at the work of others and judging your own work effectively.

INDES 233 : Presentation Methods for Industrial Design 2. (2:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: INDES 231

DESCRIPTION: Continuation of InDes 231.

**Course Outcomes**

- Student will:Understand how to represent complex topics simply, clearly, and concisely in a compelling manner using principles of information organization and effective presentation.Understand digital tools for the development of presentations
- Student will be able to:Produce effective renderings using vector and raster based computer packages.Effectively combine the principles of perspective construction; orthographic projection; lighting theory based on observation and applied in new ways.Develop more complex simulated materials based on the principles of: local color, lighting, surface finish, pattern, texture, and opacity.Adjust, manipulate, combine, and retouch images using Raster based computer packages.Produce complex presentations for industrial design using both vector and raster based packages in combination.

**300-Level Courses**

INDES 330R : Third Year Studio. (4:4:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Industrial Design core.

DESCRIPTION: Designer responsibilities, structured and unstructured procedures in problem solving, client relationships, functional relationships, and mechanisms and materials.

**Course Outcomes**

There are no course outcomes available

INDES 331R : Presentation Methods for Industrial Design 3. (2:2:2)

PREREQUISITE: Acceptance into the BFA program or instructor's consent.

DESCRIPTION: Sketching and rendering techniques focused on surface materials and finishes.

**Course Outcomes**

There are no course outcomes available

INDES 338 : ID Field Trip Seminar. (.5:Arr:Arr)

WHEN TAUGHT: Winter

PREREQUISITE: Junior level or above in Industrial Design Professional Program.

DESCRIPTION: Field trip to introduce students to professional designers, corporate and consulting design firms.

**Course Outcomes**

There are no course outcomes available

INDES 339 : History of Products. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Industrial design core.

DESCRIPTION: Overview of artifacts and products; how they have influenced society from prehistory to present day.

**Course Outcomes**

- Students should:Understand and recognize design styles, movements, thoughts and practice over the last 150 years.Know and understand significant historical and contemporary designers and their design work
- Student will be able to:Be able to engage in meaningful discussions about designApply design languages

INDES 340 : Graphics Studies for Industrial Design 1. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: BFA acceptance.

DESCRIPTION: Introduction to graphic skills such as corporate identity, packaging design, logo design, and web/interface design elements.

**Course Outcomes**

- Students should:Understand and apply basic graphic design philosophies, processes, and techniques.Understand basic typography, mechanical production and preparation of finished “comps”Apply principles of graphic design in developing their own collateral.

INDES 388 : Professional Practices of the Designer. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admittance to professional program.

DESCRIPTION: Business aspects of the design profession.

**Course Outcomes**

- Students should:Understand the tools needed for a job search; portfolio and its iterations, resume, and cover letters.Understand and apply principles of networking, contacting, interviewing and negotiating with potential employers.Understand and apply principles of an effecive and compelling portfolio presentation.Understand patents, proposals, contracts, and design briefs.Recognize unethical situations that can arise and how to deal with them.
- Students should be able to:Create and demonstrate effective job hunting skills and materials

INDES 399R : Professional Internship. (1-3:0:0)

PREREQUISITE: School's and faculty advisor's consent.

DESCRIPTION: Work experience in professional design studio evaluated by supervisor.

**Course Outcomes**

- Student acquires professional experiences in Industrial Design.
- Student demonstrates professional communication skills (report).
- Student demonstrates the ability to use reflective thinking to convert professional experience into academic understanding.

**400-Level Courses**

INDES 430R : Thesis Studio. (4:4:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: INDES 330R

DESCRIPTION: Systems design problems from initial research and analysis to final presentation of working drawings and models, with concern for ergonomics, anthropometries, marketing, user and buyer, production, function, and structure.

**Course Outcomes**

There are no course outcomes available

INDES 494R : Special Problems in Design. (.5-3:ARR:ARR)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Individual study in area of special interest.

**Course Outcomes**

There are no course outcomes available

INDES 497R : BFA Final Project. (3:ARR:ARR)

PREREQUISITE: BFA advisor's consent.

DESCRIPTION: Advanced individual project with minimum guidance, showing high degree of competence within chosen major.

**Course Outcomes**

- Ability to work on an advance individual project with minimum guidance that focuses skills and knowledge learned on a single complex visualization.

- Students will define a area of interest
- Students should:Write a cogent design project proposalWork with judicious guidance on self-directed projectInvestigate chosen problem using design methodsDemonstrate elevated competence in: design skills, grasp of theory, design methodology

INDES 499R : Directed Studies. (.5-6:ARR:ARR)

**Course Outcomes**

There are no course outcomes available

**Back to Industrial Design Home**

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**Ira A. Fulton College of Engineering and Technology Home**

**School of Technology Home**

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**Technology and Engineering**

# Information Technology

Barry Lunt, Program Coordinator
265 CTB, (801) 422-6300

## Admission to Degree Program

Admission to the information technology program is open to all BYU students.

## Learning Outcomes

- Practice as a competent professional in IT or enrolled in an appropriate graduate program.
- Demonstrate leadership by positive influence on others towards shared goals.
- Collaborate and communicate effectively in diverse team environments.
- Show sensitivity for global, societal, and organizational issues, compliant with the moral standards of the gospel of Jesus Christ in the application of technology.

## The Discipline

Information technology (IT), the technical discipline that solves problems using computing resources, will be taught through a combination of strong theoretical course work and practical application to ensure that all three aspects of the technological educational triumvirate (knowing, thinking, doing) are included. IT professionals from this discipline are competent to design computing systems with due consideration of the performance and compatibility aspects of hardware, software, and digital communication and networking. They can visualize, structure, and implement complex technical solutions.

Professionals in this discipline are also proficient in understanding user needs and communicating technical issues to the organizations and people affected by the computer system. They are "anxiously engaged" in lifelong learning to understand and wisely use new technologies as they become available. Broadly educated at the university level, these professionals have acquired balance in their lives and depth of understanding in technology and its relevance in the broader world context. Because of the influence and leadership roles we expect graduates to have, our students will be encouraged to develop high moral and ethical standards as well as being conversant with and compliant with professional performance standards.

## Career Opportunities

Career opportunities are plentiful and rewarding in both large and small companies in technical fields. Graduates will find careers in computer networking, testing, embedded intelligence, digital communications, computer system development, and integration.

## General Information

### Technical Electives

Six upper-division credit hours of information technology technical courses are required. Selected from courses in the major, these electives must be approved by an advisor prior to taking them.

Students are also strongly advised to strengthen their degree by using additional credit hours to fulfill a minor or gain greater depth in a focused area of the discipline. Some suggested areas are electronic systems, computer science, industrial design, manufacturing, or business leadership. Students are required to indicate their area of study when they apply to the professional program.

### High School Background

Recommended high school courses include computer programming, electronics, mathematics, and science courses.

### Transfer Students

This degree is designed to have some similarity to computer science and electrical and computer engineering courses in the first few semesters. Students can transfer from these programs in two-year colleges or from other four-year programs.

### Special Notice

Students receiving C– or lower grades in required courses will be placed on department probationary status.

## Education

Majors

- BS in Technology and Engineering Education

Course Information

- Technology and Engineering Education (TEE) Courses

## Faculty

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- Manufacturing Engineering Technology (Mfg) Courses

**Technology and Engineering**

# BS in Information Technology (77 hours*)

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## Program Requirements | View MAP | View Program Outcomes

1. Students must have a minimum of 124 total hours to graduate with this major.
2. Complete the following supporting courses:

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

C S 235 : Data Structures and Algorithms. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 142

DESCRIPTION: Fundamental data structures and algorithms of computer science; basic algorithm analysis; recursion; sorting and searching; lists, stacks, queues, trees, hashing; object-oriented data abstraction.

**Course Outcomes**

- Use the fundamental data types of computing (lists, stacks, queues, priority queues, sets, maps, trees, etc.).
- Understand the major techniques for implementing the fundamental data types (linked lists, binary search trees, hashing, heaps, etc.) and implement several of them.
- Properly use and select data structures from language-provided data-structure libraries.
- Apply basic algorithm analysis.
- Understand how recursion works and write programs using recursion to solve problems.
- Make informed decisions about which sorting and searching algorithms to use in specific circumstances.
- Write programs that require ~500 lines of code.

C S 236 : Discrete Structures. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: C S 235

DESCRIPTION: Introduction to grammars and parsing; predicate and propositional logic; proof techniques; sets, functions, relations, relational data model; graphs and graph algorithms.

**Course Outcomes**

- Understand and be conversant with basic discrete mathematical structures (finite state machines, regular expressions, grammars, propositional calculus, proof techniques, predicate calculus, sets, relations, functions, graphs).Write complex programs by using mathematical concepts as the basis for solving programming problems (finite state machines for lexical analysis; grammars for parsing; propositional and predicate calculus for logic programming; sets and algebras for relational databases; algebras, graphs, and topological sorting for optimizing datalog query processing).Incrementally build sophisticated programs by a systematic design process based on discrete mathematics.Design a solution for a programming problem and justify the design as one that is maintainable and extendable by other programmers who understand and are conversant with discrete mathematical structures.

- Demonstrate ability to build large programs by writing and integrating code from a diverse spectrum of program components.

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Calculus or concurrent enrollment.
DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at

conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 121 or equivalent. Calculus.

DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

TECH 312 : Exploration in Innovation Design Techniques. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Through a series of hands-on experiences, students explore principles, methods, and tools of innovation and design thinking in technology and engineering.

**Course Outcomes**

- Gain better appreciation and understanding of innovation
- Develop an ability to generate new ideas
- Develop innovation skills to develop ideas into products and processes
- Collaborate as a team to complete a project
- Present ideas and work to the class

3. Complete the following:

IT 101 : Cornerstone: Information Technology. (3:2:3)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Planning and preparing for a successful career in information technology. Developing skills with computers, problem solving, studying, and time management. Comparing information technology to computer science, computer engineering, and information systems.

NOTE: Fee.

**Course Outcomes**

- Acquire basic skills in using labs as part of the learning experience.
- Be able to reverse engineer a simple algorithm.
- Acquire basic IT terminology.
- Be able to use basic IT tools at the beginning level.
- Acquire a beginning knowledge of programming.Acquire a beginning knowledge of networking.Acquire a beginning knowledge of computer hardware.Acquire a beginning knowledge of operating systems & servers.Acquire a beginning knowledge of database systems.
- Acquire a beginning knowledge of web systems.Acquire a beginning knowledge of how data is represented in a computer.Acquire a beginning knowledge of human-computer interaction.Acquire a beginning knowledge of systems engineering and development methodologies to guide project management.
- Understand the pervasiveness and impacts of IT in our everyday lives locally and globally as well as across organizations and industries.Acquire a beginning knowledge of computer security and ethical issues.Acquire a beginning knowledge of how IT is organized and governed in organizations and enterprises.
- Acquire basic teamwork skills.Begin using oral and written communication in a professional manner.Begin using basic design and problem-solving skills.Acquire basic knowledge and research skills for continuous learning in IT profession and understand the difference between the four computing majors at BYU (IT, IS, CS, and ECE).Get to know the IT Faculty and other IT Professionals.Acquire basic knowledge and research skills for continuous learning in IT profession and for finding associated IT employment.

### IT 124 : Introduction to Computer Systems. (3:3:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 142; or concurrent enrollment.

DESCRIPTION: How a computer works, from hardware to high-level programming language. Logic circuits, Boolean algebra, computer instructions, assembly language, binary arithmetic, and C programming.

**Course Outcomes**

There are no course outcomes available

### IT 210A : Fundamentals of Web-Based Information Technology. (2:3:3)

PREREQUISITE: C S 142 & IT 101; or instructor's consent.

DESCRIPTION: Web technologies including distributed architecture, networking, database concepts, client and server development, infrastructure management, and web system integration.

**Course Outcomes**

- Define and describe fundamental computing platform concepts of operating systems and networking and their relationship to Standards
- Analyze, create and integrate systems both at the Web Architecture and at the Web System Architecture levels.
- Demonstrate system administration skills necessary to manage web systems using best practices.
- Review and analyze web systems for specific Information Assurance and Security (IAS) issues, including multiple viewpoints of incident response, within the framework of standard IAS models.
- Analyze and design web systems using professional modeling approaches. This includes systems process development within a larger systems lifecycle model using best practices.
- Acquire and apply life-long learning skills to find, assess, utilize, and attribute web development resources on the Web.

### IT 210B : Fundamentals of Web-Based Information Technology. (2:3:3)

PREREQUISITE: IT 210A

DESCRIPTION: Web technologies including distributed architecture, networking, database concepts, client and server development, infrastructure management, and web system integration.

**Course Outcomes**

- Define and describe fundamental computing platform concepts of operating systems and networking and their relationship to Standards.
- Analyze, create and integrate systems both at the Web Architecture and at the Web System Architecture levels.
- Demonstrate system administration skills necessary to manage web systems using best practices
- Review and analyze web systems for specific Information Assurance and Security (IAS) issues, including multiple viewpoints of incident response, within the framework of standard IAS models.
- Analyze and design web systems using professional modeling approaches. This includes systems process development within a larger systems lifecycle model using best practices.
- Acquire and apply life-long learning skills to find, assess, utilize, and attribute web development resources on the Web.
- Demonstrate skills in technical communication

### IT 252 : Computer Architecture and Organization. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: IT 124 & C S 235; or C S 124 & C S 235; or EC EN 224 & C S 235

DESCRIPTION: Principles of computer hardware and instruction set architecture. Subjects include: internal CPU organization and implementation, peripheral interconnect and IO systems, and low-level

programming and security issues.

**Course Outcomes**

- Demonstrate ability to understand and program with assembly language.
- Demonstrate ability to use a C compiler, an assembler, a disassembler, a debugger, and CPU emulators to develop, debug, test, analyze and optimize programs.
- Know how to write more reliable, secure, and efficient software with an understanding of how the software is executed on the underlying architecture.
- Demonstrate ability to modify a CPU design to add instructions and to improve the overall efficiency of execution.
- Demonstrate understanding of the various abstractions used to manage complexity in computer systems and support application concurrency. e.g. system calls and virtual memory.
- Know how application performance can be affected in a target system by memory hierarchy design factors such as cache size, bus width, clock rate and memory speed.
- Demonstrate how vulnerabilities in software coding can be exploited in computer security attacks (eg. buffer overflow).
- Demonstrate understanding of how peripherals are accessed in a computer system, e.g. polling or interrupt driven I/O.

IT 327 : Digital Communications. (4:3:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Phscs 123 or concurrent enrollment.

DESCRIPTION: Ohm's law, power, inductance, capacitance, reactance, impedance, resonance, transformers. Communication systems, wired and wireless. Bandwidth, modulation; Shannon's theorem, telecommunications. Network physical and data link layers (ISO/OSI model). Optics/Coax/Twisted pair; RS-232/Ethernet; Signals/Protocols/Packets; digital communication theory fundamentals.

**Course Outcomes**

- Learn the EM spectrum and spectral analysis.
- Understand the limitations of communications links.
- Learn the main types of signal modulation (amplitude, frequency, phase).
- Learn the properties of physical communication media.
- Learn about digital information and how it is communicated.
- Understand how communications links are characterized.
- Learn about modern communication systems, including television, facsimiles, telephone, modems, LANs, WANs, satellite, cell phone and optical systems.
- Understand the main types of multiplexing (time, frequency, spatial, and code division).

IT 344 : Operating Systems. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 142 & IT 210B & IT 252; or instructor's consent.

DESCRIPTION: Applying and using computer operating systems. Configuration, file systems, security, administration, network interfacing, multitasking, multiuser, device driver installation. Analyzing operating system performance.

**Course Outcomes**

- Describe the purposes, types, components, functions and inter-relationships of operating systems (desktop, mobile, and enterprise). Describe how hardware enables and integrates with this functionality.
- Describe how OS sub-systems work (scheduling, memory management, etc).
- Demonstrate an ability to work with Operating Systems by installing, compiling, configuring, and optimizing real and virtual systems. Describe Scalability issues.
- Describe common IAS concepts related to system administration. Describe system administration aspects of IAS, including authentication, directory services and access control models.
- Describe distributed/virtualization computing concepts. Implement some distributed services in an enterprise environment.
- Independently create systems that are in developing fields or applications of OS and system administration.

IT 347 : Computer Networks. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: IT 210B & STAT 201; C S 236 or concurrent enrollment.

DESCRIPTION: Computer networks. Local and wide-area networking for enterprises and service providers. Workgroups/routers/hubs/switches; network server administration; Internet protocols and routing; security and privacy.

**Course Outcomes**

- Understands computer networking concepts and vocabulary.
- Has received experience with real implementations of the concepts.
- Has built an intuition of the relationship between standards bodies and technology.
- Has built confidence through problem solving.
- Describe the role of a node and a link in an abstract network model.
- Define bandwidth, latency and throughput.
- Explain how bandwidth * latency = data volume is related to the concept of traditional “volume.”
- Describe the operation of a packet based sliding window protocol.
- List 7 layers of the OSI Model and compare them to the layering used in the Internet model.
- Explain the concept of encapsulation and its relationship to layering in the network models.
- Describe how an IP packet is carried in an Ethernet frame.
- Explain how TCP’s byte-stream sliding window is related to a traditional packet-based sliding window algorithm.
- Explain the differences between a hub, switch (bridge), and a router.

- Explain the relationship between an 802.1D bridge and a modern switch.
- Describe how a learning bridge “learns” what port should be used to forward a packet to a device.
- Describe how Spanning tree works and explain why it is necessary.
- Compare and contrast distance-vector and link-state routing algorithms.
- Explain the operation of the components of a SOHO wireless edge router including, DHCP, NAT/PAT, Routing function, Switching function and relationship to wireless access point.
- Describe how DNS works in the global internet including caching and root servers.
- Explain why guaranteed delivery is not desirable in certain multimedia protocols.
- Access MIBS from devices using SNMP on a workstation.
- Describe the operation of and configuration of Virtual LANs on an 802.1Q switchAccess MIBS from devices using SNMP on a workstation.
- Troubleshoot connectivity problems in a host occurring at multiple layers of the OSI model.
- Describe applications of symmetric encryption, asymmetric encryption and one-way hash to authentication, non-repudiation, integrity and confidentiality.

IT 350 : Database Principles and Applications. (3:2:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C S 236 & IT 210B

DESCRIPTION: Database theory and architecture; data modeling; designing application databases. Query languages, data security, database applications on the Web..

**Course Outcomes**

- Define and apply the concepts and terminology of Information Management.
- Apply conceptual modeling concepts using standard techniques such as Entity Relationship and Universal Modeling Language diagrams and tools.Use manual and automated techniques for mapping from conceptual to data models (e.g . ER to Relational).
- Use conceptual and data models to design and implement distributed database access applications applying current languages, system technologies and tools.
- Compare and contrast instalation, management, modeling and security features of current database managment systems
- Integrate, deploy, and demonstrate operational applications on database system infrastructure. Includes use of DDL, DML, programming interfaces and UI implementation.

IT 355 : Human-Computer Interaction. (3:2:4)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: IT 210B & TECH 312 & STAT 201

DESCRIPTION: User experience design techniques and best practices including requirements analysis, usability studies, prototyping methods, evaluation techniques, and cognitive, social, and emotional theories.

**Course Outcomes**

- Explain the significance and benefits of an empathetic understanding of users in systems design
- Analyze users and their environments for the purpose of designing to meet their needs
- Describe and analyze cognitive, affective and cultural aspects of the user experience. Incorporate these into new UI designs.
- Describe and analyze UIs for best-practice UI approaches, including diverse form factors and accessibility issues.
- Design and build UIs in an iterative project environment. Use best practice in creating UIs
- Present and document UX findings and the results of UX project and analysis using technical writing and presentation standards

IT 446 : Senior Project / Capstone 1. (2:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: ENGL 316; All required 300-level information technology courses.

DESCRIPTION: IT senior project proposal and feasibility studies. Project management, teamwork principles, intellectual property, supplier interactions, identifying and using professional technical literature, oral and written presentations.

**Course Outcomes**

- Participate in creation of concept definition, system definition and appropriate artifacts for a real system.
- Define tasks and use tools for the Project Life Cycle and change management
- Demonstrate an understanding of System Life Cycle models, analyze and apply these to contexts for Systems Project Management
- Demonstrate applications of teamwork principles and skills.
- Demonstrate oral and written communication skills for professional technical communication
- Describe intellectual property protections and how they apply to IT projects
- Understand and apply principles of creativity and how they apply to design.

IT 447 : Senior Projects/Capstone 2. (3:1:5)

WHEN TAUGHT: Winter

PREREQUISITE: IT 446

DESCRIPTION: Senior project design and integration. Second class of two-course sequence. Implementing design. Project management, teamwork, and presentations. Fee.

**Course Outcomes**

- Participate as a responsible member of a team in project activities and regular project review meetings with a coach.
- Manage tasks and use appropriate tools for the Project Life Cycle and change management of your

project.
- Evaluate risk in projects and plan to manage it.
- Describe and practice skills and methods of life-long learning.
- Demonstrate written, multimedia, and presentation skills for professional technical communication.
- Demonstrate an understanding of System Life Cycle models, analyze and apply these to contexts for Systems Project Management
- Participate in the System Realization, change management, and demonstration of a real system.

IT 466 : Information Assurance and Security. (3:2:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: IT 344 & IT 347 & IT 350

DESCRIPTION: Computer security principles. Incident prevention and management. Information assurance dimensions of availability, integrity, authentication, confidentiality and non-repudiations to ensure transmission, storage, and processing of information.

**Course Outcomes**

- Explain information assurance and security models, and relate these to historical and current security problems in the context of standards, best practices, policy, planning, usability and continuous education.
- Use risk assessment methods to create a security plan that uses both technical and non-technical countermeasures for a management audience.
- Develop as a team, incident response, disaster recovery and business continuity plans with an awareness of laws, regulatory standards and best practices.
- Install and configure various countermeasures such as firewalls, intrusion detection systems, virtual private networks, and encryption systems; and explain the benefits, limitations and usability impact these may have within an organization.
- Explain how the processes of certification, accreditation and maintenance can mitigate risks, and be able to support these by performing a penetration test using basic hacking techniques.
- Instruct non-technical audiences about the key elements of a good security implementation.

4. Complete 1.5 hours (3 enrollments) of the following:

IT 391R : Junior/Senior Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Required three times during junior/senior years while in professional program. College Lecture and School of Technology Lecture attendance required.

**Course Outcomes**

- Awareness of professional issues in IT.
- Motivation for life-long learning.

5. Complete the following:

ENG T 231 : Foundations of Global Leadership. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Foundational principles and practices of individual and organizational leadership in a global context from an integrated moral, technical and social perspective. Emphasis on developing integrity, valuing and leveraging diversity, acquiring and applying leadership skills.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Able to define integrity, and demonstrate understanding of how it applies to their lives and how to develop it through practice.
- Able to demonstrate familiarity with the code of ethics that corresponds to their profession.
- Able to describe a procedure for making and implementing ethical decisions and effectively apply the procedure to ethical problems of practical interest.
- Able to understand and use a model to describe their own personality type and/or preferences.
- Able to describe what it means to be self-aware and how self-awareness applies to leadership, ethical behavior and global awareness.
- Able to define and effectively practice key interpersonal skills and indicate how they can be cultivated.
- Able to describe a team development process.
- Able to value the diversity that individuals bring to a team setting and use those skills to improve team performance.
- Able to formulate a strategy and develop a plan, consistent with a vision, to accomplish a team project
- Able to define globalization, put it in an historical context and identify some key positive and negative outcomes attributed to globalization
- Able to develop an appreciation for other cultures and an understanding of how cultural factors and other forms of diversity influence communication, teamwork, and the practice of technical disciplines across the globe.
- Able to demonstrate technical understanding of a few global issues and think critically regarding the wise use of technology relative to these issues.

6. After consulting with an information technology advisor, complete 6 hours of upper-division information technology technical electives.

7. Complete the following:

IT 491R : Senior Seminar. (.5:1.0:0)

DESCRIPTION: Seminar topics for near-graduation seniors. Information technology work experience required.

**Course Outcomes**

- Write a great resume
- Ability to interview well
- Understand the offer and negotiate a contract
- Understand Business Etiquette and the written and unwritten rules in the workplace
- Understand what is required for graduation

8. Complete department packet and exit interview.

*Hours include courses that may fulfill university core requirements.

## Show all Information Technology (IT) Courses

**Ira A. Fulton College of Engineering and Technology Home**

**School of Technology Home**

- Technology (Tech) Courses

**Construction and Facilities Management**

Majors

BS in Construction and Facilities Management

Emphases
- Construction Management
- Facilities Management

Course Information
- Construction and Facilties Management (CFM) Courses

**Industrial Design**

Majors
- BFA in Industrial Design

Course Information
- Industrial Design (InDes) Courses

**Information Technology**

Majors
- BS in Information Technology

Minors
- Information Technology

Course Information
- Information Technology (IT) Courses

**Manufacturing Engineering Technology**

Majors
- BS in Manufacturing Engineering Technology

Minors
- Manufacturing

Course Information
- Manufacturing Engineering Technology (Mfg) Courses

**Technology and Engineering**

# Minor in Information Technology (16 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

IT 101 : Cornerstone: Information Technology. (3:2:3)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Planning and preparing for a successful career in information technology. Developing skills with computers, problem solving, studying, and time management. Comparing information technology to computer science, computer engineering, and information systems.

NOTE: Fee.

**Course Outcomes**

- Acquire basic skills in using labs as part of the learning experience.
- Be able to reverse engineer a simple algorithm.
- Acquire basic IT terminology.
- Be able to use basic IT tools at the beginning level.
- Acquire a beginning knowledge of programming.Acquire a beginning knowledge of networking.Acquire a beginning knowledge of computer hardware.Acquire a beginning knowledge of operating systems & servers.Acquire a beginning knowledge of database systems.
- Acquire a beginning knowledge of web systems.Acquire a beginning knowledge of how data is represented in a computer.Acquire a beginning knowledge of human-computer interaction.Acquire a beginning knowledge of systems engineering and development methodologies to guide project management.
- Understand the pervasiveness and impacts of IT in our everyday lives locally and globally as well as across organizations and industries.Acquire a beginning knowledge of computer security and ethical issues.Acquire a beginning knowledge of how IT is organized and governed in organizations and enterprises.
- Acquire basic teamwork skills.Begin using oral and written communication in a professional manner.Begin using basic design and problem-solving skills.Acquire basic knowledge and research skills for continuous learning in IT profession and understand the difference between the four computing majors at BYU (IT, IS, CS, and ECE).Get to know the IT Faculty and other IT Professionals.Acquire basic knowledge and research skills for continuous learning in IT profession and for finding associated IT employment.

IT 124 : Introduction to Computer Systems. (3:3:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 142; or concurrent enrollment.

DESCRIPTION: How a computer works, from hardware to high-level programming language. Logic circuits, Boolean algebra, computer instructions, assembly language, binary arithmetic, and C programming.

**Course Outcomes**

There are no course outcomes available

IT 210A : Fundamentals of Web-Based Information Technology. (2:3:3)

PREREQUISITE: C S 142 & IT 101; or instructor's consent.

DESCRIPTION: Web technologies including distributed architecture, networking, database concepts, client and server development, infrastructure management, and web system integration.

**Course Outcomes**

- Define and describe fundamental computing platform concepts of operating systems and networking and their relationship to Standards
- Analyze, create and integrate systems both at the Web Architecture and at the Web System Architecture levels.
- Demonstrate system administration skills necessary to manage web systems using best practices.
- Review and analyze web systems for specific Information Assurance and Security (IAS) issues, including multiple viewpoints of incident response, within the framework of standard IAS models.
- Analyze and design web systems using professional modeling approaches. This includes systems process development within a larger systems lifecycle model using best practices.
- Acquire and apply life-long learning skills to find, assess, utilize, and attribute web development resources on the Web.

IT 210B : Fundamentals of Web-Based Information Technology. (2:3:3)

PREREQUISITE: IT 210A

DESCRIPTION: Web technologies including distributed architecture, networking, database concepts, client and server development, infrastructure management, and web system integration.

**Course Outcomes**

- Define and describe fundamental computing platform concepts of operating systems and networking and their relationship to Standards.
- Analyze, create and integrate systems both at the Web Architecture and at the Web System Architecture levels.
- Demonstrate system administration skills necessary to manage web systems using best practices
- Review and analyze web systems for specific Information Assurance and Security (IAS) issues, including multiple viewpoints of incident response, within the framework of standard IAS models.
- Analyze and design web systems using professional modeling approaches. This includes systems process development within a larger systems lifecycle model using best practices.
- Acquire and apply life-long learning skills to find, assess, utilize, and attribute web development resources on the Web.
- Demonstrate skills in technical communication

2. Complete two courses from the following to complete the 16 hours required for the minor:

IT 252 : Computer Architecture and Organization. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: IT 124 & C S 235; or C S 124 & C S 235; or EC EN 224 & C S 235

DESCRIPTION: Principles of computer hardware and instruction set architecture. Subjects include: internal CPU organization and implementation, peripheral interconnect and IO systems, and low-level programming and security issues.

**Course Outcomes**

- Demonstrate ability to understand and program with assembly language.
- Demonstrate ability to use a C compiler, an assembler, a disassembler, a debugger, and CPU emulators to develop, debug, test, analyze and optimize programs.
- Know how to write more reliable, secure, and efficient software with an understanding of how the software is executed on the underlying architecture.
- Demonstrate ability to modify a CPU design to add instructions and to improve the overall efficiency of execution.
- Demonstrate understanding of the various abstractions used to manage complexity in computer systems and support application concurrency. e.g. system calls and virtual memory.
- Know how application performance can be affected in a target system by memory hierarchy design factors such as cache size, bus width, clock rate and memory speed.
- Demonstrate how vulnerabilities in software coding can be exploited in computer security attacks (eg. buffer overflow).
- Demonstrate understanding of how peripherals are accessed in a computer system, e.g. polling or interrupt driven I/O.

IT 327 : Digital Communications. (4:3:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Phscs 123 or concurrent enrollment.

DESCRIPTION: Ohm's law, power, inductance, capacitance, reactance, impedance, resonance, transformers. Communication systems, wired and wireless. Bandwidth, modulation; Shannon's theorem, telecommunications. Network physical and data link layers (ISO/OSI model). Optics/Coax/Twisted pair; RS-232/Ethernet; Signals/Protocols/Packets; digital communication theory fundamentals.

**Course Outcomes**

- Learn the EM spectrum and spectral analysis.
- Understand the limitations of communications links.
- Learn the main types of signal modulation (amplitude, frequency, phase).
- Learn the properties of physical communication media.
- Learn about digital information and how it is communicated.
- Understand how communications links are characterized.
- Learn about modern communication systems, including television, facsimiles, telephone, modems, LANs, WANs, satellite, cell phone and optical systems.
- Understand the main types of multiplexing (time, frequency, spatial, and code division).

IT 344 : Operating Systems. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 142 & IT 210B & IT 252; or instructor's consent.

DESCRIPTION: Applying and using computer operating systems. Configuration, file systems, security, administration, network interfacing, multitasking, multiuser, device driver installation. Analyzing operating system performance.

**Course Outcomes**

- Describe the purposes, types, components, functions and inter-relationships of operating systems (desktop, mobile, and enterprise). Describe how hardware enables and integrates with this functionality.
- Describe how OS sub-systems work (scheduling, memory management, etc).
- Demonstrate an ability to work with Operating Systems by installing, compiling, configuring, and optimizing real and virtual systems. Describe Scalability issues.
- Describe common IAS concepts related to system administration. Describe system administration

aspects of IAS, including authentication, directory services and access control models.
- Describe distributed/virtualization computing concepts. Implement some distributed services in an enterprise environment.
- Independently create systems that are in developing fields or applications of OS and system administration.

IT 347 : Computer Networks. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: IT 210B & STAT 201; C S 236 or concurrent enrollment.

DESCRIPTION: Computer networks. Local and wide-area networking for enterprises and service providers. Workgroups/routers/hubs/switches; network server administration; Internet protocols and routing; security and privacy.

**Course Outcomes**

- Understands computer networking concepts and vocabulary.
- Has received experience with real implementations of the concepts.
- Has built an intuition of the relationship between standards bodies and technology.
- Has built confidence through problem solving.
- Describe the role of a node and a link in an abstract network model.
- Define bandwidth, latency and throughput.
- Explain how bandwidth * latency = data volume is related to the concept of traditional “volume.”
- Describe the operation of a packet based sliding window protocol.
- List 7 layers of the OSI Model and compare them to the layering used in the Internet model.
- Explain the concept of encapsulation and its relationship to layering in the network models.
- Describe how an IP packet is carried in an Ethernet frame.
- Explain how TCP’s byte-stream sliding window is related to a traditional packet-based sliding window algorithm.
- Explain the differences between a hub, switch (bridge), and a router.
- Explain the relationship between an 802.1D bridge and a modern switch.
- Describe how a learning bridge “learns” what port should be used to forward a packet to a device.
- Describe how Spanning tree works and explain why it is necessary.
- Compare and contrast distance-vector and link-state routing algorithms.
- Explain the operation of the components of a SOHO wireless edge router including, DHCP, NAT/PAT, Routing function, Switching function and relationship to wireless access point.
- Describe how DNS works in the global internet including caching and root servers.
- Explain why guaranteed delivery is not desirable in certain multimedia protocols.
- Access MIBS from devices using SNMP on a workstation.
- Describe the operation of and configuration of Virtual LANs on an 802.1Q switchAccess MIBS from devices using SNMP on a workstation.
- Troubleshoot connectivity problems in a host occurring at multiple layers of the OSI model.
- Describe applications of symmetric encryption, asymmetric encryption and one-way hash to authentication, non-repudiation, integrity and confidentiality.

IT 350 : Database Principles and Applications. (3:2:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C S 236 & IT 210B

DESCRIPTION: Database theory and architecture; data modeling; designing application databases. Query languages, data security, database applications on the Web..

**Course Outcomes**

- Define and apply the concepts and terminology of Information Management.
- Apply conceptual modeling concepts using standard techniques such as Entity Relationship and Universal Modeling Language diagrams and tools.Use manual and automated techniques for mapping from conceptual to data models (e.g . ER to Relational).
- Use conceptual and data models to design and implement distributed database access applications applying current languages, system technologies and tools.
- Compare and contrast instalation, management, modeling and security features of current database managment systems
- Integrate, deploy, and demonstrate operational applications on database system infrastructure. Includes use of DDL, DML, programming interfaces and UI implementation.

IT 355 : Human-Computer Interaction. (3:2:4)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: IT 210B & TECH 312 & STAT 201

DESCRIPTION: User experience design techniques and best practices including requirements analysis, usability studies, prototyping methods, evaluation techniques, and cognitive, social, and emotional theories.

**Course Outcomes**

- Explain the significance and benefits of an empathetic understanding of users in systems design
- Analyze users and their environments for the purpose of designing to meet their needs
- Describe and analyze cognitive, affective and cultural aspects of the user experience. Incorporate these into new UI designs.
- Describe and analyze UIs for best-practice UI approaches, including diverse form factors and accessibility issues.
- Design and build UIs in an iterative project environment. Use best practice in creating UIs
- Present and document UX findings and the results of UX project and analysis using technical writing and presentation standards

IT 466 : Information Assurance and Security. (3:2:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: IT 344 & IT 347 & IT 350

DESCRIPTION: Computer security principles. Incident prevention and management. Information assurance dimensions of availability, integrity, authentication, confidentiality and non-repudiations to ensure transmission, storage, and processing of information.

**Course Outcomes**

- Explain information assurance and security models, and relate these to historical and current security problems in the context of standards, best practices, policy, planning, usability and continuous education.
- Use risk assessment methods to create a security plan that uses both technical and non-technical countermeasures for a management audience.
- Develop as a team, incident response, disaster recovery and business continuity plans with an awareness of laws, regulatory standards and best practices.
- Install and configure various countermeasures such as firewalls, intrusion detection systems, virtual private networks, and encryption systems; and explain the benefits, limitations and usability impact these may have within an organization.
- Explain how the processes of certification, accreditation and maintenance can mitigate risks, and be able to support these by performing a penetration test using basic hacking techniques.
- Instruct non-technical audiences about the key elements of a good security implementation.

**Note:** Some of the above courses also have prerequisites, which the student must either take or satisfy in another manner. The main prerequisite is experience using a programming language, preferably C, C++, or Java (see C S 142).

*Hours include courses that may fulfill university core requirements.

## Show all Information Technology (IT) Courses

**Ira A. Fulton College of Engineering and Technology Home**

**School of Technology Home**

- Technology (Tech) Courses

**Construction and Facilities Management**

Majors

BS in Construction and Facilities Management

Emphases
- Construction Management
- Facilities Management

Course Information
- Construction and Facilties Management (CFM) Courses

**Industrial Design**

Majors
- BFA in Industrial Design

Course Information
- Industrial Design (InDes) Courses

**Information Technology**

Majors
- BS in Information Technology

Minors
- Information Technology

Course Information
- Information Technology (IT) Courses

**Manufacturing Engineering Technology**

Majors
- BS in Manufacturing Engineering Technology

Minors
- Manufacturing

Course Information
- Manufacturing Engineering Technology (Mfg) Courses

**Technology and Engineering**

# Information Technology (IT)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

IT 101 : Cornerstone: Information Technology. (3:2:3)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Planning and preparing for a successful career in information technology. Developing skills with computers, problem solving, studying, and time management. Comparing information technology to computer science, computer engineering, and information systems.

NOTE: Fee.

**Course Outcomes**

- Acquire basic skills in using labs as part of the learning experience.
- Be able to reverse engineer a simple algorithm.
- Acquire basic IT terminology.
- Be able to use basic IT tools at the beginning level.
- Acquire a beginning knowledge of programming.Acquire a beginning knowledge of networking.Acquire a beginning knowledge of computer hardware.Acquire a beginning knowledge of operating systems & servers.Acquire a beginning knowledge of database systems.
- Acquire a beginning knowledge of web systems.Acquire a beginning knowledge of how data is represented in a computer.Acquire a beginning knowledge of human-computer interaction.Acquire a beginning knowledge of systems engineering and development methodologies to guide project management.
- Understand the pervasiveness and impacts of IT in our everyday lives locally and globally as well as across organizations and industries.Acquire a beginning knowledge of computer security and ethical issues.Acquire a beginning knowledge of how IT is organized and governed in organizations and enterprises.
- Acquire basic teamwork skills.Begin using oral and written communication in a professional manner.Begin using basic design and problem-solving skills.Acquire basic knowledge and research skills for continuous learning in IT profession and understand the difference between the four computing majors at BYU (IT, IS, CS, and ECE).Get to know the IT Faculty and other IT Professionals.Acquire basic knowledge and research skills for continuous learning in IT profession and for finding associated IT employment.

IT 124 : Introduction to Computer Systems. (3:3:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 142; or concurrent enrollment.

DESCRIPTION: How a computer works, from hardware to high-level programming language. Logic circuits, Boolean algebra, computer instructions, assembly language, binary arithmetic, and C programming.

**Course Outcomes**

There are no course outcomes available

IT 198R : Directed Studies in Information Technology. (2:2:2)

DESCRIPTION: Introductory course. Special topics in problem solving and technology careers.

**Course Outcomes**

There are no course outcomes available

IT 199R : Academic Internship: Information Technology. (1-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Consent of both department chair and cooperative education coordinator.

DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Student acquires professional experiences in the discipline.
- Student demonstrates professional communication skills (report).
- Student demonstrates the ability to use reflective thinking to convert professional experience into academic understanding.

**Education**

Majors

- BS in Technology and Engineering Education

Course Information

- Technology and Engineering Education (TEE) Courses

**Faculty**

### 200-Level Courses

IT 210A : Fundamentals of Web-Based Information Technology. (2:3:3)

PREREQUISITE: C S 142 & IT 101; or instructor's consent.

DESCRIPTION: Web technologies including distributed architecture, networking, database concepts, client and server development, infrastructure management, and web system integration.

**Course Outcomes**

- Define and describe fundamental computing platform concepts of operating systems and networking and their relationship to Standards
- Analyze, create and integrate systems both at the Web Architecture and at the Web System Architecture levels.
- Demonstrate system administration skills necessary to manage web systems using best practices.
- Review and analyze web systems for specific Information Assurance and Security (IAS) issues, including multiple viewpoints of incident response, within the framework of standard IAS models.
- Analyze and design web systems using professional modeling approaches. This includes systems process development within a larger systems lifecycle model using best practices.
- Acquire and apply life-long learning skills to find, assess, utilize, and attribute web development resources on the Web.

IT 210B : Fundamentals of Web-Based Information Technology. (2:3:3)

PREREQUISITE: IT 210A

DESCRIPTION: Web technologies including distributed architecture, networking, database concepts, client and server development, infrastructure management, and web system integration.

**Course Outcomes**

- Define and describe fundamental computing platform concepts of operating systems and networking and their relationship to Standards.
- Analyze, create and integrate systems both at the Web Architecture and at the Web System Architecture levels.
- Demonstrate system administration skills necessary to manage web systems using best practices
- Review and analyze web systems for specific Information Assurance and Security (IAS) issues, including multiple viewpoints of incident response, within the framework of standard IAS models.
- Analyze and design web systems using professional modeling approaches. This includes systems process development within a larger systems lifecycle model using best practices.
- Acquire and apply life-long learning skills to find, assess, utilize, and attribute web development resources on the Web.
- Demonstrate skills in technical communication

IT 252 : Computer Architecture and Organization. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: IT 124 & C S 235; or C S 124 & C S 235; or EC EN 224 & C S 235

DESCRIPTION: Principles of computer hardware and instruction set architecture. Subjects include: internal CPU organization and implementation, peripheral interconnect and IO systems, and low-level programming and security issues.

**Course Outcomes**

- Demonstrate ability to understand and program with assembly language.
- Demonstrate ability to use a C compiler, an assembler, a disassembler, a debugger, and CPU emulators to develop, debug, test, analyze and optimize programs.
- Know how to write more reliable, secure, and efficient software with an understanding of how the software is executed on the underlying architecture.
- Demonstrate ability to modify a CPU design to add instructions and to improve the overall efficiency of execution.
- Demonstrate understanding of the various abstractions used to manage complexity in computer systems and support application concurrency. e.g. system calls and virtual memory.
- Know how application performance can be affected in a target system by memory hierarchy design factors such as cache size, bus width, clock rate and memory speed.
- Demonstrate how vulnerabilities in software coding can be exploited in computer security attacks (eg. buffer overflow).
- Demonstrate understanding of how peripherals are accessed in a computer system, e.g. polling or interrupt driven I/O.

### 300-Level Courses

IT 318 : Electronics, Computers, and Manufacturing. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 112 & PHSCS 121; or PHSCS 105 & PHSCS 107; Phscs 121; or Phscs 105 and 107.

DESCRIPTION: Basics of electricity; behavior and manufacture of resistors, inductors, capacitors, transformers; motors; manufacture of transistors, ICs, MCMs, circuit boards. Computers; digital communications; networking.

**Course Outcomes**

- Describe the basic laws governing electronic circuits, both DC and AC.
- Describe the basic safety considerations relevant to electricity.
- Describe how resistors, potentiometers, inductors, capacitors, integrated circuits, printed wiring boards (PWBs), assembled PWBs, multi-chip modules, and hybrids are manufactured.
- Describe the basic operating characteristics for the following 6 motor types: 1) DC; 2) Stepper; 3) DC Brushless; 4) Universal; 5) AC Induction; 6) Synchronous.
- Describe the capabilities and limitations of electronic measuring equipment.
- Describe the basic characteristics of a computer and how they operate.
- Describe how industrial networks operate.

IT 327 : Digital Communications. (4:3:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Phscs 123 or concurrent enrollment.

DESCRIPTION: Ohm's law, power, inductance, capacitance, reactance, impedance, resonance, transformers. Communication systems, wired and wireless. Bandwidth, modulation; Shannon's theorem, telecommunications. Network physical and data link layers (ISO/OSI model). Optics/Coax/Twisted pair; RS-232/Ethernet; Signals/Protocols/Packets; digital communication theory fundamentals.

**Course Outcomes**

- Learn the EM spectrum and spectral analysis.
- Understand the limitations of communications links.
- Learn the main types of signal modulation (amplitude, frequency, phase).
- Learn the properties of physical communication media.
- Learn about digital information and how it is communicated.
- Understand how communications links are characterized.
- Learn about modern communication systems, including television, facsimiles, telephone, modems, LANs, WANs, satellite, cell phone and optical systems.
- Understand the main types of multiplexing (time, frequency, spatial, and code division).

IT 344 : Operating Systems. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 142 & IT 210B & IT 252; or instructor's consent.

DESCRIPTION: Applying and using computer operating systems. Configuration, file systems, security, administration, network interfacing, multitasking, multiuser, device driver installation. Analyzing operating system performance.

**Course Outcomes**

- Describe the purposes, types, components, functions and inter-relationships of operating systems (desktop, mobile, and enterprise). Describe how hardware enables and integrates with this functionality.
- Describe how OS sub-systems work (scheduling, memory management, etc).
- Demonstrate an ability to work with Operating Systems by installing, compiling, configuring, and optimizing real and virtual systems. Describe Scalability issues.
- Describe common IAS concepts related to system administration. Describe system administration aspects of IAS, including authentication, directory services and access control models.
- Describe distributed/virtualization computing concepts. Implement some distributed services in an enterprise environment.
- Independently create systems that are in developing fields or applications of OS and system administration.

IT 347 : Computer Networks. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: IT 210B & STAT 201; C S 236 or concurrent enrollment.

DESCRIPTION: Computer networks. Local and wide-area networking for enterprises and service providers. Workgroups/routers/hubs/switches; network server administration; Internet protocols and routing; security and privacy.

**Course Outcomes**

- Understands computer networking concepts and vocabulary.
- Has received experience with real implementations of the concepts.
- Has built an intuition of the relationship between standards bodies and technology.
- Has built confidence through problem solving.
- Describe the role of a node and a link in an abstract network model.
- Define bandwidth, latency and throughput.
- Explain how bandwidth * latency = data volume is related to the concept of traditional “volume.”
- Describe the operation of a packet based sliding window protocol.
- List 7 layers of the OSI Model and compare them to the layering used in the Internet model.
- Explain the concept of encapsulation and its relationship to layering in the network models.
- Describe how an IP packet is carried in an Ethernet frame.
- Explain how TCP's byte-stream sliding window is related to a traditional packet-based sliding window algorithm.
- Explain the differences between a hub, switch (bridge), and a router.
- Explain the relationship between an 802.1D bridge and a modern switch.
- Describe how a learning bridge “learns” what port should be used to forward a packet to a device.
- Describe how Spanning tree works and explain why it is necessary.
- Compare and contrast distance-vector and link-state routing algorithms.
- Explain the operation of the components of a SOHO wireless edge router including, DHCP, NAT/PAT, Routing function, Switching function and relationship to wireless access point.
- Describe how DNS works in the global internet including caching and root servers.
- Explain why guaranteed delivery is not desirable in certain multimedia protocols.
- Access MIBS from devices using SNMP on a workstation.
- Describe the operation of and configuration of Virtual LANs on an 802.1Q switchAccess MIBS from devices using SNMP on a workstation.
- Troubleshoot connectivity problems in a host occurring at multiple layers of the OSI model.
- Describe applications of symmetric encryption, asymmetric encryption and one-way hash to authentication, non-repudiation, integrity and confidentiality.

IT 350 : Database Principles and Applications. (3:2:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C S 236 & IT 210B

DESCRIPTION: Database theory and architecture; data modeling; designing application databases. Query languages, data security, database applications on the Web..

**Course Outcomes**

- Define and apply the concepts and terminology of Information Management.
- Apply conceptual modeling concepts using standard techniques such as Entity Relationship and Universal Modeling Language diagrams and tools.Use manual and automated techniques for mapping from conceptual to data models (e.g . ER to Relational).
- Use conceptual and data models to design and implement distributed database access applications applying current languages, system technologies and tools.
- Compare and contrast instalation, management, modeling and security features of current database managment systems
- Integrate, deploy, and demonstrate operational applications on database system infrastructure. Includes use of DDL, DML, programming interfaces and UI implementation.

IT 355 : Human-Computer Interaction. (3:2:4)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: IT 210B & TECH 312 & STAT 201

DESCRIPTION: User experience design techniques and best practices including requirements analysis, usability studies, prototyping methods, evaluation techniques, and cognitive, social, and emotional theories.

**Course Outcomes**

- Explain the significance and benefits of an empathetic understanding of users in systems design
- Analyze users and their environments for the purpose of designing to meet their needs
- Describe and analyze cognitive, affective and cultural aspects of the user experience. Incorporate these into new UI designs.
- Describe and analyze UIs for best-practice UI approaches, including diverse form factors and accessibility issues.
- Design and build UIs in an iterative project environment. Use best practice in creating UIs
- Present and document UX findings and the results of UX project and analysis using technical writing and presentation standards

IT 391R : Junior/Senior Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Required three times during junior/senior years while in professional program. College Lecture and School of Technology Lecture attendance required.

**Course Outcomes**

- Awareness of professional issues in IT.
- Motivation for life-long learning.

IT 399R : Academic Internship: Information Technology. (1-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Consent of both department chair and cooperative education coordinator.

DESCRIPTION: Experience in industrial environment. Approved job function supervised by employer and electronics and information technology advisor. Formal technical report required.

**Course Outcomes**

- Student acquires professional experiences in the discipline.
- Student demonstrates professional communication skills (report).
- Student demonstrates the ability to use reflective thinking to convert professional experience into academic understanding.

**400-Level Courses**

IT 410 : Advanced Web Technologies. (3:2:2)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: IT 347 & IT 350 & IT 355; or instructor's consent.

DESCRIPTION: Techniques and best practices for designing, developing, and implementing web applications. Topics include client technologies (e.g., HTML5), web frameworks, adaptive design for mobile, information architecture, load and stress testing, speed optimization, and new developments.

**Course Outcomes**

There are no course outcomes available

IT 441 : Embedded Computer Systems. (3:2:3)

PREREQUISITE: IT 344

DESCRIPTION: Design and development of embedded computer systems interacting with the physical world. Hardware/software interfacing and multiple types of embedded systems. Integrated IT design approach with networking, IAS and human interaction concerns.

**Course Outcomes**

- Describe the characteristics that define embedded systems. Be able to identify embedded systems in various applications.Describe multiple types of embedded systemsDescribe the systems incorporating embedded systems. Analyze case studies to demonstrate the multiple interacting systems required for a successful application.Describe the impact of embedded systems on current and future IT systems.Define real-time computing and its relationship to embedded systemsDescribe communication technologies used in embedded systems
- Describe and analyze sensors and actuators used in embedded systems, including software and hardware

requirements
- Design and create applications for both OS-based and small, non-OS, embedded systems.Set up and use appropriate development environments.
- Integrate more than one type of embedded system to enable networking, sensing and actuation in an IT environment
- Present and document labs and projects

IT 446 : Senior Project / Capstone 1. (2:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: ENGL 316; All required 300-level information technology courses.

DESCRIPTION: IT senior project proposal and feasibility studies. Project management, teamwork principles, intellectual property, supplier interactions, identifying and using professional technical literature, oral and written presentations.

**Course Outcomes**

- Participate in creation of concept definition, system definition and appropriate artifacts for a real system.
- Define tasks and use tools for the Project Life Cycle and change management
- Demonstrate an understanding of System Life Cycle models, analyze and apply these to contexts for Systems Project Management
- Demonstrate applications of teamwork principles and skills.
- Demonstrate oral and written communication skills for professional technical communication
- Describe intellectual property protections and how they apply to IT projects
- Understand and apply principles of creativity and how they apply to design.

IT 447 : Senior Projects/Capstone 2. (3:1:5)

WHEN TAUGHT: Winter

PREREQUISITE: IT 446

DESCRIPTION: Senior project design and integration. Second class of two-course sequence. Implementing design. Project management, teamwork, and presentations. Fee.

**Course Outcomes**

- Participate as a responsible member of a team in project activities and regular project review meetings with a coach.
- Manage tasks and use appropriate tools for the Project Life Cycle and change management of your project.
- Evaluate risk in projects and plan to manage it.
- Describe and practice skills and methods of life-long learning.
- Demonstrate written, multimedia, and presentation skills for professional technical communication.
- Demonstrate an understanding of System Life Cycle models, analyze and apply these to contexts for Systems Project Management
- Participate in the System Realization, change management, and demonstration of a real system.

IT 450 : Database Administration. (3:2.0:3.0)

WHEN TAUGHT: Winter

PREREQUISITE: IT 350

DESCRIPTION: The role and responsibilities of database administrators. Database platform, architecture, and configuration; security and account management; backup, restore and disaster recovery; availability, access and performance; data migration. Labs conducted using Oracle's relational database management.

**Course Outcomes**

There are no course outcomes available

IT 461R : Current Topics in Information Technology. (3:2:3)

PREREQUISITE: Instructor's consent.

DESCRIPTION: In-depth analysis of current growth areas in information technology. Detailed discussion and lab experience of a few topics from faculty working in the field.

**Course Outcomes**

There are no course outcomes available

IT 466 : Information Assurance and Security. (3:2:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: IT 344 & IT 347 & IT 350

DESCRIPTION: Computer security principles. Incident prevention and management. Information assurance dimensions of availability, integrity, authentication, confidentiality and non-repudiations to ensure transmission, storage, and processing of information.

**Course Outcomes**

- Explain information assurance and security models, and relate these to historical and current security problems in the context of standards, best practices, policy, planning, usability and continuous education.
- Use risk assessment methods to create a security plan that uses both technical and non-technical countermeasures for a management audience.
- Develop as a team, incident response, disaster recovery and business continuity plans with an awareness of laws, regulatory standards and best practices.
- Install and configure various countermeasures such as firewalls, intrusion detection systems, virtual private networks, and encryption systems; and explain the benefits, limitations and usability impact these may have within an organization.
- Explain how the processes of certification, accreditation and maintenance can mitigate risks, and be able to

support these by performing a penetration test using basic hacking techniques.
- Instruct non-technical audiences about the key elements of a good security implementation.

IT 491R : Senior Seminar. (.5:1.0:0)

DESCRIPTION: Seminar topics for near-graduation seniors. Information technology work experience required.

**Course Outcomes**

- Write a great resume
- Ability to interview well
- Understand the offer and negotiate a contract
- Understand Business Etiquette and the written and unwritten rules in the workplace
- Understand what is required for graduation

IT 492R : Special Problems in Information Technology. (1-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Informational technology senior standing, Engl 316, and an approved project proposal.

DESCRIPTION: Individual study in current topics of information technology.

**Course Outcomes**

- The nature of Information Technology is constant change.This course allows students to pursue personal interests under the direction of a faculty member.

## 500-Level Graduate Courses (available to advanced undergraduates)

IT 515R : Special Topics in Information Technology. (1-3:ARR:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: New topics in information technology for graduate and undergraduate students. Standard lecture and lab format.

**Course Outcomes**

- Learn and apply IT concepts and/or practices in a specialized area of IT.

IT 529 : Advanced Networking. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: IT 344, 347; or equivalents.

DESCRIPTION: Analyzing, selecting, configuring, monitoring, and managing of computer network equipment. SNMP-based monitoring and control in process of fault isolation and root cause analysis.

**Course Outcomes**

- Understands history and evolution of 802.1D, Spanning tree, VLANs and their relationships.
- Has received experience with real implementation of the concepts.
- Has built an intuition of the relationship between standards bodies and technology.
- Has built confidence through problem solving.
- Describe configuration and management issues relative to SNMP MIB.
- Perform basic monitoring with SNMP.
- Perform basic control with SNMP.
- Describe function and purpose of network management systems such as Zenoss, HP OpenView, Tivoli, OpenNMS.
- Perform basic monitoring using some NMS.
- Explain the interaction of a router and a switch implemented in the same device where the router forwards between VLANs only.
- Describe the architecture of a modern enterprise switch-router.
- Explain the details of Distance Vector routing and its advantages and disadvantages relative to Link State routing.
- Explain the details of Link state routing and its advantages and disadvantages relative to Distance Vector Routing.
- Describe the function of and uses of MPLS.
- Has gained experience and confidence in presenting technical information.
- Describe IPv6 and its evolution from IPv4.
- Explain reasons why IPv6 has not been adopted as rapidly as originally predicted.
- Is prepared to read technical literature and evaluate quality of the information.
- Is prepared to read technical literature and present the information and its context to an audience of peers.
- Explain the need for continuous learning in the networking field.

IT 548 : Mechatronics. (3:2:3)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Synergistic application of mechanical devices, electronic controls, and cyber-system principles. Design of integrated systems that interact between the real world and the IT cyber-space environment. Advanced applications of automation and control.

**Course Outcomes**

- Explain what disciplines comprise Mechatronics. Explain how the discipline of mechatronics is an integration of ideas and technologies from the contributing disciplines.
- Explain how the fields of Information Technology (IT) and Mechatronics interact
- Explain design approaches for integrated (multi-disciplinary) systems and how they are applied to Mechatronics (systems design)

- Design system modules with heterogenous component technologies including industrial control (PLC/SCADA/other), sensors and actuators, interface electronics and embedded computer components
- Design, develop and demonstrate a complete mechatronic project using a variety of mechatronic technologies, including IT design aspects.
- Analyze and report on design elements from various technologies and their integration for their intended purpose(s) in Mechatronic systems.

IT 555 : Advanced Human-Computer Interaction. (3:2:2)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: IT 355; or instructor's consent.

DESCRIPTION: Advanced techniques for designing, prototyping, building, and evaluating technology-mediated user experiences. Human-computer interaction research methods including experimental design. Ethics of working with human subjects. HCI theories and best practices.

**Course Outcomes**

There are no course outcomes available

IT 566 : Digital Forensics. (3:2:3)

WHEN TAUGHT: Winter Contact Department

PREREQUISITE: IT 466 or equivalent.

DESCRIPTION: Fundamentals of digital forensics, legal issues, evidence, chain of custody, media analysis, incident response, corporate forensics, and network forensics.

**Course Outcomes**

- Determine the nature and extent of an incident by applying the principles of digital forensics, including where appropriate reconstructing a cyber-incident.
- Analyze volatile data, nonvolatile data and files of unknown origin.
- Compare the priorities of cyber forensics for different communities
- Evaluate and integrate different tools to create a personal forensics toolkit.
- Defend the results of an investigation to various audiences including technical, legal and management.
- Create and justify forensic checklists for both existing and new technologies using established methods.

IT 567 : Cyber Security and Penetration Testing. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: IT 466 or C S 465 or I Sys 560 or equivalent content course from another institution.

DESCRIPTION: Advanced computer systems security. Vulnerabilities and exploits. System and network attacks. Ethical hacking and penetration testing. Cyber security, cyber weapons, and advanced persistent threats. Legal and regulatory requirements for security and privacy.

**Course Outcomes**

- 1. Explain the regulatory and legal requirements, and rationale for penetration testing
- 2. Hold an in-depth discussion about the ethics of cyber-security and other associated domains.
- 3. Demonstrate the use of various security tools, their application in a penetration test and be able to explain how such tools may be abused.
- 4. Illustrate clearly, by means of a written report and verbal presentation, the results of a penetration test with clear recommendations.
- 5. Explain how exploits and vulnerabilities are discovered and the correct protocols to report these for vendor fixes.
- 6. Be able to discuss new threat-types such as APT's and Cyber-Weapons and use these to explain why lifelong learning is critical for a security professional.

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**Ira A. Fulton College of Engineering and Technology Home**

**School of Technology Home**

- Technology (Tech) Courses

**Construction and Facilities Management**

Majors

BS in Construction and Facilities Management

Emphases
- Construction Management
- Facilities Management

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- Construction and Facilties Management (CFM) Courses

**Industrial Design**

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**Information Technology**

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Minors
- Information Technology

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- Information Technology (IT) Courses

**Manufacturing Engineering Technology**

Majors
- BS in Manufacturing Engineering Technology

Minors
- Manufacturing

Course Information
- Manufacturing Engineering Technology (Mfg) Courses

**Technology and Engineering**

# Manufacturing Engineering Technology

Michael Miles, Program Coordinator
265 CTB, (801) 422-6300

## Admission to Degree Program

Admission to the manufacturing engineering technology program is open to all BYU students.

## Educational Objectives

The MET Program Educational Objectives are aligned with its Vision/Mission and the Four Pillars of Manufacturing Knowledge. The MET graduates shall:

1. Be leaders in the world of Manufacturing,
2. Be life-long learners and contributors to the field of Manufacturing,
3. Be positive contributors to society and their communities, and
4. Understand the ethical, economic, social and environmental impact Manufacturing has on society.

## Program Outcomes

- Leadership — graduates will be able to develop a vision and lead a team or an organization to excellence in all of the areas listed below.
- Professionalism — graduates will have high ethical values, exhibit good work habits and continuously develop relevant new knowledge and skills.
- Creativity and problem solving — graduates will see manufacturing problems from multiple and new perspectives, generate alternative, innovative solutions and select and implement the best solution.
- Management — graduates will be able to plan, organize, staff, and control manufacturing projects.
- Materials — graduates will understand the physical and mechanical properties of engineering materials.
- Processes — graduates will understand manufacturing processes and their applications.
- Quality — graduates will be committed to quality and to continuously improving products and processes.
- Systems — graduates will understand the dynamics of manufacturing systems and supply chains and how to effectively configure the optimum system for efficient manufacture and delivery.
- Design — graduates will be able to design tooling/fixturing and contribute to the design of world-class products.
- Communication — graduates will be effective two-way communicators.
- Global awareness — graduates will be aware of the issues associated with off-shore manufacturing.
- Human and environmental factors — graduates will understand manufacturing's impact on society and the environment.

## The Discipline

Manufacturing is an exciting and rewarding discipline that has significant impact on a society's standard of living and economic independence. At BYU the manufacturing program is specifically oriented toward creating leaders in the industry.

Students in manufacturing learn creative and analytical skills that will enable them to quickly diagnose and solve manufacturing problems with insight from both engineering and management perspectives. They also develop interpersonal and communication skills that will prepare them to work as part of an engineering team and effectively interact with vendors, management, and production personnel. In addition, they receive hands-on training in modern lab facilities and learn to use computers to design, analyze, implement, and control manufacturing operations.

Manufacturing professionals are knowledgeable and skilled in the management, methods, technologies, equipment, and tooling needed to produce affordable products of high quality. They are able to effectively coordinate the procurement, installation, and start-up of production equipment as well as improve the productivity of existing operations. They are also able to coordinate manufacturing and supply-chain operation in a global setting.

The manufacturing engineering technology program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone (410) 347-7700. The program provides students with the option of obtaining a minor in business management. Students may take their electives in other areas of specialization as well. Graduates may further their technical and managerial skills by pursuing either a master of science in technology or a master of business administration.

## Career Opportunities

Career opportunities in manufacturing are plentiful and rewarding. Leaders of industry often have manufacturing backgrounds. Typical entry-level job titles include manufacturing engineer, quality manager, process engineer, tool engineer, product engineer, quality engineer, production supervisor, and account manager (technical sales). New graduates are typically hired into technical positions but have the opportunity to move into management.

The job outlook for manufacturing graduates is bright and should continue to be strong into the future. When one considers that everything that does not exist as part of nature is the product of some form of manufacturing, it is easy to see that manufacturing is an integral part of our society and generates an ever-growing workforce. Progressive companies worldwide seek qualified individuals who can provide leadership in improving the quality and productivity of their manufacturing operations.

**Education**

Majors

- BS in Technology and Engineering Education

Course Information

- Technology and Engineering Education (TEE) Courses

**Faculty**

# General Information

The manufacturing program is designed to provide simple transfer from local schools, including BYU—Idaho, Salt Lake Community College (SLCC), and Utah Valley University (UVU). Students transferring from these or other schools should meet with college and program advisors as soon as possible to evaluate transfer credits and plan their BYU curriculum.

**Ira A. Fulton College of Engineering and Technology Home**

**School of Technology Home**

- Technology (Tech) Courses

**Construction and Facilities Management**

Majors

BS in Construction and Facilities Management

Emphases
- Construction Management
- Facilities Management

Course Information
- Construction and Facilties Management (CFM) Courses

**Industrial Design**

Majors
- BFA in Industrial Design

Course Information
- Industrial Design (InDes) Courses

**Information Technology**

Majors
- BS in Information Technology

Minors
- Information Technology

Course Information
- Information Technology (IT) Courses

**Manufacturing Engineering Technology**

Majors
- BS in Manufacturing Engineering Technology

Minors
- Manufacturing

Course Information
- Manufacturing Engineering Technology (Mfg) Courses

**Technology and Engineering**

# BS in Manufacturing Engineering Technology (78–81 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Students must have a minimum of 124 total hours to graduate with this major.
2. Complete the following manufacturing core courses:

MFG 130 : Modern Manufacturing. (3:2:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Methods and characteristics of successful manufacturing engineers and managers. Introduction to engineering and technology, design, and project management. Lab.

**Course Outcomes**
- Describe the four pillars of manufacturing and their relationship to the manufacturing system.
- Help student prepare for productive professional lives including insights into leadership, teamwork and innovation.

MFG 220 : Material Removal. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: MFG 130; or concurrent enrollment.

DESCRIPTION: Methods and procedures to shape materials using basic machine tools; cutting theory, tool selection, metrology methods, and machine operation. Introduction to computer numerical control.

**Course Outcomes**
- Students will understand and be able to apply correct shop safety principles and precautions while working with or around metal cutting machinery.
- Students will understand and be able to apply the correct principles of cutting metals and non-metals with various machine tools and a variety of cutting tools.
- Students will learn to work on teams while preparing presentations on new metal removal manufacturing processes, and while developing a manufacturing plan for a proposed production run.

MFG 230 : Computer-Aided Manufacturing. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: MFG 220 & ME EN 172

DESCRIPTION: Manual and computer-assisted programming of computer numerical controlled (CNC) equipment. Developing CNC programs to manufacture parts for high production.

**Course Outcomes**
- Students will understand and be able to apply correct shop safety principles and precautions while working with or around metal cutting machinery.
- Students will understand and be able to apply the correct principles of cutting metals and non-metals with various machine tools and a variety of cutting tools.
- Students will understand and be able to apply correct principles related to manual G&M code development, as well as the use of CAD & CAM systems to create G&M code programs.
- Students will understand and be able to apply the design process while solving manufacturing related problems.

MFG 291 : Manufacturing Leadership. (1:1:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures on personal and professional development emphasizing internship preparation. Field trips observing different types of manufacturing.

**Course Outcomes**
- Understand that the essence of leadership is to build people through development of individual talents and fostering life-long growth and learning
- Accept lifelong professional, ethical, and social responsibilities
- Understand how to stay current in technical fields and how to engage in lifelong learning

- Comprehend the challenges of global supply chains
- Acquire an understanding of diverse cultures, perceptions, expectations, and professional practices
- Understand the critical role manufacturing plays in the development and stability of a country and society

MFG 331 : Metals Processes. (4:3:3)

WHEN TAUGHT: Fall
PREREQUISITE: ME EN 250
RECOMMENDED: CE En 203 is strongly recommended.
DESCRIPTION: Capabilities and applications of common metal-processing methods, including relationships between part design, material, and process parameters.

**Course Outcomes**

- Students will learn principles of casting, metal forming, and welding/joining by lecture and by hands-on lab activities. A final project requires students to design and make a part or assembly using the knowledge they gained during the course.

MFG 340 : Quality Systems in Manufacturing. (3:2:3)

WHEN TAUGHT: Winter
PREREQUISITE: STAT 201; or concurrent enrollment.
DESCRIPTION: Tools and principles of quality in manufacturing systems based on the Six Sigma process. Basic tools, variation, loss function, cost of quality, SPC, DOE, and FMEA. Comprehensive project required.

**Course Outcomes**

- Function effectively as a member or leader of a team
- Understand how to communicate effectively to build relationship and to gain support and commitment of others
- Asses the nature, types and impact of variation
- Understand how to effectively define, measure, analyze, improve and control quality
- Understand the reason for, and impact of, national and international regulatory standards and certifications
- Understand and implement system improvement concepts (lean, TOC, etc.)
- Use modern tools of communication such as charts, graphs, media, and other visual aids

MFG 355 : Plastics Materials and Processing. (3:2:3)

WHEN TAUGHT: Winter
PREREQUISITE: ME EN 250; or CH EN 378; or instructor's consent.
DESCRIPTION: Understanding plastic materials, properties, and uses. Survey of plastic-manufacturing processes. Designing plastic products and manufacturing systems.

**Course Outcomes**

- Understand the behavior and properties of plastic materials as they are affected by manufacturing processes.
- Understand the design of plastic products and the equipment, tooling, and environment necessary for their manufacture.
- Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- Function effectively on interdisciplinary teams and to demonstrate leadership characteristics
- Apply knowledge of mathematics, statistics, science and engineering in plastics manufacturing.
- Identify, formulate, and solve manufacturing-engineering problems related to plastics.
- Understand the impact of manufacturing engineering solutions in a global, economic, environmental, and societal context, especially as regards plastics.
- Have a knowledge of contemporary issues in plastics manufacturing.

MFG 431 : Tool Design. (3:2:3)

WHEN TAUGHT: Fall; Spring Contact Department
PREREQUISITE: MFG 230 & MFG 331
DESCRIPTION: Designing special tooling for manufacturing processes using solids-modeling design systems.
NOTE: As a prerequisite, MFG 331 can be taken concurrently. Contact instructor.

**Course Outcomes**

- Students will utilize past and additional instruction on the Design Process to solve manufacturing problems related to tooling.
- Students will understand and be able to apply correct principles when design tooling for a variety of processes, such as gages, fixtures, jigs, punch and die, and injection molds.
- Students will understand and apply correct principles related to cost analysis and estimation when designing tooling for manufacturing.

MFG 434 : Introduction to Manufacturing Automation. (3:2:2)

WHEN TAUGHT: Winter
PREREQUISITE: CE EN 203 & MFG 230 & IT 318
DESCRIPTION: Sensors, actuators, robotics, part feeding and assembly, PLCs, pneumatic and hydraulic control, justifying automation.
NOTE: IT 318 may be taken concurrently. Contact the instructor.

**Course Outcomes**

- Select appropriate automation processes and equipment
- Assess the impact of part variation on production
- Apply Design-for-Assembly principles to manufactured parts
- Communicate effectively through technical reports

MFG 480 : Process Planning and Systems Design. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MFG 340

DESCRIPTION: Analyzing product specifications and production requirements for manufacturing. Equipment selection and justification; facility layout and material-handling system design; process-improvement techniques.

**Course Outcomes**

- Understand key metrics in manufacturing and how they are influenced
- Know how to apply process-improvement methodologies (Lean, Six Sigma, TOC, etc.) in order to reduce lead times and to improve efficiency and quality
- Develop a detailed process plan.
- Design a cell, production line, or a plant layout.
- Understand the different elements comprising a manufacturing system and how they interact.
- Develop a schedule for system implementation and startup.
- Understand the principles and techniques of production and inventory control.
- Use discrete event simulation to evaluate a system design.
- Determine resource requirements based on standard operator times and effective machine cycle times.
- Perform an economic anaysis for justifying a proposed manufacturing solution.

MFG 491A : Professional Seminar. (.5:0.5:0)

WHEN TAUGHT: Winter

PREREQUISITE: MFG 291; Senior standing.

DESCRIPTION: Lectures on professionalism, leadership, and career and life success.

**Course Outcomes**

There are no course outcomes available

MFG 491B : Professional Seminar. (.5:0.5:0)

WHEN TAUGHT: Winter

PREREQUISITE: MFG 291; Senior standing.

DESCRIPTION: Reviewing and understanding the manufacturing principles to be tested on the SME exam.

**Course Outcomes**

There are no course outcomes available

3. Complete 3 hours of the following:

MFG 399R : International Internship. (1-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Second-semester junior standing and faculty authorization.

DESCRIPTION: Working in teams to solve problems encountered in international industry. Project management and reporting under guidance of industry supervisor and department faculty.

**Course Outcomes**

No outcomes are available at this time.

4. Complete the following supporting courses:

CE EN 103 : Engineering Mechanics--Statics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 112; or MATH 111 & MATH 119; or concurrent enrollment.

DESCRIPTION: Concepts of mechanics: force systems in equilibrium, resultants, friction, centroids, utilization of vector algebra, simple trusses, shear and bending moment diagrams, moments of inertia.

**Course Outcomes**

- Be able to manipulate basic engineering units in both the International and US Customary Systems of Units in engineering analysis and be able to convert between the two.
- Be able to perform basic vector operations using standard vector notation.
- Be able to conceptualize and draw a conventional free-body diagram which identifies and applies all known and unknown forces.
- Understand the nature of forces(s) and their manipulation in engineering analysis, including moments, couples, transmissibility and resultants.
- Understand the conditions for equilibrium for both a particle and a rigid body.
- Be able to determine the axial forces in the members of a statically determinant truss.
- Be able to calculate the center of gravity for 2 and 3 dimensional rigid bodies.
- Be able to both calculate and draw diagrams for the internal shear forces and bending moments in straight, statically determinant beams.
- Understand the nature of friction and be able to solve problems involving friction and shear on horizontal and inclined planes.

- Be able to use calculus to compute centroids of lines, areas and volumes.
- Demonstrate competence in basic engineering analysis.

CE EN 203 : Engineering Mechanics--Mechanics of Materials. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CE EN 103

DESCRIPTION: Fundamental concepts of elastic stress and strain, including transformations and stress-strain relations; beam/column theories (axial, flexure, torsion, and shear loads and deformations); shear and bending moment relationships; column stability; and cylindrical and spherical pressure vessels.

**Course Outcomes**

- Students will be able to calculate and transform axial stress (e.g., Mohr's Circle), shear stress, bearing stress, thermal stress, bending stress, and combined stress.
- Students will be able to calculate strain, transform strain (e.g., Mohr's Circle), apply stress-strain relations (e.g., Hooke's Law), and solve statically indeterminate problems.
- Students will be able to analyze deflections due to axial, torsion, bending, and shear loads, and manipulate relations between shear and bending moment.
- Students will be able to design beams and columns to carry specified axial, flexure, and shear loads, and predict their deformation and elastic stability (i.e., buckling).
- Students will be able to predict stresses in pressure vessels.

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.

- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

ENG T 231 : Foundations of Global Leadership. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Foundational principles and practices of individual and organizational leadership in a global context from an integrated moral, technical and social perspective. Emphasis on developing integrity, valuing and leveraging diversity, acquiring and applying leadership skills.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Able to define integrity, and demonstrate understanding of how it applies to their lives and how to develop it through practice.
- Able to demonstrate familiarity with the code of ethics that corresponds to their profession.
- Able to describe a procedure for making and implementing ethical decisions and effectively apply the procedure to ethical problems of practical interest.
- Able to understand and use a model to describe their own personality type and/or preferences.
- Able to describe what it means to be self-aware and how self-awareness applies to leadership, ethical behavior and global awareness.
- Able to define and effectively practice key interpersonal skills and indicate how they can be cultivated.
- Able to describe a team development process.
- Able to value the diversity that individuals bring to a team setting and use those skills to improve team performance.
- Able to formulate a strategy and develop a plan, consistent with a vision, to accomplish a team project
- Able to define globalization, put it in an historical context and identify some key positive and negative outcomes attributed to globalization
- Able to develop an appreciation for other cultures and an understanding of how cultural factors and other forms of diversity influence communication, teamwork, and the practice of technical disciplines across the globe.
- Able to demonstrate technical understanding of a few global issues and think critically regarding the wise use of technology relative to these issues.

IT 318 : Electronics, Computers, and Manufacturing. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 112 & PHSCS 121; or PHSCS 105 & PHSCS 107; Phscs 121; or Phscs 105 and 107.

DESCRIPTION: Basics of electricity; behavior and manufacture of resistors, inductors, capacitors, transformers; motors; manufacture of transistors, ICs, MCMs, circuit boards. Computers; digital communications; networking.

**Course Outcomes**

- Describe the basic laws governing electronic circuits, both DC and AC.
- Describe the basic safety considerations relevant to electricity.
- Describe how resistors, potentiometers, inductors, capacitors, integrated circuits, printed wiring boards (PWBs), assembled PWBs, multi-chip modules, and hybrids are manufactured.
- Describe the basic operating characteristics for the following 6 motor types: 1) DC; 2) Stepper; 3) DC Brushless; 4) Universal; 5) AC Induction; 6) Synchronous.
- Describe the capabilities and limitations of electronic measuring equipment.
- Describe the basic characteristics of a computer and how they operate.
- Describe how industrial networks operate.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

RECOMMENDED: Math 290.

DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

: Honors Elementary Linear Algebra. (3:3:1)

**Course Outcomes**

ME EN 172 : Engineering Graphics--Principles and Applications. (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Engineering and technology major status.

DESCRIPTION: Comprehensive applications of CAD-based national (ANSI) and international (ISO) graphics standards, including coordinate and geometric dimensioning and tolerancing practices, manufacturing, and product verification procedures.

**Course Outcomes**

- 1. Understand both surface and solid modeling techniques found in a modern commercial CAD package.
- 2. Create a CAD model of basic machine components and assemblies.
- 3. Design and create CAD models of average to complex mechanical components.
- 4. Create, read and understand engineering drawings composed of multiple views with standard dimensioning and tolerancing nomenclature.
- 5. Create, read and understand engineering drawings that contain geometric dimensioning and tolerancing symbology.
- 6. Understand the approaches and processes used in component and assembly modeling, i.e. top-down and bottom-up design.
- 7. Collaborate with teammates to learn how to apply CAD tools to the modeling projects.
- 8. Learn about design and engineering processes in a global context.

ME EN 250 : Science of Engineering Materials. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105

DESCRIPTION: Principles and properties of solid materials and their behavior as applied to engineering.

**Course Outcomes**

- 1. Describe the functional behaviors of the primary classes of materials (metals, ceramics, polymers, composites).
- 2. Predict material properties based on atomic structure and defects.
- 3. Apply the lever rule to binary phase diagrams.
- 4. Model the stress-strain diagram and describe the mechanisms for altering it for the various classes of materials.
- 5. Describe the kinetics of diffusion and the process of nucleation and growth as they affect transformation products.
- 6. Describe common degradation and failure processes for each basic class of materials.
- 7. Select an appropriate material class given functional requirements.

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

TECH 312 : Exploration in Innovation Design Techniques. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Through a series of hands-on experiences, students explore principles, methods, and tools of innovation and design thinking in technology and engineering.

**Course Outcomes**

- Gain better appreciation and understanding of innovation
- Develop an ability to generate new ideas
- Develop innovation skills to develop ideas into products and processes

- Collaborate as a team to complete a project
- Present ideas and work to the class

5. Complete the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

6. Complete one of the following options:

**Either**

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: High school algebra and trigonometry.
RECOMMENDED: Concurrent enrollment in Phscs 107.
DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 105 or concurrent enrollment.
DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

**Or**

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Calculus or concurrent enrollment.
DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

7. Complete the following:

ME EN 475 : Integrated Product and Process Design 1. (3:2:3)

WHEN TAUGHT: Fall
PREREQUISITE: ME EN 363 & ME EN 372 & ME EN 373; or EC EN 340 & EC EN 370 & EC EN 380; or ENG T 231 & MFG 340 & MFG 355; Senior standing (fewer than 30 hours remaining in the program) in mechanical engineering, manufacturing engineering technology, industrial design, or related disciplines with instructor's consent.
DESCRIPTION: Comprehensive two-semester design experience from conception to manufacturing planning and prototype. Product development process. Economic and manufacturing considerations. Intellectual property assignment agreement required.

NOTE: MeEn 475 and 476 must be taken in consecutive fall and winter semesters.

**Course Outcomes**

- 1. Understand the six stages of development through which each product passes.
- 2. Understand how the product information (requirement information and design information) evolves through the stages of development.
- 3. Understand how a purposeful network of design activities is used to cause the product information to evolve.
- 4. Understand how acceptance tests are used to ensure the transferability and quality of the product information throughout the stages of development.
- 5. Understand how product development processes can be customized for specific development projects.
- 6. Develop skills in project planning, idea generation, prototyping, developing engineering models, and engineering reporting and presentations.
- 7. Understand how to work within organizational policies to accomplish important goals.
- 8. Demonstrate the ability to use effective team processes, communication, and conflict resolution skills to enhance synergy on a project team.

ME EN 476 : Integrated Product and Process Design 2. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 363 & ME EN 372 & ME EN 373; or EC EN 340 & EC EN 370 & EC EN 380; or ENG T 231 & MFG 340 & MFG 355; Senior standing (fewer than 30 hours remaining in the program) in mechanical engineering, manufacturing engineering technology, industrial design, or related disciplines with instructor's consent.

DESCRIPTION: Comprehensive two-semester design experience from conception to manufacturing planning and prototype. Product development process. Economic and manufacturing considerations. Intellectual property assignment agreement required.

NOTE: MeEn 475 and 476 must be taken in consecutive fall and winter semesters.

**Course Outcomes**

- 1. Develop skills in product development economics and engineering drawing review and checking.
- 2. Develop and demonstrate basic understanding in at least two Design for X areas, such as Design for Manufacturing and Design for Sustainability.
- 3. Develop and demonstrate basic skills with at least two design tools, such as optimization, design of experiments, and sketching.
- 4. Understand real world applications of development methods from development case studies and product development professionals.
- 5. Demonstrate the ability to use effective team processes, communication, and conflict resolution skills to enhance synergy on a project team.
- 6. Apply the understanding and skills from Me En 475 and the other outcomes from Me En 476 while working with a project sponsor in a team setting to produce desirable and transferable product information, through design, building, and acceptance testing.

8. Complete department packet and exit interview.

*Hours include courses that may fulfill university core requirements.

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- BFA in Industrial Design

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**Information Technology**

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- Information Technology (IT) Courses

**Manufacturing Engineering Technology**

Majors
- BS in Manufacturing Engineering Technology

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- Manufacturing

Course Information
- Manufacturing Engineering Technology (Mfg) Courses

**Technology and Engineering**

# Minor in Manufacturing (15 hours)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

MFG 130 : Modern Manufacturing. (3:2:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Methods and characteristics of successful manufacturing engineers and managers. Introduction to engineering and technology, design, and project management. Lab.

**Course Outcomes**
- Describe the four pillars of manufacturing and their relationship to the manufacturing system.
- Help student prepare for productive professional lives including insights into leadership, teamwork and innovation.

MFG 340 : Quality Systems in Manufacturing. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 201; or concurrent enrollment.

DESCRIPTION: Tools and principles of quality in manufacturing systems based on the Six Sigma process. Basic tools, variation, loss function, cost of quality, SPC, DOE, and FMEA. Comprehensive project required.

**Course Outcomes**
- Function effectively as a member or leader of a team
- Understand how to communicate effectively to build relationship and to gain support and commitment of others
- Asses the nature, types and impact of variation
- Understand how to effectively define, measure, analyze, improve and control quality
- Understand the reason for, and impact of, national and international regulatory standards and certifications
- Understand and implement system improvement concepts (lean, TOC, etc.)
- Use modern tools of communication such as charts, graphs, media, and other visual aids

MFG 480 : Process Planning and Systems Design. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MFG 340

DESCRIPTION: Analyzing product specifications and production requirements for manufacturing. Equipment selection and justification; facility layout and material-handling system design; process-improvement techniques.

**Course Outcomes**
- Understand key metrics in manufacturing and how they are influenced
- Know how to apply process-improvement methodologies (Lean, Six Sigma, TOC, etc.) in order to reduce lead times and to improve efficiency and quality
- Develop a detailed process plan.
- Design a cell, production line, or a plant layout.
- Understand the different elements comprising a manufacturing system and how they interact.
- Develop a schedule for system implementation and startup.
- Understand the principles and techniques of production and inventory control.
- Use discrete event simulation to evaluate a system design.
- Determine resource requirements based on standard operator times and effective machine cycle times.
- Perform an economic anaysis for justifying a proposed manufacturing solution.

2. Complete two courses from the following:

MFG 220 : Material Removal. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: MFG 130; or concurrent enrollment.

DESCRIPTION: Methods and procedures to shape materials using basic machine tools; cutting theory, tool selection, metrology methods, and machine operation. Introduction to computer numerical control.

**Course Outcomes**

- Students will understand and be able to apply correct shop safety principles and precautions while working with or around metal cutting machinery.
- Students will understand and be able to apply the correct principles of cutting metals and non-metals with various machine tools and a variety of cutting tools.
- Students will learn to work on teams while preparing presentations on new metal removal manufacturing processes, and while developing a manufacturing plan for a proposed production run.

MFG 230 : Computer-Aided Manufacturing. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: MFG 220 & ME EN 172

DESCRIPTION: Manual and computer-assisted programming of computer numerical controlled (CNC) equipment. Developing CNC programs to manufacture parts for high production.

**Course Outcomes**

- Students will understand and be able to apply correct shop safety principles and precautions while working with or around metal cutting machinery.
- Students will understand and be able to apply the correct principles of cutting metals and non-metals with various machine tools and a variety of cutting tools.
- Students will understand and be able to apply correct principles related to manual G&M code development, as well as the use of CAD & CAM systems to create G&M code programs.
- Students will understand and be able to apply the design process while solving manufacturing related problems.

MFG 331 : Metals Processes. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: ME EN 250

RECOMMENDED: CE En 203 is strongly recommended.

DESCRIPTION: Capabilities and applications of common metal-processing methods, including relationships between part design, material, and process parameters.

**Course Outcomes**

- Students will learn principles of casting, metal forming, and welding/joining by lecture and by hands-on lab activities. A final project requires students to design and make a part or assembly using the knowledge they gained during the course.

MFG 355 : Plastics Materials and Processing. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 250; or CH EN 378; or instructor's consent.

DESCRIPTION: Understanding plastic materials, properties, and uses. Survey of plastic-manufacturing processes. Designing plastic products and manufacturing systems.

**Course Outcomes**

- Understand the behavior and properties of plastic materials as they are affected by manufacturing processes.
- Understand the design of plastic products and the equipment, tooling, and environment necessary for their manufacture.
- Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- Function effectively on interdisciplinary teams and to demonstrate leadership characteristics
- Apply knowledge of mathematics, statistics, science and engineering in plastics manufacturing.
- Identify, formulate, and solve manufacturing-engineering problems related to plastics.
- Understand the impact of manufacturing engineering solutions in a global, economic, environmental, and societal context, especially as regards plastics.
- Have a knowledge of contemporary issues in plastics manufacturing.

**Show all Manufacturing Engineering Technology (MFG) Courses**

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- Information Technology (IT) Courses

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Majors
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- Manufacturing Engineering Technology (Mfg) Courses

**Technology and Engineering**

# Manufacturing Engineering Technology (Mfg)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

MFG 130 : Modern Manufacturing. (3:2:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Methods and characteristics of successful manufacturing engineers and managers. Introduction to engineering and technology, design, and project management. Lab.

**Course Outcomes**
- Describe the four pillars of manufacturing and their relationship to the manufacturing system.
- Help student prepare for productive professional lives including insights into leadership, teamwork and innovation.

### 200-Level Courses

MFG 220 : Material Removal. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: MFG 130; or concurrent enrollment.

DESCRIPTION: Methods and procedures to shape materials using basic machine tools; cutting theory, tool selection, metrology methods, and machine operation. Introduction to computer numerical control.

**Course Outcomes**
- Students will understand and be able to apply correct shop safety principles and precautions while working with or around metal cutting machinery.
- Students will understand and be able to apply the correct principles of cutting metals and non-metals with various machine tools and a variety of cutting tools.
- Students will learn to work on teams while preparing presentations on new metal removal manufacturing processes, and while developing a manufacturing plan for a proposed production run.

MFG 230 : Computer-Aided Manufacturing. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: MFG 220 & ME EN 172

DESCRIPTION: Manual and computer-assisted programming of computer numerical controlled (CNC) equipment. Developing CNC programs to manufacture parts for high production.

**Course Outcomes**
- Students will understand and be able to apply correct shop safety principles and precautions while working with or around metal cutting machinery.
- Students will understand and be able to apply the correct principles of cutting metals and non-metals with various machine tools and a variety of cutting tools.
- Students will understand and be able to apply correct principles related to manual G&M code development, as well as the use of CAD & CAM systems to create G&M code programs.
- Students will understand and be able to apply the design process while solving manufacturing related problems.

MFG 291 : Manufacturing Leadership. (1:1:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures on personal and professional development emphasizing internship preparation. Field trips observing different types of manufacturing.

**Course Outcomes**
- Understand that the essence of leadership is to build people through development of individual talents and fostering life-long growth and learning
- Accept lifelong professional, ethical, and social responsibilities
- Understand how to stay current in technical fields and how to engage in lifelong learning

**Education**

Majors

- BS in Technology and Engineering Education

Course Information

- Technology and Engineering Education (TEE) Courses

**Faculty**

Comprehend the challenges of global supply chains
- Acquire an understanding of diverse cultures, perceptions, expectations, and professional practices
- Understand the critical role manufacturing plays in the development and stability of a country and society

### 300-Level Courses

MFG 331 : Metals Processes. (4:3:3)

WHEN TAUGHT: Fall
PREREQUISITE: ME EN 250
RECOMMENDED: CE En 203 is strongly recommended.
DESCRIPTION: Capabilities and applications of common metal-processing methods, including relationships between part design, material, and process parameters.

**Course Outcomes**

- Students will learn principles of casting, metal forming, and welding/joining by lecture and by hands-on lab activities. A final project requires students to design and make a part or assembly using the knowledge they gained during the course.

MFG 340 : Quality Systems in Manufacturing. (3:2:3)

WHEN TAUGHT: Winter
PREREQUISITE: STAT 201; or concurrent enrollment.
DESCRIPTION: Tools and principles of quality in manufacturing systems based on the Six Sigma process. Basic tools, variation, loss function, cost of quality, SPC, DOE, and FMEA. Comprehensive project required.

**Course Outcomes**

- Function effectively as a member or leader of a team
- Understand how to communicate effectively to build relationship and to gain support and commitment of others
- Asses the nature, types and impact of variation
- Understand how to effectively define, measure, analyze, improve and control quality
- Understand the reason for, and impact of, national and international regulatory standards and certifications
- Understand and implement system improvement concepts (lean, TOC, etc.)
- Use modern tools of communication such as charts, graphs, media, and other visual aids

MFG 355 : Plastics Materials and Processing. (3:2:3)

WHEN TAUGHT: Winter
PREREQUISITE: ME EN 250; or CH EN 378; or instructor's consent.
DESCRIPTION: Understanding plastic materials, properties, and uses. Survey of plastic-manufacturing processes. Designing plastic products and manufacturing systems.

**Course Outcomes**

- Understand the behavior and properties of plastic materials as they are affected by manufacturing processes.
- Understand the design of plastic products and the equipment, tooling, and environment necessary for their manufacture.
- Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- Function effectively on interdisciplinary teams and to demonstrate leadership characteristics
- Apply knowledge of mathematics, statistics, science and engineering in plastics manufacturing.
- Identify, formulate, and solve manufacturing-engineering problems related to plastics.
- Understand the impact of manufacturing engineering solutions in a global, economic, environmental, and societal context, especially as regards plastics.
- Have a knowledge of contemporary issues in plastics manufacturing.

MFG 399R : International Internship. (1-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Second-semester junior standing and faculty authorization.
DESCRIPTION: Working in teams to solve problems encountered in international industry. Project management and reporting under guidance of industry supervisor and department faculty.

**Course Outcomes**

No outcomes are available at this time.

### 400-Level Courses

MFG 431 : Tool Design. (3:2:3)

WHEN TAUGHT: Fall; Spring Contact Department
PREREQUISITE: MFG 230 & MFG 331
DESCRIPTION: Designing special tooling for manufacturing processes using solids-modeling design systems.
NOTE: As a prerequisite, MFG 331 can be taken concurrently. Contact instructor.

**Course Outcomes**

- Students will utilize past and additional instruction on the Design Process to solve manufacturing problems related to tooling.
- Students will understand and be able to apply correct principles when design tooling for a variety of processes, such as gages, fixtures, jigs, punch and die, and injection molds.

- Students will understand and apply correct principles related to cost analysis and estimation when designing tooling for manufacturing.

MFG 434 : Introduction to Manufacturing Automation. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: CE EN 203 & MFG 230 & IT 318

DESCRIPTION: Sensors, actuators, robotics, part feeding and assembly, PLCs, pneumatic and hydraulic control, justifying automation.

NOTE: IT 318 may be taken concurrently. Contact the instructor.

**Course Outcomes**

- Select appropriate automation processes and equipment
- Assess the impact of part variation on production
- Apply Design-for-Assembly principles to manufactured parts
- Communicate effectively through technical reports

MFG 479 : Innovation and Entrepreneurship. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Develop ideas into a business model. Learn product development. Entrepreneurial concepts and practices. Strategic planning and global competitiveness.

**Course Outcomes**

- Participate effectively on an entrepreneurial founding team
- Evaluate business ideas, opportunities, and plans
- Plan a new business financially
- Understand and apply entrepreneurial terminology to the entrepreneurial and investment ecosystems
- Formulate strategies to overcome common start-up business challenges
- Prepare effectively a written business plan
- Make an effective oral business plan presentation

MFG 480 : Process Planning and Systems Design. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MFG 340

DESCRIPTION: Analyzing product specifications and production requirements for manufacturing. Equipment selection and justification; facility layout and material-handling system design; process-improvement techniques.

**Course Outcomes**

- Understand key metrics in manufacturing and how they are influenced
- Know how to apply process-improvement methodologies (Lean, Six Sigma, TOC, etc.) in order to reduce lead times and to improve efficiency and quality
- Develop a detailed process plan.
- Design a cell, production line, or a plant layout.
- Understand the different elements comprising a manufacturing system and how they interact.
- Develop a schedule for system implementation and startup.
- Understand the principles and techniques of production and inventory control.
- Use discrete event simulation to evaluate a system design.
- Determine resource requirements based on standard operator times and effective machine cycle times.
- Perform an economic anaysis for justifying a proposed manufacturing solution.

MFG 485 : Capstone: Production Management. (3:1:6)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: MFG 340 & MFG 431 & MFG 480

DESCRIPTION: Production operations: designing a production system, carrying our production functions, and procuring materials from suppliers. Principles of lean operations, project management, and industrial supervision.

**Course Outcomes**

There are no course outcomes available

MFG 490R : Special Problems in Manufacturing Engineering Technology. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- Students will learn to work to independently and to take initiative in completing a project while being guided by a faculty member.

MFG 491A : Professional Seminar. (.5:0.5:0)

WHEN TAUGHT: Winter

PREREQUISITE: MFG 291; Senior standing.

DESCRIPTION: Lectures on professionalism, leadership, and career and life success.

**Course Outcomes**

There are no course outcomes available

MFG 491B : Professional Seminar. (.5:0.5:0)

WHEN TAUGHT: Winter

PREREQUISITE: MFG 291; Senior standing.

DESCRIPTION: Reviewing and understanding the manufacturing principles to be tested on the SME exam.

**Course Outcomes**

There are no course outcomes available

## 500-Level Graduate Courses (available to advanced undergraduates)

MFG 531 : Advanced Computer-Aided Manufacturing Programming. (3:2:3)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: MFG 230 or previous CNC programming experience, or instructor's approval.

DESCRIPTION: CAD/CAM programming techniques and requirements for manufacturing components on computer numerical-control machine tools, emphasizing CAM programming, postprocessors, and CAM software evaluation.

NOTE: Fee.

**Course Outcomes**

- Students will understand and be able to apply correct principles in the design of parts, creation of tool path, and machining of the part for advanced surfaces and contours.

MFG 532 : Manufacturing Systems. (3:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: Mfg 480 or instructor's consent.

DESCRIPTION: Analyzing lean manufacturing systems. Numerous examples and case studies from industry demonstrating principles of lean production, inventory management, and lean distribution. Project with a local company to gain confidence with these principles in an industrial setting.

**Course Outcomes**

- Students will understand and be able to apply principles of lean manufacturing in a production environment.

MFG 533 : Manufacturing Information Systems. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: Mfg 480 or instructor's consent.

DESCRIPTION: Applying and integrating software and information technologies in planning, executing, and monitoring production operations.

**Course Outcomes**

- Understand how to design and interpret and enterprise architecture
- Understand the basics of computers, languages, architectures and networking
- Be able to create and use a simple database management system
- Understand the major IT applications used in a manufacturing enterprise.
- Understand the issues associated with IT integration
- Be able to manipulate and analyze data using Excel
- Understand how to specify, evaluate and implement IT systems in manufacturing

MFG 555 : Composite Materials and Processes. (3:2:3)

PREREQUISITE: Graduate standing or instructor's consent.

DESCRIPTION: Structure, processing, properties, and uses of composite materials, including various manufacturing methods and the relationship between properties and fabrication.

**Course Outcomes**

- Lectures on each major resin discussing properties as related to structureLectures on each major resin discussing manufacturing process considerations for that resinLectures on each principal manufacturing method and what properties of a resin are most compatible with that processLectures on each principal manufacturing method and what properties are changed in that processLaboratories on manufacturing methods
- Lecture on design of plastic productsBoeing project on design/implementation of plastics
- Knowledge of chemistry applied in understanding the structure and chemistry relationship to plastics propertiesKnowledge of chemistry applied in understanding the crosslinking reactions in thermosets
- Lectures on processes, especially parts of lectures on troubleshooting

MFG 574 : Advanced Tool Design. (3:2:3)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: MFG 431

DESCRIPTION: Advanced design of net-shape products utilizing CAD and CAE methods. Plastic injection mold design and construction. Rapid prototyping and injection molding project.

**Course Outcomes**

- Students will understand and be able to apply appropriate design principles in the creation of manufacturing tooling.

MFG 575 : Packaging Technologies. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: IT 318 & MFG 431

RECOMMENDED: MFG 220, 230, 355.

DESCRIPTION: Fundamentals of packaging technologies; materials, design and processes. Understanding of the importance and role of packaging in the manufacturing and product environment. Combined instruction and hands-on project application of the various aspects of packaging materials, design, and processes through individual and team assignments, written reports, and oral presentations.

**Course Outcomes**

There are no course outcomes available

MFG 580 : Manufacturing Simulation. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MFG 480

DESCRIPTION: Design and optimization of manufacturing systems using simulation. Simulation languages and modeling methodology.

**Course Outcomes**

- Understand key manufacturing system performance metrics and associated drivers
- Know how to plan and conduct a simulation study
- Be able to collect and analyze input data for use in a simulation study
- Be able to construct an accurate computer model of a manufacturing system
- Be able to design and conduct simulation experiments
- Be able to analyze simulation output and draw appropriate conclusions
- Be able to present a simulation study and make a compelling recommendation

## Graduate Courses

For 600-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Manufacturing Engineering Technology**

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**Technology and Engineering**

# Technology and Engineering Education

Steven Shumway, Program Coordinator
230H SNLB, (801) 422-6496

## Learning Outcomes

- Students will receive an opportunity to interact, be mentored, and have close relationship with faculty members as they learn together about secular and spiritual knowledge.
- Students will be able to become certified secondary education teachers in technology and engineering education for the State of Utah.
- Students will increase technical competency in a technology and/or engineering specialization of their choice.
- Students will develop creativity, design, entrepreneurial, innovative, problem solving, critical thinking, effective communication, and life-long learning skills.
- Students will be stretched to maximize their own individual learning through rigor, excellence, and high expectations of performance.

## The Discipline

Students graduating from the technology and engineering education program at Brigham Young University are prepared to teach in secondary schools. Students in the program are required to take courses in visual communications, production technologies, and engineering design. Students will need to complete 18 hours of technical emphasis in one or two depth areas: graphic design and multimedia, engineering prep and electronics, construction systems, information technology, architecture and furniture design, manufacturing, computer science, and trade and technical. In addition, students are required to complete teacher education courses. Finally, students are provided with field-based experiences to teach at the middle and high school levels throughout the program, culminating with a semester-long supervised student teaching experience.

## Career Opportunities

The dramatic pace of technological innovation makes this a vital major. The current need for teachers is far greater than the number of available graduates resulting in excellent job placement. Most graduates teach technology-related subjects at the middle and high school level. The degree also provides a strong foundation for numerous technical and teaching careers, including corporate or higher education.

## Education

Majors

- BS in Technology and Engineering Education

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- Technology and Engineering Education (TEE) Courses

## Faculty

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**Manufacturing Engineering Technology**

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**Technology and Engineering**

# BS in Technology and Engineering Education (76-77 hours*, including licensure hours)

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*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following core courses:
   a. Complete one course from the following:

CE EN 112 : Engineering Drafting with CAD Applications. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Civil engineering or technology education major status

DESCRIPTION: Structural and component drafting, emphasizing computer-automated (CAD) systems. Concepts include applied and descriptive geometry, multiview representation, sectional views, dimensional practices, and axonometric sketching.

**Course Outcomes**
- An understanding of fundamental drafting concepts and manual drafting techniques
- An understanding of CAD-based drafting techniques
- An ability and skills for preparing technical drawings manually and by using AutoCAD
- An ability to work in a team to complete a term project and produce a technical report
- An ability to communicate with team members and produce an effective, well organized oral presentation
- An understanding of Building Information Modeling (BIM) and its application in engineering
- An ability to use BIM software to develop structural models for analysis
- An ability to present structural data in a collaborative environment

CFM 105 : Introduction to Construction and Facilities Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to construction and facilities management including BIM, estimating, scheduling, and construction calculation methods.

NOTE: Fee.

**Course Outcomes**

There are no course outcomes available

   b. Complete the following:

ENG T 231 : Foundations of Global Leadership. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Foundational principles and practices of individual and organizational leadership in a global context from an integrated moral, technical and social perspective. Emphasis on developing integrity, valuing and leveraging diversity, acquiring and applying leadership skills.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
- Able to define integrity, and demonstrate understanding of how it applies to their lives and how to develop it through practice.
- Able to demonstrate familiarity with the code of ethics that corresponds to their profession.
- Able to describe a procedure for making and implementing ethical decisions and effectively apply the procedure to ethical problems of practical interest.
- Able to understand and use a model to describe their own personality type and/or preferences.
- Able to describe what it means to be self-aware and how self-awareness applies to leadership, ethical behavior and global awareness.

Able to define and effectively practice key interpersonal skills and indicate how they can be cultivated.
- Able to describe a team development process.
- Able to value the diversity that individuals bring to a team setting and use those skills to improve team performance.
- Able to formulate a strategy and develop a plan, consistent with a vision, to accomplish a team project
- Able to define globalization, put it in an historical context and identify some key positive and negative outcomes attributed to globalization
- Able to develop an appreciation for other cultures and an understanding of how cultural factors and other forms of diversity influence communication, teamwork, and the practice of technical disciplines across the globe.
- Able to demonstrate technical understanding of a few global issues and think critically regarding the wise use of technology relative to these issues.

TECH 312 : Exploration in Innovation Design Techniques. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Through a series of hands-on experiences, students explore principles, methods, and tools of innovation and design thinking in technology and engineering.

**Course Outcomes**

- Gain better appreciation and understanding of innovation
- Develop an ability to generate new ideas
- Develop innovation skills to develop ideas into products and processes
- Collaborate as a team to complete a project
- Present ideas and work to the class

TEE 125 : Communication Technologies and Systems. (3:2:4)

WHEN TAUGHT: Fall

DESCRIPTION: Use of, interaction with, and teaching about communication, technologies.

**Course Outcomes**

There are no course outcomes available

TEE 200 : Processes and Prototyping with Wood. (3:2:4)

WHEN TAUGHT: Fall; Winter Even Yrs.; Spring Odd Yrs.

DESCRIPTION: Processes for and prototyping with wood and wood-based composites.

NOTE: Fee.

**Course Outcomes**

- Visualization of how components are joined and how to communicate this through drawings and specifications.Properties of wood as a material and how these properties impact design of projects using wood and wood products.Subtractive processes in prototype construction: sawing, shaping, milling, turning, routing, etc.Additive processes in prototype construction: joining, laminating, fastening, etc.Identification, care, and use of hand tools including tools for measuring, layout, sawing, planing, scraping, shaping, clamping, drilling, driving, and sharpening.Set-up and accurate and safe use of woodworking machinery including the jointer, surface planer, table saw, panel saw radial arm saw, power miter saw, bandsaw, thickness sander, mortiser, boring machine, lathe, and drill press.The use of electric, pneumatic, and cordless power hand tools including routers, drills, and sanders.Methods of clamping, gluing, and assembly, sanding, and finishing.Practical problem solving in working with industrial materials, tools, and machines.The importance of caring, hard work, planning, initiative, and patience, in making a project that is well designed, includes quality workmanship, and is nicely finished. Concepts and methods of teaching safe use of woodworking equipment.Basic machine and hand tool maintenance.

TEE 225 : Electronics for Technology and Engineering Teachers. (3:2:4)

WHEN TAUGHT: Fall

DESCRIPTION: Teaching electronic, construction, and transportation systems.

**Course Outcomes**

- UETS STANDARD 4- Content Knowledge: The teacher understands the central concepts, tools of inquiry, and structure of the discipline. STL Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.· BMG: Technology transfer occurs when a new user applies an existing innovation developed for one purpose in a different function.BMH: Technological innovation often results when ideas, knowledge or skills are shared within a technology, among technologies or across other fields.BMI: Technological progress promotes the advancement of science and mathematics. STL Standard 7: Students will develop an understanding of the influence of technology on history.BMG: Most technological development has been evolutionary, the result of a series of refinements to a basic invention.BMH: The evolution of society has been directly affected by, and has in turn affected, the development and use of tools and materials.BMI: Throughout history, technology has been a powerful force in reshaping the social, cultural, political, and economic landscape.BMO: The information age places emphasis on the processing and exchange of information. STL Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.· BMF: Troubleshooting is a problem-solving method used to identify the cause of a malfunction in a technological system.BMG: Invention is a process of turning ideas and imagination into devices and systems. Innovation is the process of modifying an existing product or system to improve it.BMH: Some technological problems are best solved through experimentation. STL Standard 17: Students will develop an understanding of and be able to select and use information and communication technologies.· BML: Information and

communication technologies include the inputs, processes, and outputs associated with sending and receiving information.BMM: Information and communication systems allow information to be transferred from human to human, human to machine, machine to human, and machine to machine.BMO: Communication systems are made up of source, encoder, transmitter, receiver, decoder, storage, retrieval, and destination.BMP: There are many ways to communicate information, such as graphic and electronic means.BMQ: Technological knowledge and processes are communicated using symbols, measurement, conventions, icons, graphic images, and languages that incorporate a variety of visual, auditory, and tactile stimuli.

- Students will be able to describe the basic electronic concepts of voltage, amperage, resistance & power.Students will be able to use Ohm's and Watt's law to perform basic calculations in an electronic circuit.Students will be able to describe how voltage, amperage, power & resistance behave in series and parallel circuits and be able to calculate unknown quantities in a circuit.Students will be able to use a power supply, breadboard, basic components, and a digital multi-meter to build, test and troubleshoot basic electronic circuits.Students will be able to use a digital multi-meter, oscilloscope and digital logic probe to test, troubleshoot and repair faulty circuits.Students will be able to identify basic electronics components and describe the function of each component.Students will be able to identify and draw the basic schematic symbols used to represent electronics components in a circuit.Students will be able to use appropriate materials and equipment (including simulation software, CNC Mill, soldering iron) to design and build a working electronic circuit that is a solution to a technological problem and/or need.Students will be able to successfully calculate unknown quantities and complete labs associated with magnetism, electromagnetic induction, capacitors, semiconductors, transformers and alternating current.Based on a set of given inputs and desired outputs, students will be able to design a digital electronic circuit as a solution to a technological problem or need.Students will be able to collect technical data and to apply appropriate math and science knowledge to see the connections between technology and other fields of study.Students will be able to describe historical examples of discoveries, experiments, innovations and inventions related to electronics communications technology and be able to provide examples of technology transfer and how these technologies affected past and current society.

TEE 229 : Processes and Manufacturing with Metals and Polymers. (3:2:4)

WHEN TAUGHT: Winter
PREREQUISITE: TEE 200; or concurrent enrollment.
DESCRIPTION: Processes for and manufacturing with metals and polymers.
NOTE: Fee.

**Course Outcomes**

- Students will gain an understanding of the properties and processes of the primary domains of polymers.
- Students will learn the classifications of metals, safety, design principles, measurement, reading a drawing, sheet metal, bench metal, metal fasteners, Shielded Metal Arc Welding, MIG Welding, Oxy-acetylene gas welding, and metal removal using a lathe and a mill.
- Students will understand:Historical aspects and impacts of manufacturing.Principles of manufacturing including material flow, converting raw materials and standard stock into finished products, economy of motion and material use, interchangeability of parts, product design for manufacture, and tasks involved in manufacturing a finished product.Principles of free enterprise including types of ownership, product selection and design, marketing techniques, corporate structure in manufacturing, and record keeping.

TEE 255 : Visual Communication Design. (3:2:4)

WHEN TAUGHT: Winter
PREREQUISITE: TEE 125; or instructor's consent.
DESCRIPTION: Teaching visual design principles and processes through digital and print media.

**Course Outcomes**

- Prepare you to teach communications technology, graphic design, and web design.
- Provide an opportunity to learn the basics of graphic design.
- Introduce you to the visual communications profession and professional literature.
- Gain competency in applying the design principles in both print and web mediums.

TEE 330 : Creativity, Engineering, and Problem Solving. (3:2:4)

WHEN TAUGHT: Winter
DESCRIPTION: Designing solutions to technological problems using innovation, creativity, experimentation, problem solving, and engineering design. Manufacturing systems; teaching methods and prototype development.

**Course Outcomes**

- UETS STANDARD 4 - Content Knowledge: The teacher understands the central concepts, tools of inquiry, and structure of the discipline.STL Standard 2: Students will develop an understanding of the core concepts of technology.STL Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.STL Standard 8: Students will develop an understanding of the attributes of design.STL Standard 9: Students will develop an understanding of engineering design.STL Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.STL Standard 11: Students will develop the abilities to apply the design process.
- Students will incorporate the concepts of group goals, individual accountability, group processing and practice interpersonal and small group skills in order to work cooperatively in a group engineering design project.Students will incorporate various systems (e.g., electronic, mechanical, hydraulic, pneumatic, thermal) as they use the engineering design process to design an invention, innovation or solution to a design problem.Students will know the steps of the engineering design process and then document and apply this process in building a solution to a design activity.Students will use the steps of the engineering design process to innovate a new design solution to a common household item.Students will create an operations manual (design

portfolio) which includes a self-evaluation, peer evaluation, sketches made during the ideation stage, problem-solving log, copy of the computer program and final drawing of the engineering design project.As a group, students will verbally and visually present their design portfolio to the rest of the class.During the engineering design process, students will identify the constraints and limitations of the design problem, consider trade-offs, and then design, build a prototype, test, optimize and troubleshoot a design solution to a problem.Students will collect technical data and then apply math and science knowledge in contextual setting.Students will learn the basics of computer control systems, including, inputs, outputs, and feedback loops; and be able to design, build and program a microprocessor-driven system to drive a specific set of output devices based upon inputs to the system from various sensors and feedback mechanisms.Students will build and program a robot as a solution to a given problem.Students will know the basics of radio control devices and then use these principles to design a solution to a problem.Students will identify a variety of engineering related curriculum resources that are currently available for them to use in their future classrooms.

TEE 340 : Principles of Technology and Engineering. (3:2:4)

WHEN TAUGHT: Fall

DESCRIPTION: Teaching technology and engineering concepts in education. Developing problem-solving skills by tackling technological and engineering problems.

**Course Outcomes**

- UETS STANDARD 4 - Content Knowledge: The teacher understands the central concepts, tools of inquiry, and structure of the discipline.STL Standard 4: Students will develop an understanding of the cultural, social, economic, and political effects of technology.STL Standard 5: Students will develop an understanding of the effects of technology on the environment.STL Standard 6: Students will develop an understanding of the role of society in the development and use of technology.STL Standard 8: Students will develop an understanding of the attributes of design.STL Standard 9: Students will develop an understanding of engineering design.STL Standard 11: Students will develop the abilities to apply the design process.STL Standard 12: Students will develop the abilities to use and maintain technological products and systems.STL Standard 16: Students will develop an understanding of and be able to select and use energy and power technologies.STL Standard 20: Students will develop an understanding of and be able to select and use construction technologies.
- Students will understand and be able to differentiate between the concepts of force, work, energy and power in mechanical, fluid, electrical and thermal systems.Students will be able to perform calculations to determine the amount of work, energy or power of various mechanical, fluid, electrical or thermal systems. Students will know and be able to use the engineering design cycle to design a prototype of a solution to a power, energy and/or transportation problem.Students will be able to identify, describe, and perform basic calculations for simple machines (e.g. levers, gears, pulleys, hydraulic systems).Students will be able to use equipment and materials to perform basic power and energy experiments.Students will understand basic terminology related to construction technologies and be able to identify and describe the basic components of a structure.Students will know how to use tools and equipment to process various materials in order to design, build and test a structure as a solution to a technological problem.Students will be able to use simulation software to design, build and test a structure as a solution to a technological problem.

TEE 360 : Standards for Technological Literacy. (3:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: Eng T 231 or concurrent enrollment; completion of the GE Physical Science and Biological Science requirements.

DESCRIPTION: The teaching of technological literacy and engineering problem solving in education specifically focusing on the fields of medical, agricultural, and energy and power technologies.

**Course Outcomes**

- UETS Standard 4: Content Knowledge. Each candidate understands the central concepts, tools of inquiry, and structure of the discipline.UETS Standard 6: Instructional Planning. Each candidate plans instruction to support students in meeting rigorous learning goals by drawing upon knowledge of content area, Core Curriculum standards, instructional best practices, and the community context.UETS Standard 7: Instructional Strategies. Each candidate uses various instructional strategies to ensure that all learners develop a deep understanding of content areas and their connections, and build skills to apply and extend knowledge in meaningful ways.STL Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.STL Standard 7: Students will develop an understanding of the influence of technology on history.STL Standard 8: Students will develop an understanding of the attributes of design.STL Standard 11: Students will develop the abilities to apply the design process.STL Standard 14: Students will develop an understanding of and be able to select and use medical technologies.STL Standard 15: Students will develop an understanding of and be able to select and use agricultural and related biotechnologies.STL Standard 16: Students will develop an understanding of and be able to select and use energy and power technologies.
- Students will be able to create lesson plans that would enable a teacher to teach basic principles involving STL Standard 14, Medical Technologies.Students will be able to create lesson plans that would enable a teacher to teach basic principles involving STL Standard 15, Agricultural and Related Biotechnologies.Students will be able to create lesson plans that would enable a teacher to teach basic principles involving STL Standard 16, Energy and Power Technologies.Students will be able to demonstrate technical understanding of a few technological issues and think critically regarding the wise development and use of technology relative to STL Standard 14, Medical Technologies.Students will be able to demonstrate technical understanding of a few technological issues and think critically regarding the wise development and use of technology relative to STL Standard 15, Agricultural and Related Biotechnologies.Students will be able to demonstrate technical understanding of a few technological issues and think critically regarding the wise development and use of technology relative to STL Standard 16, Energy and Power Technologies.

3. Complete 14 hours from one or more of the following areas:
   Graphic design and multimedia
   Engineering prep and electronics
   Construction systems
   Information technology
   Architecture and furniture design
   Manufacturing
   Computer science
   Trade and technical

   For specific courses, please visit www.et.byu.edu/tte or contact the School of Technology advisement center in 250 SNLB.

4. Complete four registrations of the following:
   TEE 291R : Undergraduate Seminar. (.5:1:0)
   WHEN TAUGHT: Fall; Winter
   DESCRIPTION: Student leadership training, including organization and operation of student technology education clubs. College Lecture attendance required. Separate program sections.
   NOTE: Required each semester for undergraduate majors not enrolled in TTE 391R or 491R.

   **Course Outcomes**
   - Each candidate possesses a knowledge of and an ability to implement a contemporary technology and engineering education program based on all 20 of the Standards for Technological Literacy developed by the International Technology and Engineering Educators Association (ITEEA).

5. Complete one course from the following:
   MATH 110 : College Algebra. (3:3:0)
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   PREREQUISITE: Math 97 or equivalent (see Independent Study).
   DESCRIPTION: Functions, polynomials, theory of equations, exponential and logarithmic functions, matrices, systems of linear equations, permutations, combinations, binomial theorem.

   **Course Outcomes**
   - Graph functions using horizontal and vertical shiftsGraph functions using compressions and stretchesGraph functions using reflections about the x-axis or y-axisForm composite functions and find the domainDetermine the inverse of a function and graph an inverse function from the graph of a function
   - This course prepares students to take courses in calculus, statistics, mathematics for elementary education majors, and other areas where algebra skills are required. Fluent skills in algebra are necessary for success in any area that uses mathematical analysis. The mastery of college algebra requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. College Algebra develops the concepts of graphing functions, polynomial and rational functions, exponential and logarithmic functions, conic sections, solving systems of equations, the binomial theorem, permutations, combinations, and probability. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information, visit the Math 110 Wiki page.
   - Quadratic functionsPolynomial functionsRational functionsPolynomial and rational inequalitiesThe real zeros of a polynomial functionComplex zeros and the Fundamental Theorem of Algebra
   - Exponential functionsLogarithmic functionsProperties of LogarithmsLogarithmic and exponential equationsCompound interestExponential growth and decay
   - Graph parabolas, ellipses, and hyperbolasFind the equation of parabolas, ellipses, and hyperbolasDiscuss the equation of conic sections to find vertices, foci, asymptotes, and the directrixWork with conic sections that are not centered at the origin
   - Solve systems of linear equations using substitution and eliminationSolve systems of non-linear equations using substitution and eliminationDecompose rational functions using partial fractions
   - Find terms in a sequence using a formula and a recursive definitionFind a formula for terms in an arithmetic sequence and be able to add the terms of a finite arithmetic sequenceFind a formula for the terms in a geometric sequence and be able to find the sum of finite and infinite geometric seriesProve statements using mathematical induction
   - Work with operations on sets such as union, intersection and complement and count the number of elements in a setCompute permutations and combinationsEvaluate binomial coefficients and expand binomials using the Binomial TheoremCompute probabilities of equally likely outcomes

   MATH 111 : Trigonometry. (2:2:0)
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   PREREQUISITE: Math 110 or equivalent.
   DESCRIPTION: Circular functions, triangle relationships, identities, inverse trig functions, trigonometric equations, vectors, complex numbers, DeMoivre's theorem.

   **Course Outcomes**
   - Students should gain familiarity and proficiency with the basic theorems of trigonometry.For more detailed information, visit the Math 111 Wiki page.

6. Complete the Professional Education Component:
   - Complete the following:
     CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)
     WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.

DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

TEE 276A : Exploration of Teaching A. (2:Arr:Arr)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment with TEE 276B.

DESCRIPTION: Lecture series directed at helping prospective teachers understand demands and opportunities associated with teaching secondary students.

**Course Outcomes**

There are no course outcomes available

TEE 276B : Exploration of Teaching B. (2:Arr:Arr)

WHEN TAUGHT: Fall

PREREQUISITE: FBI fingerprint and background clearance; concurrent enrollment with TEE 276A.

DESCRIPTION: Field-based initial experience directed at helping prospective teachers understand demands and opportunities associated with teaching secondary students.

**Course Outcomes**

There are no course outcomes available

TEE 377 : Teaching Methods in Technology Education. (2:2:0)

PREREQUISITE: TEE 276B

DESCRIPTION: Developing meaningful and engaging instruction for secondary students in technology education; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Educator Preparation Program OutcomesThis course is part of your preparation for licensure in a major or minor that is part of the BYU Educator Preparation Program (EPP). This course will help you fulfill the EPP Outcomes required for accreditation. Advisors in Education Student Services (350 MCKB / 801-422-3426) can answer questions you have about the licensure requirements (http://education.byu.edu/ess/licensing.html) for your teaching major or minor.As students progress through the Technology and Engineering teacher education program, they should gain knowledge, dispositions and skills that will enable them to become effective teachers. The standards that encompass the knowledge, dispositions and skills that teachers should have are known as the UETS standards and can be found on the TEE Outcomes webpage. The following UETS standards will be addressed in this class (TEE 377).
- UETS Standard 1 - Learner and Development:The teacher understands cognitive, linguistic, social, emotional and physical areas of student development.UETS Standard 3 - Learning Environments:The teacher works with learners to create environments that support individual and collaborative learning, encouraging positive social interaction, active engagement in learning, and self-motivation.UETS Standard 4 - Content Knowledge:The teacher understands the central concepts, tools of inquiry, and structure of the discipline.UETS Standard 5 - Assessment:The teacher uses multiple methods of assessment to engage learners in their own growth, monitor learner progress, guide planning and instruction, and determine whether the outcomes described in the content standards have been met.UETS Standard 6- Instructional Planning:The teacher plans instruction to support students in meeting rigorous learning goals by drawing uopn knowlege of content area, Core Curriculum standards, instructional best practices, and the community context.UETS Standard 7- Instructional Strategies:The teacher uses various instructional strategies to ensure that all learners develop a deep understanding of content areas and their connections, and build skills to apply and extend knowledge in meaningful ways.
- Students will be able to identify the basic theories of student motivation and apply these theories to design classroom instruction for a technology and engineering classroom.Students will be able to identify and differentiate between direct and inquiry- based instruction and to develop lesson plans using both instructional approaches.Students will be able to develop instructional objectives that address cognitive, affective, and psychomotor domains of learning.Students will be able to develop instructional objectives for each of the levels of Blooms taxonomy.Students will be able to develop a disclosure document that outlines classroom procedures and student expectations appropriate for a T&E classroom.Students will be able to identify instructional strategies and teaching methods that might be used in a T&E classroom and to incorporate these strategies into a lesson plan.Students will be able to develop an assessment plan that includes strategies for formative and summative assessment in a T&E classroom.Students will be able to develop a rubric for assessment of a technology and engineering classroom activity.Students will be able to develop a plan for implementing problem solving strategies into their course instruction.Students will be able to identify implications for how students learn; including addressing student pre-conceptions of course content, developing student competence in a content area, and developing strategies for meta-cognition. Students will also be able to identify interventions for each of these areas.Students will be able to identify examples of student multiple intelligences and develop a plan for how this might affect instruction in the classroom.Students will be able to describe appropriate procedures for implementing cooperative learning into classroom activities.

TEE 378 : Practicum in Technology Education. (2:2:0)

PREREQUISITE: TEE 377

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students in technology education; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Educator Preparation Program OutcomesThis course is part of your preparation for licensure in a major or minor that is part of the BYU Educator Preparation Program (EPP). This course will help you fulfill the EPP Outcomes required for accreditation. Advisors in Education Student Services (350 MCKB / 801-422-3426) can answer questions you have about the licensure requirements (http://education.byu.edu/ess/licensing.html) for your teaching major or minor.UETS Standard 1 - Learner and Development:The teacher understands cognitive, linguistic, social, emotional and physical areas of student development.UETS Standard 2 - Learning Differences: The teacher understands individual learner differences and cultural and linguistic diversity.UETS Standard 3 - Learning Environments:The teacher works with learners to create environments that support individual and collaborative learning, encouraging positive social interaction, active engagement in learning, and self-motivation.UETS Standard 4 - Content Knowledge:The teacher understands the central concepts, tools of inquiry, and structure of the discipline.UETS Standard 5 - Assessment:The teacher uses multiple methods of assessment to engage learners in their own growth, monitor learner progress, guide planning and instruction, and determine whether the outcomes described in the content standards have been met.UETS Standard 6- Instructional Planning:The teacher plans instruction to support students in meeting rigorous learning goals by drawing uopn knowlege of content area, Core Curriculum standards, instructional best practices, and the community context.UETS Standard 7- Instructional Strategies:The teacher uses various instructional strategies to ensure that all learners develop a deep understanding of content areas and their connections, and build skills to apply and extend knowledge in meaningful ways.UETS Standard 8 - Reflection and Continuous Growth: The teacher is a reflectiv practitioner who uses evidence to continually evaluate and adapt practice to meet the needs of each learner.
- Students will identify the basic steps of the Backwards Design approach to curriculum development and use these steps to develop a curricular unit to be taught as part of the practicum experience in a middle school setting.As part of their practicum experience, students will successfully develop and teach a curricular unit (including unit plan, lesson plans, assessments, lab experiences, instructional materials) in a middle school technology and engineering classroom. Note: the mentor teacher and the university supervisor will assess this practicum experience using the CPAS assessment.During their practicum experience, students

will demonstrate effective classroom management strategies.

**Note:** FBI fingerprinting and background clearance must be completed prior to enrollment in TEE 276R.

- Complete 12 hours of the following:

  TEE 476 : Secondary Student Teaching. (12:Arr:Arr)

  WHEN TAUGHT: Fall; Winter

  PREREQUISITE: Completion of all course work or departmental approval.

  DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

  **Course Outcomes**

  - Students will complete a classroom experience.Students will attend a school faculty meeting.Students will attend parent-teacher conferences.Students will record a 5-minute video of themselves teaching in the classroom.Students will keep a lesson plan notebook that will include copies of all lesson plans developed and used during the student teaching experience.Students will complete a teacher work sample. Students will complete a Field Experience Demographic for each school in which they teach.Students will have their mentor teachers complete the Clinical Practice Assessment System evaluation.Students will have their mentor teachers complete the Professional Disposition Instrument. Students will have a final interview with the program student teacher coordinator.

7. Complete department packet and exit interview.

*Hours include courses that may fulfill university core requirements.

## Show all Technology and Engineering Education (TEE) Courses

**Ira A. Fulton College of Engineering and Technology Home**

**School of Technology Home**

- Technology (Tech) Courses

**Construction and Facilities Management**

Majors

BS in Construction and Facilities Management

Emphases
- Construction Management
- Facilities Management

Course Information
- Construction and Facilties Management (CFM) Courses

**Industrial Design**

Majors
- BFA in Industrial Design

Course Information
- Industrial Design (InDes) Courses

**Information Technology**

Majors
- BS in Information Technology

Minors
- Information Technology

Course Information
- Information Technology (IT) Courses

**Manufacturing Engineering Technology**

Majors
- BS in Manufacturing Engineering Technology

Minors
- Manufacturing

Course Information
- Manufacturing Engineering Technology (Mfg) Courses

**Technology and Engineering**

# Technology and Engineering Education (TEE)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

TEE 125 : Communication Technologies and Systems. (3:2:4)

WHEN TAUGHT: Fall

DESCRIPTION: Use of, interaction with, and teaching about communication, technologies.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

TEE 200 : Processes and Prototyping with Wood. (3:2:4)

WHEN TAUGHT: Fall; Winter Even Yrs.; Spring Odd Yrs.

DESCRIPTION: Processes for and prototyping with wood and wood-based composites.

NOTE: Fee.

**Course Outcomes**

- Visualization of how components are joined and how to communicate this through drawings and specifications.Properties of wood as a material and how these properties impact design of projects using wood and wood products.Subtractive processes in prototype construction: sawing, shaping, milling, turning, routing, etc.Additive processes in prototype construction: joining, laminating, fastening, etc.Identification, care, and use of hand tools including tools for measuring, layout, sawing, planing, scraping, shaping, clamping, drilling, driving, and sharpening.Set-up and accurate and safe use of woodworking machinery including the jointer, surface planer, table saw, panel saw radial arm saw, power miter saw, bandsaw, thickness sander, mortiser, boring machine, lathe, and drill press.The use of electric, pneumatic, and cordless power hand tools including routers, drills, and sanders.Methods of clamping, gluing, and assembly, sanding, and finishing.Practical problem solving in working with industrial materials, tools, and machines.The importance of caring, hard work, planning, initiative, and patience, in making a project that is well designed, includes quality workmanship, and is nicely finished. Concepts and methods of teaching safe use of woodworking equipment.Basic machine and hand tool maintenance.

TEE 225 : Electronics for Technology and Engineering Teachers. (3:2:4)

WHEN TAUGHT: Fall

DESCRIPTION: Teaching electronic, construction, and transportation systems.

**Course Outcomes**

- UETS STANDARD 4- Content Knowledge: The teacher understands the central concepts, tools of inquiry, and structure of the discipline. STL Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.· BMG: Technology transfer occurs when a new user applies an existing innovation developed for one purpose in a different function.BMH: Technological innovation often results when ideas, knowledge or skills are shared within a technology, among technologies or across other fields.BMI: Technological progress promotes the advancement of science and mathematics. STL Standard 7: Students will develop an understanding of the influence of technology on history.BMG: Most technological development has been evolutionary, the result of a series of refinements to a basic invention.BMH: The evolution of society has been directly affected by, and has in turn affected, the development and use of tools and materials.BMI: Throughout history, technology has been a powerful force in reshaping the social, cultural, political, and economic landscape.BMO: The information age places emphasis on the processing and exchange of information. STL Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.· BMF: Troubleshooting is a problem-solving method used to identify the cause of a malfunction in a technological system.BMG: Invention is a process of turning ideas and imagination into devices and systems. Innovation is the process of modifying an existing product or system to improve it.BMH: Some technological problems are best solved through experimentation. STL Standard 17: Students will develop an understanding of and be able to select and use information and communication technologies.· BML: Information and communication technologies include the inputs, processes, and outputs associated with sending and receiving information.BMM: Information and communication systems allow information to be transferred from human to human, human to machine, machine to human, and machine to machine.BMO: Communication systems are made up of source, encoder, transmitter, receiver, decoder, storage, retrieval, and destination.BMP: There are many ways to communicate information, such as graphic

and electronic means.BMQ: Technological knowledge and processes are communicated using symbols, measurement, conventions, icons, graphic images, and languages that incorporate a variety of visual, auditory, and tactile stimuli.

- Students will be able to describe the basic electronic concepts of voltage, amperage, resistance & power.Students will be able to use Ohm's and Watt's law to perform basic calculations in an electronic circuit.Students will be able to describe how voltage, amperage, power & resistance behave in series and parallel circuits and be able to calculate unknown quantities in a circuit.Students will be able to use a power supply, breadboard, basic components, and a digital multi-meter to build, test and troubleshoot basic electronic circuits.Students will be able to use a digital multi-meter, oscilloscope and digital logic probe to test, troubleshoot and repair faulty circuits.Students will be able to identify basic electronics components and describe the function of each component.Students will be able to identify and draw the basic schematic symbols used to represent electronics components in a circuit.Students will be able to use appropriate materials and equipment (including simulation software, CNC Mill, soldering iron) to design and build a working electronic circuit that is a solution to a technological problem and/or need.Students will be able to successfully calculate unknown quantities and complete labs associated with magnetism, electromagnetic induction, capacitors, semiconductors, transformers and alternating current.Based on a set of given inputs and desired outputs, students will be able to design a digital electronic circuit as a solution to a technological problem or need.Students will be able to collect technical data and to apply appropriate math and science knowledge to see the connections between technology and other fields of study.Students will be able to describe historical examples of discoveries, experiments, innovations and inventions related to electronics communications technology and be able to provide examples of technology transfer and how these technologies affected past and current society.

TEE 229 : Processes and Manufacturing with Metals and Polymers. (3:2:4)

WHEN TAUGHT: Winter

PREREQUISITE: TEE 200; or concurrent enrollment.

DESCRIPTION: Processes for and manufacturing with metals and polymers.

NOTE: Fee.

**Course Outcomes**

- Students will gain an understanding of the properties and processes of the primary domains of polymers.
- Students will learn the classifications of metals, safety, design principles, measurement, reading a drawing, sheet metal, bench metal, metal fasteners, Shielded Metal Arc Welding, MIG Welding, Oxy-acetylene gas welding, and metal removal using a lathe and a mill.
- Students will understand:Historical aspects and impacts of manufacturing.Principles of manufacturing including material flow, converting raw materials and standard stock into finished products, economy of motion and material use, interchangeability of parts, product design for manufacture, and tasks involved in manufacturing a finished product.Principles of free enterprise including types of ownership, product selection and design, marketing techniques, corporate structure in manufacturing, and record keeping.

TEE 251 : Video Production and Nonlinear Editing. (3:2:4)

WHEN TAUGHT: Winter

PREREQUISITE: TEE 125 & TEE 255; or instructor's consent.

DESCRIPTION: Teaching video in education to inspire, communicate, and develop creativity. Fundamentals include planning, storyboarding, camera techniques, composition, assembling, and editing video projects.

**Course Outcomes**

- Provide students an opportunity to gain an understanding of the technical, creative, and cultural, political, economic, and environmental impact of photography, television and film/video media.Expose and train students in contemporary video, film, TV, and photography pre-production, production, and post-production techniques.Expose and train students to effectively use contemporary video, film, TV, and photography tools (i.e., Final Cut Pro, DVD Studio, Studio Code, Adobe Creative Suite, Camera Switcher, HD Video, digital SLR cameras, Celtix [script writing], lighting and audio recording equipment, and so forth).Teach students the primary elements of photography and TV/Film production, which are:1. Principles of audio, including micing techniques and handling of common audio problems.2. Camera placement and operations, including a basic understanding of camera color balancing and various important framing techniques.3. Lighting techniques, including existing light, bounced light and three-point lighting.4. Technical and production differences between standard definition (SDTV) and HDTV/DTV production.5. Elements of effective visual composition. 6. Editing techniques: assembly and insert, on-line and off-line, linear and random access, and the use of time-code.7. A general understanding of the pre-production, production, and post-production stages for both TV and film, including associated audio and video equipment.

TEE 255 : Visual Communication Design. (3:2:4)

WHEN TAUGHT: Winter

PREREQUISITE: TEE 125; or instructor's consent.

DESCRIPTION: Teaching visual design principles and processes through digital and print media.

**Course Outcomes**

- Prepare you to teach communications technology, graphic design, and web design.
- Provide an opportunity to learn the basics of graphic design.
- Introduce you to the visual communications profession and professional literature.
- Gain competency in applying the design principles in both print and web mediums.

TEE 276A : Exploration of Teaching A. (2:Arr:Arr)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment with TEE 276B.

DESCRIPTION: Lecture series directed at helping prospective teachers understand demands and opportunities associated with teaching secondary students.

**Course Outcomes**

There are no course outcomes available

TEE 276B : Exploration of Teaching B. (2:Arr:Arr)

WHEN TAUGHT: Fall

PREREQUISITE: FBI fingerprint and background clearance; concurrent enrollment with TEE 276A.

DESCRIPTION: Field-based initial experience directed at helping prospective teachers understand demands and opportunities associated with teaching secondary students.

**Course Outcomes**

There are no course outcomes available

TEE 291R : Undergraduate Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Student leadership training, including organization and operation of student technology education clubs. College Lecture attendance required. Separate program sections.

NOTE: Required each semester for undergraduate majors not enrolled in TTE 391R or 491R.

**Course Outcomes**

- Each candidate possesses a knowledge of and an ability to implement a contemporary technology and engineering education program based on all 20 of the Standards for Technological Literacy developed by the International Technology and Engineering Educators Association (ITEEA).

### 300-Level Courses

TEE 330 : Creativity, Engineering, and Problem Solving. (3:2:4)

WHEN TAUGHT: Winter

DESCRIPTION: Designing solutions to technological problems using innovation, creativity, experimentation, problem solving, and engineering design. Manufacturing systems; teaching methods and prototype development.

**Course Outcomes**

- UETS STANDARD 4 - Content Knowledge: The teacher understands the central concepts, tools of inquiry, and structure of the discipline.STL Standard 2: Students will develop an understanding of the core concepts of technology.STL Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.STL Standard 8: Students will develop an understanding of the attributes of design.STL Standard 9: Students will develop an understanding of engineering design.STL Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.STL Standard 11: Students will develop the abilities to apply the design process.
- Students will incorporate the concepts of group goals, individual accountability, group processing and practice interpersonal and small group skills in order to work cooperatively in a group engineering design project.Students will incorporate various systems (e.g., electronic, mechanical, hydraulic, pneumatic, thermal) as they use the engineering design process to design an invention, innovation or solution to a design problem.Students will know the steps of the engineering design process and then document and apply this process in building a solution to a design activity.Students will use the steps of the engineering design process to innovate a new design solution to a common household item.Students will create an operations manual (design portfolio) which includes a self-evaluation, peer evaluation, sketches made during the ideation stage, problem-solving log, copy of the computer program and final drawing of the engineering design project.As a group, students will verbally and visually present their design portfolio to the rest of the class.During the engineering design process, students will identify the constraints and limitations of the design problem, consider trade-offs, and then design, build a prototype, test, optimize and troubleshoot a design solution to a problem.Students will collect technical data and then apply math and science knowledge in contextual setting.Students will learn the basics of computer control systems, including, inputs, outputs, and feedback loops; and be able to design, build and program a microprocessor-driven system to drive a specific set of output devices based upon inputs to the system from various sensors and feedback mechanisms.Students will build and program a robot as a solution to a given problem.Students will know the basics of radio control devices and then use these principles to design a solution to a problem.Students will identify a variety of engineering related curriculum resources that are currently available for them to use in their future classrooms.

TEE 340 : Principles of Technology and Engineering. (3:2:4)

WHEN TAUGHT: Fall

DESCRIPTION: Teaching technology and engineering concepts in education. Developing problem-solving skills by tackling technological and engineering problems.

**Course Outcomes**

- UETS STANDARD 4 - Content Knowledge: The teacher understands the central concepts, tools of inquiry, and structure of the discipline.STL Standard 4: Students will develop an understanding of the cultural, social, economic, and political effects of technology.STL Standard 5: Students will develop an understanding of the effects of technology on the environment.STL Standard 6: Students will develop an understanding of the role of society in the development and use of technology.STL Standard 8: Students will develop an understanding of the attributes of design.STL Standard 9: Students will develop an understanding of engineering design.STL Standard 11: Students will develop the abilities to apply the design process.STL Standard 12: Students will develop the abilities to use and maintain technological products and systems.STL Standard 16: Students will develop an understanding of and be able to select and use energy and power technologies.STL Standard 20: Students will develop an understanding of and be able to select and use construction technologies.
- Students will understand and be able to differentiate between the concepts of force, work, energy and power in mechanical, fluid, electrical and thermal systems.Students will be able to perform calculations to determine the

amount of work, energy or power of various mechanical, fluid, electrical or thermal systems. Students will know and be able to use the engineering design cycle to design a prototype of a solution to a power, energy and/or transportation problem.Students will be able to identify, describe, and perform basic calculations for simple machines (e.g. levers, gears, pulleys, hydraulic systems).Students will be able to use equipment and materials to perform basic power and energy experiments.Students will understand basic terminology related to construction technologies and be able to identify and describe the basic components of a structure.Students will know how to use tools and equipment to process various materials in order to design, build and test a structure as a solution to a technological problem.Students will be able to use simulation software to design, build and test a structure as a solution to a technological problem.

TEE 350 : Multimedia Authoring and Publishing. (3:2:4)

WHEN TAUGHT: Spring

PREREQUISITE: TEE 125; or instructor's consent.

DESCRIPTION: Developing advanced media authoring skills for teaching interactive design. Solving real-world interactive design problems for the World Wide Web, CD-ROM, and DVD-ROM in an entrepreneurial environment.

**Course Outcomes**

- Each candidate possesses a knowledge of and an ability to implement a contemporary technology and engineering education program based on all 20 of the Standards for Technological Literacy developed by the International Technology and Engineering Educators Association (ITEEA).

TEE 360 : Standards for Technological Literacy. (3:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: Eng T 231 or concurrent enrollment; completion of the GE Physical Science and Biological Science requirements.

DESCRIPTION: The teaching of technological literacy and engineering problem solving in education specifically focusing on the fields of medical, agricultural, and energy and power technologies.

**Course Outcomes**

- UETS Standard 4: Content Knowledge. Each candidate understands the central concepts, tools of inquiry, and structure of the discipline.UETS Standard 6: Instructional Planning. Each candidate plans instruction to support students in meeting rigorous learning goals by drawing upon knowledge of content area, Core Curriculum standards, instructional best practices, and the community context.UETS Standard 7: Instructional Strategies. Each candidate uses various instructional strategies to ensure that all learners develop a deep understanding of content areas and their connections, and build skills to apply and extend knowledge in meaningful ways.STL Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.STL Standard 7: Students will develop an understanding of the influence of technology on history.STL Standard 8: Students will develop an understanding of the attributes of design.STL Standard 11: Students will develop the abilities to apply the design process.STL Standard 14: Students will develop an understanding of and be able to select and use medical technologies.STL Standard 15: Students will develop an understanding of and be able to select and use agricultural and related biotechnologies.STL Standard 16: Students will develop an understanding of and be able to select and use energy and power technologies.
- Students will be able to create lesson plans that would enable a teacher to teach basic principles involving STL Standard 14, Medical Technologies.Students will be able to create lesson plans that would enable a teacher to teach basic principles involving STL Standard 15, Agricultural and Related Biotechnologies.Students will be able to create lesson plans that would enable a teacher to teach basic principles involving STL Standard 16, Energy and Power Technologies.Students will be able to demonstrate technical understanding of a few technological issues and think critically regarding the wise development and use of technology relative to STL Standard 14, Medical Technologies.Students will be able to demonstrate technical understanding of a few technological issues and think critically regarding the wise development and use of technology relative to STL Standard 15, Agricultural and Related Biotechnologies.Students will be able to demonstrate technical understanding of a few technological issues and think critically regarding the wise development and use of technology relative to STL Standard 16, Energy and Power Technologies.

TEE 377 : Teaching Methods in Technology Education. (2:2:0)

PREREQUISITE: TEE 276B

DESCRIPTION: Developing meaningful and engaging instruction for secondary students in technology education; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Educator Preparation Program OutcomesThis course is part of your preparation for licensure in a major or minor that is part of the BYU Educator Preparation Program (EPP). This course will help you fulfill the EPP Outcomes required for accreditation. Advisors in Education Student Services (350 MCKB / 801-422-3426) can answer questions you have about the licensure requirements (http://education.byu.edu/ess/licensing.html) for your teaching major or minor.As students progress through the Technology and Engineering teacher education program, they should gain knowledge, dispositions and skills that will enable them to become effective teachers. The standards that encompass the knowledge, dispositions and skills that teachers should have are known as the UETS standards and can be found on the TEE Outcomes webpage. The following UETS standards will be addressed in this class (TEE 377).
- UETS Standard 1 - Learner and Development:The teacher understands cognitive, linguistic, social, emotional and physical areas of student development.UETS Standard 3 - Learning Environments:The teacher works with learners to create environments that support individual and collaborative learning, encouraging positive social interaction, active engagement in learning, and self-motivation.UETS Standard 4 - Content Knowledge:The teacher understands the central concepts, tools of inquiry, and structure of the discipline.UETS Standard 5 - Assessment:The teacher uses multiple methods of assessment to engage learners in their own growth, monitor learner progress, guide planning and instruction, and determine whether the outcomes described in the content standards have been met.UETS Standard 6- Instructional Planning:The teacher plans instruction to support students in meeting rigorous learning goals by drawing uopn knowlege of content area, Core Curriculum standards, instructional best practices, and the community context.UETS Standard 7- Instructional Strategies:The teacher uses various instructional strategies to ensure that all learners develop a deep understanding of content areas and their connections, and build skills to apply and extend knowledge in meaningful ways.
- Students will be able to identify the basic theories of student motivation and apply these theories to design

classroom instruction for a technology and engineering classroom.Students will be able to identify and differentiate between direct and inquiry- based instruction and to develop lesson plans using both instructional approaches.Students will be able to develop instructional objectives that address cognitive, affective, and psychomotor domains of learning.Students will be able to develop instructional objectives for each of the levels of Blooms taxonomy.Students will be able to develop a disclosure document that outlines classroom procedures and student expectations appropriate for a T&E classroom.Students will be able to identify instructional strategies and teaching methods that might be used in a T&E classroom and to incorporate these strategies into a lesson plan.Students will be able to develop an assessment plan that includes strategies for formative and summative assessment in a T&E classroom.Students will be able to develop a rubric for assessment of a technology and engineering classroom activity.Students will be able to develop a plan for implementing problem solving strategies into their course instruction.Students will be able to identify implications for how students learn; including addressing student pre-conceptions of course content, developing student competence in a content area, and developing strategies for meta-cognition. Students will also be able to identify interventions for each of these areas.Students will be able to identify examples of student multiple intelligences and develop a plan for how this might affect instruction in the classroom.Students will be able to describe appropriate procedures for implementing cooperative learning into classroom activities.

TEE 378 : Practicum in Technology Education. (2:2:0)

PREREQUISITE: TEE 377

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students in technology education; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Educator Preparation Program OutcomesThis course is part of your preparation for licensure in a major or minor that is part of the BYU Educator Preparation Program (EPP). This course will help you fulfill the EPP Outcomes required for accreditation. Advisors in Education Student Services (350 MCKB / 801-422-3426) can answer questions you have about the licensure requirements (http://education.byu.edu/ess/licensing.html) for your teaching major or minor.UETS Standard 1 - Learner and Development:The teacher understands cognitive, linguistic, social, emotional and physical areas of student development.UETS Standard 2 - Learning Differences: The teacher understands individual learner differences and cultural and linguistic diversity.UETS Standard 3 - Learning Environments:The teacher works with learners to create environments that support individual and collaborative learning, encouraging positive social interaction, active engagement in learning, and self-motivation.UETS Standard 4 - Content Knowledge:The teacher understands the central concepts, tools of inquiry, and structure of the discipline.UETS Standard 5 - Assessment:The teacher uses multiple methods of assessment to engage learners in their own growth, monitor learner progress, guide planning and instruction, and determine whether the outcomes described in the content standards have been met.UETS Standard 6- Instructional Planning:The teacher plans instruction to support students in meeting rigorous learning goals by drawing uopn knowlege of content area, Core Curriculum standards, instructional best practices, and the community context.UETS Standard 7- Instructional Strategies:The teacher uses various instructional strategies to ensure that all learners develop a deep understanding of content areas and their connections, and build skills to apply and extend knowledge in meaningful ways.UETS Standard 8 - Reflection and Continuous Growth: The teacher is a reflectiv practitioner who uses evidence to continually evaluate and adapt practice to meet the needs of each learner.
- Students will identify the basic steps of the Backwards Design approach to curriculum development and use these steps to develop a curricular unit to be taught as part of the practicum experience in a middle school setting.As part of their practicum experience, students will successfully develop and teach a curricular unit (including unit plan, lesson plans, assessments, lab experiences, instructional materials) in a middle school technology and engineering classroom. Note: the mentor teacher and the university supervisor will assess this practicum experience using the CPAS assessment.During their practicum experience, students will demonstrate effective classroom management strategies.

TEE 399R : Academic Internship. (.5-3:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Department chair's consent.

DESCRIPTION: Work experience in technical and/or teaching environment. Internship will be supervised by employer and program internship coordinator. Formal technical report required.

**Course Outcomes**

- Student acquires professional experiences in any discipline within technology.
- Student demonstrates professional communication skills (report).
- Student demonstrates the ability to use reflective thinking to convert professional experience into academic understanding.

**400-Level Courses**

TEE 400 : Furniture Design and Advanced Woodworking Processes. (3:2:4)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: TEE 200

DESCRIPTION: Designing several projects and building a significant piece of furniture. Topics include: current and past designers; surface decoration through coloring, texturing, pyrography; models, mock-ups, working drawings; bending, turning, advanced machining.

**Course Outcomes**

- Each candidate possesses a knowledge of and an ability to implement a contemporary technology and engineering education program based on all 20 of the Standards for Technological Literacy developed by the International Technology and Engineering Educators Association (ITEEA).
- Explore furniture design and design and build a significant piece of furniture.Prepare a research report summarizing the life and key contributions of a furniture designer assigned/selected from the list provided and give a brief presentation (five minutes) to the class of your findings.Construct 6 sketch models of possible furniture pieces.Complete thumbnail design sketches of at least 24 pieces of furniture that could be appropriate to build in the class.Complete a working drawing which includes a 3-view orthographic projection drawn to an appropriate scale, and full scale details of all joints and connections of materials (including those containing

hardware).If building a chair, a full-scale mock-up is required and will substitute for the primary views of the drawing requirement, full scale details of each joint or connection of materials is still required.Complete a cost estimate using the Estimating Sheet provided.Complete a plan of procedure detailing the sequence to be followed in building your furniture.Using a variety of surface decoration/manipulation techniques make three surface decoration swatches approximately 1/4" x 2" x 5".Design and make two full-scale, completely finished, functioning door or drawer pulls.

TEE 476 : Secondary Student Teaching. (12:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will complete a classroom experience.Students will attend a school faculty meeting.Students will attend parent-teacher conferences.Students will record a 5-minute video of themselves teaching in the classroom.Students will keep a lesson plan notebook that will include copies of all lesson plans developed and used during the student teaching experience.Students will complete a teacher work sample. Students will complete a Field Experience Demographic for each school in which they teach.Students will have their mentor teachers complete the Clinical Practice Assessment System evaluation.Students will have their mentor teachers complete the Professional Disposition Instrument. Students will have a final interview with the program student teacher coordinator.

TEE 490R : Independent Research and Development. (.5-3:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Program supervisor's consent.

DESCRIPTION: Individually preparing technical content associated with selected technological emphases.

NOTE: Fee.

**Course Outcomes**

- Each candidate possesses a knowledge of and an ability to implement a contemporary technology and engineering education program based on all 20 of the Standards for Technological Literacy developed by the International Technology and Engineering Educators Association (ITEEA).

TEE 496 : Academic Internship. (12:Arr:Arr)

WHEN TAUGHT: Fall

PREREQUISITE: All course work or departmental approval; major GPA of 2.85; at least a C- in TEE 377.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

### 500-Level Graduate Courses (available to advanced undergraduates)

TEE 593R : Workshop in Applied Technology Education. (.5-2:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Teaching and learning technological literacy skills. Reviewing and participating in current technological advances, with a focus on teaching practice and methods.

NOTE: Maximum of 2 credit hours applicable to MS program. Fee.

**Course Outcomes**

- Students will understand the current pedagogical techniques used in their teaching field of choice.

## Graduate Courses

For 600-level courses, see the BYU 2014–2015 Graduate Catalog.

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**School of Technology Home**

- Technology (Tech) Courses

**Construction and Facilities Management**

Majors

BS in Construction and Facilities Management

Emphases
- Construction Management
- Facilities Management

Course Information
- Construction and Facilties Management (CFM) Courses

**Industrial Design**

Majors
- BFA in Industrial Design

Course Information
- Industrial Design (InDes) Courses

**Information Technology**

Majors
- BS in Information Technology

Minors
- Information Technology

Course Information
- Information Technology (IT) Courses

**Manufacturing Engineering Technology**

Majors
- BS in Manufacturing Engineering Technology

Minors
- Manufacturing

Course Information
- Manufacturing Engineering Technology (Mfg) Courses

**Technology and Engineering**

# School of Technology Faculty

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## Professors

Christensen, Kip
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 1982
PhD, Colorado State University, 1991

Christofferson, Jay P.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 1992
PhD, Colorado State University, 1996

Lunt, Barry Mark
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
MS, Brigham Young University, 1979
PhD, Utah State University, 1993

Miles, Michael Paul
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Professor
**DEGREES:** BS, University of Idaho, 1989
MS, Ohio State University, Columbus, 1991
PhD, Ecole des Mines de Paris, 1995

Terry, Ronald E.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Professor
**DEGREES:** BS, Oregon State University, 1971
PhD, Brigham Young University, 1976

## Associate Professors

Burr, Kevin Lester
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** AS, Brigham Young University, 1982
BS, University of Nevada, Las Vegas, 1988
MEd, University of Nevada, Las Vegas, 1990
EdD, Oklahoma State University, 1997

Campbell, Jeffery Lynn

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** AA, Ricks College, 1977
BS, Brigham Young University, 1984
MBA, University of Phoenix, 1990
PhD, University of Idaho, 1999

Ekstrom, Joseph Jones
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, Brigham Young University, 1976
PhD, Brigham Young University, 1991

Fry, Richard Eldon
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1989
MFA, University of Illinois, Urbana-Champaign, 1994

Harrell, Charles
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1976
MS, University of Utah, 1982
PhD, University of Denmark, 1988

Hawks, Val D.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** AS, Snow College, 1978
BS, Brigham Young University, 1980
MS, Lehigh University, 1986
PhD, Gonzaga University, 2005

Helps, C Richard
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BS, Witwatersrand, South Africa, 1978
MS, Witwatersrand, South Africa, 1986

Howell, Bryan Franklin
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1987
MFA, University of Texas, Austin, 2003

Hutchings, D Mark
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1977
MRECM, University of Denver, 1992
PhD, Texas A&M University, 2002

Miller, Kevin R.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MA, University of Phoenix, 1995
PhD, Arizona State University, 2001

Shumway, Steven LeRoy
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor

**DEGREES:** BS, Brigham Young University, 1987
MS, Utah State University, 1993
PhD, Utah State University, 1999

Skaggs, Paul Tharlie
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1980
MFA, Rochester Institute of Technology, 2001

Teng, Chia-Chi
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Professor
**DEGREES:** BS, National Tsing Hua University, 1985
MS, University of Washington, 1993
PhD, University of Washington, 2007

## Assistant Professors

Boardman, Alan J.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Brigham Young University, 1997
PhD, University of Utah, 2011

Farnsworth, Clifton B.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2000
PhD, University of Utah, 2008

George, Andrew R.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** MS, Brigham Young University, 2006
PhD, University of Stuttgart, 2011

Hansen, Derek L.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
PhD, University of Michigan, 2007

Morgan, David C.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** MID, Rhode Island School of Design, 1995

Rowe, Dale C.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** BEng, University of Kent, 2003
PhD, University of Kent, 2010

Tew, Kevin B.
**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
**DEGREES:** MS, Brigham Young University, 2006
PhD, University of Utah, 2012

Weidman, Justin E.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** MS, Brigham Young University, 2010
PhD, Virginia Tech, 2012

Wright, Geoffrey A.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
MA, Chapman University, 2003
PhD, Brigham Young University, 2008

## Associate Teaching Professors

Capt, Brian Charles

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1993

McKell, Eric K.

**COLLEGE:** Ira A. Fulton College of Engineering and Technology
**DEPARTMENT:** School of Technology
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1997

- Education
- Engineering and Technology
- Family, Home, and Social Sciences
- Fine Arts and Communications
- Humanities
- Law School
- Life Sciences
- Management
- Nursing
- Physical and Mathematical Sciences
- Religious Education
- Undergraduate Education

**Departments / Schools / Centers / Programs**

- American Heritage Course
- Anthropology
- Economics
- FHSS minor and courses
- School of Family Life
- Geography
- History
- Political Science
- Psychology
- School of Social Work
- Sociology
- Women's Studies Program

# College of Family, Home, and Social Sciences

990 SWKT
(801) 422-2083

**Dean**: Benjamin M. Ogles, Professor, Psychology
**Associate Dean**: Shawn W. Miller, Associate Professor, History
**Associate Dean:** Kelly D. Patterson, Professor, Political Science
**Associate Dean**: Susanne Olsen Roper, Associate Professor, Family Life

The College of Family, Home, and Social Sciences is composed of departments that study patterns of human behavior from diverse disciplinary approaches. Teaching and scholarship rely on social science methodology to learn about human behavior and human societies — their histories, organization, governments, and economies. As the name implies, the college is particularly concerned with studying the family as the basic unit of society. The many institutes and centers within the college provide opportunities for faculty and students to further research and disseminate scholarship.

Students in the college gain a broad education that helps develop an appreciation of the values of modern civilization and prepares them to contribute effectively as citizens. The knowledge and skills gained in the varied disciplines prepare them well for graduate study and professional careers. Many of the departments and programs housed within the college provide opportunities for student learning outside the classroom through internships and faculty-mentored teaching and research experiences.

## Academic Departments and Curriculum Areas

American Heritage
Anthropology
Economics
Family Life
Geography
History
Political Science
Psychology
Social Work
Sociology

## Research and Academic Support Areas

Center for Family History and Genealogy
Center for the Study of Elections and Democracy (CSED)
Charles Redd Center for Western Studies and Lemuel H. Redd Jr. Chair in Western History
Child and Family Studies Laboratory
Comprehensive Clinic
Family and Social Service Internships
Family Studies Center
Gerontology Program
Museum of Peoples and Cultures
New World Archaeological Foundation
Office of Public Archaeology
Relate Institute
Survey Research Lab
Washington Seminar

## College Advisement Center

Lori L. Seely, Supervisor
1041 JFSB
(801) 422-3541

Advisors are prepared to assist students in the selection of university core offerings that will contribute to a broad education. Advisors also assist departments in offering counsel for specific majors, counseling for a career, and monitoring a student's progress toward graduation.

## Degrees Offered

Bachelor's, master's, and doctoral degrees are offered in the college. See the individual department and program listings in this catalog for specific degrees offered and the requirements for each.

## Scholarships and Awards

Scholarships and awards are available to qualified students. Applications may be obtained from the Financial Aid Office, A-141 ASB. See department and college websites for their scholarships.

## Family and Social Service Internships

945 SWKT
(801) 422-2168

Staff members in the Family and Social Service Internships Office assist students in the School of Family Life, Psychology, and Sociology in finding and successfully completing an internship to enhance their undergraduate education. Academic credit for internships is offered through the individual departments.

## FHSS Writing Lab

Joyce Adams, Director
1051 JFSB
(801) 422-4454
fhss-writinglab@byu.edu

Writing advisors in the FHSS Writing Lab offer discipline-specific tutoring in writing for FHSS students. They help students become better writers by focusing on the global aspects of writing, such as thesis construction, organization, transitions, idea development, logical coherence, style, and argument clarity.

## Family Studies Center

Jeremy Yorgason, Director
801-422-3515

The Family Studies Center is dedicated to research that identifies characteristics associated with strong marriages and families, the processes by which they develop, and positive individual and relationship outcomes of healthy family relationships. Historically, the Family Studies Center has supported funding for research on family relationships (e.g., the Flourishing Families Project), conferences on cutting-edge family topics (e.g., families and health; work and families), and outreach activities (e.g., "Families Under Fire" conference). Currently, to achieve Center goals, two main initiatives are being supported.

First, the Center is supporting the Couple Relationships and Transition Experiences (CREATE) research study. The CREATE study is planned to tap a national sample of early married couples, and to include unique measures of relationship functioning in context of transitions and stressors across time. Several BYU faculty members are investigators in that study.

Second, the Center is supporting the development of advanced methods to be used in analyzing data that can provide answers to questions about family relationships. As part of this initiative the Center hosts a lunch-time methods workshop twice a month where faculty or guests will present on research methods used with family data. Faculty members and students from across the University that are interested in studying family relationships are invited to attend.

## Museum of Peoples and Cultures

105 ALLN
(801) 422-0020

The Museum of Peoples and Cultures is located in Allen Hall at 700 North 100 East in Provo. Museum hours are from 9:00 a.m. to 5:00 p.m. Monday through Friday. General admission is free. Guided tours are available for a nominal fee and can be scheduled by calling the museum at (801) 422-0020.

**Educational Opportunities.** Classes in museum practices designed to provide students with practical experience in collections care and management—including computer applications, exhibition curation, and educational programming—are available with approval. Museum practice courses are taught by the museum's staff, who are adjunct anthropology faculty (see listings in the Anthropology section of this catalog). The museum also employs several students each semester to assist in collections work and welcomes volunteers to assist in educational and promotional work.

**Anthropological Collections and Research Opportunities.** Museum collections comprise prehistoric and ethnographic artifacts from various parts of the world. The bulk of holdings are from the Southwest, Mesoamerica, Polynesia, ancient Peru, and the Great Basin, especially Utah Valley. The museum also cares for a collection of more than 100,000 documents and over 50,000 images that document BYU archaeological research and artifactual materials. The museum encourages students to inquire about research possibilities using its collections.

College of Family, Home, and Social Sciences Home

Course Information

- American Heritage Course

# American Heritage (A Htg)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Course

**100-Level Courses**

A HTG 100 : American Heritage. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Synthesis of American constitutional and economic principles, and patterns of historical development.

**Course Outcomes**

- Understand the religious, historical, political and economic origins of the Constitution
- Learn how the Constitution works;
- Apply their knowledge of the Constitution to analyze major historical, political and economic issues
- Become better informed, more active citizens

Back to College of Family, Home, and Social Sciences Home

**College of Family, Home, and Social Sciences Home**

**Anthropology Department Home**

**Majors**

BA in Anthropology
Emphases:
- Archaeology
- Sociocultural

- BA in Anthropology (Sociocultural Double Major)

**Minor**

- Anthropology

**Course Information**

- Anthropology Courses

**Faculty**

# Anthropology

Charles W. Nuckolls, Chair
800 SWKT, (801) 422-3058

College of Family, Home, and Social Sciences Advisement Center
151 SWKT, (801) 422-3541

## Admission to Degree Program

All undergraduate degree programs in the Department of Anthropology are open enrollment.

## The Discipline

Anthropology's central aims are to describe, interpret, and make meaningful human behavior in sociocultural systems. Anthropology also seeks to explain the similarities and differences in human behavior patterns among all peoples and cultures, both in the present and the past. Social and cultural anthropology study human society in the present, using participant-observation, interviewing, and other techniques to understand the full round of life in a single culture, a subculture, or a multicultural system. Archaeology provides methods for learning about the world's peoples who are no longer living; thus it is an important part of the anthropological family of special skills and interests. Museum Studies integrates the above skills with the management, curation, research, and display of museum quality ethnographic and archaeological collections in professional museum settings.

## Career Opportunities

Distinctive contributions are made by both anthropology and archaeology majors, and therefore jobs are available wherever social and cultural differences or social system complexities exist. International development, social services, businesses, schools, development projects, medicine, and law all offer significant careers. Recent concern with environmental protection has opened up others. University teaching and research positions are limited in growth, but highly qualified students can find positions after obtaining the PhD.

For archaeology majors, both legal and societal interest in understanding and preserving the past have resulted in increased job opportunities in state and national agencies required to observe recent preservation laws and in private corporations serving this end. Archaeologists working in international regions are not only employable in scholastic venues of teaching and research, but also international heritage site development.

For those students interested in combining Museum Studies courses with anthropology, employment opportunities exist in many collections-related venues including museums, libraries, and research institutes that rely on maintaining large collections of specimens for scholarly use.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in Anthropology**
**Archaeology Emphasis** (Program Outcomes)
**Sociocultural Emphasis** (Program Outcomes)
**BA in Anthropology (Sociocultural Double Major)** (Program Outcomes)

**Minor in Anthropology**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MA in Anthropology with an emphasis in Archaeology

A Museum Practices Certificate is available in conjunction with acceptance in the MA in Archaeology or a related MA program on campus.

For more information see the BYU 2014-2015 Graduate Catalog.

## General Information

1. Each student wishing to major in anthropology should arrange through the college advisement center to counsel with an advisor and prepare a proposed sequence of study. Following this, the student should meet with the assigned faculty advisor for final approval of the program.
2. Undergraduate students are allowed some, but not excessive, specialization.
3. All degrees are in the field of anthropology.

## Special Opportunities for Field Study

The department offers a number of unique curriculum and field study opportunities. Selected courses are regularly counted toward BYU's major. Consult with the department chair or your faculty advisor about equivalencies.

Archaeology students complete their requirement in the field school typically held in conjunction with an ongoing, local (Utah) research project and occasionally in more exotic settings (Jordan).

Sociocultural faculty rotate leading ethnographic field schools abroad in India, Latin America, Africa, and Southeast Asia.

College of Family, Home, and Social Sciences Home

Anthropology Department Home

Majors

BA in Anthropology
Emphases:
- Archaeology
- Sociocultural

- BA in Anthropology (Sociocultural Double Major)

Minor

- Anthropology

Course Information

- Anthropology Courses

Faculty

# BA in Anthropology: Archaeology Emphasis (56.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following:

ANTHR 101 : Social/Cultural Anthropology. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Aspects of society and culture: kinship, beliefs, economy, and political order among peoples worldwide. Methods and perspectives used in social/cultural anthropology.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Come to understand culture as a way of interpreting experience, and realize that culture informs both social life and individual psychology, shaping and coloring how people perceive and act in the world.Grasp the social scientific principles and reasoning involved in ethnography, and recognize the value, limitations, and ethical implications of this way of making sense of social conduct.Acquire an informed awareness of other cultural worlds—an appreciation of other ways of being human—of believing, behaving, and belonging, including their kinship organization and ritual, economic, and political practices.— Learn to see personal beliefs, values, attitudes, and conduct—including kinship organization and ritual, economic and political practices—from the perspective of people with different ideas about the way the world works.Develop an increased ability to write effectively.

ANTHR 110 : Introduction to Archaeology. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Studying past human behaviors and cultures by applying scientific principles and reasoning; exploring case studies concerning archaeological discoveries.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- This course should help students to demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process. Students will learn to appreciate the excitement of discovery that has accompanied important scientific developments as well as demonstrate how scientific methodology can be used to analyze real-world science-related problems. Students will become adept at evaluating scientific data and claims in order to make rational decisions on public-policy science issues that affect their community. As students complete the course they will learn to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data, as well as reflect rationally upon the interface between science and religion.

ANTHR 150 : Introduction to the Major. (.5:1:0)
WHEN TAUGHT: Fall
DESCRIPTION: Overview of anthropology major and graduation requirements; preparing for senior thesis sequence; career opportunities; and graduate school application process.

**Course Outcomes**

- Students in this course will gain an introductory level understanding of the basic assumptions of the disciplines of Anthropology and Archaeology as well as their historical development along with examples of applications of various methodologies in the field.

ANTHR 201 : Foundations of Social Theory. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: ANTHR 101
DESCRIPTION: Theoretical and philosophical antecedents of modern social theory; ideas and theorists that shaped the formation of anthropology as a discipline.

**Course Outcomes**

There are no course outcomes available

ANTHR 202 : Foundations of Anthropological Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ANTHR 201

DESCRIPTION: Ideas from the founders of social and cultural anthropology and archaeology as disciplines, particularly at the turn of the 20th century.

**Course Outcomes**

There are no course outcomes available

ANTHR 203 : Contemporary Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ANTHR 202

DESCRIPTION: Important current theoretical frameworks in anthropology.

**Course Outcomes**

There are no course outcomes available

ANTHR 215 : Introduction to Archaeology: Method and Theory. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Field and analytic methods and their relevance to data acquisition; use of theory and the relation of theory to methods.

**Course Outcomes**

- Students will gain a knowledge of the history of archaeology as well as an exposure to basic archaeological theory and methodological practices in the field. Through this study, students will also gain a knowledge of the most important figures in archaeology as well as the major sites world-wide integrated with a chronology of world pre-history and history relevant to archaeological research.

ANTHR 300 : Biological Anthropology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Relationships between human biology, environment, social structure, and culture. Concepts and data on race, primates, evolution, population genetics, growth, and sociobiology.

**Course Outcomes**

- Develop an understanding of the relationships between human biology, environment, social structure.
- Collect data on race, primates, evolution, population genetics, growth, and sociobiology.

ANTHR 402 : Quantitative Methods for Anthropology. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Quantitative methods in archaeology and sociocultural anthropology, including methods of organizing, exploring, and presenting data, probability, and statistical inference.

**Course Outcomes**

There are no course outcomes available

2. Complete 3 hours from the following old world archaeology courses:

ANTHR 351 : Archaeology and the Bible. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.; Winter Odd Yrs.

DESCRIPTION: Setting and context of the Bible as clarified and supplemented from archaeology, history, and related studies. Archaeological methods.

**Course Outcomes**

- Students will gain knowledge of the development of Biblical archaeology as a field within the overall umbrella of the discipline of anthropology. This study will include extensive study of the both the defining personalities and methodologies in this sub-area of archaeology, as well as the major excavated sites in the Levant associated with Biblical events. Students will also gain a knowledge of the historical development of the Near East through its archaeological contexts, and the debates existing between differing methodologies associated with the use of the Bible as a primary document.

ANTHR 375 : Archaeology of Egypt. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: ANTHR 101; or ANTHR 110; or ANTHR 215

DESCRIPTION: Survey of the most important archaeological sites, artifacts, and monuments of Egypt, their cultural contexts, as well as major methodological developments in Egyptian archaeology and Egyptology.

**Course Outcomes**

- Survey of the most important archaeological sites, artifacts, and monuments of Egypt, their cultural contexts, as well as major methodological developments in Egyptian archaeology and Egyptology
- Pre-Islamic roots through Ottoman period. Sites, artifacts, and monuments of Islam. Focus on religious and cultural contexts. Relevant Islamic texts and archaeological methods for understanding medieval Islamic sites and artifacts

ANTHR 376 : Archaeology of the Ancient Aegean and Greece. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

RECOMMENDED: Anthr 101, 110, or 205.

DESCRIPTION: Bronze Age Aegean through the Classical and Hellenistic eras. Archaeological sites, artifacts, and monuments of the Mediterranean region impacted by Greek civilization. Classical archaeological methodologies associated with the study, excavation, and interpretation of these cultures.

**Course Outcomes**

- Students will learn the archaeology and cultural contexts of the ancient Aegean and Greek worlds, including classical archaeological methodologies and theory. Students will analyze the contributions that Greek culture, religion, art, and architecture, have played in the development of world history and society.

ANTHR 377 : Archaeology of Roman Civilization. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

RECOMMENDED: Anthr 101, 110, or 205.

DESCRIPTION: Survey of the most important sites, artifacts, monuments, and methodological approaches associated with the archaeological study of Etruria, Roman Italy, and the Roman Empire. Cultural contexts of the regions impacted by Roman civilization.

**Course Outcomes**

- Students will gain a knowledge of the development of Etruscan and Roman societies through a study of Classical archaeological techniques and methodology. Heavy emphasis will be placed on students gaining a chronological knowledge of both of these cultures and their impact on the Mediterranean Basin as well as on developments in the medieval worlds of Europe and Islam. Students will also gain a knowledge of the major assumptions and methodologies of Classical archaeology and gain experience in writing in the discipline.

ANTHR 378 : Near Eastern Archaeology. (3:2:ARR)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Peoples and culture history in Mesopotamia, Syria, Palestine, Egypt, 3500--500 B.C. Substantial reading, writing, discussion.

**Course Outcomes**

- Students will gain an introductory level understanding of the archaeology, history, and ancient cultural contexts of the major ancient civilizations of Mesopotamia, Syria, Palestine, and Egypt through readings, research assignments, and discussion.
- Students will increase their skill sets with regard to critical thinking, research, analysis of data, and writing through multiple types of course assignments including a final research paper project.

ANTHR 379 : Archaeology of Islam. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

RECOMMENDED: Anthr 101, 110, or 205.

DESCRIPTION: Pre-Islamic roots through Ottoman period. Sites, artifacts, and monuments of Islam. Focus on religious and cultural contexts. Relevant Islamic texts and archaeological methods for understanding medieval Islamic sites and artifacts.

**Course Outcomes**

- Pre-Islamic roots through Ottoman period. Sites, artifacts, and monuments of Islam. Focus on religious and cultural contexts. Relevant Islamic texts and archaeological methods for understanding medieval Islamic sites and artifacts

ANTHR 385 : Archaeology of Europe. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Cultural developments of temperate Europe from prehistory to the Roman expansion; lectures and case studies highlight issues related to environmental change, the introduction of farming, population movement, and the emergence of increasingly complex socio-economic systems.

**Course Outcomes**

There are no course outcomes available

ANTHR 390R : Special Topics in Regional Anthropology. (.5-3:ARR:0)

OFFERED: Offered when unique opportunities or needs arise.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Subjects related to a particular area or people.

**Course Outcomes**

- ANTHR 390R Provides students the opportunity to gain a more in-depth knowledge in a field specific

region of archaeological or socio-cultural interest. The course offers the chance for visiting scholars with special expertise or regional interest to provide an intensive learning experience in anthropology for students interested in the field or the specific region.

ANTHR 580 : Near East Seminar. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Current issues in Near Eastern archaeological research.

NOTE: Undergraduates may enroll if they have completed 30 hours in anthropology coursework.

**Course Outcomes**

- Topics vary according to the instructor's research interests. However, each graduate seminar must provide students an intensive mentored research experience in the archaeology of the Near East. Often the seminars are organized by topic. Example: The Archaeology of Mortuary Practices Applied to the Archaeological Data Set of the Near East. Each Seminar must increase the students' research, critical thinking, analysis, and writing skills in the discipline.

ANTHR 590R : Special Topics. (3:3:ARR)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Special topics in archaeology or museum studies.

**Course Outcomes**

- Under the direction of a mentoring professor, students will critically examine, investigate, and integrate the literature for a topic of interest in Anothropology studies.

**Note:** Anthr 390R and 590R must be an old world topic.

3. Complete 3 hours from the following new world archaeology courses:

ANTHR 350 : Archaeological Cultures of North America. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Cultural developments of North American Indians (Canada, U.S., and northern Mexico) before Columbus.

**Course Outcomes**

- Students will gain an introductory level comprehension of the diverse cultural developments of North American indigenous peoples as well as selected examples from Canada and Northern Mexico through the study of archaeological evidence and material culture.
- Students will gain a more in-depth comprehension of the diversity and complexity of data sets regarding archaeological evidence via material cultural remains by hands-on interactions with the collections of the Museum of Peoples and Cultures at BYU.
- Through course assignments, students will increase their skills in critical thinking, research, analysis, and writing. Emphasis will be placed on writing in the discipline.

ANTHR 355 : Mesoamerican Archaeology. (3:2:ARR)

WHEN TAUGHT: Fall

DESCRIPTION: Cultural and environmental bases of ancient civilizations in Mexico and Central America. Olmec, Maya, Toltec, and Aztec cultures.

**Course Outcomes**

- Students will gain knowledge of the major archaeological sites excavated and studied in Meso-America with an emphasis on critiquing archaeological methodologies and theory as they have been applied to specific archaeological sites in the field. Through this study, students will also gain a knowledge of the history and cultural development of the major societies and cultures of this region and the role that archaeology plays in assisting in providing data related to questions associated with the development and decline of these entities.

ANTHR 390R : Special Topics in Regional Anthropology. (.5-3:ARR:0)

OFFERED: Offered when unique opportunities or needs arise.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Subjects related to a particular area or people.

**Course Outcomes**

- ANTHR 390R Provides students the opportunity to gain a more in-depth knowledge in a field specific region of archaeological or socio-cultural interest. The course offers the chance for visiting scholars with special expertise or regional interest to provide an intensive learning experience in anthropology for students interested in the field or the specific region.

ANTHR 530 : Great Basin Archaeology. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Anthr 350 or equivalent.

DESCRIPTION: Overview of ethnography, history of research, and prehistory of the Great Basin culture area. Current issues in archaeological research emphasized.

**Course Outcomes**

Students will gain archaeological and cultural knowledge of the major native peoples of the Great Basin Region from pre-history through European contact through a study of their archaeologial remains and ethnographic studies.
- Students will have hands-on experiences with the collections of the Museum of Peoples and Cultures that are representative of the cultures of the Great Basin Region.

ANTHR 535 : Southwest Seminar. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Anthr 350 or equivalent.

DESCRIPTION: Overview of ethnography and prehistory of American Southwest. Current issues in archaeological research emphasized.

**Course Outcomes**

There are no course outcomes available

ANTHR 562 : Formative Mesoamerica. (3:3:0)

DESCRIPTION: Topics and issues concerning beginnings and development of Mesoamerican civilizations. Mexican and Mayan antecedents of classic Mayan civilization and culture.

**Course Outcomes**

There are no course outcomes available

ANTHR 564 : Classic Mayan Civilization. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Topics and issues concerning archaeological and cultural aspects of classic Mayan civilization and society.

**Course Outcomes**

- Students will gain an in-depth knowledge of the development and accomplishments of the Classic Mayan Civilization at a graduate level.
- Students will expand their abilities to critically problem solve and write effectively in the discipline through class assignments including readings, class discussion, and research paper assignments.
- Students will gain a graduate level knowledge of Classic Mayan material culture through class readings, discussions, writing assignments, and the study of actual material artifacts including but not limited to pottery samples.
- Students will gain a graduate level knowledge of archaeological field methodologies that are pertinent to the excavation of Mayan sites.

ANTHR 565 : Mayan Ceramic Analysis. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Current approaches to classification and analysis of archaeological ceramics, particularly Maya Lowland pottery. Laboratory study of pottery collections from the Maya area.

**Course Outcomes**

There are no course outcomes available

ANTHR 566 : Mayan Ethnohistory. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Topics and issues of cultural change, colonization, and documentation of change processes in the Mayan region, from postclassic period and independence from Spain.

**Course Outcomes**

There are no course outcomes available

ANTHR 590R : Special Topics. (3:3:ARR)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Special topics in archaeology or museum studies.

**Course Outcomes**

- Under the direction of a mentoring professor, students will critically examine, investigate, and integrate the literature for a topic of interest in Anothropology studies.

**Note:** Anthr 390R and 590R must be a new world topic.

4. Complete 3 hours from the following ethnography courses:

ANTHR 317 : Native Peoples of North America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Indian groups at the time of the European arrival; social organization, beliefs, values, economy, and adaptation to environment.

**Course Outcomes**

- Through course assignments, students will gain an introductory knowledge of the major Native American cultures at the time of European contact including but not limited to social organization, belief systems, values, economies, and adaptations to environments.
- Through course assignments and hands-on access to the collections of the BYU Museum of Peoples and Cultures, students will gain a greater depth of knowledge concerning the diverse range of material culture represented by the indigenous peoples of North America.
- Through course assignments, students will increase their skill sets in critical thinking, research, analysis, and writing skills in the disciplines of anthropology and archaeology.

ANTHR 326 : Guatemalan Society and Culture. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: History, culture, society, and life (economic, familial, religious) among peoples of Guatemala. Guatemala as exemplar of colonial, cultural, and global processes evident throughout Latin America.

**Course Outcomes**

- Using Guatemala as a case, which exemplifies the political, economic, and religious histories of Latin America, students will learn the basic relationships between cultural principles, social structure, environmental constraint, and important symbols in Latin America, and how these were constructed through historical processes of violent and peaceful social interaction.

ANTHR 330 : Peoples of Africa. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, economic, and social organization, family life, language, worldview, religion, ritual, artistic expression, ecological adaptation, and contemporary development issues among rural and urban sub-Saharan peoples.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

ANTHR 335 : Peoples of India. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Society and culture on the Indian subcontinent. Stratification, kinship, marriage, religion, politics, economics.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be provided an overview of the peoples and cultures of South Asia with an emphasis on India; a region consisting of several hundred languages, multiple ethnicities, many religious traditions, and competing political orientations.
- Students will receive increased knowledge of the cultures of India through in-depth readings, lectures, discussions, and films.
- Students will increase their capacity for critical thinking skills and writing within the discipline through discussions, exams, and a written research papers.

ANTHR 340 : Peoples of the Middle East. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Ecology, social organization, and beliefs of nomadic, rural, and urban groups between western Africa and Pakistan.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain an introductory level understanding of the variety of cultures, ethnic groups, religious variances, and competing political entities representative of the regions included in the MIddle East. Special emphasis will be placed on applying this knowledge to archaeological and anthropological perspectives, disciplines, and professions.
- Through course assignments, students will increase their skills in creative thinking, analysis of data, research, and writing.
- Through course assignments, students will gain a knowledge and demonstrate their comprehension of the ecologies, social organizations, religious beliefs, and variances between nomadic, rural, and urban groups in the Middle East.

ANTHR 341 : Ethnonationalism and Southeast Asia. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Anthr 101.

DESCRIPTION: Historical and ethnographic perspectives on social and political dynamics in Southeast Asia, including upland ethnic minority issues, ethnonationalistic movements, geopolitical influences, war, genocide, religious dynamics, and the rise of nationalism in the region.

**Course Outcomes**

There are no course outcomes available

ANTHR 343 : Chinese Culture and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter Odd Yrs.

DESCRIPTION: Cultural and social institutions of traditional and modern China, including mainland China, Taiwan, Hong Kong, or other areas of Chinese impact.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain knowledge of the varieties of cultures encompassed in the vast domains of China as well as the basic social paradigms of Chinese society. Through this study, students will also gain a basic knowledge of the history of China and its importance in both past and present world contexts.

5. Complete 3 hours from the following systems and institutions courses:

ANTHR 309 : Language, Culture, and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Linguistic anthropology as a way of doing ethnography; language as symbolic form, vehicle of thought, and instrument of social interaction; speech events as cultural texts.

**Course Outcomes**

There are no course outcomes available

ANTHR 430 : Moral and Ritual Institutions. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Anthropological approaches to religion; its content and relation to other social institutions in societies ranging from gatherers to industrialists.

**Course Outcomes**

- Be able to discuss the major theorists and theories of religion, the major theories of religion advanced, and the relation to various categories of religious practice. Be able to use ethnographic data to discuss and illustrate major religious and ritual practices, the significance of these practices as symbols, and the consequences of these practices in society and in the individual.

ANTHR 431 : Kinship and Gender. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Kinship theory and analysis, 1920-present. Recent issues in anthropological treatment of gender, marriage, and family structure.

**Course Outcomes**

- Students will learn the nature of kinship and the geneological basis of society. Students will also learn the importance of kinship when conducting fieldwork.

ANTHR 432 : Economic and Political Institutions. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Connections between wealth and power: political and legal systems in state and nonstate societies; global expansion of capitalism and technology.

**Course Outcomes**

- This course is designed to enhance student knowledge and skills as a scholar with relation to critical reading within the discipline, intelligent and informed discussion, and writing about past and current issues in global economics.
- Students will gain a working knowledge of political, legal, and economic anthropology as a preparation for the senior thesis, graduate programs, and possible careers in anthropological, political, legal, or economic fields.
- Students will expand their capacities to read with increased comprehension and to write coherently and persuasively in the discipline.
- Students will be given many opportunities to think critically about topics pertinent to the course content and their individual research assignments.
- Students will present their own individual research assignment in both written form and through the venues of a class presentation and discussion of the central themes and tenets as well as methodologies utilized within their individual research project.

ANTHR 436 : Symbolic Anthropology. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Social use and understanding of semiotics, signs, symbols, and other meaningful forms as critically constitutive of culture.

**Course Outcomes**

There are no course outcomes available

ANTHR 490R : Special Topics in Theory and System. (3:3:0)

OFFERED: Offered when unique opportunities or needs arise.

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Subjects related to anthropological theory or the operation of social systems.

**Course Outcomes**

- Develop an enhanced understanding of social interaction, of what it means to be in the presence of others, and ultimately of human being and human beings.Prepare to do effective fieldwork and deskwork, to eventually produce accurate, useful, and insightful interpretations of various interactional practices.Describe the positions, ideas, and methods that will most help you make sense of various interactional practices, of particular social institutions, activities, events, roles, places, and objects.Demonstrate the ability to think soundly, to communicate effectively, and to write a clear and convincing essay.

6. Complete 6 hours from the following:
   a. Museum

ANTHR 311 : Museums and Cultures. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Role of museums in society. Analyzing museum content, use, and sociology. Visits to and critiques of area museums. Final projects with real museums in the region.

**Course Outcomes**

- This course will give participants a sound foundation in understanding the important roles museums play as cultural symbols in world societies, as well as exploring how individual types of museums becomes unique paradigms of cultural memory, education, and identity. The diverse ways in which societies utilize and conceptualize museums will also be a major focus for discussion.

ANTHR 314 : Museum Registration and Legal/Ethical Issues. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ANTHR 311
DESCRIPTION: Managing museum collections: cataloging, loans, ethics, legal issues, object handling, basic object conservation. Practical experience working with museum objects and specific museum challenges.

**Course Outcomes**

- Students will be familiar with registration/collections management/collections care disciplines
- Students will gain hands-on, real-life experience with museum collections and registration
- Students will be familiar with technical writing for collections care (mainly object description and condition reporting)
- Students will be learn basic project management skills in managing collection projects
- Students will have a basic understanding of museum ethics and laws affecting museum collections

ANTHR 412 : Museum Collections Management. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ANTHR 311 & ANTHR 314
DESCRIPTION: Instruction and practice in aspects of managing museum collections: writing catalogs, processing donations, preserving objects.

**Course Outcomes**

There are no course outcomes available

ANTHR 414 : Museum Projects. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ANTHR 311 & ANTHR 314
DESCRIPTION: Supervised experience in a museum working with exhibitions, public programs, or research.

**Course Outcomes**

There are no course outcomes available

ANTHR 511 : Museums and Cultures. (3:3:0)
WHEN TAUGHT: Fall Even Yrs.
DESCRIPTION: Museums in society. Cultural foundations of museum content and sociology of museum use. Analyzing museum studies literature. Visits to and critiques of area museums. Final projects in real museums in the region.

**Course Outcomes**

- To introduce students to the unique and important roles that differing types of museums play in world cultures as well as how diverse cultures view museums and collective memory.
- Students will be provided hands-on, real-life experiences with museum collections related to the issues and methodologies introduced by the course.
- Students will have hands-on experiences in research, analysis, and writing related to the anthropology of museums both nationally and internationally.

- Students will be introduced to the major museum fields, their sub-fields,and their professional assumptions and opportunities, thus also helping students identify their own career interests in, and aptitudes for, the various museum disciplines.
- Student projects will introduce students to the team approach to museum work. Assignments will assist students in learning how to give professional and persuasive presentations of their written research in group settings.
- Students will be provided opportunities to work closely with professionals in the field and visit diverse museum types thus expanding their knowledge of the museum profession and practices.
- Students will be provided individual counseling in how to prepare for a career in the museum fields.

ANTHR 512 : Heritage Resource Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admittance into graduate program in archaeology or certificate program in museum practices.

DESCRIPTION: Legal and ethical issues for practicing archaeologists. Preservation law, collections law, public archaeology, Native American issues, and careers in archaeology and museums.

**Course Outcomes**

- Students will learn the history of cultural resource management and laws relevant to its inception and current state.
- Students are to understand the inherent value in cultural resource preservation.
- This course will instruct students in the basic methods necessary in carrying out compliance for the Section 106 review process.
- Students will learn the current fundamental issues relative to CRM in the U.S. and will discuss ways in which certain aspects of the field can be improved.

b. Practicum, internship, applications

ANTHR 441 : Anthropology of Development. (3:3:3)

DESCRIPTION: Theory, practice, and research methods regarding the anthropological study and resolution of poverty, disease, malnutrition, displacement, and inadequate educational opportunities.

**Course Outcomes**

- To enable the students to apply anthropological theory and ideas in a practical manner and by so doing to assess how the process of development has traditionally been done, say from 1945 to the present. Has that system worked? What have been its successes and failures, and why? We will study what the difficulties are that impede development, structurally, culturally, and environmentally. In addition, we will ask whether the cross-cultural analysis and communication perspective that anthropology (supposedly) excels in helps. Does or can the use of anthropological techniques and analysis help make development more successful? Has anthropologically-informed development worked? Where, when, why? And if not, why not? In a word, can the principles and practices of anthropology be used in development projects to produce something more successful and reliable in the way of development? Can the principles and skills be identified and learned or imparted to a group of students so that new practitioners can be more successful if they enter into some kind of development enterprise or project? These objectives will be achieved by a] studying class texts; b] undertaking an individual research project; c] preparing and presenting a critique of a development project based on a journal account. Outcomes will be the ability to better understand the role of Anthropology in development work coupled with greater knowledge and skills in carrying out personal development projects. This in turn will contribute to greater confidence; a greater ability to analyze and understand human activity, sociality and thought; a greater awareness of cultural diversity, and an increased ability to communicate both orally and in written work.

ANTHR 460 : Practical Applications in Contract Archaeology. (3:1:9)

WHEN TAUGHT: Winter

PREREQUISITE: ANTHR 215

RECOMMENDED: Anthr 454, 455, 456.

DESCRIPTION: Working with professionals and graduate students on contract and research projects; learning archaeological field/laboratory methods; applying training to actual research projects, artifact analyses, site documentation, and report writing.

**Course Outcomes**

There are no course outcomes available

ANTHR 496R : Academic Internship: Research. (.5-3:ARR:ARR)

PREREQUISITE: Supervising instructor's consent.

DESCRIPTION: Field or library research.

**Course Outcomes**

- Complete a supervised internship in an employment setting or agency related to Anthropology.Link academic learning with these professional experiences.Complete a minimum of 45 hands-on hours per credit.

c. Electives

Additional courses selected from items 2, 3, 4, or 5 above.

7. Complete the following in sequential order:

ANTHR 454 : Field School Preparation. (2:2:2)

WHEN TAUGHT: Winter
PREREQUISITE: Major status.
DESCRIPTION: Topics and training related to preparation for archaeological field school assignments and on-site excavation required for Anthr 455.

**Course Outcomes**

There are no course outcomes available

ANTHR 455 : Field School of Archaeology. (6:0:ARR)
WHEN TAUGHT: Spring; Summer
PREREQUISITE: ANTHR 215 & ANTHR 454
DESCRIPTION: Training and experience in excavation at a BYU-sponsored dig.

**Course Outcomes**

There are no course outcomes available

(6 hours required)
ANTHR 456 : Lab Skills for Anthropology. (3:1:Arr)
WHEN TAUGHT: Fall
PREREQUISITE: ANTHR 402 & ANTHR 455
DESCRIPTION: Analytical and laboratory techniques as part of a BYU-sponsored archaeological project.

**Course Outcomes**

There are no course outcomes available

ANTHR 499 : Senior Thesis. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Anthr 205, 206, 442, 495 (for sociocultural); 205, 206, 215, 402, 454R, 455R, 456R (for archaeology).
DESCRIPTION: Supervised analysis and write-up of data generated during field project. Refinement for publication.

**Course Outcomes**

- Students will analyze data and field notes collected for Anthr 495 to produce publishable journal article, a large-size poster, and a conference presentation.

*Hours include courses that may fulfill university core requirements.

## Show all Anthropology Courses

College of Family, Home, and Social Sciences Home

Anthropology Department Home

Majors

BA in Anthropology

Emphases:

- Archaeology
- Sociocultural

- BA in Anthropology (Sociocultural Double Major)

Minor

- Anthropology

Course Information

- Anthropology Courses

Faculty

# BA in Anthropology: Sociocultural Emphasis (54.5 hours*)

Show All Course Descriptions
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## Program Requirements | View MAP | View Program Outcomes

1. Complete the following:

ANTHR 101 : Social/Cultural Anthropology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Aspects of society and culture: kinship, beliefs, economy, and political order among peoples worldwide. Methods and perspectives used in social/cultural anthropology.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Come to understand culture as a way of interpreting experience, and realize that culture informs both social life and individual psychology, shaping and coloring how people perceive and act in the world.Grasp the social scientific principles and reasoning involved in ethnography, and recognize the value, limitations, and ethical implications of this way of making sense of social conduct.Acquire an informed awareness of other cultural worlds—an appreciation of other ways of being human—of believing, behaving, and belonging, including their kinship organization and ritual, economic, and political practices.— Learn to see personal beliefs, values, attitudes, and conduct—including kinship organization and ritual, economic and political practices—from the perspective of people with different ideas about the way the world works.Develop an increased ability to write effectively.

ANTHR 110 : Introduction to Archaeology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Studying past human behaviors and cultures by applying scientific principles and reasoning; exploring case studies concerning archaeological discoveries.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- This course should help students to demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process. Students will learn to appreciate the excitement of discovery that has accompanied important scientific developments as well as demonstrate how scientific methodology can be used to analyze real-world science-related problems. Students will become adept at evaluating scientific data and claims in order to make rational decisions on public-policy science issues that affect their community. As students complete the course they will learn to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data, as well as reflect rationally upon the interface between science and religion.

ANTHR 150 : Introduction to the Major. (.5:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Overview of anthropology major and graduation requirements; preparing for senior thesis sequence; career opportunities; and graduate school application process.

**Course Outcomes**

- Students in this course will gain an introductory level understanding of the basic assumptions of the disciplines of Anthropology and Archaeology as well as their historical development along with examples of applications of various methodologies in the field.

ANTHR 201 : Foundations of Social Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ANTHR 101

DESCRIPTION: Theoretical and philosophical antecedents of modern social theory; ideas and theorists that shaped the formation of anthropology as a discipline.

**Course Outcomes**

There are no course outcomes available

ANTHR 202 : Foundations of Anthropological Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ANTHR 201

DESCRIPTION: Ideas from the founders of social and cultural anthropology and archaeology as disciplines, particularly at the turn of the 20th century.

**Course Outcomes**

There are no course outcomes available

ANTHR 203 : Contemporary Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ANTHR 202

DESCRIPTION: Important current theoretical frameworks in anthropology.

**Course Outcomes**

There are no course outcomes available

2. Complete 9 hours from the following "peoples" courses:

ANTHR 317 : Native Peoples of North America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Indian groups at the time of the European arrival; social organization, beliefs, values, economy, and adaptation to environment.

**Course Outcomes**

- Through course assignments, students will gain an introductory knowledge of the major Native American cultures at the time of European contact including but not limited to social organization, belief systems, values, economies, and adaptations to environments.
- Through course assignments and hands-on access to the collections of the BYU Museum of Peoples and Cultures, students will gain a greater depth of knowledge concerning the diverse range of material culture represented by the indigenous peoples of North America.
- Through course assignments, students will increase their skill sets in critical thinking, research, analysis, and writing skills in the disciplines of anthropology and archaeology.

ANTHR 326 : Guatemalan Society and Culture. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: History, culture, society, and life (economic, familial, religious) among peoples of Guatemala. Guatemala as exemplar of colonial, cultural, and global processes evident throughout Latin America.

**Course Outcomes**

- Using Guatemala as a case, which exemplifies the political, economic, and religious histories of Latin America, students will learn the basic relationships between cultural principles, social structure, environmental constraint, and important symbols in Latin America, and how these were constructed through historical processes of violent and peaceful social interaction.

ANTHR 330 : Peoples of Africa. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, economic, and social organization, family life, language, worldview, religion, ritual, artistic expression, ecological adaptation, and contemporary development issues among rural and urban sub-Saharan peoples.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

ANTHR 335 : Peoples of India. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Society and culture on the Indian subcontinent. Stratification, kinship, marriage, religion, politics, economics.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be provided an overview of the peoples and cultures of South Asia with an emphasis on India; a region consisting of several hundred languages, multiple ethnicities, many religious traditions, and competing political orientations.
- Students will receive increased knowledge of the cultures of India through in-depth readings, lectures, discussions, and films.
- Students will increase their capacity for critical thinking skills and writing within the discipline through discussions, exams, and a written research papers.

ANTHR 340 : Peoples of the Middle East. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Ecology, social organization, and beliefs of nomadic, rural, and urban groups between western Africa and Pakistan.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain an introductory level understanding of the variety of cultures, ethnic groups, religious variances, and competing political entities representative of the regions included in the MIddle East. Special emphasis will be placed on applying this knowledge to archaeological and anthropological perspectives, disciplines, and professions.
- Through course assignments, students will increase their skills in creative thinking, analysis of data, research, and writing.
- Through course assignments, students will gain a knowledge and demonstrate their comprehension of the ecologies, social organizations, religious beliefs, and variances between nomadic, rural, and urban groups in the Middle East.

ANTHR 341 : Ethnonationalism and Southeast Asia. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Anthr 101.

DESCRIPTION: Historical and ethnographic perspectives on social and political dynamics in Southeast Asia, including upland ethnic minority issues, ethnonationalistic movements, geopolitical influences, war, genocide, religious dynamics, and the rise of nationalism in the region.

**Course Outcomes**

There are no course outcomes available

ANTHR 343 : Chinese Culture and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter Odd Yrs.

DESCRIPTION: Cultural and social institutions of traditional and modern China, including mainland China, Taiwan, Hong Kong, or other areas of Chinese impact.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain knowledge of the varieties of cultures encompassed in the vast domains of China as well as the basic social paradigms of Chinese society. Through this study, students will also gain a basic knowledge of the history of China and its importance in both past and present world contexts.

ANTHR 345 : American Culture. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Perspectives and methods for making sense of mainstream middle-class American society; American ways of being-in-the-world, of believing, behaving, and belonging; American cultural themes.

**Course Outcomes**

- Develop an enhanced understanding of what it means to be American.Learn how to use the stories Americans tell about themselves as portholes through which to peer into the ordinarily invisible world of American culture.Be able to describe the values, beliefs, and attitudes that shape and color how Americans perceive and act in the world, that inform American social and political life as well as individual psychology.Demonstrate theability to think soundly, to communicate effectively, and to write a clear and convincing memoir of a specific American experience that reveals a particular, readily identifiable aspect of American culture.

ANTHR 346 : Anthropology of Mormonism. (3:3:0)

DESCRIPTION: Intensive analysis of Mormon society and culture using a range of anthropological perspectives.

**Course Outcomes**

- Students will gain a knowledge of the development of Mormonism as a distinct religious and cultural force within American society as well as its impact in world-wide contexts. The emergence of Mormonism as a 'culture' and the evolution of its assumptions and unique cultural characteristics will also be emphasized. Students will gain practice in applying current anthropological theories to a culture familiar to the majority of participants, but perhaps never thought about by students through the disciplinary assumptions of anthropology.

ANTHR 390R : Special Topics in Regional Anthropology. (.5-3:ARR:0)

OFFERED: Offered when unique opportunities or needs arise.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Subjects related to a particular area or people.

**Course Outcomes**

- ANTHR 390R Provides students the opportunity to gain a more in-depth knowledge in a field specific region of archaeological or socio-cultural interest. The course offers the chance for visiting scholars with special expertise or regional interest to provide an intensive learning experience in anthropology for students interested in the field or the specific region.

3. Complete 15 hours from the following systems/institutions courses:
    - ANTHR 247 : Applied Anthropology. (3:3:0)

      WHEN TAUGHT: Winter

      DESCRIPTION: Anthropological principles and methods applied to business, education, environment, government, communication, national and international development, and health sectors. Ethically and culturally appropriate strategies for researching and participating in planned socio-cultural change.

      **Course Outcomes**

      - This course has the objectives to introduce students to career options outside academia and to help them explore graduate programs that will prepare them for those careers. This course will also introduce them to theoretical and ethical issues in applied and practicing anthropology and to some of the current social problems that are dominating the field. Students will learn the basic training in the skills and methodologies, (including report writing), that they will use as an applied anthropologist.

    - ANTHR 300 : Biological Anthropology. (3:3:0)

      WHEN TAUGHT: Fall; Winter; Spring

      DESCRIPTION: Relationships between human biology, environment, social structure, and culture. Concepts and data on race, primates, evolution, population genetics, growth, and sociobiology.

      **Course Outcomes**

      - Develop an understanding of the relationships between human biology, environment, social structure.
      - Collect data on race, primates, evolution, population genetics, growth, and sociobiology.

    - ANTHR 309 : Language, Culture, and Society. (3:3:0)

      WHEN TAUGHT: Fall; Winter; Spring

      DESCRIPTION: Linguistic anthropology as a way of doing ethnography; language as symbolic form, vehicle of thought, and instrument of social interaction; speech events as cultural texts.

      **Course Outcomes**

      There are no course outcomes available

    - ANTHR 430 : Moral and Ritual Institutions. (3:3:0)

      WHEN TAUGHT: Fall

      DESCRIPTION: Anthropological approaches to religion; its content and relation to other social institutions in societies ranging from gatherers to industrialists.

      **Course Outcomes**

      - Be able to discuss the major theorists and theories of religion, the major theories of religion advanced, and the relation to various categories of religious practice. Be able to use ethnographic data to discuss and illustrate major religious and ritual practices, the significance of these practices as symbols, and the consequences of these practices in society and in the individual.

    - ANTHR 431 : Kinship and Gender. (3:3:0)

      WHEN TAUGHT: Winter

      DESCRIPTION: Kinship theory and analysis, 1920-present. Recent issues in anthropological treatment of gender, marriage, and family structure.

      **Course Outcomes**

      - Students will learn the nature of kinship and the geneological basis of society. Students will also learn the importance of kinship when conducting fieldwork.

    - ANTHR 432 : Economic and Political Institutions. (3:3:0)

      WHEN TAUGHT: Winter

      DESCRIPTION: Connections between wealth and power: political and legal systems in state and nonstate societies; global expansion of capitalism and technology.

      **Course Outcomes**

      - This course is designed to enhance student knowledge and skills as a scholar with relation to critical reading within the discipline, intelligent and informed discussion, and writing about past and current issues in global economics.
      - Students will gain a working knowledge of political, legal, and economic anthropology as a preparation for the senior thesis, graduate programs, and possible careers in anthropological, political, legal, or economic fields.
      - Students will expand their capacities to read with increased comprehension and to write coherently and persuasively in the discipline.
      - Students will be given many opportunities to think critically about topics pertinent to the course

content and their individual research assignments.
- Students will present their own individual research assignment in both written form and through the venues of a class presentation and discussion of the central themes and tenets as well as methodologies utilized within their individual research project.

ANTHR 434 : Medical Anthropology. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.; Winter Even Yrs.

RECOMMENDED: Anthr 247.

DESCRIPTION: Interactions between culture and health in comparative perspective, emphasizing social, historical, and ecological determinants.

**Course Outcomes**

There are no course outcomes available

ANTHR 436 : Symbolic Anthropology. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Social use and understanding of semiotics, signs, symbols, and other meaningful forms as critically constitutive of culture.

**Course Outcomes**

There are no course outcomes available

ANTHR 439 : Psychological Anthropology. (3:3:0)

DESCRIPTION: Culture/mind relationship. Cross-cultural variation in concepts of person, emotions, and treatment modalities by society. Psychological implications of cultural differences in childrearing.

**Course Outcomes**

- 1. Through this course students will develop a critique of both the overemphasis on macro-level 'structure' and 'culture' in mainstream anthropology, as well as the overly individualistic emphasis in psychology on micro-processes and the 'psyches' of individuals. Students will gain an appreciation for the extent to which 'mind' and 'culture' co-constitute one another in various dimensions of human experience.
- 2. Students will learn to critique the philosophical and theoretical assumptions inherent in various approaches to understanding human experience and intersubjectivity.
- 3. Students will learn to analyze cultural and psychological data from a person-centered ethnographic standpoint by engaging with readings and conducting a course project analyzing some psychocultural phenomenon and writing up the results.

ANTHR 441 : Anthropology of Development. (3:3:3)

DESCRIPTION: Theory, practice, and research methods regarding the anthropological study and resolution of poverty, disease, malnutrition, displacement, and inadequate educational opportunities.

**Course Outcomes**

- To enable the students to apply anthropological theory and ideas in a practical manner and by so doing to assess how the process of development has traditionally been done, say from 1945 to the present. Has that system worked? What have been its successes and failures, and why? We will study what the difficulties are that impede development, structurally, culturally, and environmentally. In addition, we will ask whether the cross-cultural analysis and communication perspective that anthropology (supposedly) excels in helps. Does or can the use of anthropological techniques and analysis help make development more successful? Has anthropologically-informed development worked? Where, when, why? And if not, why not? In a word, can the principles and practices of anthropology be used in development projects to produce something more successful and reliable in the way of development? Can the principles and skills be identified and learned or imparted to a group of students so that new practitioners can be more successful if they enter into some kind of development enterprise or project? These objectives will be achieved by a] studying class texts; b] undertaking an individual research project; c] preparing and presenting a critique of a development project based on a journal account. Outcomes will be the ability to better understand the role of Anthropology in development work coupled with greater knowledge and skills in carrying out personal development projects. This in turn will contribute to greater confidence; a greater ability to analyze and understand human activity, sociality and thought; a greater awareness of cultural diversity, and an increased ability to communicate both orally and in written work.

ANTHR 490R : Special Topics in Theory and System. (3:3:0)

OFFERED: Offered when unique opportunities or needs arise.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Subjects related to anthropological theory or the operation of social systems.

**Course Outcomes**

- Develop an enhanced understanding of social interaction, of what it means to be in the presence of others, and ultimately of human being and human beings.Prepare to do effective fieldwork and deskwork, to eventually produce accurate, useful, and insightful interpretations of various interactional practices.Describe the positions, ideas, and methods that will most help you make sense of various interactional practices, of particular social institutions, activities, events, roles, places, and objects.Demonstrate the ability to think soundly, to communicate effectively, and to write a clear and convincing essay.

LING 550 : Sociolinguistics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 210 or ELang 223; or equivalent.

DESCRIPTION: Research and theory in anthropological linguistics and sociolinguistics.

**Course Outcomes**

- Understand the relationship between language use and society with respect to regional, social, ethnic and contextual variation.
- Conduct research into a wide range of sociolingusitic variation
- Impart knowledge of sociolinguistics and related research in presentations and papers

LING 551 : Anthropological Linguistics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: For Fall 2013 & forward admits, Ling 220 and Ling 230; or equivalent.

DESCRIPTION: Language in culture and society: development, typology, and description.

**Course Outcomes**

- Upon completion of this course students will be equipped with the conceptual tools to think about and analyze linguistic data in social contexts of use.
- Student will become conversant with foundational texts which inform our cultural understanding and use of language.
- Through readings, weekly exercises and discussions they will acquire the metalinguistic concepts necessary for contextualizing varieties of language.
- In class transcription sessions will address the representation of linguistic data, and how that representation may affect one's assessments of semantic intent.

- Up to 3 hours of the following Museum Studies courses may be used to complete the 15 hour requirement:

ANTHR 311 : Museums and Cultures. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Role of museums in society. Analyzing museum content, use, and sociology. Visits to and critiques of area museums. Final projects with real museums in the region.

**Course Outcomes**

- This course will give participants a sound foundation in understanding the important roles museums play as cultural symbols in world societies, as well as exploring how individual types of museums becomes unique paradigms of cultural memory, education, and identity. The diverse ways in which societies utilize and conceptualize museums will also be a major focus for discussion.

ANTHR 314 : Museum Registration and Legal/Ethical Issues. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ANTHR 311

DESCRIPTION: Managing museum collections: cataloging, loans, ethics, legal issues, object handling, basic object conservation. Practical experience working with museum objects and specific museum challenges.

**Course Outcomes**

- Students will be familiar with registration/collections management/collections care disciplines
- Students will gain hands-on, real-life experience with museum collections and registration
- Students will be familiar with technical writing for collections care (mainly object description and condition reporting)
- Students will be learn basic project management skills in managing collection projects
- Students will have a basic understanding of museum ethics and laws affecting museum collections

ANTHR 412 : Museum Collections Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ANTHR 311 & ANTHR 314

DESCRIPTION: Instruction and practice in aspects of managing museum collections: writing catalogs, processing donations, preserving objects.

**Course Outcomes**

There are no course outcomes available

ANTHR 414 : Museum Projects. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ANTHR 311 & ANTHR 314

DESCRIPTION: Supervised experience in a museum working with exhibitions, public programs, or research.

**Course Outcomes**

There are no course outcomes available

ANTHR 511 : Museums and Cultures. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Museums in society. Cultural foundations of museum content and sociology of museum use. Analyzing museum studies literature. Visits to and critiques of area museums. Final projects in real museums in the region.

**Course Outcomes**

- To introduce students to the unique and important roles that differing types of museums play in world cultures as well as how diverse cultures view museums and collective memory.
- Students will be provided hands-on, real-life experiences with museum collections related to the issues and methodologies introduced by the course.
- Students will have hands-on experiences in research, analysis, and writing related to the anthropology of museums both nationally and internationally.
- Students will be introduced to the major museum fields, their sub-fields,and their professional assumptions and opportunities, thus also helping students identify their own career interests in, and aptitudes for, the various museum disciplines.
- Student projects will introduce students to the team approach to museum work. Assignments will assist students in learning how to give professional and persuasive presentations of their written research in group settings.
- Students will be provided opportunities to work closely with professionals in the field and visit diverse museum types thus expanding their knowledge of the museum profession and practices.
- Students will be provided individual counseling in how to prepare for a career in the museum fields.

4. Complete 3 hours of statistics or data management courses:

ANTHR 402 : Quantitative Methods for Anthropology. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Quantitative methods in archaeology and sociocultural anthropology, including methods of organizing, exploring, and presenting data, probability, and statistical inference.

**Course Outcomes**

There are no course outcomes available

ANTHR 443 : Ethnographic Data Analysis. (3:3:Arr)

WHEN TAUGHT: Fall

PREREQUISITE: ANTHR 442

RECOMMENDED: Anthr 495R.

DESCRIPTION: Systematic text analysis of interview data, audio, video, and survey data. Grounded theory and content analysis. Coding methods and codebook development/management. Developing an empirically grounded analysis of qualitative or mixed-methods data. Using qualitative data analysis software.

NOTE: For sociocultural anthropology majors, Anthr 495R is most appropriate after thesis fieldwork is complete and data is ready for analysis.

**Course Outcomes**

There are no course outcomes available

5. Complete the following in sequential order:

ANTHR 442 : Ethnographic Research Design and Methods. (3:2:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ANTHR 201 & ANTHR 202

RECOMMENDED: 300-level regionally relevant courses in the geographic area of interest.

DESCRIPTION: Methods and philosophy of social science research design. Rationale, limitations, ethical issues, and practices of participant observation, interviewing, quantitative measurement, and other methods. Developing complete research proposal for EthnographicField Project (Anthr 495). Securing IRB approval. Local fieldwork exercises.

**Course Outcomes**

There are no course outcomes available

**ANTHR 495R : Ethnographic Field Project. (3-6:0:ARR)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: ANTHR 203 & ANTHR 442

DESCRIPTION: Conduct field work. Maintain, code, and index field notes, interview transcripts, and other data sources in preparation for Anthr 499 thesis write-up.

NOTE: IRB approval and instructor's consent required before departure to field. No class meetings.

**Course Outcomes**

- Students will conduct independent field work and log field notes. Students will follow their own research plan developed in Anthr 442.

(6 hours required)

ANTHR 499 : Senior Thesis. (3:3:0)

WHEN Fall; Winter

TAUGHT:

PREREQUISITE: Anthr 205, 206, 442, 495 (for sociocultural); 205, 206, 215, 402, 454R, 455R, 456R (for archaeology).

DESCRIPTION: Supervised analysis and write-up of data generated during field project. Refinement for publication.

**Course Outcomes**

- Students will analyze data and field notes collected for Anthr 495 to produce publishable journal article, a large-size poster, and a conference presentation.

*Hours include courses that may fulfill university core requirements.

** The major requires that a field project be completed in one of the recognized field schools conducted by a member of the BYU faculty. A local field work option is available in exceptional circumstances and must be approved by the entire faculty.

## Show all Anthropology Courses

**College of Family, Home, and Social Sciences Home**

**Anthropology Department Home**

**Majors**

BA in Anthropology
Emphases:
- Archaeology
- Sociocultural

- BA in Anthropology (Sociocultural Double Major)

**Minor**

- Anthropology

**Course Information**

- Anthropology Courses

**Faculty**

# BA in Anthropology (Sociocultural Double Major) (39.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

This major is designed to accommodate the varying interests of students from a range of other disciplines, but it is only available to students completing an additional major in another field. Its purpose is to allow students with other majors to add the perspectives that anthropology is uniquely qualified to provide.

## Program Requirements | View MAP | View Program Outcomes

1. Complete all requirements of a primary major. Double counting courses between primary major and anthropology will not be allowed.
2. Complete the following:

ANTHR 101 : Social/Cultural Anthropology. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Aspects of society and culture: kinship, beliefs, economy, and political order among peoples worldwide. Methods and perspectives used in social/cultural anthropology.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
- Come to understand culture as a way of interpreting experience, and realize that culture informs both social life and individual psychology, shaping and coloring how people perceive and act in the world.Grasp the social scientific principles and reasoning involved in ethnography, and recognize the value, limitations, and ethical implications of this way of making sense of social conduct.Acquire an informed awareness of other cultural worlds—an appreciation of other ways of being human—of believing, behaving, and belonging, including their kinship organization and ritual, economic, and political practices.— Learn to see personal beliefs, values, attitudes, and conduct—including kinship organization and ritual, economic and political practices—from the perspective of people with different ideas about the way the world works.Develop an increased ability to write effectively.

ANTHR 150 : Introduction to the Major. (.5:1:0)
WHEN TAUGHT: Fall
DESCRIPTION: Overview of anthropology major and graduation requirements; preparing for senior thesis sequence; career opportunities; and graduate school application process.

**Course Outcomes**
- Students in this course will gain an introductory level understanding of the basic assumptions of the disciplines of Anthropology and Archaeology as well as their historical development along with examples of applications of various methodologies in the field.

ANTHR 201 : Foundations of Social Theory. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: ANTHR 101
DESCRIPTION: Theoretical and philosophical antecedents of modern social theory; ideas and theorists that shaped the formation of anthropology as a discipline.

**Course Outcomes**
There are no course outcomes available

ANTHR 202 : Foundations of Anthropological Theory. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ANTHR 201
DESCRIPTION: Ideas from the founders of social and cultural anthropology and archaeology as disciplines, particularly at the turn of the 20th century.

**Course Outcomes**
There are no course outcomes available

ANTHR 203 : Contemporary Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ANTHR 202
DESCRIPTION: Important current theoretical frameworks in anthropology.

**Course Outcomes**

There are no course outcomes available

ANTHR 442 : Ethnographic Research Design and Methods. (3:2:ARR)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: ANTHR 201 & ANTHR 202
RECOMMENDED: 300-level regionally relevant courses in the geographic area of interest.
DESCRIPTION: Methods and philosophy of social science research design. Rationale, limitations, ethical issues, and practices of participant observation, interviewing, quantitative measurement, and other methods. Developing complete research proposal for EthnographicField Project (Anthr 495). Securing IRB approval. Local fieldwork exercises.

**Course Outcomes**

There are no course outcomes available

**ANTHR 495R : Ethnographic Field Project. (3-6:0:ARR)

WHEN TAUGHT: Spring; Summer
PREREQUISITE: ANTHR 203 & ANTHR 442
DESCRIPTION: Conduct field work. Maintain, code, and index field notes, interview transcripts, and other data sources in preparation for Anthr 499 thesis write-up.
NOTE: IRB approval and instructor's consent required before departure to field. No class meetings.

**Course Outcomes**

- Students will conduct independent field work and log field notes. Students will follow their own research plan developed in Anthr 442.

ANTHR 499 : Senior Thesis. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Anthr 205, 206, 442, 495 (for sociocultural); 205, 206, 215, 402, 454R, 455R, 456R (for archaeology).
DESCRIPTION: Supervised analysis and write-up of data generated during field project. Refinement for publication.

**Course Outcomes**

- Students will analyze data and field notes collected for Anthr 495 to produce publishable journal article, a large-size poster, and a conference presentation.

3. Complete 6 hours from the following:

ANTHR 317 : Native Peoples of North America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Indian groups at the time of the European arrival; social organization, beliefs, values, economy, and adaptation to environment.

**Course Outcomes**

- Through course assignments, students will gain an introductory knowledge of the major Native American cultures at the time of European contact including but not limited to social organization, belief systems, values, economies, and adaptations to environments.
- Through course assignments and hands-on access to the collections of the BYU Museum of Peoples and Cultures, students will gain a greater depth of knowledge concerning the diverse range of material culture represented by the indigenous peoples of North America.
- Through course assignments, students will increase their skill sets in critical thinking, research, analysis, and writing skills in the disciplines of anthropology and archaeology.

ANTHR 326 : Guatemalan Society and Culture. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: History, culture, society, and life (economic, familial, religious) among peoples of Guatemala. Guatemala as exemplar of colonial, cultural, and global processes evident throughout Latin America.

**Course Outcomes**

- Using Guatemala as a case, which exemplifies the political, economic, and religious histories of Latin America, students will learn the basic relationships between cultural principles, social structure, environmental constraint, and important symbols in Latin America, and how these were constructed through historical processes of violent and peaceful social interaction.

ANTHR 330 : Peoples of Africa. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, economic, and social organization, family life, language, worldview, religion, ritual, artistic expression, ecological adaptation, and contemporary development issues among rural and urban sub-Saharan peoples.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

ANTHR 335 : Peoples of India. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Society and culture on the Indian subcontinent. Stratification, kinship, marriage, religion, politics, economics.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be provided an overview of the peoples and cultures of South Asia with an emphasis on India; a region consisting of several hundred languages, multiple ethnicities, many religious traditions, and competing political orientations.
- Students will receive increased knowledge of the cultures of India through in-depth readings, lectures, discussions, and films.
- Students will increase their capacity for critical thinking skills and writing within the discipline through discussions, exams, and a written research papers.

ANTHR 340 : Peoples of the Middle East. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Ecology, social organization, and beliefs of nomadic, rural, and urban groups between western Africa and Pakistan.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain an introductory level understanding of the variety of cultures, ethnic groups, religious variances, and competing political entities representative of the regions included in the MIddle East. Special emphasis will be placed on applying this knowledge to archaeological and anthropological perspectives, disciplines, and professions.
- Through course assignments, students will increase their skills in creative thinking, analysis of data, research, and writing.
- Through course assignments, students will gain a knowledge and demonstrate their comprehension of the ecologies, social organizations, religious beliefs, and variances between nomadic, rural, and urban groups in the Middle East.

ANTHR 341 : Ethnonationalism and Southeast Asia. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Anthr 101.

DESCRIPTION: Historical and ethnographic perspectives on social and political dynamics in Southeast Asia, including upland ethnic minority issues, ethnonationalistic movements, geopolitical influences, war, genocide, religious dynamics, and the rise of nationalism in the region.

**Course Outcomes**

There are no course outcomes available

ANTHR 343 : Chinese Culture and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter Odd Yrs.

DESCRIPTION: Cultural and social institutions of traditional and modern China, including mainland China, Taiwan, Hong Kong, or other areas of Chinese impact.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain knowledge of the varieties of cultures encompassed in the vast domains of China as well as the basic social paradigms of Chinese society. Through this study, students will also gain a basic knowledge of the history of China and its importance in both past and present world contexts.

ANTHR 345 : American Culture. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Perspectives and methods for making sense of mainstream middle-class American society; American ways of being-in-the-world, of believing, behaving, and belonging; American cultural themes.

**Course Outcomes**

- Develop an enhanced understanding of what it means to be American.Learn how to use the stories Americans tell about themselves as portholes through which to peer into the ordinarily invisible world of American culture.Be able to describe the values, beliefs, and attitudes that shape and color how Americans perceive and act in the world, that inform American social and political life as well as

individual psychology.Demonstrate theability to think soundly, to communicate effectively, and to write a clear and convincing memoir of a specific American experience that reveals a particular, readily identifiable aspect of American culture.

ANTHR 346 : Anthropology of Mormonism. (3:3:0)

DESCRIPTION: Intensive analysis of Mormon society and culture using a range of anthropological perspectives.

**Course Outcomes**

- Students will gain a knowledge of the development of Mormonism as a distinct religious and cultural force within American society as well as its impact in world-wide contexts. The emergence of Mormonism as a 'culture' and the evolution of its assumptions and unique cultural characteristics will also be emphasized. Students will gain practice in applying current anthropological theories to a culture familiar to the majority of participants, but perhaps never thought about by students through the disciplinary assumptions of anthropology.

ANTHR 390R : Special Topics in Regional Anthropology. (.5-3:ARR:0)

OFFERED: Offered when unique opportunities or needs arise.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Subjects related to a particular area or people.

**Course Outcomes**

- ANTHR 390R Provides students the opportunity to gain a more in-depth knowledge in a field specific region of archaeological or socio-cultural interest. The course offers the chance for visiting scholars with special expertise or regional interest to provide an intensive learning experience in anthropology for students interested in the field or the specific region.

4. Complete 6 hours from the following:

ANTHR 309 : Language, Culture, and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Linguistic anthropology as a way of doing ethnography; language as symbolic form, vehicle of thought, and instrument of social interaction; speech events as cultural texts.

**Course Outcomes**

There are no course outcomes available

ANTHR 402 : Quantitative Methods for Anthropology. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Quantitative methods in archaeology and sociocultural anthropology, including methods of organizing, exploring, and presenting data, probability, and statistical inference.

**Course Outcomes**

There are no course outcomes available

ANTHR 430 : Moral and Ritual Institutions. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Anthropological approaches to religion; its content and relation to other social institutions in societies ranging from gatherers to industrialists.

**Course Outcomes**

- Be able to discuss the major theorists and theories of religion, the major theories of religion advanced, and the relation to various categories of religious practice. Be able to use ethnographic data to discuss and illustrate major religious and ritual practices, the significance of these practices as symbols, and the consequences of these practices in society and in the individual.

ANTHR 431 : Kinship and Gender. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Kinship theory and analysis, 1920-present. Recent issues in anthropological treatment of gender, marriage, and family structure.

**Course Outcomes**

- Students will learn the nature of kinship and the geneological basis of society. Students will also learn the importance of kinship when conducting fieldwork.

ANTHR 432 : Economic and Political Institutions. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Connections between wealth and power: political and legal systems in state and nonstate societies; global expansion of capitalism and technology.

**Course Outcomes**

- This course is designed to enhance student knowledge and skills as a scholar with relation to critical reading within the discipline, intelligent and informed discussion, and writing about past and current issues in global economics.
- Students will gain a working knowledge of political, legal, and economic anthropology as a preparation for the senior thesis, graduate programs, and possible careers in anthropological, political, legal, or economic fields.
- Students will expand their capacities to read with increased comprehension and to write coherently and persuasively in the discipline.
- Students will be given many opportunities to think critically about topics pertinent to the course content and their individual research assignments.
- Students will present their own individual research assignment in both written form and through the venues of a class presentation and discussion of the central themes and tenets as well as methodologies utilized within their individual research project.

ANTHR 434 : Medical Anthropology. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.; Winter Even Yrs.

RECOMMENDED: Anthr 247.

DESCRIPTION: Interactions between culture and health in comparative perspective, emphasizing social, historical, and ecological determinants.

**Course Outcomes**

There are no course outcomes available

ANTHR 436 : Symbolic Anthropology. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Social use and understanding of semiotics, signs, symbols, and other meaningful forms as critically constitutive of culture.

**Course Outcomes**

There are no course outcomes available

ANTHR 439 : Psychological Anthropology. (3:3:0)

DESCRIPTION: Culture/mind relationship. Cross-cultural variation in concepts of person, emotions, and treatment modalities by society. Psychological implications of cultural differences in childrearing.

**Course Outcomes**

- 1. Through this course students will develop a critique of both the overemphasis on macro-level 'structure' and 'culture' in mainstream anthropology, as well as the overly individualistic emphasis in psychology on micro-processes and the 'psyches' of individuals. Students will gain an appreciation for the extent to which 'mind' and 'culture' co-constitute one another in various dimensions of human experience.
- 2. Students will learn to critique the philosophical and theoretical assumptions inherent in various approaches to understanding human experience and intersubjectivity.
- 3. Students will learn to analyze cultural and psychological data from a person-centered ethnographic standpoint by engaging with readings and conducting a course project analyzing some psychocultural phenomenon and writing up the results.

ANTHR 441 : Anthropology of Development. (3:3:3)

DESCRIPTION: Theory, practice, and research methods regarding the anthropological study and resolution of poverty, disease, malnutrition, displacement, and inadequate educational opportunities.

**Course Outcomes**

- To enable the students to apply anthropological theory and ideas in a practical manner and by so doing to assess how the process of development has traditionally been done, say from 1945 to the present. Has that system worked? What have been its successes and failures, and why? We will study what the difficulties are that impede development, structurally, culturally, and environmentally. In addition, we will ask whether the cross-cultural analysis and communication perspective that anthropology (supposedly) excels in helps. Does or can the use of anthropological techniques and analysis help make development more successful? Has anthropologically-informed development worked? Where, when, why? And if not, why not? In a word, can the principles and practices of anthropology be used in development projects to produce something more successful and reliable in the way of development? Can the principles and skills be identified and learned or imparted to a group of students so that new practitioners can be more successful if they enter into some kind of development enterprise or project? These objectives will be achieved by a] studying class texts; b] undertaking an individual research project; c] preparing and presenting a critique of a development project based on a journal account. Outcomes will be the ability to better understand the role of Anthropology in development work coupled with greater knowledge and skills in carrying out personal development projects. This in turn will contribute to greater confidence; a greater ability to analyze and understand human activity, sociality and thought; a greater awareness of cultural diversity, and an increased ability to communicate both orally and in written work.

ANTHR 443 : Ethnographic Data Analysis. (3:3:Arr)

WHEN TAUGHT: Fall

PREREQUISITE: ANTHR 442

RECOMMENDED: Anthr 495R.

DESCRIPTION: Systematic text analysis of interview data, audio, video, and survey data. Grounded theory and content analysis. Coding methods and codebook development/management. Developing an empirically grounded analysis of qualitative or mixed-methods data. Using qualitative data analysis software.

NOTE: For sociocultural anthropology majors, Anthr 495R is most appropriate after thesis fieldwork is

complete and data is ready for analysis.

**Course Outcomes**

There are no course outcomes available

ANTHR 490R : Special Topics in Theory and System. (3:3:0)

OFFERED: Offered when unique opportunities or needs arise.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Subjects related to anthropological theory or the operation of social systems.

**Course Outcomes**

- Develop an enhanced understanding of social interaction, of what it means to be in the presence of others, and ultimately of human being and human beings.Prepare to do effective fieldwork and deskwork, to eventually produce accurate, useful, and insightful interpretations of various interactional practices.Describe the positions, ideas, and methods that will most help you make sense of various interactional practices, of particular social institutions, activities, events, roles, places, and objects.Demonstrate the ability to think soundly, to communicate effectively, and to write a clear and convincing essay.

ANTHR 511 : Museums and Cultures. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Museums in society. Cultural foundations of museum content and sociology of museum use. Analyzing museum studies literature. Visits to and critiques of area museums. Final projects in real museums in the region.

**Course Outcomes**

- To introduce students to the unique and important roles that differing types of museums play in world cultures as well as how diverse cultures view museums and collective memory.
- Students will be provided hands-on, real-life experiences with museum collections related to the issues and methodologies introduced by the course.
- Students will have hands-on experiences in research, analysis, and writing related to the anthropology of museums both nationally and internationally.
- Students will be introduced to the major museum fields, their sub-fields,and their professional assumptions and opportunities, thus also helping students identify their own career interests in, and aptitudes for, the various museum disciplines.
- Student projects will introduce students to the team approach to museum work. Assignments will assist students in learning how to give professional and persuasive presentations of their written research in group settings.
- Students will be provided opportunities to work closely with professionals in the field and visit diverse museum types thus expanding their knowledge of the museum profession and practices.
- Students will be provided individual counseling in how to prepare for a career in the museum fields.

5. Complete an additional 3 hours from sections 3 or 4 above.

*Hours include courses that may fulfill university core requirements.

** The major requires that a field project be completed in one of the recognized field schools conducted by a member of the BYU faculty. A local field work option is available in exceptional circumstances and must be approved by the entire faculty.

## Show all Anthropology Courses

**College of Family, Home, and Social Sciences Home**

**Anthropology Department Home**

**Majors**

BA in Anthropology
Emphases:
- Archaeology
- Sociocultural

- BA in Anthropology (Sociocultural Double Major)

**Minor**

- Anthropology

**Course Information**

- Anthropology Courses

**Faculty**

# Minor in Anthropology (16 hours)

## Program Requirements

Complete 16 hours of department courses, with no more than two courses in addition to Anthr 108R from lower-division course offerings.

## Show all Anthropology Courses

**College of Family, Home, and Social Sciences Home**

**Anthropology Department Home**

**Majors**

BA in Anthropology
Emphases:
- Archaeology
- Sociocultural

- BA in Anthropology (Sociocultural Double Major)

**Minor**

- Anthropology

**Course Information**

- Anthropology Courses

**Faculty**

# Anthropology (Anthr)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

ANTHR 101 : Social/Cultural Anthropology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Aspects of society and culture: kinship, beliefs, economy, and political order among peoples worldwide. Methods and perspectives used in social/cultural anthropology.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Come to understand culture as a way of interpreting experience, and realize that culture informs both social life and individual psychology, shaping and coloring how people perceive and act in the world.Grasp the social scientific principles and reasoning involved in ethnography, and recognize the value, limitations, and ethical implications of this way of making sense of social conduct.Acquire an informed awareness of other cultural worlds—an appreciation of other ways of being human—of believing, behaving, and belonging, including their kinship organization and ritual, economic, and political practices.— Learn to see personal beliefs, values, attitudes, and conduct—including kinship organization and ritual, economic and political practices—from the perspective of people with different ideas about the way the world works.Develop an increased ability to write effectively.

ANTHR 103 : Archaeology Field Trip. (1:2:0)

DESCRIPTION: Archaeology field trip to Four Corners.

NOTE: Meet weekly prior to trip. Students responsible for food and camping costs. Limited enrollment

**Course Outcomes**

- Through on-site study, students will gain archaeological knowledge related to the major cultures of the Great Basin and Southwest regions of the United States.

ANTHR 108R : Anthropological Films. (1:0:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Examination of other cultures through ethnographic or archaeological film.

NOTE: Can be taken separately or concurrently with Anthr 101 or 110.

**Course Outcomes**

- Through an exposure, critique, and study of ethnographic films, students will gain knowledge of the diverse types of human cultural systems in existence today in addition to the methodologies utilized to study and record them.

ANTHR 110 : Introduction to Archaeology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Studying past human behaviors and cultures by applying scientific principles and reasoning; exploring case studies concerning archaeological discoveries.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- This course should help students to demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process. Students will learn to appreciate the excitement of discovery that has accompanied important scientific developments as well as demonstrate how scientific methodology can be used to analyze real-world science-related problems. Students will become adept at evaluating scientific data and claims in order to make rational decisions on public-policy science issues that affect their community. As students complete the course they will learn to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data, as well as reflect rationally upon the interface between science and religion.

ANTHR 150 : Introduction to the Major. (.5:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Overview of anthropology major and graduation requirements; preparing for senior thesis sequence; career opportunities; and graduate school application process.

**Course Outcomes**

- Students in this course will gain an introductory level understanding of the basic assumptions of the disciplines of Anthropology and Archaeology as well as their historical development along with examples of applications of various methodologies in the field.

### 200-Level Courses

ANTHR 201 : Foundations of Social Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ANTHR 101

DESCRIPTION: Theoretical and philosophical antecedents of modern social theory; ideas and theorists that shaped the formation of anthropology as a discipline.

**Course Outcomes**

There are no course outcomes available

ANTHR 202 : Foundations of Anthropological Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ANTHR 201

DESCRIPTION: Ideas from the founders of social and cultural anthropology and archaeology as disciplines, particularly at the turn of the 20th century.

**Course Outcomes**

There are no course outcomes available

ANTHR 203 : Contemporary Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ANTHR 202

DESCRIPTION: Important current theoretical frameworks in anthropology.

**Course Outcomes**

There are no course outcomes available

ANTHR 207 : Experiments in Ancient Technology. (3:1:2)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Processes by which tools and other objects were produced anciently; experimental reproduction and use of ancient tools and their scientific analysis..

**Course Outcomes**

There are no course outcomes available

ANTHR 215 : Introduction to Archaeology: Method and Theory. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Field and analytic methods and their relevance to data acquisition; use of theory and the relation of theory to methods.

**Course Outcomes**

- Students will gain a knowledge of the history of archaeology as well as an exposure to basic archaeological theory and methodological practices in the field. Through this study, students will also gain a knowledge of the most important figures in archaeology as well as the major sites world-wide integrated with a chronology of world pre-history and history relevant to archaeological research.

ANTHR 247 : Applied Anthropology. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Anthropological principles and methods applied to business, education, environment, government, communication, national and international development, and health sectors. Ethically and culturally appropriate strategies for researching and participating in planned socio-cultural change.

**Course Outcomes**

- This course has the objectives to introduce students to career options outside academia and to help them explore graduate programs that will prepare them for those careers. This course will also introduce them to theoretical and ethical issues in applied and practicing anthropology and to some of the current social problems that are dominating the field. Students will learn the basic training in the skills and methodologies, (including report writing), that they will use as an applied anthropologist.

**300-Level Courses**

ANTHR 300 : Biological Anthropology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Relationships between human biology, environment, social structure, and culture. Concepts and data on race, primates, evolution, population genetics, growth, and sociobiology.

**Course Outcomes**

- Develop an understanding of the relationships between human biology, environment, social structure.
- Collect data on race, primates, evolution, population genetics, growth, and sociobiology.

ANTHR 301 : Human Osteology. (2:1:2)

DESCRIPTION: Identification and treatment of skeletal material found in archaeological excavations.

**Course Outcomes**

- In archaeology, the recovery of human remains is often a critical part of field work. Students will thus learn all the necessary skills involved with identifying osteological remains and their relationship to both archaeological and forensic analysis including relationships to race, gender, and human disease and diet. Modern techniques of analysis will be a major focus of this course.

ANTHR 309 : Language, Culture, and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Linguistic anthropology as a way of doing ethnography; language as symbolic form, vehicle of thought, and instrument of social interaction; speech events as cultural texts.

**Course Outcomes**

There are no course outcomes available

ANTHR 311 : Museums and Cultures. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Role of museums in society. Analyzing museum content, use, and sociology. Visits to and critiques of area museums. Final projects with real museums in the region.

**Course Outcomes**

- This course will give participants a sound foundation in understanding the important roles museums play as cultural symbols in world societies, as well as exploring how individual types of museums becomes unique paradigms of cultural memory, education, and identity. The diverse ways in which societies utilize and conceptualize museums will also be a major focus for discussion.

ANTHR 312 : Intercultural Communication. (3:3:0)

OFFERED: Independent Study only.

DESCRIPTION: Communication processes as affected by proxemic, kinesic, linguistic, social, institutional, worldview, value differences, and other aspects of culture. Seminar/workshop: theory, research methods, applications.

**Course Outcomes**

- After taking this course, you should be able to discuss the following questions and to give examples to illustrate your explanations:1. What must we take into account if we want to learn how to communicate appropriately and effectively with members of other societies?2. How does culture shape communication and social interaction in general?3. What values, beliefs, and attitudes seem to shape the interactions and communications of members of mainstream middle-class American society? And how do these patterns compare and contrast with those of other societies with which you are familiar?

ANTHR 314 : Museum Registration and Legal/Ethical Issues. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ANTHR 311

DESCRIPTION: Managing museum collections: cataloging, loans, ethics, legal issues, object handling, basic object conservation. Practical experience working with museum objects and specific museum challenges.

**Course Outcomes**

- Students will be familiar with registration/collections management/collections care disciplines
- Students will gain hands-on, real-life experience with museum collections and registration
- Students will be familiar with technical writing for collections care (mainly object description and condition reporting)
- Students will be learn basic project management skills in managing collection projects
- Students will have a basic understanding of museum ethics and laws affecting museum collections

ANTHR 317 : Native Peoples of North America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Indian groups at the time of the European arrival; social organization, beliefs, values, economy, and adaptation to

environment.

**Course Outcomes**

- Through course assignments, students will gain an introductory knowledge of the major Native American cultures at the time of European contact including but not limited to social organization, belief systems, values, economies, and adaptations to environments.
- Through course assignments and hands-on access to the collections of the BYU Museum of Peoples and Cultures, students will gain a greater depth of knowledge concerning the diverse range of material culture represented by the indigenous peoples of North America.
- Through course assignments, students will increase their skill sets in critical thinking, research, analysis, and writing skills in the disciplines of anthropology and archaeology.

ANTHR 326 : Guatemalan Society and Culture. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: History, culture, society, and life (economic, familial, religious) among peoples of Guatemala. Guatemala as exemplar of colonial, cultural, and global processes evident throughout Latin America.

**Course Outcomes**

- Using Guatemala as a case, which exemplifies the political, economic, and religious histories of Latin America, students will learn the basic relationships between cultural principles, social structure, environmental constraint, and important symbols in Latin America, and how these were constructed through historical processes of violent and peaceful social interaction.

ANTHR 330 : Peoples of Africa. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, economic, and social organization, family life, language, worldview, religion, ritual, artistic expression, ecological adaptation, and contemporary development issues among rural and urban sub-Saharan peoples.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

ANTHR 335 : Peoples of India. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Society and culture on the Indian subcontinent. Stratification, kinship, marriage, religion, politics, economics.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be provided an overview of the peoples and cultures of South Asia with an emphasis on India; a region consisting of several hundred languages, multiple ethnicities, many religious traditions, and competing political orientations.
- Students will receive increased knowledge of the cultures of India through in-depth readings, lectures, discussions, and films.
- Students will increase their capacity for critical thinking skills and writing within the discipline through discussions, exams, and a written research papers.

ANTHR 336 : Cinema and Culture in India. (3:3:0)

WHEN TAUGHT: Spring

DESCRIPTION: Anthropology of film in India; the world's largest film industry. Indian cultural and linguistic diversity. How different film genres reflect, distort, or utilize Indian cultural diversity. Evidences in the film work of Satyajit Ray.

**Course Outcomes**

There are no course outcomes available

ANTHR 340 : Peoples of the Middle East. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Ecology, social organization, and beliefs of nomadic, rural, and urban groups between western Africa and Pakistan.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain an introductory level understanding of the variety of cultures, ethnic groups, religious variances, and competing political entities representative of the regions included in the MIddle East. Special emphasis will be placed on applying this knowledge to archaeological and anthropological perspectives, disciplines, and professions.
- Through course assignments, students will increase their skills in creative thinking, analysis of data, research, and writing.
- Through course assignments, students will gain a knowledge and demonstrate their comprehension of the ecologies, social organizations, religious beliefs, and variances between nomadic, rural, and urban groups in the Middle East.

ANTHR 341 : Ethnonationalism and Southeast Asia. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Anthr 101.

DESCRIPTION: Historical and ethnographic perspectives on social and political dynamics in Southeast Asia, including upland ethnic

minority issues, ethnonationalistic movements, geopolitical influences, war, genocide, religious dynamics, and the rise of nationalism in the region.

**Course Outcomes**

There are no course outcomes available

ANTHR 343 : Chinese Culture and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter Odd Yrs.

DESCRIPTION: Cultural and social institutions of traditional and modern China, including mainland China, Taiwan, Hong Kong, or other areas of Chinese impact.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain knowledge of the varieties of cultures encompassed in the vast domains of China as well as the basic social paradigms of Chinese society. Through this study, students will also gain a basic knowledge of the history of China and its importance in both past and present world contexts.

ANTHR 345 : American Culture. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Perspectives and methods for making sense of mainstream middle-class American society; American ways of being-in-the-world, of believing, behaving, and belonging; American cultural themes.

**Course Outcomes**

- Develop an enhanced understanding of what it means to be American.Learn how to use the stories Americans tell about themselves as portholes through which to peer into the ordinarily invisible world of American culture.Be able to describe the values, beliefs, and attitudes that shape and color how Americans perceive and act in the world, that inform American social and political life as well as individual psychology.Demonstrate theability to think soundly, to communicate effectively, and to write a clear and convincing memoir of a specific American experience that reveals a particular, readily identifiable aspect of American culture.

ANTHR 346 : Anthropology of Mormonism. (3:3:0)

DESCRIPTION: Intensive analysis of Mormon society and culture using a range of anthropological perspectives.

**Course Outcomes**

- Students will gain a knowledge of the development of Mormonism as a distinct religious and cultural force within American society as well as its impact in world-wide contexts. The emergence of Mormonism as a 'culture' and the evolution of its assumptions and unique cultural characteristics will also be emphasized. Students will gain practice in applying current anthropological theories to a culture familiar to the majority of participants, but perhaps never thought about by students through the disciplinary assumptions of anthropology.

ANTHR 348 : Contemporary Japan. (3:3:0)

DESCRIPTION: Using movies and popular media to examine the social structures and family life dynamics of contemporary Japan.

**Course Outcomes**

There are no course outcomes available

ANTHR 350 : Archaeological Cultures of North America. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Cultural developments of North American Indians (Canada, U.S., and northern Mexico) before Columbus.

**Course Outcomes**

- Students will gain an introductory level comprehension of the diverse cultural developments of North American indigenous peoples as well as selected examples from Canada and Northern Mexico through the study of archaeological evidence and material culture.
- Students will gain a more in-depth comprehension of the diversity and complexity of data sets regarding archaeological evidence via material cultural remains by hands-on interactions with the collections of the Museum of Peoples and Cultures at BYU.
- Through course assignments, students will increase their skills in critical thinking, research, analysis, and writing. Emphasis will be placed on writing in the discipline.

ANTHR 351 : Archaeology and the Bible. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.; Winter Odd Yrs.

DESCRIPTION: Setting and context of the Bible as clarified and supplemented from archaeology, history, and related studies. Archaeological methods.

**Course Outcomes**

- Students will gain knowledge of the development of Biblical archaeology as a field within the overall umbrella of the discipline of anthropology. This study will include extensive study of the both the defining personalities and methodologies in this sub-area of archaeology, as well as the major excavated sites in the Levant associated with Biblical events. Students will also gain a knowledge of the historical development of the Near East through its archaeological contexts, and the debates existing between differing methodologies associated with the use of the Bible as a primary document.

ANTHR 355 : Mesoamerican Archaeology. (3:2:ARR)

WHEN TAUGHT: Fall

DESCRIPTION: Cultural and environmental bases of ancient civilizations in Mexico and Central America. Olmec, Maya, Toltec, and Aztec cultures.

**Course Outcomes**

- Students will gain knowledge of the major archaeological sites excavated and studied in Meso-America with an emphasis on critiquing archaeological methodologies and theory as they have been applied to specific archaeological sites in the field. Through this study, students will also gain a knowledge of the history and cultural development of the major societies and cultures of this region and the role that archaeology plays in assisting in providing data related to questions associated with the development and decline of these entities.

ANTHR 375 : Archaeology of Egypt. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: ANTHR 101; or ANTHR 110; or ANTHR 215

DESCRIPTION: Survey of the most important archaeological sites, artifacts, and monuments of Egypt, their cultural contexts, as well as major methodological developments in Egyptian archaeology and Egyptology.

**Course Outcomes**

- Survey of the most important archaeological sites, artifacts, and monuments of Egypt, their cultural contexts, as well as major methodological developments in Egyptian archaeology and Egyptology
- Pre-Islamic roots through Ottoman period. Sites, artifacts, and monuments of Islam. Focus on religious and cultural contexts. Relevant Islamic texts and archaeological methods for understanding medieval Islamic sites and artifacts

ANTHR 376 : Archaeology of the Ancient Aegean and Greece. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

RECOMMENDED: Anthr 101, 110, or 205.

DESCRIPTION: Bronze Age Aegean through the Classical and Hellenistic eras. Archaeological sites, artifacts, and monuments of the Mediterranean region impacted by Greek civilization. Classical archaeological methodologies associated with the study, excavation, and interpretation of these cultures.

**Course Outcomes**

- Students will learn the archaeology and cultural contexts of the ancient Aegean and Greek worlds, including classical archaeological methodologies and theory. Students will analyze the contributions that Greek culture, religion, art, and architecture, have played in the development of world history and society.

ANTHR 377 : Archaeology of Roman Civilization. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

RECOMMENDED: Anthr 101, 110, or 205.

DESCRIPTION: Survey of the most important sites, artifacts, monuments, and methodological approaches associated with the archaeological study of Etruria, Roman Italy, and the Roman Empire. Cultural contexts of the regions impacted by Roman civilization.

**Course Outcomes**

- Students will gain a knowledge of the development of Etruscan and Roman societies through a study of Classical archaeological techniques and methodology. Heavy emphasis will be placed on students gaining a chronological knowledge of both of these cultures and their impact on the Mediterranean Basin as well as on developments in the medieval worlds of Europe and Islam. Students will also gain a knowledge of the major assumptions and methodologies of Classical archaeology and gain experience in writing in the discipline.

ANTHR 378 : Near Eastern Archaeology. (3:2:ARR)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Peoples and culture history in Mesopotamia, Syria, Palestine, Egypt, 3500--500 B.C. Substantial reading, writing, discussion.

**Course Outcomes**

- Students will gain an introductory level understanding of the archaeology, history, and ancient cultural contexts of the major ancient civilizations of Mesopotamia, Syria, Palestine, and Egypt through readings, research assignments, and discussion.
- Students will increase their skill sets with regard to critical thinking, research, analysis of data, and writing through multiple types of course assignments including a final research paper project.

ANTHR 379 : Archaeology of Islam. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

RECOMMENDED: Anthr 101, 110, or 205.

DESCRIPTION: Pre-Islamic roots through Ottoman period. Sites, artifacts, and monuments of Islam. Focus on religious and cultural contexts. Relevant Islamic texts and archaeological methods for understanding medieval Islamic sites and artifacts.

**Course Outcomes**

- Pre-Islamic roots through Ottoman period. Sites, artifacts, and monuments of Islam. Focus on religious and cultural contexts. Relevant Islamic texts and archaeological methods for understanding medieval Islamic sites and artifacts

ANTHR 385 : Archaeology of Europe. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Cultural developments of temperate Europe from prehistory to the Roman expansion; lectures and case studies highlight issues related to environmental change, the introduction of farming, population movement, and the emergence of increasingly complex socio-economic systems.

**Course Outcomes**

There are no course outcomes available

ANTHR 390R : Special Topics in Regional Anthropology. (.5-3:ARR:0)

OFFERED: Offered when unique opportunities or needs arise.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Subjects related to a particular area or people.

**Course Outcomes**

- ANTHR 390R Provides students the opportunity to gain a more in-depth knowledge in a field specific region of archaeological or socio-cultural interest. The course offers the chance for visiting scholars with special expertise or regional interest to provide an intensive learning experience in anthropology for students interested in the field or the specific region.

**400-Level Courses**

ANTHR 402 : Quantitative Methods for Anthropology. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Quantitative methods in archaeology and sociocultural anthropology, including methods of organizing, exploring, and presenting data, probability, and statistical inference.

**Course Outcomes**

There are no course outcomes available

ANTHR 412 : Museum Collections Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ANTHR 311 & ANTHR 314

DESCRIPTION: Instruction and practice in aspects of managing museum collections: writing catalogs, processing donations, preserving objects.

**Course Outcomes**

There are no course outcomes available

ANTHR 414 : Museum Projects. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ANTHR 311 & ANTHR 314

DESCRIPTION: Supervised experience in a museum working with exhibitions, public programs, or research.

**Course Outcomes**

There are no course outcomes available

ANTHR 430 : Moral and Ritual Institutions. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Anthropological approaches to religion; its content and relation to other social institutions in societies ranging from gatherers to industrialists.

**Course Outcomes**

- Be able to discuss the major theorists and theories of religion, the major theories of religion advanced, and the relation to various categories of religious practice. Be able to use ethnographic data to discuss and illustrate major religious and ritual practices, the significance of these practices as symbols, and the consequences of these practices in society and in the individual.

ANTHR 431 : Kinship and Gender. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Kinship theory and analysis, 1920-present. Recent issues in anthropological treatment of gender, marriage, and family structure.

**Course Outcomes**

- Students will learn the nature of kinship and the geneological basis of society. Students will also learn the importance of kinship when conducting fieldwork.

ANTHR 432 : Economic and Political Institutions. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Connections between wealth and power: political and legal systems in state and nonstate societies; global expansion of capitalism and technology.

**Course Outcomes**

- This course is designed to enhance student knowledge and skills as a scholar with relation to critical reading within the discipline, intelligent and informed discussion, and writing about past and current issues in global economics.
- Students will gain a working knowledge of political, legal, and economic anthropology as a preparation for the senior thesis, graduate programs, and possible careers in anthropological, political, legal, or economic fields.
- Students will expand their capacities to read with increased comprehension and to write coherently and persuasively in the discipline.
- Students will be given many opportunities to think critically about topics pertinent to the course content and their individual research assignments.
- Students will present their own individual research assignment in both written form and through the venues of a class presentation and discussion of the central themes and tenets as well as methodologies utilized within their individual research project.

ANTHR 434 : Medical Anthropology. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.; Winter Even Yrs.

RECOMMENDED: Anthr 247.

DESCRIPTION: Interactions between culture and health in comparative perspective, emphasizing social, historical, and ecological determinants.

**Course Outcomes**

There are no course outcomes available

ANTHR 436 : Symbolic Anthropology. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Social use and understanding of semiotics, signs, symbols, and other meaningful forms as critically constitutive of culture.

**Course Outcomes**

There are no course outcomes available

ANTHR 439 : Psychological Anthropology. (3:3:0)

DESCRIPTION: Culture/mind relationship. Cross-cultural variation in concepts of person, emotions, and treatment modalities by society. Psychological implications of cultural differences in childrearing.

**Course Outcomes**

- 1. Through this course students will develop a critique of both the overemphasis on macro-level 'structure' and 'culture' in mainstream anthropology, as well as the overly individualistic emphasis in psychology on micro-processes and the 'psyches' of individuals. Students will gain an appreciation for the extent to which 'mind' and 'culture' co-constitute one another in various dimensions of human experience.
- 2. Students will learn to critique the philosophical and theoretical assumptions inherent in various approaches to understanding human experience and intersubjectivity.
- 3. Students will learn to analyze cultural and psychological data from a person-centered ethnographic standpoint by engaging with readings and conducting a course project analyzing some psychocultural phenomenon and writing up the results.

ANTHR 441 : Anthropology of Development. (3:3:3)

DESCRIPTION: Theory, practice, and research methods regarding the anthropological study and resolution of poverty, disease, malnutrition, displacement, and inadequate educational opportunities.

**Course Outcomes**

- To enable the students to apply anthropological theory and ideas in a practical manner and by so doing to assess how the process of development has traditionally been done, say from 1945 to the present. Has that system worked? What have been its successes and failures, and why? We will study what the difficulties are that impede development, structurally, culturally, and environmentally. In addition, we will ask whether the cross-cultural analysis and communication perspective that anthropology (supposedly) excels in helps. Does or can the use of anthropological techniques and analysis help make development more successful? Has anthropologically-informed development worked? Where, when, why? And if not, why not? In a word, can the principles and practices of anthropology be used in development projects to produce something more successful and reliable in the way of development? Can the principles and skills be identified and learned or imparted to a group of students so that new practitioners can be more successful if they enter into some kind of development enterprise or project? These objectives will be achieved by a] studying class texts; b] undertaking an individual research project; c] preparing and presenting a critique of a development project based on a journal account. Outcomes will be the ability to better understand the role of Anthropology in development work coupled with greater knowledge and skills in carrying out personal development projects. This in turn will contribute to greater confidence; a greater ability to analyze and understand human activity, sociality and thought; a greater awareness of cultural diversity, and an increased ability to communicate both orally and in written work.

ANTHR 442 : Ethnographic Research Design and Methods. (3:2:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ANTHR 201 & ANTHR 202

RECOMMENDED: 300-level regionally relevant courses in the geographic area of interest.

DESCRIPTION: Methods and philosophy of social science research design. Rationale, limitations, ethical issues, and practices of

participant observation, interviewing, quantitative measurement, and other methods. Developing complete research proposal for EthnographicField Project (Anthr 495). Securing IRB approval. Local fieldwork exercises.

**Course Outcomes**

There are no course outcomes available

ANTHR 443 : Ethnographic Data Analysis. (3:3:Arr)

WHEN TAUGHT: Fall

PREREQUISITE: ANTHR 442

RECOMMENDED: Anthr 495R.

DESCRIPTION: Systematic text analysis of interview data, audio, video, and survey data. Grounded theory and content analysis. Coding methods and codebook development/management. Developing an empirically grounded analysis of qualitative or mixed-methods data. Using qualitative data analysis software.

NOTE: For sociocultural anthropology majors, Anthr 495R is most appropriate after thesis fieldwork is complete and data is ready for analysis.

**Course Outcomes**

There are no course outcomes available

ANTHR 454 : Field School Preparation. (2:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: Major status.

DESCRIPTION: Topics and training related to preparation for archaeological field school assignments and on-site excavation required for Anthr 455.

**Course Outcomes**

There are no course outcomes available

ANTHR 455 : Field School of Archaeology. (6:0:ARR)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: ANTHR 215 & ANTHR 454

DESCRIPTION: Training and experience in excavation at a BYU-sponsored dig.

**Course Outcomes**

There are no course outcomes available

ANTHR 456 : Lab Skills for Anthropology. (3:1:Arr)

WHEN TAUGHT: Fall

PREREQUISITE: ANTHR 402 & ANTHR 455

DESCRIPTION: Analytical and laboratory techniques as part of a BYU-sponsored archaeological project.

**Course Outcomes**

There are no course outcomes available

ANTHR 460 : Practical Applications in Contract Archaeology. (3:1:9)

WHEN TAUGHT: Winter

PREREQUISITE: ANTHR 215

RECOMMENDED: Anthr 454, 455, 456.

DESCRIPTION: Working with professionals and graduate students on contract and research projects; learning archaeological field/laboratory methods; applying training to actual research projects, artifact analyses, site documentation, and report writing.

**Course Outcomes**

There are no course outcomes available

ANTHR 490R : Special Topics in Theory and System. (3:3:0)

OFFERED: Offered when unique opportunities or needs arise.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Subjects related to anthropological theory or the operation of social systems.

**Course Outcomes**

- Develop an enhanced understanding of social interaction, of what it means to be in the presence of others, and ultimately of human being and human beings.Prepare to do effective fieldwork and deskwork, to eventually produce accurate, useful, and insightful interpretations of various interactional practices.Describe the positions, ideas, and methods that will most help you make sense of various interactional practices, of particular social institutions, activities, events, roles, places, and objects.Demonstrate the ability to think soundly, to communicate effectively, and to write a clear and convincing essay.

ANTHR 495R : Ethnographic Field Project. (3-6:0:ARR)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: ANTHR 203 & ANTHR 442

DESCRIPTION: Conduct field work. Maintain, code, and index field notes, interview transcripts, and other data sources in preparation

for Anthr 499 thesis write-up.
NOTE: IRB approval and instructor's consent required before departure to field. No class meetings.

**Course Outcomes**

- Students will conduct independent field work and log field notes. Students will follow their own research plan developed in Anthr 442.

ANTHR 496R : Academic Internship: Research. (.5-3:ARR:ARR)

PREREQUISITE: Supervising instructor's consent.
DESCRIPTION: Field or library research.

**Course Outcomes**

- Complete a supervised internship in an employment setting or agency related to Anthropology.Link academic learning with these professional experiences.Complete a minimum of 45 hands-on hours per credit.

ANTHR 497 : Directed Readings. (3:ARR:0)

PREREQUISITE: Major status; Supervising instructor's consent.
DESCRIPTION: Reading 2,500 pages on a stated topic.

**Course Outcomes**

- Under the direction of a mentoring professor, students will critically examine, investigate, and integrate the literature for a topic of interest in anthropology.

ANTHR 499 : Senior Thesis. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Anthr 205, 206, 442, 495 (for sociocultural); 205, 206, 215, 402, 454R, 455R, 456R (for archaeology).
DESCRIPTION: Supervised analysis and write-up of data generated during field project. Refinement for publication.

**Course Outcomes**

- Students will analyze data and field notes collected for Anthr 495 to produce publishable journal article, a large-size poster, and a conference presentation.

## 500-Level Graduate Courses (available to advanced undergraduates)

ANTHR 500 : History of Archaeology. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Acceptance into the graduate program.
DESCRIPTION: Historical approach to development of archaeological knowledge, method, and theory, emphasizing North America and individual contributions.

**Course Outcomes**

There are no course outcomes available

ANTHR 501 : Current Archaeological Method and Theory. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Acceptance into the graduate program.
RECOMMENDED: Anthr 500.
DESCRIPTION: Major developments in archaeological method and theory, emphasizing current perspectives.

**Course Outcomes**

There are no course outcomes available

ANTHR 502 : Quantitative Methods for Anthropology. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.
DESCRIPTION: Methods of organizing, exploring, and presenting data. Probability and statistical inference.

**Course Outcomes**

- Students will gain hands-on experience in applying differing types of quantitative analysis methods to artifacts and other materials recovered from the BYU Summer Field School in Archaeology. The strengths and weaknesses of each methodology will be emphasized as well as discerning which form of analysis best suits the research questions to be addressed.
- Students will learn to intelligently integrate appropriate forms of quantative methods to their senior thesis capstone project and demonstrate their abilities to utilize such methodologies as a professional in archaeology.

ANTHR 511 : Museums and Cultures. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.
DESCRIPTION: Museums in society. Cultural foundations of museum content and sociology of museum use. Analyzing museum studies literature. Visits to and critiques of area museums. Final projects in real museums in the region.

**Course Outcomes**

- To introduce students to the unique and important roles that differing types of museums play in world cultures as well as how diverse cultures view museums and collective memory.
- Students will be provided hands-on, real-life experiences with museum collections related to the issues and methodologies introduced by the course.
- Students will have hands-on experiences in research, analysis, and writing related to the anthropology of museums both nationally and internationally.
- Students will be introduced to the major museum fields, their sub-fields,and their professional assumptions and opportunities, thus also helping students identify their own career interests in, and aptitudes for, the various museum disciplines.
- Student projects will introduce students to the team approach to museum work. Assignments will assist students in learning how to give professional and persuasive presentations of their written research in group settings.
- Students will be provided opportunities to work closely with professionals in the field and visit diverse museum types thus expanding their knowledge of the museum profession and practices.
- Students will be provided individual counseling in how to prepare for a career in the museum fields.

ANTHR 512 : Heritage Resource Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admittance into graduate program in archaeology or certificate program in museum practices.

DESCRIPTION: Legal and ethical issues for practicing archaeologists. Preservation law, collections law, public archaeology, Native American issues, and careers in archaeology and museums.

**Course Outcomes**

- Students will learn the history of cultural resource management and laws relevant to its inception and current state.
- Students are to understand the inherent value in cultural resource preservation.
- This course will instruct students in the basic methods necessary in carrying out compliance for the Section 106 review process.
- Students will learn the current fundamental issues relative to CRM in the U.S. and will discuss ways in which certain aspects of the field can be improved.

ANTHR 522 : Museum Practices and Technologies. (3:3:ARR)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Core museum disciplines: collections management, curation, education, exhibition, and conservation. Supporting technologies: database, digital photography, Web design, etc. Career paths.

**Course Outcomes**

- Students will have competency in a variety of computer software and technologies upon which museum practices are dependent.
- Students will learn how to work as leaders and/or team members in a museum setting.
- Students will be able to apply museum technologies effectively to ensure the success of various museum projects.
- Students will be familiar with career options in the museum field and understand what skills they need to develop to succeed.

ANTHR 524 : Museology: Curation and Writing. (3:3:ARR)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Admission to certificate in museum practices program.

DESCRIPTION: Professional practices supporting the educational, research, and reporting functions of museums, emphasizing museum writing leading to publication, cataloguing, policy writing, exhibition conceptualization, etc.

**Course Outcomes**

- Students will have hands-on experiences through class assignments in all aspects of writing associated with museum functions and curation including condition reports, registration documents and databases, exhibition research and panels, and educational materials.
- Students will also learn how to research and write a grant for a museum project or exhibition.
- Students will learn hands-on skills by developing, researching, and writing all materials necessary for a new exhibition at the Museum of Peoples and Cultures. This experience will also require students to work directly with collections held at the Museum or in other storage facilities.

ANTHR 525 : Museum Registration and Collections Management. (3:3:ARR)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Managing anthropological collections: object-handling, object-tracking, accessioning, deaccessioning, collections databases, loans, valuating collections, conservation environments, ethics, and NAGPRA and other laws relating to museums.

**Course Outcomes**

There are no course outcomes available

ANTHR 526 : Museum Exhibitions and Programming. (3:1:8)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: ANTHR 524

DESCRIPTION: Instruction and practica in all aspects of exhibition development. Current thought and literature in museum education with practica for application.

**Course Outcomes**

There are no course outcomes available

ANTHR 530 : Great Basin Archaeology. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Anthr 350 or equivalent.

DESCRIPTION: Overview of ethnography, history of research, and prehistory of the Great Basin culture area. Current issues in archaeological research emphasized.

**Course Outcomes**

- Students will gain archaeological and cultural knowledge of the major native peoples of the Great Basin Region from pre-history through European contact through a study of their archaeologial remains and ethnographic studies.
- Students will have hands-on experiences with the collections of the Museum of Peoples and Cultures that are representative of the cultures of the Great Basin Region.

ANTHR 535 : Southwest Seminar. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Anthr 350 or equivalent.

DESCRIPTION: Overview of ethnography and prehistory of American Southwest. Current issues in archaeological research emphasized.

**Course Outcomes**

There are no course outcomes available

ANTHR 562 : Formative Mesoamerica. (3:3:0)

DESCRIPTION: Topics and issues concerning beginnings and development of Mesoamerican civilizations. Mexican and Mayan antecedents of classic Mayan civilization and culture.

**Course Outcomes**

There are no course outcomes available

ANTHR 564 : Classic Mayan Civilization. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Topics and issues concerning archaeological and cultural aspects of classic Mayan civilization and society.

**Course Outcomes**

- Students will gain an in-depth knowledge of the development and accomplishments of the Classic Mayan Civilization at a graduate level.
- Students will expand their abilities to critically problem solve and write effectively in the discipline through class assignments including readings, class discussion, and research paper assignments.
- Students will gain a graduate level knowledge of Classic Mayan material culture through class readings, discussions, writing assignments, and the study of actual material artifacts including but not limited to pottery samples.
- Students will gain a graduate level knowledge of archaeological field methodologies that are pertinent to the excavation of Mayan sites.

ANTHR 565 : Mayan Ceramic Analysis. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Current approaches to classification and analysis of archaeological ceramics, particularly Maya Lowland pottery. Laboratory study of pottery collections from the Maya area.

**Course Outcomes**

There are no course outcomes available

ANTHR 566 : Mayan Ethnohistory. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Topics and issues of cultural change, colonization, and documentation of change processes in the Mayan region, from postclassic period and independence from Spain.

**Course Outcomes**

There are no course outcomes available

ANTHR 580 : Near East Seminar. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Current issues in Near Eastern archaeological research.

NOTE: Undergraduates may enroll if they have completed 30 hours in anthropology coursework.

**Course Outcomes**

- Topics vary according to the instructor's research interests. However, each graduate seminar must provide

students an intensive mentored research experience in the archaeology of the Near East. Often the seminars are organized by topic. Example: The Archaeology of Mortuary Practices Applied to the Archaeological Data Set of the Near East. Each Seminar must increase the students' research, critical thinking, analysis, and writing skills in the discipline.

ANTHR 590R : Special Topics. (3:3:ARR)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Special topics in archaeology or museum studies.

**Course Outcomes**

- Under the direction of a mentoring professor, students will critically examine, investigate, and integrate the literature for a topic of interest in Anothropology studies.

ANTHR 596 : Museum Projects. (3:0:8)

WHEN TAUGHT: Spring Odd Yrs.

PREREQUISITE: ANTHR 524 & ANTHR 526

DESCRIPTION: One or more supervised museum projects, such as producing an exhibition, developing educational materials, conducting inventory, or accessioning collections.

**Course Outcomes**

There are no course outcomes available

ANTHR 599R : Academic Internship: Federal Agency on Museum/Collections Repository. (1-6:0:0)

PREREQUISITE: Prior approval; completion of all course work for certificate in museum practices (may be taken concurrently with Anthr 596).

DESCRIPTION: Earning credit while employed in federal agency archaeology (BLM, U.S. Forest Service, etc.); or 320 hours in collections-holding institution (sixteen weeks half-time; eight weeks full-time).

**Course Outcomes**

There are no course outcomes available

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Anthropology Department Home**

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**Anthropology Department Home**

**Majors**

BA in Anthropology
Emphases:
- Archaeology
- Sociocultural

- BA in Anthropology (Sociocultural Double Major)

**Minor**

- Anthropology

**Course Information**

- Anthropology Courses

**Faculty**

# Anthropology Faculty

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## Professors

Clark, John Edward
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1976
MA, Brigham Young University, 1979
PhD, University of Michigan, 1994

Forsyth, Donald W.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1971
MA, Brigham Young University, 1972
PhD, University of Pennsylvania, 1979

Hawkins, John P.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1970
AM, University of Chicago, 1972
PhD, University of Chicago, 1978

Nuckolls, Charles W.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Professor
**DEGREES:** AB, University of Chicago, 1979
MA, University of Wisconsin-Madison, 1980
PhD, University of Chicago, 1987

## Associate Professors

Crandall, David P.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1986
M Phil, Oxford University, England, 1989
D Phil, Oxford University, England, 1993

Finlayson, Cynthia S.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Associate Professor
**DEGREES:** BA, George Washington University, 1974
MA, George Washington University, Washington, D.C., 1984
PhD, University of Iowa, 1998

Johnson, David J.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1972
MA, University of Utah, 1981
PhD, University of Utah, 1986

## Assistant Professor

Allison, James

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1985
MA, Brigham Young University, 1990
PhD, Arizona State University, 2000

## Emeriti

Janetski, Joel C.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Anthropology
**RANK:** Emeritus
**DEGREES:** BA, Brigham Young University, 1965
MA, University of Utah, 1977
PhD, University of Utah, 1983

**College of Family, Home, and Social Sciences Home**

**Economics Department Home**

**Majors**

- BA in Economics
- BS in Economics

**Minors**

- Economics

**Course Information**

- Economics Courses

**Faculty**

# Economics

Eric R. Eide, Chair
130 FOB, (801) 422-2859

College of Family, Home, and Social Sciences Advisement Center
151 SWKT, (801) 422-3541

## Admission to Degree Program

All degree programs in the Department of Economics are open enrollment. However, special limitations apply for teaching majors.

## The Discipline

Economics examines how societies choose to allocate scarce resources among competing uses. A broad range of contemporary policy issues are studied in fields such as natural resource and environmental economics; economic development and growth; international trade and finance; economic history; the organization of industries; the development and efficiency of law; business cycles; labor markets; and public and private finance.

## Career Opportunities

Professional economists work in three basic areas: business, government, and academics. Undergraduates generally pursue training beyond their BS/BA in economics if they wish to become professional economists.

Those in business forecast and analyze various aspects of the economy or of particular markets and most often work for brokerage firms, business or economic consulting firms, investment banks, insurance companies, or large manufacturing firms.

Those in government accumulate, interpret, and analyze national and international data in support of policy development and work for agencies such as the U.S. State Department, Treasury Department, Bureau of Labor Statistics, and Office of the Trade Representative; for state planning bodies and regulatory commissions; or for international bodies like the World Bank or IMF.

Academic economists teach and conduct research at colleges and universities. Entry into these positions requires training at least as far as the master's level; for the most part, the professional degree is the PhD.

Undergraduates who are not interested in postundergraduate study in economics generally pursue one of three options: graduate training in a profession (e.g., the MBA, MPA, JD, or MD); employment with a business consulting, economic consulting, brokerage, or other specialized service provider that relies to a substantial degree on economic analysis; or employment with a government agency or entity that relies on economic analysis and data. In the latter two areas, those with BAs typically gather and analyze data and provide research support under the direction of professional staff economists. A BA/BS in economics is also very good preparation for those interested in foreign service careers or work with organizations in economic development, international finance, or actuarial licensing. Many undergraduates pursue business careers, including those of finance, marketing, sales, and production.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in Economics** (Program Outcomes)
**BS in Economics** (Program Outcomes)

**Minor in Economics**

Students should see their college advisement center for help or information concerning the undergraduate programs.

College of Family, Home, and Social Sciences Home

Economics Department Home

Majors
- BA in Economics
- BS in Economics

Minors
- Economics

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Faculty

# BA in Economics (40–57 hours*)

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## Program Requirements | View MAP | View Program Outcomes

1. The Economics Department requires a minimum of 21 hours in the major to be taken in residency at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.

2. Major courses: complete the following with a grade of C– or better:

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

ECON 378 : Statistics for Economists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: ECON 110 & MATH 112
DESCRIPTION: Introduction to matrix algebra and statistics in preparation for regression analysis. Other topics include: probability, random variables, density and distribution functions, estimation, hypothesis testing.

**Course Outcomes**

- Demonstrate an understanding of the basic principles and terminology of probability, simple distribution theory, statistics, and matrix algebra in preparation for a successful introduction to econometric methods in Economics 388. These principles and concepts include:The language, intuition, and notation necessary to understand basic approaches to probability, including basic combinatoric counting techniques, the additive and multiplicative laws of probability, conditional probability and independence, the law of total probability, and Bayes' rule, and to solve basic probability problems using these techniques.Random variables, both univariate and bivariate, including: distribution functions, density functions, conditional density, expected values, variance, covariance, and correlation coefficients. Specific examples of useful random variables.Statistics and sampling distributions.Law of Large Numbers and Central Limit Theorem. Parameter estimators and their derivation using the Method of Moments and Method of Maximum Likelihood.Statistical inference, including the idea of sampling error, sampling distributions, the construction of confidence intervals, and formal hypothesis tests.Basic matrix theory and the properties of matrix operations, including addition, subtraction, matrix products, matrix determinants, and matrix inversion.Use these statistical techniques to analyze data in diverse applications. Recognize the usefulness of statistics in a variety of career fields.

(or equivalent)

ECON 380 : Intermediate Price Theory 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: ECON 110 & MATH 112
DESCRIPTION: Producer, consumer, and equilibrium theories; mathematical techniques of unconstrained and constrained optimization introduced and applied extensively.

**Course Outcomes**

- Recognize the common building blocks of economic models (actors, choices, objectives, constraints)Solve economic models (constrained optimization, equilibrium conditions) Interpret the results (comparative statics)Explain concepts using graphs, prose, and mathematical analysis
- ConsumerThe axioms upon which standard microeconomic consumer theory is based.The implications of consumer demand including price and income responses in absolute and elasticity forms in both utility

maximization and expenditure minimization problems.FirmsThe meaning and representation of technologyThe implications of cost and profit maximization for firmsMarketsIntegrate consumers and producers into a market in order to perform market analysis on equilibrium traded quantities and pricesUse market analysis to understand the effects of public policy
- Compare the impact on equilibrium behavior of altering the assumptions of canonical modelsContrast the results of different market imperfections

ECON 381 : Intermediate Macroeconomics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 110 & MATH 112; Math 112 can be concurrent enrollment.

DESCRIPTION: Intermediate macroeconomic theory, emphasizing income, unemployment, and price-level analysis.

**Course Outcomes**

- Demonstrate an understanding of the nature and construction of key macroeconomic data;Demonstrate an understanding of the connection between microeconomics and macroeconomics;Demonstrate an understanding of standard models ofeconomic growthlong-run macroeconomic behaviorshort-run macroeconomic behaviorUse these models to analyze the macroeconomic effects of monetary and fiscal policy changes as well as other economic shocks;Use these models to interpret historical and current events; andDemonstrate an understanding of issues regarding the value and limitations of monetary and fiscal policy.

ECON 382 : Intermediate Price Theory 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Welfare theory, imperfect information, imperfect competition, uncertainty, externalities, and public goods.

**Course Outcomes**

- Formally express and analyze economic modelsRecognize the common building blocks of economic models (actors, choices, objectives, constraints)Solve economic models (constrained optimization, equilibrium conditions)Interpret the results (comparative statics)Demonstrate an understanding of the core microeconomic models ofPerfect competition in general equilibrium (exchange and production)Monopoly and oligopolyExternalities and public goodsDecision-making under uncertainty (expected utility)Information problems (moral hazard, adverse selection)Adapt models to new scenariosCompare the impact on equilibrium behavior of altering the assumptions of canonical modelsContrast the results of different market imperfectionsEstablish a knowledge base that will be useful in economic field classesApply models in various real-world examples and identify the positive and normative conclusions in that environment

ECON 388 : Introduction to Econometrics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Mathematical and statistical techniques used in estimating, predicting, and testing hypotheses associated with quantifiable economic relationships.

**Course Outcomes**

- Demonstrate an understanding of the theoretical foundations of estimating and testing the basic regression model, employing tools from matrix algebra, calculus, and statistics.Perform basic regression and testing procedures using Stata. Complete an empirical research project that includes the following elements:.Formulate an econometric model.Collect and prepare relevant data for use in estimating the model.Use appropriate methods of estimation.Test relevant behavioral hypotheses.Understand and test the Gauss-Markov assumptions.Analyze and interpret the estimated model.Prepare a written report summarizing the research results.

**Note:** Stat 201 and Math 313 may be substituted for Econ 378.

3. Supporting courses: complete the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

**Note 1:** A *university* calculus course such as Math 112 or 113 is strongly recommended. Deferred students are encouraged to take a refresher math course such as Eng T 295R before or concurrent with Econ 378, 380, or 381.

**Note 2:** For students contemplating graduate work in economics, the 500-level economics courses plus Math 113, 313, and 314 are strongly recommended.

4. Complete GE Foreign Language or 7 hours of mathematics in addition to Math 112.

5. Complete at least 12 credit hours from the following courses:

ECON 413R : Topics in Economic Theory. (.5-5:ARR:ARR)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

**Course Outcomes**

- Learn in depth about an area of research in economics;Understand the research literature and in particular the contributions of the seminal articles;Analyze current journal articles and assess their contribution to the literature.

ECON 420 : Economics of Antitrust Law and Regulation. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

RECOMMENDED: Econ 382.

DESCRIPTION: Economic analysis of reasons for - and effects of - antitrust laws and regulation in selected areas, including utilities, telecommunications, transportation, energy, health, safety, and the environment.

**Course Outcomes**

- Demonstrate basic familiarity with the provisions of the principal Federal antitrust statutes, including the Sherman Act, the Clayton Act, the FTC Act, the Robinson-Patman Act, and the Hart-Scott-Rodino Act.Evaluate the likely effects of Section 1 of the Sherman Antitrust Act using monopoly, Cournot, Stackelberg, and Bertrand models of non-cooperative behavior among a small number of rival firms.Evaluate the likely effects of Section 2 of the Sherman Antitrust Act using simple analytical models of predation, exclusion, tying, bundling.Evaluate the likely effects of laws limiting price discrimination, including the Robinson-Patman Act, using simple analytical models of price discrimination.Evaluate the likely effects of Section 7 of the Clayton Act and the HRS Act using simple analytical models of mergers.Evaluate public regulation of monopolies as an alternative to relying on antitrust law using simple analytical models of rate-of-return regulation, nonlinear pricing and peak load pricing.Synthesize the relevant economics and legal literature, including Federal and Supreme Court rulings, via a substantial survey paper on a specific antitrust issue.

ECON 421 : Law and Economics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Common law allocative mechanisms (contract, tort, and property law) as alternatives to collective intervention when markets fail; consideration of economic logic of law.

**Course Outcomes**

- Demonstrate a basic familiarity with the Common Law.Analyze the incentives created by Common Law tort rules.Analyze the incentives created by Common Law contract rules.Distinguish between “property rules” and “liability rules” with regard to property rights.Evaluate the relative efficiency of specific tort rules.Evaluate the relative efficiency of specific contract rules.Analyze the incentives to litigate or settle under different rules about which party pays the costs of the litigation.Analyze the incentives created by criminal sanctions.Synthesize the relevant economics and legal literature, including Federal and Supreme Court rulings, via a substantial survey paper on a specific tort, contract or property issue.

ECON 431 : Economic Development. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 380; Econ 388 (or concurrent enrollment) or Pl Sc 328.

DESCRIPTION: Microeconomic analysis of the causes of income differences across countries.

**Course Outcomes**

- Discuss the labor and consumption patterns among the world’s poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property Rights.Discuss the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Explain the potential role of government in economic development, especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

ECON 432 : Economic Growth. (3:3:0)

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Econ 388.

DESCRIPTION: Theory and evidence relating to economic growth, including physical and human capital accumulation, population, technological change, institutions, and government.

**Course Outcomes**

- Adjust values in one currency to values in another currency controlling for purchasing power parity (PPP) deviations.Demonstrate an understanding of basic dynamic models of economic growth, including:The Solow modelThe Solow model with population growthThe Harrod-Domar modelAK modelsModels of product varietySchumpeterian models.Discuss growth and development accounting, and decompose observed differences across countries into efficiency and technology components.Discuss Lorenz curves and Gini coefficients.Discuss how growth interacts with:Population & demographyHuman capitalTechnical progressOpennessGovernmentInequalityCultureGeography, Climate & Resources.

ECON 440 : Natural Resources and Environmental Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 380 & ECON 388

RECOMMENDED: Econ 382.

DESCRIPTION: Economic theory applied to allocation of natural resources and environmental amenities. Issues relating to externalities, common property resources, public goods, allocation of depletable natural resources over time, economic factors of environmental polarization, and others.

**Course Outcomes**

- Utilize economic principles and models to address private and public policy issues related to allocating natural resources and environmental amenities.Demonstrate an active understanding of the following elements of economic theory as it relates to natural resource and environmental economics:Welfare economics and concepts of Pareto optimality, efficiency, and equityThe role of property, property rights, and the bundle of rights conceptThe role of externalities, common property resources, and public goodsConcepts and measures of economic value including non-market valuation.Demonstrate a basic knowledge of the role of markets and market failure with regards to the allocation of natural resources and environmental amenities.Gain a basic understanding of the effects and relative merits of public environmental policy efforts, including cap-and-trade schemes, Pigovian taxes, regulation, and public ownership and/or management.Become knowledgeable about and be able to use economic principles and non-market valuation techniques to address a variety of continuing and contemporary natural resource and environmental issues. These issues may include, but are not exclusive to:Population growth and the environmentGlobal warmingWilderness protection and related public lands issuesAir pollution and public healthIntergenerational allocation of soil, forest, and other depleteable natural resourcesImpacts of environmental features on property values.

ECON 450 : Financial Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 382 & ECON 388

DESCRIPTION: Theory of financial economics, emphasizing capital markets, investment decisions, choice, capital asset pricing model, futures and options markets, efficient markets, and capital structures.

**Course Outcomes**

- Understand and derive the fundamental relationship between risk and return that is implied by the Capital Asset Pricing Model (CAPM). Students should also know the assumptions necessary for this model to hold and be capable of identifying when potential investment projects satisfy these assumptions.Use linear regression to calculate an asset's historical sensitivity to broad market indices, its implied historical mispricing and an estimate of the asset's idiosyncratic risk. Students should also be capable of performing hypothesis testing on these values.Replicate traditional tests of the CAPM using currently available data.Be capable of collecting and analyzing asset market data to estimate the efficient frontier of risky assets using either Excel or another software package. Students should also be able to understand the efficient frontier mathematically and the reasons that it is useful.Calculate the present value of a stream of payments given an appropriate discount factor. Students should know how to use the CAPM to derive potential discount factors for payment streams.Calculate the yield to maturity of a stream of payments given an observed price. Students should also understand the relationship between the coupon rate of traditional bonds, their price and their yield to maturity.Calculate forward rates for all future periods given the observed yield curve.Understand the liquidity preference theory of bond markets as well as the expectations hypothesis. They should also be able to price complicated payment streams using observations of the yield curve and the expectations hypothesis.Calculate the duration and modified duration of a stream of payments and use these to calculate optimal hedges given an arbitrary position in the fixed income market.Calculate and understand bond convexity and its role (along with duration) in hedging.Price forward contracts by arbitrage given a risk-free rate.Price futures contracts whose payoffs are not correlated with the market reinvestment rate. Understand currently used hypotheses regarding futures contract pricing.Understand the structure of call and put options.Price put options given a call option (and vice versa) using the put-call parity relationship.Apply the Black-Scholes option pricing formula to price call and put options given beliefs about the volatility of the underlying asset.Apply the Black-Scholes option pricing formula to calculate the implied volatility of an asset given its price.

ECON 453 : Monetary Theory and Policy. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Concurrent enrollment in Econ 388.

DESCRIPTION: Macroeconomic aspects of money demand, money supply, the monetary transmission mechanism, central bank policy, and other current issues.

**Course Outcomes**

- Summarize the broad empirical evidence regarding the long-run and short-run relationships between money and inflation and money and output.Demonstrate a fundamental knowledge of the institutional and regulatory structure of the U.S. financial system.Explain the macroeconomic role of central banks with special emphasis on the role of the Federal Reserve System in the U.S. economy.Demonstrate an active understanding of the following elements of modern monetary theory:The role of expectations, especially rational expectationsSolve simple rational expectations modelsAnalyze the rudimentary new Keynesian dynamic stochastic general equilibrium modelsTheories of the transmission mechanism of monetary policyIdentify the current issues in the conduct of monetary policy.Demonstrate a general

understanding of the causes and consequences of financial crises with a focus on the financial crisis of 2007-2009.Identify and evaluate the principal issues regarding financial regulation.

ECON 458 : International Trade Theory and Applications. (3:3:0)

PREREQUISITE: ECON 380

DESCRIPTION: Microeconomic analysis of why nations trade, who wins and loses from trade, and the costs and benefits of various trade policies.

**Course Outcomes**

- Discuss why all kinds of nations—rich and poor, large and small—gain from international trade.Demonstrate an understanding of comparative advantage and how it creates gains from trade.Analyze the Ricardian model of trade and thereby learn how different technologies in different nations create comparative advantage and gains from trade.Analyze the Heckscher-Ohlin model of trade and thereby learn: 1) How different factor endowments in different nations create comparative advantage and gains from trade, and 2) Why some people lose from trade even though nations as a whole gain from trade.Discuss economies of scale and how they can generate gains from trade.Discuss how trade generates extra gains by reducing market power.Demonstrate an understanding of the main causes and effects of direct foreign investment.Demonstrate an understanding of the main causes and effects of international migration.Discuss how various trade policies affect national welfare and why such policies help some while hurting others.Discuss the politics of trade.

ECON 459 : International Monetary Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 381 & ECON 388; or ECON 381 & PL SC 328

DESCRIPTION: Monetary and macroeconomic aspects of international relations dealing primarily with short-run balance-of-payments disequilibrium and adjustments.

**Course Outcomes**

- Demonstrate a familiarity with the key issues in two broad fields:International Finance, particularly exchange rate behavior, Open Economy Macroeconomics.Discuss the nature of the foreign exchange market, including:It's market organizationThe role of vehicle currenciesThe instruments tradedThe role of arbitrage.Understand and use models of exchange rate behavior:Covered and uncovered interest rate parityLong-run monetary and equilibrium models.Understand financial portfolio theory to the extent that it is useful in explaining exchange rate behavior, including:The determination of risk premiaHow it may explain the "forward bias" puzzle.Discuss the history of the international financial system since the late 1700's.Discuss the international aspects of the national income and product accounts, along with the balance of payments accounts.Apply simple dynamic models of consumption smoothing to the current account.

ECON 461 : Economics of Education. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: ECON 388

DESCRIPTION: Evaluation of education policy from an economic perspective, focusing on the benefits and costs of policy outcomes. Introduction to quantitative methods used by empirical education researchers.

NOTE: Concurrent enrollment accepted for Econ 388; see professor.

**Course Outcomes**

- Evaluate education policy from an economics perspectiveIncorporate costs and benefits in education policy analysisIdentify unintended consequences associated with alternative policy optionsBase analysis on research literature findings.Demonstrate an understanding of the theoretical underpinnings of the fieldEducation productionHuman Capital formationRole of incentives.Speak fluently and intelligently about current issues in education policy, includingUS and International policyTeacher labor marketsK-12 education policyHigher education.Evaluate the economics of education research literatureKnow the seminal papers in the field, and how they shaped the disciplineKnow the current "cutting edge" papers and how they are pushing the frontiers of knowledge.Demonstrate an understanding of the quantitative methods and research tools that empirical education economists use to conduct research, includingCross sectional and panel data modelsMethods to account for selection biasThe importance of obtaining causal effects.

ECON 463 : Economics of the Labor Market. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 388

DESCRIPTION: Economic analysis and institutional background of labor markets in developed countries, particularly the United States. Typical topics include labor supply and demand analysis, determination of wages and employment, investment in education, wage differences by gender and race, immigration, and unions.

**Course Outcomes**

- Demonstrate an understanding of standard optimization models to set up and solve the labor supply problem facing the individual and the labor demand problem facing the firm and show the important comparative statics results of both models. Students will understand how these models produce the neoclassical market framework and be able to solve problems using that framework.Solve and use other microeconomic optimizing models of agent behavior, such as models of job search, human capital choices, labor supply, and demand in risky occupations, union wage setting, and behavior under alternative compensation schemes.Demonstrate an understanding of the basic institutional structure of the U.S. labor market, including broad trends in labor supply behavior and wages and the institutional details and likely labor market effects of major government programs.Read and discuss high quality empirical research on labor economic topics and explain how these results interrelate to the predictions of formal economic models.Complete an empirical project demonstrating competence in basic

econometric techniques.Identify some of the ways in which government policy choices affect labor market outcomes

ECON 465 : Health Economics. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: ECON 382 & ECON 388

DESCRIPTION: Economic models of health-care markets, including the supply and demand for health and health care, insurance, market imperfections, public-sector involvement, and regulation.

NOTE: Concurrent enrollment accepted for Econ 388; see professor.

**Course Outcomes**

- Read, understand, and discuss the academic literature in health economics. A daily quiz will be administered to test understanding of the reading.Participate in linking academic research to contemporary policy discussions through class discussion and preparation of occasional class presentations.Complete a major research project in which they either 1) summarize and evaluate the available evidence on a particular policy question, or 2) conduct an original research project where they identify a question, assemble a dataset, thoughtfully apply appropriate empirical methods, and clearly describe their methodology, assumptions, and findings.

ECON 468 : Urban Economics. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380; Econ 388 or concurrent enrollment.

DESCRIPTION: Economic models relating to spatial location of economic activities and development of cities. Application of economic theory to problems and policies associated with housing, urban transportation, congestion, local government finance, and other urban problems.

**Course Outcomes**

- Demonstrate an understanding of the role of transportation costs in determining land uses and land prices.Demonstrate a familiarity with the monocentric city model of land use and its use in understanding the impact of local land use and transportation policies.Apply the basic models of housing demand and the role of filtering in determining the stock of housing in a city.Demonstrate an understanding of the economic concepts of external costs and how these play a role in air pollution and highway congestion. Apply the concept of Pigouvian pricing as a solution to externality problems in the case of highway congestion.Discuss the role of time costs in consumers' choice of transportation mode, and why collection and distribution parts of urban trips are so important in determining the proper design of mass transit systems. Demonstrate an understanding of the role of economies of scale in efficient mass transit design.Use the basic economic model of "rational" crime to predict the impact of various anti-crime policies.

ECON 474 : Topics in Economic History. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ECON 380; Econ 388 or concurrent enrollment.

**Course Outcomes**

There are no course outcomes available

ECON 475 : Public Economics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Evaluation of the role of government from an economic perspective. Typical topics include taxation, externalities, public goods, corruption, public choice, Social Security, Medicare and Medicaid, education, income redistribution, and crime.

**Course Outcomes**

- Discuss the revenue, expenditure, and debt patterns of the U.S federal government.Analyze how modifying the neoclassical assumptions learned in 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property RightsInformation ProblemsHyperbolic Discounting or Loss AversionDemonstrate an understanding of the function and incentive effects of the major redistribution programs in the United States.Discuss the efficiency and distributional effects of taxation and the theory of optimal taxation for both income and commodity taxes.Read papers in the public economics literature andProvide written and oral critiques of the papersApply modern tools of econometric analysis in discussing the papers

ECON 476 : Industrial Organization. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ECON 378; or STAT 201 & MATH 313

DESCRIPTION: Industrial organization focuses on firm behavior in imperfectly competitive markets. Typical topics include the acquisition and use of market power by firms, strategic interactions among firms, and an introduction to noncooperative game theory.

**Course Outcomes**

- Analyze basic models of competition among firms producing homogeneous goods: competition, monopoly, Cournot oligopoly, Bertrand oligopoly, Stackelberg oligopoly.Apply basic game theory

including solution concepts for normal and extensive form games.Demonstrate an understanding of extensions to these basic model, including supergames, models of product differentiation, and games of incomplete information.Apply these models to key issues in theoretical and applied industrial organization: mergers, collusion, advertising, R&D competition, antitrust policy, entry accommodation and entry deterrence, and business strategy.Discuss the role of government in the market in determining antitrust policy, patent policy, and regulation.Read, synthesize, and write short review papers on applied or empirical papers from the industrial organization literature.

ECON 477 : Political Economics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 382

DESCRIPTION: Economic models of government structure and function: electoral competition, voter participation and cycles, preference aggregation, information aggregation, externalities and public goods, electoral structure, political agency, influence, and bargaining.

**Course Outcomes**

There are no course outcomes available

ECON 478 : Game Theory and Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Application of game theory to study strategic interaction between individuals and organizations. Applications include imperfect competition, insurance markets, and bargaining.

**Course Outcomes**

- Demonstrate an understanding of the game theoretic method of analysis.Define a Nash Equilibrium and discuss refinements of the Nash Equilibrium Concept.Think abstractly and rigorously about strategic interaction.

ECON 482 : Welfare Economics. (3:3.0:0.0)

PREREQUISITE: ECON 378 & ECON 382; or STAT 201 & MATH 313 & ECON 382

DESCRIPTION: General equilibrium theorems and considerations that must guide applied economic work and provide quantitative information on the effects of alternative policy measures.

**Course Outcomes**

No outcomes are available at this time.

ECON 486 : Mathematical Economics. (3:3:0)

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Further development of optimization and comparative statics. Differential equations and dynamic analysis.

**Course Outcomes**

No outcomes are available at this time.

ECON 488 : Applied Econometrics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 388

DESCRIPTION: Application of econometric methods, introduction to research design, and evaluation of empirical research. Special attention given to linking economic theory and econometrics, and causal inference.

**Course Outcomes**

- Demonstrate an understanding of the assumptions underlying commonly used empirical approaches for the identification of causal effects, including:Ordinary least squaresMatchingInterrupted time seriesDifference in differencesFixed effectsInstrumental variablesDemonstrate an understanding of the interplay between economic theory and empirical work.Read and understand contemporary academic literature in economics. Students will provide written evaluations of selected academic papers, including a clear description and critique of the empirical methods used.Apply modern empirical methods using data analysis exercises.Complete a research project in which they identify a question, assemble a dataset, thoughtfully apply appropriate empirical methods, and clearly describe their methodology, assumptions, and findings.

ECON 580 : Advanced Price Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 382; or STAT 201 & MATH 313 & ECON 382

DESCRIPTION: Modern theories of consumers, producers, and competitive equilibria.

**Course Outcomes**

- Use the tools of constrained optimization in analyzing comparative statics results arising in the study of economic phenomena.

ECON 581 : Advanced Macroeconomics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 381 & ECON 382 & ECON 388

DESCRIPTION: Theory of determining national income, employment, inflation, and interest rates. Issues of economic fluctuations, economic growth, and monetary and fiscal policy.

**Course Outcomes**

- Acquire a toolset for analyzing modern macroeconomic models.Demonstrate an understanding of basic dynamic stochastic general equilibrium (DSGE) macroeconomic modeling, including:How to set up a model.How to render it stationary, if necessary.How to solve for the model's steady state both analytically and numerically.How to solve for the model's dynamics using various numerical techniques.How to calibrate the model.How to simulate the model economy.How to generate impulse response functions.How to generate data moments.How to estimate model parameters using simulated method of momentsUse MATLAB and Dynare, software packages widely used in macroeconomic model simulation.Demonstrate an understanding of other macroeconomic models, such as:Overlapping generations (OLG) models.Continuous-time Ramsey-style models.Estimate and interpret structural vector autoregression (SVAR) empirical models.Demonstrate an understanding of current issues being addressed in macroeconomics research.Be prepared to perform well in the macroeconomics classes in the top Ph.D. programs in economics.

ECON 582 : Topics in Mathematical Economics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 580

DESCRIPTION: Advanced topics such as risk and uncertainty, game theory, and capital theory.

**Course Outcomes**

- Economics 582 is a topics course with the goal of showing students the frontier. By its nature, the course exhibits different learning objectives each time it is taught.

ECON 586 : Advanced Mathematics for Economists. (3:3:0)

PREREQUISITE: ECON 380 & MATH 314

DESCRIPTION: Advanced mathematical methods that have proved useful in economic modeling.

**Course Outcomes**

No outcomes are available at this time.

ECON 588 : Advanced Econometrics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 388

DESCRIPTION: Theory and practice of formulating, estimating, and analyzing economic models.

**Course Outcomes**

- Demonstrate a familiarity with the properties and applications of several families of statistical distributions to econometric problems.Demonstrate an understanding of variations and generalizations of the basic regression model includingGeneralized least squaresGeneralized autoregressive conditional heteroskedasticity modelsInstrumental variablesSeemingly unrelated regression modelsPanel dataHausman specification tests.Demonstrate an understanding of estimation frameworks in econometric models includingParametric, semiparametric, and non parametric specificationsMaximum likelihood, M-, generalized method of moments, kernel, empirical likelihood, and extremum estimation.Formulate and estimate various nonlinear models.Identify and estimate autoregressive integrated moving average (ARIMA) models and obtain forecasts of economic variables.Demonstrate an understanding of dynamic (and static) structural econometric models including being able to discussReduced form, structural, and transfer function representationsThe identification problemIssues of estimation and statistical inferenceVector autoregression models.Complete a research project in which they formulate a research question, apply appropriate methods to answer the question, and prepare a paper summarizing their results.

6. Complete at least 3 credit hours from the following courses:

ECON 213R : Topics in Economic Analysis. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: ECON 110

**Course Outcomes**

There are no course outcomes available

ECON 230 : Economic Development and Growth. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: ECON 110

DESCRIPTION: Problems and processes of economic growth and development, emphasizing less-developed nations.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Be familiar with the labor and consumption patterns among the world's poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 110 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and

Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property RightsGain a basic understanding of econometric methods used in testing economic theories in growth and development.Analyze the Solow Growth model and its implications for economic growth.Explain the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Discuss the potential role of government in economic development. Especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

ECON 253 : Money and Banking. (3:3:0)

PREREQUISITE: ECON 110

DESCRIPTION: Economic principles applied to monetary analysis and policy and the banking structure.

**Course Outcomes**

No outcomes are available at this time.

ECON 257 : International Trade and Finance. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 110

DESCRIPTION: Economic analysis of the mechanisms, problems, institutions, and policies of trade among countries. Financial and monetary arrangements that facilitate trade.

**Course Outcomes**

- Explain the key developments (models) in the intellectual history of the study of the patterns of trade in goods and services from Adam Smith through the present.Broadly discuss the evidence which supports or is contrary to the application of these developments to particular countries and goods and services.Analyze policy within the context of these models in order to gain insights about the patterns of trade.Analyze the gains from international trade with these key models and understand the political economy of trade (who gains and who loses from trade).Analyze the patterns, gains, and losses from international trade (migration) in financial and direct foreign investment and labor migration in the short and long runs.Analyze the reasons for international outsourcing portions of production and the gains and losses from doing so.Identify how trade in goods, services, and capital enter the international income accounts and the balance of payments.Discuss how exchange rates affect trade and how trade, fiscal, and monetary policy affects exchange rates.Explain the essential differences in fiscal and monetary effects for floating and fixed exchange rates.Broadly discuss the development of U.S. trade policy and the world institutions that support international trade and finance.

ECON 274 : American Economic History. (3:3:0)

PREREQUISITE: ECON 110

DESCRIPTION: Impact on households, firms, and government of America's transformation from a rural, agricultural colony to a major industrial nation.

**Course Outcomes**

There are no course outcomes available

ECON 275 : Public Finance. (3:3:0)

PREREQUISITE: ECON 110

DESCRIPTION: Economics of decision making in the public sector; cost-benefit analysis and efficiency-equity issues of taxation and expenditure policies.

**Course Outcomes**

- Discuss the revenue, expenditure, and debt patterns of the U.S. Federal Government.Analyze how welfare impolications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property RightsInformation ProblemsDemonstart an understanding of the function and incentive effects of the major redistribution programs in the United States.Demonstrate an understanding of the function and incentive effects of the major redistribution programs in the United States.Discuss the efficiency and distributional effects of taxation.

ECON 413R : Topics in Economic Theory. (.5-5:ARR:ARR)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

**Course Outcomes**

- Learn in depth about an area of research in economics;Understand the research literature and in particular the contributions of the seminal articles;Analyze current journal articles and assess their contribution to the literature.

ECON 420 : Economics of Antitrust Law and Regulation. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

RECOMMENDED: Econ 382.

DESCRIPTION: Economic analysis of reasons for - and effects of - antitrust laws and regulation in selected areas, including utilities, telecommunications, transportation, energy, health, safety, and the environment.

**Course Outcomes**

- Demonstrate basic familiarity with the provisions of the principal Federal antitrust statutes, including the Sherman Act, the Clayton Act, the FTC Act, the Robinson-Patman Act, and the Hart-Scott-Rodino Act.Evaluate the likely effects of Section 1 of the Sherman Antitrust Act using monopoly, Cournot, Stackelberg, and Bertrand models of non-cooperative behavior among a small number of rival firms.Evaluate the likely effects of Section 2 of the Sherman Antitrust Act using simple analytical models of predation, exclusion, tying, bundling.Evaluate the likely effects of laws limiting price discrimination, including the Robinson-Patman Act, using simple analytical models of price discrimination.Evaluate the likely effects of Section 7 of the Clayton Act and the HRS Act using simple analytical models of mergers.Evaluate public regulation of monopolies as an alternative to relying on antitrust law using simple analytical models of rate-of-return regulation, nonlinear pricing and peak load pricing.Synthesize the relevant economics and legal literature, including Federal and Supreme Court rulings, via a substantial survey paper on a specific antitrust issue.

ECON 421 : Law and Economics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Common law allocative mechanisms (contract, tort, and property law) as alternatives to collective intervention when markets fail; consideration of economic logic of law.

**Course Outcomes**

- Demonstrate a basic familiarity with the Common Law.Analyze the incentives created by Common Law tort rules.Analyze the incentives created by Common Law contract rules.Distinguish between “property rules” and “liability rules” with regard to property rights.Evaluate the relative efficiency of specific tort rules.Evaluate the relative efficiency of specific contract rules.Analyze the incentives to litigate or settle under different rules about which party pays the costs of the litigation.Analyze the incentives created by criminal sanctions.Synthesize the relevant economics and legal literature, including Federal and Supreme Court rulings, via a substantial survey paper on a specific tort, contract or property issue.

ECON 431 : Economic Development. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 380; Econ 388 (or concurrent enrollment) or Pl Sc 328.

DESCRIPTION: Microeconomic analysis of the causes of income differences across countries.

**Course Outcomes**

- Discuss the labor and consumption patterns among the world's poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property Rights.Discuss the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Explain the potential role of government in economic development, especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

ECON 432 : Economic Growth. (3:3:0)

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Econ 388.

DESCRIPTION: Theory and evidence relating to economic growth, including physical and human capital accumulation, population, technological change, institutions, and government.

**Course Outcomes**

- Adjust values in one currency to values in another currency controlling for purchasing power parity (PPP) deviations.Demonstrate an understanding of basic dynamic models of economic growth, including:The Solow modelThe Solow model with population growthThe Harrod-Domar modelAK modelsModels of product varietySchumpeterian models.Discuss growth and development accounting, and decompose observed differences across countries into efficiency and technology components.Discuss Lorenz curves and Gini coefficients.Discuss how growth interacts with:Population & demographyHuman capitalTechnical progressOpennessGovernmentInequalityCultureGeography, Climate & Resources.

ECON 440 : Natural Resources and Environmental Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 380 & ECON 388

RECOMMENDED: Econ 382.

DESCRIPTION: Economic theory applied to allocation of natural resources and environmental amenities. Issues relating to externalities, common property resources, public goods, allocation of depletable natural resources over time, economic factors of environmental polarization, and others.

**Course Outcomes**

- Utilize economic principles and models to address private and public policy issues related to allocating natural resources and environmental amenities.Demonstrate an active understanding of the following elements of economic theory as it relates to natural resource and environmental economics:Welfare economics and concepts of Pareto optimality, efficiency, and equityThe role of property, property rights, and the bundle of rights conceptThe role of externalities, common property resources, and public goodsConcepts and measures of economic value including non-market valuation.Demonstrate a basic knowledge of the role of markets and market failure with regards to the allocation of natural resources and environmental amenities.Gain a basic understanding of the effects and relative merits of public environmental policy efforts, including cap-and-trade schemes, Pigovian taxes, regulation, and public ownership and/or management.Become knowledgeable about and be able to use economic principles and non-market valuation techniques to address a variety of continuing and contemporary natural resource and environmental issues. These issues may include, but are not exclusive to:Population growth and the environmentGlobal warmingWilderness protection and related public lands issuesAir

pollution and public healthIntergenerational allocation of soil, forest, and other depleteable natural resourcesImpacts of environmental features on property values.

ECON 450 : Financial Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 382 & ECON 388

DESCRIPTION: Theory of financial economics, emphasizing capital markets, investment decisions, choice, capital asset pricing model, futures and options markets, efficient markets, and capital structures.

**Course Outcomes**

- Understand and derive the fundamental relationship between risk and return that is implied by the Capital Asset Pricing Model (CAPM). Students should also know the assumptions necessary for this model to hold and be capable of identifying when potential investment projects satisfy these assumptions.Use linear regression to calculate an asset's historical sensitivity to broad market indices, its implied historical mispricing and an estimate of the asset's idiosyncratic risk. Students should also be capable of performing hypothesis testing on these values.Replicate traditional tests of the CAPM using currently available data.Be capable of collecting and analyzing asset market data to estimate the efficient frontier of risky assets using either Excel or another software package. Students should also be able to understand the efficient frontier mathematically and the reasons that it is useful.Calculate the present value of a stream of payments given an appropriate discount factor. Students should know how to use the CAPM to derive potential discount factors for payment streams.Calculate the yield to maturity of a stream of payments given an observed price. Students should also understand the relationship between the coupon rate of traditional bonds, their price and their yield to maturity.Calculate forward rates for all future periods given the observed yield curve.Understand the liquidity preference theory of bond markets as well as the expectations hypothesis. They should also be able to price complicated payment streams using observations of the yield curve and the expectations hypothesis.Calculate the duration and modified duration of a stream of payments and use these to calculate optimal hedges given an arbitrary position in the fixed income market.Calculate and understand bond convexity and its role (along with duration) in hedging.Price forward contracts by arbitrage given a risk-free rate.Price futures contracts whose payoffs are not correlated with the market reinvestment rate. Understand currently used hypotheses regarding futures contract pricing.Understand the structure of call and put options.Price put options given a call option (and vice versa) using the put-call parity relationship.Apply the Black-Scholes option pricing formula to price call and put options given beliefs about the volatility of the underlying asset.Apply the Black-Scholes option pricing formula to calculate the implied volatility of an asset given its price.

ECON 453 : Monetary Theory and Policy. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Concurrent enrollment in Econ 388.

DESCRIPTION: Macroeconomic aspects of money demand, money supply, the monetary transmission mechanism, central bank policy, and other current issues.

**Course Outcomes**

- Summarize the broad empirical evidence regarding the long-run and short-run relationships between money and inflation and money and output.Demonstrate a fundamental knowledge of the institutional and regulatory structure of the U.S. financial system.Explain the macroeconomic role of central banks with special emphasis on the role of the Federal Reserve System in the U.S. economy.Demonstrate an active understanding of the following elements of modern monetary theory:The role of expectations, especially rational expectationsSolve simple rational expectations modelsAnalyze the rudimentary new Keynesian dynamic stochastic general equilibrium modelsTheories of the transmission mechanism of monetary policyIdentify the current issues in the conduct of monetary policy.Demonstrate a general understanding of the causes and consequences of financial crises with a focus on the financial crisis of 2007-2009.Identify and evaluate the principal issues regarding financial regulation.

ECON 458 : International Trade Theory and Applications. (3:3:0)

PREREQUISITE: ECON 380

DESCRIPTION: Microeconomic analysis of why nations trade, who wins and loses from trade, and the costs and benefits of various trade policies.

**Course Outcomes**

- Discuss why all kinds of nations—rich and poor, large and small—gain from international trade.Demonstrate an understanding of comparative advantage and how it creates gains from trade.Analyze the Ricardian model of trade and thereby learn how different technologies in different nations create comparative advantage and gains from trade.Analyze the Heckscher-Ohlin model of trade and thereby learn: 1) How different factor endowments in different nations create comparative advantage and gains from trade, and 2) Why some people lose from trade even though nations as a whole gain from trade.Discuss economies of scale and how they can generate gains from trade.Discuss how trade generates extra gains by reducing market power.Demonstrate an understanding of the main causes and effects of direct foreign investment.Demonstrate an understanding of the main causes and effects of international migration.Discuss how various trade policies affect national welfare and why such policies help some while hurting others.Discuss the politics of trade.

ECON 459 : International Monetary Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 381 & ECON 388; or ECON 381 & PL SC 328

DESCRIPTION: Monetary and macroeconomic aspects of international relations dealing primarily with short-run balance-of-payments disequilibrium and adjustments.

**Course Outcomes**

- Demonstrate a familiarity with the key issues in two broad fields:International Finance, particularly exchange rate behavior, Open Economy Macroeconomics.Discuss the nature of the foreign exchange market, including:It's market organizationThe role of vehicle currenciesThe instruments tradedThe role of arbitrage.Understand and use models of exchange rate behavior:Covered and uncovered interest rate parityLong-run monetary and equilibrium models.Understand financial portfolio theory to the extent that it is useful in explaining exchange rate behavior, including:The determination of risk premiaHow it may explain the "forward bias" puzzle.Discuss the history of the international financial system since the late 1700's.Discuss the international aspects of the national income and product accounts, along with the balance of payments accounts.Apply simple dynamic models of consumption smoothing to the current account.

ECON 461 : Economics of Education. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: ECON 388

DESCRIPTION: Evaluation of education policy from an economic perspective, focusing on the benefits and costs of policy outcomes. Introduction to quantitative methods used by empirical education researchers.

NOTE: Concurrent enrollment accepted for Econ 388; see professor.

**Course Outcomes**

- Evaluate education policy from an economics perspectiveIncorporate costs and benefits in education policy analysisIdentify unintended consequences associated with alternative policy optionsBase analysis on research literature findings.Demonstrate an understanding of the theoretical underpinnings of the fieldEducation productionHuman Capital formationRole of incentives.Speak fluently and intelligently about current issues in education policy, includingUS and International policyTeacher labor marketsK-12 education policyHigher education.Evaluate the economics of education research literatureKnow the seminal papers in the field, and how they shaped the disciplineKnow the current "cutting edge" papers and how they are pushing the frontiers of knowledge.Demonstrate an understanding of the quantitative methods and research tools that empirical education economists use to conduct research, includingCross sectional and panel data modelsMethods to account for selection biasThe importance of obtaining causal effects.

ECON 463 : Economics of the Labor Market. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 388

DESCRIPTION: Economic analysis and institutional background of labor markets in developed countries, particularly the United States. Typical topics include labor supply and demand analysis, determination of wages and employment, investment in education, wage differences by gender and race, immigration, and unions.

**Course Outcomes**

- Demonstrate an understanding of standard optimization models to set up and solve the labor supply problem facing the individual and the labor demand problem facing the firm and show the important comparative statics results of both models. Students will understand how these models produce the neoclassical market framework and be able to solve problems using that framework.Solve and use other microeconomic optimizing models of agent behavior, such as models of job search, human capital choices, labor supply, and demand in risky occupations, union wage setting, and behavior under alternative compensation schemes.Demonstrate an understanding of the basic institutional structure of the U.S. labor market, including broad trends in labor supply behavior and wages and the institutional details and likely labor market effects of major government programs.Read and discuss high quality empirical research on labor economic topics and explain how these results interrelate to the predictions of formal economic models.Complete an empirical project demonstrating competence in basic econometric techniques.Identify some of the ways in which government policy choices affect labor market outcomes

ECON 465 : Health Economics. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: ECON 382 & ECON 388

DESCRIPTION: Economic models of health-care markets, including the supply and demand for health and health care, insurance, market imperfections, public-sector involvement, and regulation.

NOTE: Concurrent enrollment accepted for Econ 388; see professor.

**Course Outcomes**

- Read, understand, and discuss the academic literature in health economics. A daily quiz will be administered to test understanding of the reading.Participate in linking academic research to contemporary policy discussions through class discussion and preparation of occasional class presentations.Complete a major research project in which they either 1) summarize and evaluate the available evidence on a particular policy question, or 2) conduct an original research project where they identify a question, assemble a dataset, thoughtfully apply appropriate empirical methods, and clearly describe their methodology, assumptions, and findings.

ECON 468 : Urban Economics. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380; Econ 388 or concurrent enrollment.

DESCRIPTION: Economic models relating to spatial location of economic activities and development of cities. Application of economic theory to problems and policies associated with housing, urban transportation, congestion, local government finance, and other urban problems.

**Course Outcomes**

- Demonstrate an understanding of the role of transportation costs in determining land uses and land prices.Demonstrate a familiarity with the monocentric city model of land use and its use in understanding the impact of local land use and transportation policies.Apply the basic models of housing demand and the role of filtering in determining the stock of housing in a city.Demonstrate an understanding of the economic concepts of external costs and how these play a role in air pollution and highway congestion. Apply the concept of Pigouvian pricing as a solution to externality problems in the case of highway congestion.Discuss the role of time costs in consumers' choice of transportation mode, and why collection and distribution parts of urban trips are so important in determining the proper design of mass transit systems. Demonstrate an understanding of the role of economies of scale in efficient mass transit design.Use the basic economic model of "rational" crime to predict the impact of various anti-crime policies.

ECON 474 : Topics in Economic History. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ECON 380; Econ 388 or concurrent enrollment.

**Course Outcomes**

There are no course outcomes available

ECON 475 : Public Economics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Evaluation of the role of government from an economic perspective. Typical topics include taxation, externalities, public goods, corruption, public choice, Social Security, Medicare and Medicaid, education, income redistribution, and crime.

**Course Outcomes**

- Discuss the revenue, expenditure, and debt patterns of the U.S federal government.Analyze how modifying the neoclassical assumptions learned in 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property RightsInformation ProblemsHyperbolic Discounting or Loss AversionDemonstrate an understanding of the function and incentive effects of the major redistribution programs in the United States.Discuss the efficiency and distributional effects of taxation and the theory of optimal taxation for both income and commodity taxes.Read papers in the public economics literature andProvide written and oral critiques of the papersApply modern tools of econometric analysis in discussing the papers

ECON 476 : Industrial Organization. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ECON 378; or STAT 201 & MATH 313

DESCRIPTION: Industrial organization focuses on firm behavior in imperfectly competitive markets. Typical topics include the acquisition and use of market power by firms, strategic interactions among firms, and an introduction to noncooperative game theory.

**Course Outcomes**

- Analyze basic models of competition among firms producing homogeneous goods: competition, monopoly, Cournot oligopoly, Bertrand oligopoly, Stackelberg oligopoly.Apply basic game theory including solution concepts for normal and extensive form games.Demonstrate an understanding of extensions to these basic model, including supergames, models of product differentiation, and games of incomplete information.Apply these models to key issues in theoretical and applied industrial organization: mergers, collusion, advertising, R&D competition, antitrust policy, entry accommodation and entry deterrence, and business strategy.Discuss the role of government in the market in determining antitrust policy, patent policy, and regulation.Read, synthesize, and write short review papers on applied or empirical papers from the industrial organization literature.

ECON 477 : Political Economics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 382

DESCRIPTION: Economic models of government structure and function: electoral competition, voter participation and cycles, preference aggregation, information aggregation, externalities and public goods, electoral structure, political agency, influence, and bargaining.

**Course Outcomes**

There are no course outcomes available

ECON 478 : Game Theory and Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Application of game theory to study strategic interaction between individuals and organizations. Applications include imperfect competition, insurance markets, and bargaining.

**Course Outcomes**

- Demonstrate an understanding of the game theoretic method of analysis.Define a Nash Equilibrium and discuss refinements of the Nash Equilibrium Concept.Think abstractly and rigorously about strategic

interaction.

ECON 482 : Welfare Economics. (3:3.0:0.0)

PREREQUISITE: ECON 378 & ECON 382; or STAT 201 & MATH 313 & ECON 382

DESCRIPTION: General equilibrium theorems and considerations that must guide applied economic work and provide quantitative information on the effects of alternative policy measures.

**Course Outcomes**

No outcomes are available at this time.

ECON 486 : Mathematical Economics. (3:3:0)

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Further development of optimization and comparative statics. Differential equations and dynamic analysis.

**Course Outcomes**

No outcomes are available at this time.

ECON 488 : Applied Econometrics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 388

DESCRIPTION: Application of econometric methods, introduction to research design, and evaluation of empirical research. Special attention given to linking economic theory and econometrics, and causal inference.

**Course Outcomes**

- Demonstrate an understanding of the assumptions underlying commonly used empirical approaches for the identification of causal effects, including:Ordinary least squaresMatchingInterrupted time seriesDifference in differencesFixed effectsInstrumental variablesDemonstrate an understanding of the interplay between economic theory and empirical work.Read and understand contemporary academic literature in economics. Students will provide written evaluations of selected academic papers, including a clear description and critique of the empirical methods used.Apply modern empirical methods using data analysis exercises.Complete a research project in which they identify a question, assemble a dataset, thoughtfully apply appropriate empirical methods, and clearly describe their methodology, assumptions, and findings.

ECON 580 : Advanced Price Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 382; or STAT 201 & MATH 313 & ECON 382

DESCRIPTION: Modern theories of consumers, producers, and competitive equilibria.

**Course Outcomes**

- Use the tools of constrained optimization in analyzing comparative statics results arising in the study of economic phenomena.

ECON 581 : Advanced Macroeconomics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 381 & ECON 382 & ECON 388

DESCRIPTION: Theory of determining national income, employment, inflation, and interest rates. Issues of economic fluctuations, economic growth, and monetary and fiscal policy.

**Course Outcomes**

- Acquire a toolset for analyzing modern macroeconomic models.Demonstrate an understanding of basic dynamic stochastic general equilibrium (DSGE) macroeconomic modeling, including:How to set up a model.How to render it stationary, if necessary.How to solve for the model's steady state both analytically and numerically.How to solve for the model's dynamics using various numerical techniques.How to calibrate the model.How to simulate the model economy.How to generate impulse response functions.How to generate data moments.How to estimate model parameters using simulated method of momentsUse MATLAB and Dynare, software packages widely used in macroeconomic model simulation.Demonstrate an understanding of other macroeconomic models, such as:Overlapping generations (OLG) models.Continuous-time Ramsey-style models.Estimate and interpret structural vector autoregression (SVAR) empirical models.Demonstrate an understanding of current issues being addressed in macroeconomics research.Be prepared to perform well in the macroeconomics classes in the top Ph.D. programs in economics.

ECON 582 : Topics in Mathematical Economics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 580

DESCRIPTION: Advanced topics such as risk and uncertainty, game theory, and capital theory.

**Course Outcomes**

- Economics 582 is a topics course with the goal of showing students the frontier. By its nature, the course exhibits different learning objectives each time it is taught.

ECON 586 : Advanced Mathematics for Economists. (3:3:0)

PREREQUISITE: ECON 380 & MATH 314

DESCRIPTION: Advanced mathematical methods that have proved useful in economic modeling.

**Course Outcomes**

No outcomes are available at this time.

ECON 588 : Advanced Econometrics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 388

DESCRIPTION: Theory and practice of formulating, estimating, and analyzing economic models.

**Course Outcomes**

- Demonstrate a familiarity with the properties and applications of several families of statistical distributions to econometric problems.Demonstrate an understanding of variations and generalizations of the basic regression model includingGeneralized least squaresGeneralized autoregressive conditional heteroskedasticity modelsInstrumental variablesSeemingly unrelated regression modelsPanel dataHausman specification tests.Demonstrate an understanding of estimation frameworks in econometric models includingParametric, semiparametric, and non parametric specificationsMaximum likelihood, M-, generalized method of moments, kernel, empirical likelihood, and extremum estimation.Formulate and estimate various nonlinear models.Identify and estimate autoregressive integrated moving average (ARIMA) models and obtain forecasts of economic variables.Demonstrate an understanding of dynamic (and static) structural econometric models including being able to discussReduced form, structural, and transfer function representationsThe identification problemIssues of estimation and statistical inferenceVector autoregression models.Complete a research project in which they formulate a research question, apply appropriate methods to answer the question, and prepare a paper summarizing their results.

**Note 1:** The 200-level field courses are intended as interim courses as a student moves from Econ 110 into the 300-level core courses. Once the student has completed Econ 380, he or she is strongly encouraged to take the 400-level rather than the 200-level field courses.

**Note 2:** Students should not take both a 200-level and a 400-level course with the same last two digits (e.g., Econ 275 and 475), although they are encouraged to take the 300- and 500-level theory classes (e.g., Econ 380 and 580).

*Hours include courses that may fulfill university core requirements.

## Show all Economics Courses

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Economics Department Home

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Faculty

# BS in Economics (37 hours*)

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## Program Requirements | View MAP | View Program Outcomes

1. The Economics Department requires a minimum of 21 hours in the major to be taken in residency at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.

2. Major courses: complete the following with a grade of C– or better:

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

ECON 378 : Statistics for Economists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: ECON 110 & MATH 112
DESCRIPTION: Introduction to matrix algebra and statistics in preparation for regression analysis. Other topics include: probability, random variables, density and distribution functions, estimation, hypothesis testing.

**Course Outcomes**

- Demonstrate an understanding of the basic principles and terminology of probability, simple distribution theory, statistics, and matrix algebra in preparation for a successful introduction to econometric methods in Economics 388. These principles and concepts include:The language, intuition, and notation necessary to understand basic approaches to probability, including basic combinatoric counting techniques, the additive and multiplicative laws of probability, conditional probability and independence, the law of total probability, and Bayes' rule, and to solve basic probability problems using these techniques.Random variables, both univariate and bivariate, including: distribution functions, density functions, conditional density, expected values, variance, covariance, and correlation coefficients. Specific examples of useful random variables.Statistics and sampling distributions.Law of Large Numbers and Central Limit Theorem. Parameter estimators and their derivation using the Method of Moments and Method of Maximum Likelihood.Statistical inference, including the idea of sampling error, sampling distributions, the construction of confidence intervals, and formal hypothesis tests.Basic matrix theory and the properties of matrix operations, including addition, subtraction, matrix products, matrix determinants, and matrix inversion.Use these statistical techniques to analyze data in diverse applications. Recognize the usefulness of statistics in a variety of career fields.

(or equivalent)

ECON 380 : Intermediate Price Theory 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: ECON 110 & MATH 112
DESCRIPTION: Producer, consumer, and equilibrium theories; mathematical techniques of unconstrained and constrained optimization introduced and applied extensively.

**Course Outcomes**

- Recognize the common building blocks of economic models (actors, choices, objectives, constraints)Solve economic models (constrained optimization, equilibrium conditions) Interpret the results (comparative statics)Explain concepts using graphs, prose, and mathematical analysis
- ConsumerThe axioms upon which standard microeconomic consumer theory is based.The implications of consumer demand including price and income responses in absolute and elasticity forms in both utility

maximization and expenditure minimization problems.FirmsThe meaning and representation of technologyThe implications of cost and profit maximization for firmsMarketsIntegrate consumers and producers into a market in order to perform market analysis on equilibrium traded quantities and pricesUse market analysis to understand the effects of public policy
- Compare the impact on equilibrium behavior of altering the assumptions of canonical modelsContrast the results of different market imperfections

ECON 381 : Intermediate Macroeconomics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 110 & MATH 112; Math 112 can be concurrent enrollment.

DESCRIPTION: Intermediate macroeconomic theory, emphasizing income, unemployment, and price-level analysis.

**Course Outcomes**

- Demonstrate an understanding of the nature and construction of key macroeconomic data;Demonstrate an understanding of the connection between microeconomics and macroeconomics;Demonstrate an understanding of standard models ofeconomic growthlong-run macroeconomic behaviorshort-run macroeconomic behaviorUse these models to analyze the macroeconomic effects of monetary and fiscal policy changes as well as other economic shocks;Use these models to interpret historical and current events; andDemonstrate an understanding of issues regarding the value and limitations of monetary and fiscal policy.

ECON 382 : Intermediate Price Theory 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Welfare theory, imperfect information, imperfect competition, uncertainty, externalities, and public goods.

**Course Outcomes**

- Formally express and analyze economic modelsRecognize the common building blocks of economic models (actors, choices, objectives, constraints)Solve economic models (constrained optimization, equilibrium conditions)Interpret the results (comparative statics)Demonstrate an understanding of the core microeconomic models ofPerfect competition in general equilibrium (exchange and production)Monopoly and oligopolyExternalities and public goodsDecision-making under uncertainty (expected utility)Information problems (moral hazard, adverse selection)Adapt models to new scenariosCompare the impact on equilibrium behavior of altering the assumptions of canonical modelsContrast the results of different market imperfectionsEstablish a knowledge base that will be useful in economic field classesApply models in various real-world examples and identify the positive and normative conclusions in that environment

ECON 388 : Introduction to Econometrics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Mathematical and statistical techniques used in estimating, predicting, and testing hypotheses associated with quantifiable economic relationships.

**Course Outcomes**

- Demonstrate an understanding of the theoretical foundations of estimating and testing the basic regression model, employing tools from matrix algebra, calculus, and statistics.Perform basic regression and testing procedures using Stata. Complete an empirical research project that includes the following elements:.Formulate an econometric model.Collect and prepare relevant data for use in estimating the model.Use appropriate methods of estimation.Test relevant behavioral hypotheses.Understand and test the Gauss-Markov assumptions.Analyze and interpret the estimated model.Prepare a written report summarizing the research results.

**Note:** Stat 201 and Math 313 may be substituted for Econ 378.

3. Supporting courses: complete the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

**Note 1:** A *university* calculus course such as Math 112 or 113 is strongly recommended. Deferred students are encouraged to take a refresher math course such as Eng T 295R before or concurrent with Econ 378, 380, or 381.

**Note 2:** For students contemplating graduate work in economics, the 500-level economics courses plus Math 113, 313, and 314 are strongly recommended.

4. Complete at least 12 credit hours from the following courses:

ECON 413R : Topics in Economic Theory. (.5-5:ARR:ARR)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

**Course Outcomes**

- Learn in depth about an area of research in economics;Understand the research literature and in particular the contributions of the seminal articles;Analyze current journal articles and assess their contribution to the literature.

ECON 420 : Economics of Antitrust Law and Regulation. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

RECOMMENDED: Econ 382.

DESCRIPTION: Economic analysis of reasons for - and effects of - antitrust laws and regulation in selected areas, including utilities, telecommunications, transportation, energy, health, safety, and the environment.

**Course Outcomes**

- Demonstrate basic familiarity with the provisions of the principal Federal antitrust statutes, including the Sherman Act, the Clayton Act, the FTC Act, the Robinson-Patman Act, and the Hart-Scott-Rodino Act.Evaluate the likely effects of Section 1 of the Sherman Antitrust Act using monopoly, Cournot, Stackelberg, and Bertrand models of non-cooperative behavior among a small number of rival firms.Evaluate the likely effects of Section 2 of the Sherman Antitrust Act using simple analytical models of predation, exclusion, tying, bundling.Evaluate the likely effects of laws limiting price discrimination, including the Robinson-Patman Act, using simple analytical models of price discrimination.Evaluate the likely effects of Section 7 of the Clayton Act and the HRS Act using simple analytical models of mergers.Evaluate public regulation of monopolies as an alternative to relying on antitrust law using simple analytical models of rate-of-return regulation, nonlinear pricing and peak load pricing.Synthesize the relevant economics and legal literature, including Federal and Supreme Court rulings, via a substantial survey paper on a specific antitrust issue.

ECON 421 : Law and Economics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Common law allocative mechanisms (contract, tort, and property law) as alternatives to collective intervention when markets fail; consideration of economic logic of law.

**Course Outcomes**

- Demonstrate a basic familiarity with the Common Law.Analyze the incentives created by Common Law tort rules.Analyze the incentives created by Common Law contract rules.Distinguish between “property rules” and “liability rules” with regard to property rights.Evaluate the relative efficiency of specific tort rules.Evaluate the relative efficiency of specific contract rules.Analyze the incentives to litigate or settle under different rules about which party pays the costs of the litigation.Analyze the incentives created by criminal sanctions.Synthesize the relevant economics and legal literature, including Federal and Supreme Court rulings, via a substantial survey paper on a specific tort, contract or property issue.

ECON 431 : Economic Development. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 380; Econ 388 (or concurrent enrollment) or Pl Sc 328.

DESCRIPTION: Microeconomic analysis of the causes of income differences across countries.

**Course Outcomes**

- Discuss the labor and consumption patterns among the world’s poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property Rights.Discuss the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Explain the potential role of government in economic development, especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

ECON 432 : Economic Growth. (3:3:0)

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Econ 388.

DESCRIPTION: Theory and evidence relating to economic growth, including physical and human capital accumulation, population, technological change, institutions, and government.

**Course Outcomes**

- Adjust values in one currency to values in another currency controlling for purchasing power parity (PPP) deviations.Demonstrate an understanding of basic dynamic models of economic growth, including:The Solow modelThe Solow model with population growthThe Harrod-Domar modelAK modelsModels of product varietySchumpeterian models.Discuss growth and development accounting, and decompose observed differences across countries into efficiency and technology components.Discuss Lorenz curves and Gini coefficients.Discuss how growth interacts with:Population & demographyHuman capitalTechnical progressOpennessGovernmentInequalityCultureGeography, Climate & Resources.

ECON 440 : Natural Resources and Environmental Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 380 & ECON 388

RECOMMENDED: Econ 382.

DESCRIPTION: Economic theory applied to allocation of natural resources and environmental amenities. Issues relating to externalities, common property resources, public goods, allocation of depletable natural resources over time, economic factors of environmental polarization, and others.

**Course Outcomes**

- Utilize economic principles and models to address private and public policy issues related to allocating natural resources and environmental amenities.Demonstrate an active understanding of the following elements of economic theory as it relates to natural resource and environmental economics:Welfare economics and concepts of Pareto optimality, efficiency, and equityThe role of property, property rights, and the bundle of rights conceptThe role of externalities, common property resources, and public goodsConcepts and measures of economic value including non-market valuation.Demonstrate a basic knowledge of the role of markets and market failure with regards to the allocation of natural resources and environmental amenities.Gain a basic understanding of the effects and relative merits of public environmental policy efforts, including cap-and-trade schemes, Pigovian taxes, regulation, and public ownership and/or management.Become knowledgeable about and be able to use economic principles and non-market valuation techniques to address a variety of continuing and contemporary natural resource and environmental issues. These issues may include, but are not exclusive to:Population growth and the environmentGlobal warmingWilderness protection and related public lands issuesAir pollution and public healthIntergenerational allocation of soil, forest, and other depleteable natural resourcesImpacts of environmental features on property values.

ECON 450 : Financial Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 382 & ECON 388

DESCRIPTION: Theory of financial economics, emphasizing capital markets, investment decisions, choice, capital asset pricing model, futures and options markets, efficient markets, and capital structures.

**Course Outcomes**

- Understand and derive the fundamental relationship between risk and return that is implied by the Capital Asset Pricing Model (CAPM). Students should also know the assumptions necessary for this model to hold and be capable of identifying when potential investment projects satisfy these assumptions.Use linear regression to calculate an asset's historical sensitivity to broad market indices, its implied historical mispricing and an estimate of the asset's idiosyncratic risk. Students should also be capable of performing hypothesis testing on these values.Replicate traditional tests of the CAPM using currently available data.Be capable of collecting and analyzing asset market data to estimate the efficient frontier of risky assets using either Excel or another software package. Students should also be able to understand the efficient frontier mathematically and the reasons that it is useful.Calculate the present value of a stream of payments given an appropriate discount factor. Students should know how to use the CAPM to derive potential discount factors for payment streams.Calculate the yield to maturity of a stream of payments given an observed price. Students should also understand the relationship between the coupon rate of traditional bonds, their price and their yield to maturity.Calculate forward rates for all future periods given the observed yield curve.Understand the liquidity preference theory of bond markets as well as the expectations hypothesis. They should also be able to price complicated payment streams using observations of the yield curve and the expectations hypothesis.Calculate the duration and modified duration of a stream of payments and use these to calculate optimal hedges given an arbitrary position in the fixed income market.Calculate and understand bond convexity and its role (along with duration) in hedging.Price forward contracts by arbitrage given a risk-free rate.Price futures contracts whose payoffs are not correlated with the market reinvestment rate. Understand currently used hypotheses regarding futures contract pricing.Understand the structure of call and put options.Price put options given a call option (and vice versa) using the put-call parity relationship.Apply the Black-Scholes option pricing formula to price call and put options given beliefs about the volatility of the underlying asset.Apply the Black-Scholes option pricing formula to calculate the implied volatility of an asset given its price.

ECON 453 : Monetary Theory and Policy. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Concurrent enrollment in Econ 388.

DESCRIPTION: Macroeconomic aspects of money demand, money supply, the monetary transmission mechanism, central bank policy, and other current issues.

**Course Outcomes**

- Summarize the broad empirical evidence regarding the long-run and short-run relationships between money and inflation and money and output.Demonstrate a fundamental knowledge of the institutional and regulatory structure of the U.S. financial system.Explain the macroeconomic role of central banks with special emphasis on the role of the Federal Reserve System in the U.S. economy.Demonstrate an active understanding of the following elements of modern monetary theory:The role of expectations, especially rational expectationsSolve simple rational expectations modelsAnalyze the rudimentary new Keynesian dynamic stochastic general equilibrium modelsTheories of the transmission mechanism of monetary policyIdentify the current issues in the conduct of monetary policy.Demonstrate a general understanding of the causes and consequences of financial crises with a focus on the financial crisis of

2007-2009.Identify and evaluate the principal issues regarding financial regulation.

ECON 458 : International Trade Theory and Applications. (3:3:0)

PREREQUISITE: ECON 380

DESCRIPTION: Microeconomic analysis of why nations trade, who wins and loses from trade, and the costs and benefits of various trade policies.

**Course Outcomes**

- Discuss why all kinds of nations—rich and poor, large and small—gain from international trade.Demonstrate an understanding of comparative advantage and how it creates gains from trade.Analyze the Ricardian model of trade and thereby learn how different technologies in different nations create comparative advantage and gains from trade.Analyze the Heckscher-Ohlin model of trade and thereby learn: 1) How different factor endowments in different nations create comparative advantage and gains from trade, and 2) Why some people lose from trade even though nations as a whole gain from trade.Discuss economies of scale and how they can generate gains from trade.Discuss how trade generates extra gains by reducing market power.Demonstrate an understanding of the main causes and effects of direct foreign investment.Demonstrate an understanding of the main causes and effects of international migration.Discuss how various trade policies affect national welfare and why such policies help some while hurting others.Discuss the politics of trade.

ECON 459 : International Monetary Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 381 & ECON 388; or ECON 381 & PL SC 328

DESCRIPTION: Monetary and macroeconomic aspects of international relations dealing primarily with short-run balance-of-payments disequilibrium and adjustments.

**Course Outcomes**

- Demonstrate a familiarity with the key issues in two broad fields:International Finance, particularly exchange rate behavior, Open Economy Macroeconomics.Discuss the nature of the foreign exchange market, including:It's market organizationThe role of vehicle currenciesThe instruments tradedThe role of arbitrage.Understand and use models of exchange rate behavior:Covered and uncovered interest rate parityLong-run monetary and equilibrium models.Understand financial portfolio theory to the extent that it is useful in explaining exchange rate behavior, including:The determination of risk premiaHow it may explain the "forward bias" puzzle.Discuss the history of the international financial system since the late 1700's.Discuss the international aspects of the national income and product accounts, along with the balance of payments accounts.Apply simple dynamic models of consumption smoothing to the current account.

ECON 461 : Economics of Education. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: ECON 388

DESCRIPTION: Evaluation of education policy from an economic perspective, focusing on the benefits and costs of policy outcomes. Introduction to quantitative methods used by empirical education researchers.

NOTE: Concurrent enrollment accepted for Econ 388; see professor.

**Course Outcomes**

- Evaluate education policy from an economics perspectiveIncorporate costs and benefits in education policy analysisIdentify unintended consequences associated with alternative policy optionsBase analysis on research literature findings.Demonstrate an understanding of the theoretical underpinnings of the fieldEducation productionHuman Capital formationRole of incentives.Speak fluently and intelligently about current issues in education policy, includingUS and International policyTeacher labor marketsK-12 education policyHigher education.Evaluate the economics of education research literatureKnow the seminal papers in the field, and how they shaped the disciplineKnow the current "cutting edge" papers and how they are pushing the frontiers of knowledge.Demonstrate an understanding of the quantitative methods and research tools that empirical education economists use to conduct research, includingCross sectional and panel data modelsMethods to account for selection biasThe importance of obtaining causal effects.

ECON 463 : Economics of the Labor Market. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 388

DESCRIPTION: Economic analysis and institutional background of labor markets in developed countries, particularly the United States. Typical topics include labor supply and demand analysis, determination of wages and employment, investment in education, wage differences by gender and race, immigration, and unions.

**Course Outcomes**

- Demonstrate an understanding of standard optimization models to set up and solve the labor supply problem facing the individual and the labor demand problem facing the firm and show the important comparative statics results of both models. Students will understand how these models produce the neoclassical market framework and be able to solve problems using that framework.Solve and use other microeconomic optimizing models of agent behavior, such as models of job search, human capital choices, labor supply, and demand in risky occupations, union wage setting, and behavior under alternative compensation schemes.Demonstrate an understanding of the basic institutional structure of the U.S. labor market, including broad trends in labor supply behavior and wages and the institutional details and likely labor market effects of major government programs.Read and discuss high quality empirical research on labor economic topics and explain how these results interrelate to the predictions of formal economic models.Complete an empirical project demonstrating competence in basic econometric techniques.Identify some of the ways in which government policy choices affect labor

market outcomes

ECON 465 : Health Economics. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: ECON 382 & ECON 388

DESCRIPTION: Economic models of health-care markets, including the supply and demand for health and health care, insurance, market imperfections, public-sector involvement, and regulation.

NOTE: Concurrent enrollment accepted for Econ 388; see professor.

**Course Outcomes**

- Read, understand, and discuss the academic literature in health economics. A daily quiz will be administered to test understanding of the reading.Participate in linking academic research to contemporary policy discussions through class discussion and preparation of occasional class presentations.Complete a major research project in which they either 1) summarize and evaluate the available evidence on a particular policy question, or 2) conduct an original research project where they identify a question, assemble a dataset, thoughtfully apply appropriate empirical methods, and clearly describe their methodology, assumptions, and findings.

ECON 468 : Urban Economics. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380; Econ 388 or concurrent enrollment.

DESCRIPTION: Economic models relating to spatial location of economic activities and development of cities. Application of economic theory to problems and policies associated with housing, urban transportation, congestion, local government finance, and other urban problems.

**Course Outcomes**

- Demonstrate an understanding of the role of transportation costs in determining land uses and land prices.Demonstrate a familiarity with the monocentric city model of land use and its use in understanding the impact of local land use and transportation policies.Apply the basic models of housing demand and the role of filtering in determining the stock of housing in a city.Demonstrate an understanding of the economic concepts of external costs and how these play a role in air pollution and highway congestion. Apply the concept of Pigouvian pricing as a solution to externality problems in the case of highway congestion.Discuss the role of time costs in consumers' choice of transportation mode, and why collection and distribution parts of urban trips are so important in determining the proper design of mass transit systems. Demonstrate an understanding of the role of economies of scale in efficient mass transit design.Use the basic economic model of "rational" crime to predict the impact of various anti-crime policies.

ECON 474 : Topics in Economic History. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ECON 380; Econ 388 or concurrent enrollment.

**Course Outcomes**

There are no course outcomes available

ECON 475 : Public Economics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Evaluation of the role of government from an economic perspective. Typical topics include taxation, externalities, public goods, corruption, public choice, Social Security, Medicare and Medicaid, education, income redistribution, and crime.

**Course Outcomes**

- Discuss the revenue, expenditure, and debt patterns of the U.S federal government.Analyze how modifying the neoclassical assumptions learned in 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property RightsInformation ProblemsHyperbolic Discounting or Loss AversionDemonstrate an understanding of the function and incentive effects of the major redistribution programs in the United States.Discuss the efficiency and distributional effects of taxation and the theory of optimal taxation for both income and commodity taxes.Read papers in the public economics literature andProvide written and oral critiques of the papersApply modern tools of econometric analysis in discussing the papers

ECON 476 : Industrial Organization. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ECON 378; or STAT 201 & MATH 313

DESCRIPTION: Industrial organization focuses on firm behavior in imperfectly competitive markets. Typical topics include the acquisition and use of market power by firms, strategic interactions among firms, and an introduction to noncooperative game theory.

**Course Outcomes**

- Analyze basic models of competition among firms producing homogeneous goods: competition, monopoly, Cournot oligopoly, Bertrand oligopoly, Stackelberg oligopoly.Apply basic game theory including solution concepts for normal and extensive form games.Demonstrate an understanding of

extensions to these basic model, including supergames, models of product differentiation, and games of incomplete information.Apply these models to key issues in theoretical and applied industrial organization: mergers, collusion, advertising, R&D competition, antitrust policy, entry accommodation and entry deterrence, and business strategy.Discuss the role of government in the market in determining antitrust policy, patent policy, and regulation.Read, synthesize, and write short review papers on applied or empirical papers from the industrial organization literature.

ECON 477 : Political Economics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 382

DESCRIPTION: Economic models of government structure and function: electoral competition, voter participation and cycles, preference aggregation, information aggregation, externalities and public goods, electoral structure, political agency, influence, and bargaining.

**Course Outcomes**

There are no course outcomes available

ECON 478 : Game Theory and Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Application of game theory to study strategic interaction between individuals and organizations. Applications include imperfect competition, insurance markets, and bargaining.

**Course Outcomes**

- Demonstrate an understanding of the game theoretic method of analysis.Define a Nash Equilibrium and discuss refinements of the Nash Equilibrium Concept.Think abstractly and rigorously about strategic interaction.

ECON 482 : Welfare Economics. (3:3.0:0.0)

PREREQUISITE: ECON 378 & ECON 382; or STAT 201 & MATH 313 & ECON 382

DESCRIPTION: General equilibrium theorems and considerations that must guide applied economic work and provide quantitative information on the effects of alternative policy measures.

**Course Outcomes**

No outcomes are available at this time.

ECON 486 : Mathematical Economics. (3:3:0)

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Further development of optimization and comparative statics. Differential equations and dynamic analysis.

**Course Outcomes**

No outcomes are available at this time.

ECON 488 : Applied Econometrics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 388

DESCRIPTION: Application of econometric methods, introduction to research design, and evaluation of empirical research. Special attention given to linking economic theory and econometrics, and causal inference.

**Course Outcomes**

- Demonstrate an understanding of the assumptions underlying commonly used empirical approaches for the identification of causal effects, including:Ordinary least squaresMatchingInterrupted time seriesDifference in differencesFixed effectsInstrumental variablesDemonstrate an understanding of the interplay between economic theory and empirical work.Read and understand contemporary academic literature in economics. Students will provide written evaluations of selected academic papers, including a clear description and critique of the empirical methods used.Apply modern empirical methods using data analysis exercises.Complete a research project in which they identify a question, assemble a dataset, thoughtfully apply appropriate empirical methods, and clearly describe their methodology, assumptions, and findings.

ECON 580 : Advanced Price Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 382; or STAT 201 & MATH 313 & ECON 382

DESCRIPTION: Modern theories of consumers, producers, and competitive equilibria.

**Course Outcomes**

- Use the tools of constrained optimization in analyzing comparative statics results arising in the study of economic phenomena.

ECON 581 : Advanced Macroeconomics. (3:3:0)

WHEN Fall

TAUGHT:
PREREQUISITE: ECON 381 & ECON 382 & ECON 388
DESCRIPTION: Theory of determining national income, employment, inflation, and interest rates. Issues of economic fluctuations, economic growth, and monetary and fiscal policy.

**Course Outcomes**

- Acquire a toolset for analyzing modern macroeconomic models.Demonstrate an understanding of basic dynamic stochastic general equilibrium (DSGE) macroeconomic modeling, including:How to set up a model.How to render it stationary, if necessary.How to solve for the model's steady state both analytically and numerically.How to solve for the model's dynamics using various numerical techniques.How to calibrate the model.How to simulate the model economy.How to generate impulse response functions.How to generate data moments.How to estimate model parameters using simulated method of momentsUse MATLAB and Dynare, software packages widely used in macroeconomic model simulation.Demonstrate an understanding of other macroeconomic models, such as:Overlapping generations (OLG) models.Continuous-time Ramsey-style models.Estimate and interpret structural vector autoregression (SVAR) empirical models.Demonstrate an understanding of current issues being addressed in macroeconomics research.Be prepared to perform well in the macroeconomics classes in the top Ph.D. programs in economics.

ECON 582 : Topics in Mathematical Economics. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ECON 580
DESCRIPTION: Advanced topics such as risk and uncertainty, game theory, and capital theory.

**Course Outcomes**

- Economics 582 is a topics course with the goal of showing students the frontier. By its nature, the course exhibits different learning objectives each time it is taught.

ECON 586 : Advanced Mathematics for Economists. (3:3:0)
PREREQUISITE: ECON 380 & MATH 314
DESCRIPTION: Advanced mathematical methods that have proved useful in economic modeling.

**Course Outcomes**

No outcomes are available at this time.

ECON 588 : Advanced Econometrics. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ECON 388
DESCRIPTION: Theory and practice of formulating, estimating, and analyzing economic models.

**Course Outcomes**

- Demonstrate a familiarity with the properties and applications of several families of statistical distributions to econometric problems.Demonstrate an understanding of variations and generalizations of the basic regression model includingGeneralized least squaresGeneralized autoregressive conditional heteroskedasticity modelsInstrumental variablesSeemingly unrelated regression modelsPanel dataHausman specification tests.Demonstrate an understanding of estimation frameworks in econometric models includingParametric, semiparametric, and non parametric specificationsMaximum likelihood, M-, generalized method of moments, kernel, empirical likelihood, and extremum estimation.Formulate and estimate various nonlinear models.Identify and estimate autoregressive integrated moving average (ARIMA) models and obtain forecasts of economic variables.Demonstrate an understanding of dynamic (and static) structural econometric models including being able to discussReduced form, structural, and transfer function representationsThe identification problemIssues of estimation and statistical inferenceVector autoregression models.Complete a research project in which they formulate a research question, apply appropriate methods to answer the question, and prepare a paper summarizing their results.

5. Complete at least 3 credit hours from the following courses:
ECON 213R : Topics in Economic Analysis. (.5-3:ARR:ARR)
WHEN TAUGHT: Fall Contact Department; Winter Contact Department
PREREQUISITE: ECON 110

**Course Outcomes**

There are no course outcomes available

ECON 230 : Economic Development and Growth. (3:3:0)
WHEN TAUGHT: Spring
PREREQUISITE: ECON 110
DESCRIPTION: Problems and processes of economic growth and development, emphasizing less-developed nations.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Be familiar with the labor and consumption patterns among the world's poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 110 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property RightsGain a basic

understanding of econometric methods used in testing economic theories in growth and development.Analyze the Solow Growth model and its implications for economic growth.Explain the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Discuss the potential role of government in economic development. Especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

ECON 253 : Money and Banking. (3:3:0)

PREREQUISITE: ECON 110

DESCRIPTION: Economic principles applied to monetary analysis and policy and the banking structure.

**Course Outcomes**

No outcomes are available at this time.

ECON 257 : International Trade and Finance. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 110

DESCRIPTION: Economic analysis of the mechanisms, problems, institutions, and policies of trade among countries. Financial and monetary arrangements that facilitate trade.

**Course Outcomes**

- Explain the key developments (models) in the intellectual history of the study of the patterns of trade in goods and services from Adam Smith through the present.Broadly discuss the evidence which supports or is contrary to the application of these developments to particular countries and goods and services.Analyze policy within the context of these models in order to gain insights about the patterns of trade.Analyze the gains from international trade with these key models and understand the political economy of trade (who gains and who loses from trade).Analyze the patterns, gains, and losses from international trade (migration) in financial and direct foreign investment and labor migration in the short and long runs.Analyze the reasons for international outsourcing portions of production and the gains and losses from doing so.Identify how trade in goods, services, and capital enter the international income accounts and the balance of payments.Discuss how exchange rates affect trade and how trade, fiscal, and monetary policy affects exchange rates.Explain the essential differences in fiscal and monetary effects for floating and fixed exchange rates.Broadly discuss the development of U.S. trade policy and the world institutions that support international trade and finance.

ECON 274 : American Economic History. (3:3:0)

PREREQUISITE: ECON 110

DESCRIPTION: Impact on households, firms, and government of America's transformation from a rural, agricultural colony to a major industrial nation.

**Course Outcomes**

There are no course outcomes available

ECON 275 : Public Finance. (3:3:0)

PREREQUISITE: ECON 110

DESCRIPTION: Economics of decision making in the public sector; cost-benefit analysis and efficiency-equity issues of taxation and expenditure policies.

**Course Outcomes**

- Discuss the revenue, expenditure, and debt patterns of the U.S. Federal Government.Analyze how welfare impolications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property RightsInformation ProblemsDemonstart an understanding of the function and incentive effects of the major redistribution programs in the United States.Demonstrate an understanding of the function and incentive effects of the major redistribution programs in the United States.Discuss the efficiency and distributional effects of taxation.

ECON 413R : Topics in Economic Theory. (.5-5:ARR:ARR)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

**Course Outcomes**

- Learn in depth about an area of research in economics;Understand the research literature and in particular the contributions of the seminal articles;Analyze current journal articles and assess their contribution to the literature.

ECON 420 : Economics of Antitrust Law and Regulation. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

RECOMMENDED: Econ 382.

DESCRIPTION: Economic analysis of reasons for - and effects of - antitrust laws and regulation in selected areas, including utilities, telecommunications, transportation, energy, health, safety, and the environment.

**Course Outcomes**

- Demonstrate basic familiarity with the provisions of the principal Federal antitrust statutes, including the Sherman Act, the Clayton Act, the FTC Act, the Robinson-Patman Act, and the Hart-Scott-Rodino Act.Evaluate the likely effects of Section 1 of the Sherman Antitrust Act using monopoly, Cournot, Stackelberg, and Bertrand models of non-cooperative behavior among a small number of rival firms.Evaluate the likely effects of Section 2 of the Sherman Antitrust Act using simple analytical models of predation, exclusion, tying, bundling.Evaluate the likely effects of laws limiting price discrimination, including the Robinson-Patman Act, using simple analytical models of price discrimination.Evaluate the likely effects of Section 7 of the Clayton Act and the HRS Act using simple analytical models of mergers.Evaluate public regulation of monopolies as an alternative to relying on antitrust law using simple analytical models of rate-of-return regulation, nonlinear pricing and peak load pricing.Synthesize the relevant economics and legal literature, including Federal and Supreme Court rulings, via a substantial survey paper on a specific antitrust issue.

ECON 421 : Law and Economics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Common law allocative mechanisms (contract, tort, and property law) as alternatives to collective intervention when markets fail; consideration of economic logic of law.

**Course Outcomes**

- Demonstrate a basic familiarity with the Common Law.Analyze the incentives created by Common Law tort rules.Analyze the incentives created by Common Law contract rules.Distinguish between “property rules” and “liability rules” with regard to property rights.Evaluate the relative efficiency of specific tort rules.Evaluate the relative efficiency of specific contract rules.Analyze the incentives to litigate or settle under different rules about which party pays the costs of the litigation.Analyze the incentives created by criminal sanctions.Synthesize the relevant economics and legal literature, including Federal and Supreme Court rulings, via a substantial survey paper on a specific tort, contract or property issue.

ECON 431 : Economic Development. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 380; Econ 388 (or concurrent enrollment) or Pl Sc 328.

DESCRIPTION: Microeconomic analysis of the causes of income differences across countries.

**Course Outcomes**

- Discuss the labor and consumption patterns among the world’s poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property Rights.Discuss the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Explain the potential role of government in economic development, especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

ECON 432 : Economic Growth. (3:3:0)

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Econ 388.

DESCRIPTION: Theory and evidence relating to economic growth, including physical and human capital accumulation, population, technological change, institutions, and government.

**Course Outcomes**

- Adjust values in one currency to values in another currency controlling for purchasing power parity (PPP) deviations.Demonstrate an understanding of basic dynamic models of economic growth, including:The Solow modelThe Solow model with population growthThe Harrod-Domar modelAK modelsModels of product varietySchumpeterian models.Discuss growth and development accounting, and decompose observed differences across countries into efficiency and technology components.Discuss Lorenz curves and Gini coefficients.Discuss how growth interacts with:Population & demographyHuman capitalTechnical progressOpennessGovernmentInequalityCultureGeography, Climate & Resources.

ECON 440 : Natural Resources and Environmental Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 380 & ECON 388

RECOMMENDED: Econ 382.

DESCRIPTION: Economic theory applied to allocation of natural resources and environmental amenities. Issues relating to externalities, common property resources, public goods, allocation of depletable natural resources over time, economic factors of environmental polarization, and others.

**Course Outcomes**

- Utilize economic principles and models to address private and public policy issues related to allocating natural resources and environmental amenities.Demonstrate an active understanding of the following elements of economic theory as it relates to natural resource and environmental economics:Welfare economics and concepts of Pareto optimality, efficiency, and equityThe role of property, property rights, and the bundle of rights conceptThe role of externalities, common property resources, and public goodsConcepts and measures of economic value including non-market valuation.Demonstrate a basic knowledge of the role of markets and market failure with regards to the allocation of natural resources and environmental amenities.Gain a basic understanding of the effects and relative merits of public environmental policy efforts, including cap-and-trade schemes, Pigovian taxes, regulation, and public ownership and/or management.Become knowledgeable about and be able to use economic principles and non-market valuation techniques to address a variety of continuing and contemporary natural resource and environmental issues. These issues may include, but are not exclusive to:Population growth and the environmentGlobal warmingWilderness protection and related public lands issuesAir

pollution and public healthIntergenerational allocation of soil, forest, and other depleteable natural resourcesImpacts of environmental features on property values.

ECON 450 : Financial Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 382 & ECON 388

DESCRIPTION: Theory of financial economics, emphasizing capital markets, investment decisions, choice, capital asset pricing model, futures and options markets, efficient markets, and capital structures.

**Course Outcomes**

- Understand and derive the fundamental relationship between risk and return that is implied by the Capital Asset Pricing Model (CAPM). Students should also know the assumptions necessary for this model to hold and be capable of identifying when potential investment projects satisfy these assumptions.Use linear regression to calculate an asset's historical sensitivity to broad market indices, its implied historical mispricing and an estimate of the asset's idiosyncratic risk. Students should also be capable of performing hypothesis testing on these values.Replicate traditional tests of the CAPM using currently available data.Be capable of collecting and analyzing asset market data to estimate the efficient frontier of risky assets using either Excel or another software package. Students should also be able to understand the efficient frontier mathematically and the reasons that it is useful.Calculate the present value of a stream of payments given an appropriate discount factor. Students should know how to use the CAPM to derive potential discount factors for payment streams.Calculate the yield to maturity of a stream of payments given an observed price. Students should also understand the relationship between the coupon rate of traditional bonds, their price and their yield to maturity.Calculate forward rates for all future periods given the observed yield curve.Understand the liquidity preference theory of bond markets as well as the expectations hypothesis. They should also be able to price complicated payment streams using observations of the yield curve and the expectations hypothesis.Calculate the duration and modified duration of a stream of payments and use these to calculate optimal hedges given an arbitrary position in the fixed income market.Calculate and understand bond convexity and its role (along with duration) in hedging.Price forward contracts by arbitrage given a risk-free rate.Price futures contracts whose payoffs are not correlated with the market reinvestment rate. Understand currently used hypotheses regarding futures contract pricing.Understand the structure of call and put options.Price put options given a call option (and vice versa) using the put-call parity relationship.Apply the Black-Scholes option pricing formula to price call and put options given beliefs about the volatility of the underlying asset.Apply the Black-Scholes option pricing formula to calculate the implied volatility of an asset given its price.

ECON 453 : Monetary Theory and Policy. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Concurrent enrollment in Econ 388.

DESCRIPTION: Macroeconomic aspects of money demand, money supply, the monetary transmission mechanism, central bank policy, and other current issues.

**Course Outcomes**

- Summarize the broad empirical evidence regarding the long-run and short-run relationships between money and inflation and money and output.Demonstrate a fundamental knowledge of the institutional and regulatory structure of the U.S. financial system.Explain the macroeconomic role of central banks with special emphasis on the role of the Federal Reserve System in the U.S. economy.Demonstrate an active understanding of the following elements of modern monetary theory:The role of expectations, especially rational expectationsSolve simple rational expectations modelsAnalyze the rudimentary new Keynesian dynamic stochastic general equilibrium modelsTheories of the transmission mechanism of monetary policyIdentify the current issues in the conduct of monetary policy.Demonstrate a general understanding of the causes and consequences of financial crises with a focus on the financial crisis of 2007-2009.Identify and evaluate the principal issues regarding financial regulation.

ECON 458 : International Trade Theory and Applications. (3:3:0)

PREREQUISITE: ECON 380

DESCRIPTION: Microeconomic analysis of why nations trade, who wins and loses from trade, and the costs and benefits of various trade policies.

**Course Outcomes**

- Discuss why all kinds of nations—rich and poor, large and small—gain from international trade.Demonstrate an understanding of comparative advantage and how it creates gains from trade.Analyze the Ricardian model of trade and thereby learn how different technologies in different nations create comparative advantage and gains from trade.Analyze the Heckscher-Ohlin model of trade and thereby learn: 1) How different factor endowments in different nations create comparative advantage and gains from trade, and 2) Why some people lose from trade even though nations as a whole gain from trade.Discuss economies of scale and how they can generate gains from trade.Discuss how trade generates extra gains by reducing market power.Demonstrate an understanding of the main causes and effects of direct foreign investment.Demonstrate an understanding of the main causes and effects of international migration.Discuss how various trade policies affect national welfare and why such policies help some while hurting others.Discuss the politics of trade.

ECON 459 : International Monetary Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 381 & ECON 388; or ECON 381 & PL SC 328

DESCRIPTION: Monetary and macroeconomic aspects of international relations dealing primarily with short-run balance-of-payments disequilibrium and adjustments.

**Course Outcomes**

- Demonstrate a familiarity with the key issues in two broad fields:International Finance, particularly exchange rate behavior, Open Economy Macroeconomics.Discuss the nature of the foreign exchange market, including:It's market organizationThe role of vehicle currenciesThe instruments tradedThe role of arbitrage.Understand and use models of exchange rate behavior:Covered and uncovered interest rate parityLong-run monetary and equilibrium models.Understand financial portfolio theory to the extent that it is useful in explaining exchange rate behavior, including:The determination of risk premiaHow it may explain the "forward bias" puzzle.Discuss the history of the international financial system since the late 1700's.Discuss the international aspects of the national income and product accounts, along with the balance of payments accounts.Apply simple dynamic models of consumption smoothing to the current account.

ECON 461 : Economics of Education. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: ECON 388

DESCRIPTION: Evaluation of education policy from an economic perspective, focusing on the benefits and costs of policy outcomes. Introduction to quantitative methods used by empirical education researchers.

NOTE: Concurrent enrollment accepted for Econ 388; see professor.

**Course Outcomes**

- Evaluate education policy from an economics perspectiveIncorporate costs and benefits in education policy analysisIdentify unintended consequences associated with alternative policy optionsBase analysis on research literature findings.Demonstrate an understanding of the theoretical underpinnings of the fieldEducation productionHuman Capital formationRole of incentives.Speak fluently and intelligently about current issues in education policy, includingUS and International policyTeacher labor marketsK-12 education policyHigher education.Evaluate the economics of education research literatureKnow the seminal papers in the field, and how they shaped the disciplineKnow the current "cutting edge" papers and how they are pushing the frontiers of knowledge.Demonstrate an understanding of the quantitative methods and research tools that empirical education economists use to conduct research, includingCross sectional and panel data modelsMethods to account for selection biasThe importance of obtaining causal effects.

ECON 463 : Economics of the Labor Market. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 388

DESCRIPTION: Economic analysis and institutional background of labor markets in developed countries, particularly the United States. Typical topics include labor supply and demand analysis, determination of wages and employment, investment in education, wage differences by gender and race, immigration, and unions.

**Course Outcomes**

- Demonstrate an understanding of standard optimization models to set up and solve the labor supply problem facing the individual and the labor demand problem facing the firm and show the important comparative statics results of both models. Students will understand how these models produce the neoclassical market framework and be able to solve problems using that framework.Solve and use other microeconomic optimizing models of agent behavior, such as models of job search, human capital choices, labor supply, and demand in risky occupations, union wage setting, and behavior under alternative compensation schemes.Demonstrate an understanding of the basic institutional structure of the U.S. labor market, including broad trends in labor supply behavior and wages and the institutional details and likely labor market effects of major government programs.Read and discuss high quality empirical research on labor economic topics and explain how these results interrelate to the predictions of formal economic models.Complete an empirical project demonstrating competence in basic econometric techniques.Identify some of the ways in which government policy choices affect labor market outcomes

ECON 465 : Health Economics. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: ECON 382 & ECON 388

DESCRIPTION: Economic models of health-care markets, including the supply and demand for health and health care, insurance, market imperfections, public-sector involvement, and regulation.

NOTE: Concurrent enrollment accepted for Econ 388; see professor.

**Course Outcomes**

- Read, understand, and discuss the academic literature in health economics. A daily quiz will be administered to test understanding of the reading.Participate in linking academic research to contemporary policy discussions through class discussion and preparation of occasional class presentations.Complete a major research project in which they either 1) summarize and evaluate the available evidence on a particular policy question, or 2) conduct an original research project where they identify a question, assemble a dataset, thoughtfully apply appropriate empirical methods, and clearly describe their methodology, assumptions, and findings.

ECON 468 : Urban Economics. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380; Econ 388 or concurrent enrollment.

DESCRIPTION: Economic models relating to spatial location of economic activities and development of cities. Application of economic theory to problems and policies associated with housing, urban transportation, congestion, local government finance, and other urban problems.

**Course Outcomes**

- Demonstrate an understanding of the role of transportation costs in determining land uses and land prices.Demonstrate a familiarity with the monocentric city model of land use and its use in understanding the impact of local land use and transportation policies.Apply the basic models of housing demand and the role of filtering in determining the stock of housing in a city.Demonstrate an understanding of the economic concepts of external costs and how these play a role in air pollution and highway congestion. Apply the concept of Pigouvian pricing as a solution to externality problems in the case of highway congestion.Discuss the role of time costs in consumers' choice of transportation mode, and why collection and distribution parts of urban trips are so important in determining the proper design of mass transit systems. Demonstrate an understanding of the role of economies of scale in efficient mass transit design.Use the basic economic model of "rational" crime to predict the impact of various anti-crime policies.

ECON 474 : Topics in Economic History. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ECON 380; Econ 388 or concurrent enrollment.

**Course Outcomes**

There are no course outcomes available

ECON 475 : Public Economics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Evaluation of the role of government from an economic perspective. Typical topics include taxation, externalities, public goods, corruption, public choice, Social Security, Medicare and Medicaid, education, income redistribution, and crime.

**Course Outcomes**

- Discuss the revenue, expenditure, and debt patterns of the U.S federal government.Analyze how modifying the neoclassical assumptions learned in 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property RightsInformation ProblemsHyperbolic Discounting or Loss AversionDemonstrate an understanding of the function and incentive effects of the major redistribution programs in the United States.Discuss the efficiency and distributional effects of taxation and the theory of optimal taxation for both income and commodity taxes.Read papers in the public economics literature andProvide written and oral critiques of the papersApply modern tools of econometric analysis in discussing the papers

ECON 476 : Industrial Organization. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ECON 378; or STAT 201 & MATH 313

DESCRIPTION: Industrial organization focuses on firm behavior in imperfectly competitive markets. Typical topics include the acquisition and use of market power by firms, strategic interactions among firms, and an introduction to noncooperative game theory.

**Course Outcomes**

- Analyze basic models of competition among firms producing homogeneous goods: competition, monopoly, Cournot oligopoly, Bertrand oligopoly, Stackelberg oligopoly.Apply basic game theory including solution concepts for normal and extensive form games.Demonstrate an understanding of extensions to these basic model, including supergames, models of product differentiation, and games of incomplete information.Apply these models to key issues in theoretical and applied industrial organization: mergers, collusion, advertising, R&D competition, antitrust policy, entry accommodation and entry deterrence, and business strategy.Discuss the role of government in the market in determining antitrust policy, patent policy, and regulation.Read, synthesize, and write short review papers on applied or empirical papers from the industrial organization literature.

ECON 477 : Political Economics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 382

DESCRIPTION: Economic models of government structure and function: electoral competition, voter participation and cycles, preference aggregation, information aggregation, externalities and public goods, electoral structure, political agency, influence, and bargaining.

**Course Outcomes**

There are no course outcomes available

ECON 478 : Game Theory and Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Application of game theory to study strategic interaction between individuals and organizations. Applications include imperfect competition, insurance markets, and bargaining.

**Course Outcomes**

- Demonstrate an understanding of the game theoretic method of analysis.Define a Nash Equilibrium and discuss refinements of the Nash Equilibrium Concept.Think abstractly and rigorously about strategic

interaction.

ECON 482 : Welfare Economics. (3:3.0:0.0)

PREREQUISITE: ECON 378 & ECON 382; or STAT 201 & MATH 313 & ECON 382

DESCRIPTION: General equilibrium theorems and considerations that must guide applied economic work and provide quantitative information on the effects of alternative policy measures.

**Course Outcomes**

No outcomes are available at this time.

ECON 486 : Mathematical Economics. (3:3:0)

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Further development of optimization and comparative statics. Differential equations and dynamic analysis.

**Course Outcomes**

No outcomes are available at this time.

ECON 488 : Applied Econometrics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 388

DESCRIPTION: Application of econometric methods, introduction to research design, and evaluation of empirical research. Special attention given to linking economic theory and econometrics, and causal inference.

**Course Outcomes**

- Demonstrate an understanding of the assumptions underlying commonly used empirical approaches for the identification of causal effects, including:Ordinary least squaresMatchingInterrupted time seriesDifference in differencesFixed effectsInstrumental variablesDemonstrate an understanding of the interplay between economic theory and empirical work.Read and understand contemporary academic literature in economics. Students will provide written evaluations of selected academic papers, including a clear description and critique of the empirical methods used.Apply modern empirical methods using data analysis exercises.Complete a research project in which they identify a question, assemble a dataset, thoughtfully apply appropriate empirical methods, and clearly describe their methodology, assumptions, and findings.

ECON 580 : Advanced Price Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 382; or STAT 201 & MATH 313 & ECON 382

DESCRIPTION: Modern theories of consumers, producers, and competitive equilibria.

**Course Outcomes**

- Use the tools of constrained optimization in analyzing comparative statics results arising in the study of economic phenomena.

ECON 581 : Advanced Macroeconomics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 381 & ECON 382 & ECON 388

DESCRIPTION: Theory of determining national income, employment, inflation, and interest rates. Issues of economic fluctuations, economic growth, and monetary and fiscal policy.

**Course Outcomes**

- Acquire a toolset for analyzing modern macroeconomic models.Demonstrate an understanding of basic dynamic stochastic general equilibrium (DSGE) macroeconomic modeling, including:How to set up a model.How to render it stationary, if necessary.How to solve for the model's steady state both analytically and numerically.How to solve for the model's dynamics using various numerical techniques.How to calibrate the model.How to simulate the model economy.How to generate impulse response functions.How to generate data moments.How to estimate model parameters using simulated method of momentsUse MATLAB and Dynare, software packages widely used in macroeconomic model simulation.Demonstrate an understanding of other macroeconomic models, such as:Overlapping generations (OLG) models.Continuous-time Ramsey-style models.Estimate and interpret structural vector autoregression (SVAR) empirical models.Demonstrate an understanding of current issues being addressed in macroeconomics research.Be prepared to perform well in the macroeconomics classes in the top Ph.D. programs in economics.

ECON 582 : Topics in Mathematical Economics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 580

DESCRIPTION: Advanced topics such as risk and uncertainty, game theory, and capital theory.

**Course Outcomes**

- Economics 582 is a topics course with the goal of showing students the frontier. By its nature, the course exhibits different learning objectives each time it is taught.

ECON 586 : Advanced Mathematics for Economists. (3:3:0)

PREREQUISITE: ECON 380 & MATH 314

DESCRIPTION: Advanced mathematical methods that have proved useful in economic modeling.

**Course Outcomes**

No outcomes are available at this time.

ECON 588 : Advanced Econometrics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 388

DESCRIPTION: Theory and practice of formulating, estimating, and analyzing economic models.

**Course Outcomes**

- Demonstrate a familiarity with the properties and applications of several families of statistical distributions to econometric problems.Demonstrate an understanding of variations and generalizations of the basic regression model includingGeneralized least squaresGeneralized autoregressive conditional heteroskedasticity modelsInstrumental variablesSeemingly unrelated regression modelsPanel dataHausman specification tests.Demonstrate an understanding of estimation frameworks in econometric models includingParametric, semiparametric, and non parametric specificationsMaximum likelihood, M-, generalized method of moments, kernel, empirical likelihood, and extremum estimation.Formulate and estimate various nonlinear models.Identify and estimate autoregressive integrated moving average (ARIMA) models and obtain forecasts of economic variables.Demonstrate an understanding of dynamic (and static) structural econometric models including being able to discussReduced form, structural, and transfer function representationsThe identification problemIssues of estimation and statistical inferenceVector autoregression models.Complete a research project in which they formulate a research question, apply appropriate methods to answer the question, and prepare a paper summarizing their results.

**Note 1:** The 200-level field courses are intended as interim courses as a student moves from Econ 110 into the 300-level core courses. Once the student has completed Econ 380, he or she is strongly encouraged to take the 400-level rather than the 200-level field courses.

**Note 2:** Students should not take both a 200-level and a 400-level course with the same last two digits (e.g., Econ 275 and 475), although they are encouraged to take the 300- and 500-level theory classes (e.g., Econ 380 and 580).

*Hours include courses that may fulfill university core requirements.

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# Minor in Economics (18 hours*)

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## Program Requirements

1. Complete the following:

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

ECON 380 : Intermediate Price Theory 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: ECON 110 & MATH 112
DESCRIPTION: Producer, consumer, and equilibrium theories; mathematical techniques of unconstrained and constrained optimization introduced and applied extensively.

**Course Outcomes**

- Recognize the common building blocks of economic models (actors, choices, objectives, constraints)Solve economic models (constrained optimization, equilibrium conditions) Interpret the results (comparative statics)Explain concepts using graphs, prose, and mathematical analysis
- ConsumerThe axioms upon which standard microeconomic consumer theory is based.The implications of consumer demand including price and income responses in absolute and elasticity forms in both utility maximization and expenditure minimization problems.FirmsThe meaning and representation of technologyThe implications of cost and profit maximization for firmsMarketsIntegrate consumers and producers into a market in order to perform market analysis on equilibrium traded quantities and pricesUse market analysis to understand the effects of public policy
- Compare the impact on equilibrium behavior of altering the assumptions of canonical modelsContrast the results of different market imperfections

ECON 381 : Intermediate Macroeconomics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: ECON 110 & MATH 112; Math 112 can be concurrent enrollment.
DESCRIPTION: Intermediate macroeconomic theory, emphasizing income, unemployment, and price-level analysis.

**Course Outcomes**

- Demonstrate an understanding of the nature and construction of key macroeconomic data;Demonstrate an understanding of the connection between microeconomics and macroeconomics;Demonstrate an understanding of standard models ofeconomic growthlong-run macroeconomic behaviorshort-run macroeconomic behaviorUse these models to analyze the macroeconomic effects of monetary and fiscal policy changes as well as other economic shocks;Use these models to interpret historical and current events; andDemonstrate an understanding of issues regarding the value and limitations of monetary and fiscal policy.

2. Complete 9 additional hours in economics courses.

*Hours include courses that may fulfill university core requirements.

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# Economics (Econ)

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## Undergraduate Courses

### 100-Level Courses

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

ECON 199R : Academic Internship. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Faculty advisor's and department chair's prior written consent
NOTE: Not counted toward required major or minor hours.

**Course Outcomes**

- Apply economic analysis to real-world problems while working for an employer in the private, public, or non-profit sectors.

### 200-Level Courses

ECON 213R : Topics in Economic Analysis. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
PREREQUISITE: ECON 110

**Course Outcomes**

There are no course outcomes available

ECON 230 : Economic Development and Growth. (3:3:0)

WHEN TAUGHT: Spring
PREREQUISITE: ECON 110
DESCRIPTION: Problems and processes of economic growth and development, emphasizing less-developed nations.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Be familiar with the labor and consumption patterns among the world's poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 110 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property RightsGain a basic understanding of econometric methods used in testing economic theories in growth and development.Analyze the Solow Growth model and its implications for economic growth.Explain the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Discuss the potential role of government in economic development. Especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

ECON 253 : Money and Banking. (3:3:0)

PREREQUISITE: ECON 110

DESCRIPTION: Economic principles applied to monetary analysis and policy and the banking structure.

**Course Outcomes**

No outcomes are available at this time.

ECON 257 : International Trade and Finance. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 110

DESCRIPTION: Economic analysis of the mechanisms, problems, institutions, and policies of trade among countries. Financial and monetary arrangements that facilitate trade.

**Course Outcomes**

- Explain the key developments (models) in the intellectual history of the study of the patterns of trade in goods and services from Adam Smith through the present.Broadly discuss the evidence which supports or is contrary to the application of these developments to particular countries and goods and services.Analyze policy within the context of these models in order to gain insights about the patterns of trade.Analyze the gains from international trade with these key models and understand the political economy of trade (who gains and who loses from trade).Analyze the patterns, gains, and losses from international trade (migration) in financial and direct foreign investment and labor migration in the short and long runs.Analyze the reasons for international outsourcing portions of production and the gains and losses from doing so.Identify how trade in goods, services, and capital enter the international income accounts and the balance of payments.Discuss how exchange rates affect trade and how trade, fiscal, and monetary policy affects exchange rates.Explain the essential differences in fiscal and monetary effects for floating and fixed exchange rates.Broadly discuss the development of U.S. trade policy and the world institutions that support international trade and finance.

ECON 265 : Introduction to Health Economics. (3:3:0)

PREREQUISITE: ECON 110

DESCRIPTION: Applying economic principles to markets for health and health care.

**Course Outcomes**

No outcomes are available at this time.

ECON 274 : American Economic History. (3:3:0)

PREREQUISITE: ECON 110

DESCRIPTION: Impact on households, firms, and government of America's transformation from a rural, agricultural colony to a major industrial nation.

**Course Outcomes**

There are no course outcomes available

ECON 275 : Public Finance. (3:3:0)

PREREQUISITE: ECON 110

DESCRIPTION: Economics of decision making in the public sector; cost-benefit analysis and efficiency-equity issues of taxation and expenditure policies.

**Course Outcomes**

- Discuss the revenue, expenditure, and debt patterns of the U.S. Federal Government.Analyze how welfare impolications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property RightsInformation ProblemsDemonstart an understanding of the function and incentive effects of the major redistribution programs in the United States.Demonstrate an understanding of the function and incentive effects of the major redistribution programs in the United States.Discuss the efficiency and distributional effects of taxation.

ECON 280 : Introduction to Economic Analysis and Reasoning. (3:3:0)

PREREQUISITE: ECON 110 & MATH 112

DESCRIPTION: Maximizing self-interest model of behavior and the environment, and constraints within which business and household decisions are made.

NOTE: Not for majors or major credit.

**Course Outcomes**

No outcomes are available at this time.

### 300-Level Courses

ECON 378 : Statistics for Economists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ECON 110 & MATH 112

DESCRIPTION: Introduction to matrix algebra and statistics in preparation for regression analysis. Other topics include: probability, random variables, density and distribution functions, estimation, hypothesis testing.

**Course Outcomes**

- Demonstrate an understanding of the basic principles and terminology of probability, simple distribution theory,

statistics, and matrix algebra in preparation for a successful introduction to econometric methods in Economics 388. These principles and concepts include:The language, intuition, and notation necessary to understand basic approaches to probability, including basic combinatoric counting techniques, the additive and multiplicative laws of probability, conditional probability and independence, the law of total probability, and Bayes' rule, and to solve basic probability problems using these techniques.Random variables, both univariate and bivariate, including: distribution functions, density functions, conditional density, expected values, variance, covariance, and correlation coefficients. Specific examples of useful random variables.Statistics and sampling distributions.Law of Large Numbers and Central Limit Theorem. Parameter estimators and their derivation using the Method of Moments and Method of Maximum Likelihood.Statistical inference, including the idea of sampling error, sampling distributions, the construction of confidence intervals, and formal hypothesis tests.Basic matrix theory and the properties of matrix operations, including addition, subtraction, matrix products, matrix determinants, and matrix inversion.Use these statistical techniques to analyze data in diverse applications. Recognize the usefulness of statistics in a variety of career fields.

ECON 380 : Intermediate Price Theory 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 110 & MATH 112

DESCRIPTION: Producer, consumer, and equilibrium theories; mathematical techniques of unconstrained and constrained optimization introduced and applied extensively.

**Course Outcomes**

- Recognize the common building blocks of economic models (actors, choices, objectives, constraints)Solve economic models (constrained optimization, equilibrium conditions) Interpret the results (comparative statics)Explain concepts using graphs, prose, and mathematical analysis
- ConsumerThe axioms upon which standard microeconomic consumer theory is based.The implications of consumer demand including price and income responses in absolute and elasticity forms in both utility maximization and expenditure minimization problems.FirmsThe meaning and representation of technologyThe implications of cost and profit maximization for firmsMarketsIntegrate consumers and producers into a market in order to perform market analysis on equilibrium traded quantities and pricesUse market analysis to understand the effects of public policy
- Compare the impact on equilibrium behavior of altering the assumptions of canonical modelsContrast the results of different market imperfections

ECON 381 : Intermediate Macroeconomics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 110 & MATH 112; Math 112 can be concurrent enrollment.

DESCRIPTION: Intermediate macroeconomic theory, emphasizing income, unemployment, and price-level analysis.

**Course Outcomes**

- Demonstrate an understanding of the nature and construction of key macroeconomic data;Demonstrate an understanding of the connection between microeconomics and macroeconomics;Demonstrate an understanding of standard models ofeconomic growthlong-run macroeconomic behaviorshort-run macroeconomic behaviorUse these models to analyze the macroeconomic effects of monetary and fiscal policy changes as well as other economic shocks;Use these models to interpret historical and current events; andDemonstrate an understanding of issues regarding the value and limitations of monetary and fiscal policy.

ECON 382 : Intermediate Price Theory 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Welfare theory, imperfect information, imperfect competition, uncertainty, externalities, and public goods.

**Course Outcomes**

- Formally express and analyze economic modelsRecognize the common building blocks of economic models (actors, choices, objectives, constraints)Solve economic models (constrained optimization, equilibrium conditions)Interpret the results (comparative statics)Demonstrate an understanding of the core microeconomic models ofPerfect competition in general equilibrium (exchange and production)Monopoly and oligopolyExternalities and public goodsDecision-making under uncertainty (expected utility)Information problems (moral hazard, adverse selection)Adapt models to new scenariosCompare the impact on equilibrium behavior of altering the assumptions of canonical modelsContrast the results of different market imperfectionsEstablish a knowledge base that will be useful in economic field classesApply models in various real-world examples and identify the positive and normative conclusions in that environment

ECON 388 : Introduction to Econometrics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Mathematical and statistical techniques used in estimating, predicting, and testing hypotheses associated with quantifiable economic relationships.

**Course Outcomes**

- Demonstrate an understanding of the theoretical foundations of estimating and testing the basic regression model, employing tools from matrix algebra, calculus, and statistics.Perform basic regression and testing procedures using Stata. Complete an empirical research project that includes the following elements:.Formulate an econometric model.Collect and prepare relevant data for use in estimating the model.Use appropriate methods of estimation.Test relevant behavioral hypotheses.Understand and test the Gauss-Markov assumptions.Analyze and interpret the estimated model.Prepare a written report summarizing the research results.

**400-Level Courses**

ECON 413R : Topics in Economic Theory. (.5-5:ARR:ARR)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

**Course Outcomes**

- Learn in depth about an area of research in economics;Understand the research literature and in particular the contributions of the seminal articles;Analyze current journal articles and assess their contribution to the literature.

ECON 420 : Economics of Antitrust Law and Regulation. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

RECOMMENDED: Econ 382.

DESCRIPTION: Economic analysis of reasons for - and effects of - antitrust laws and regulation in selected areas, including utilities, telecommunications, transportation, energy, health, safety, and the environment.

**Course Outcomes**

- Demonstrate basic familiarity with the provisions of the principal Federal antitrust statutes, including the Sherman Act, the Clayton Act, the FTC Act, the Robinson-Patman Act, and the Hart-Scott-Rodino Act.Evaluate the likely effects of Section 1 of the Sherman Antitrust Act using monopoly, Cournot, Stackelberg, and Bertrand models of non-cooperative behavior among a small number of rival firms.Evaluate the likely effects of Section 2 of the Sherman Antitrust Act using simple analytical models of predation, exclusion, tying, bundling.Evaluate the likely effects of laws limiting price discrimination, including the Robinson-Patman Act, using simple analytical models of price discrimination.Evaluate the likely effects of Section 7 of the Clayton Act and the HRS Act using simple analytical models of mergers.Evaluate public regulation of monopolies as an alternative to relying on antitrust law using simple analytical models of rate-of-return regulation, nonlinear pricing and peak load pricing.Synthesize the relevant economics and legal literature, including Federal and Supreme Court rulings, via a substantial survey paper on a specific antitrust issue.

ECON 421 : Law and Economics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Common law allocative mechanisms (contract, tort, and property law) as alternatives to collective intervention when markets fail; consideration of economic logic of law.

**Course Outcomes**

- Demonstrate a basic familiarity with the Common Law.Analyze the incentives created by Common Law tort rules.Analyze the incentives created by Common Law contract rules.Distinguish between “property rules” and “liability rules” with regard to property rights.Evaluate the relative efficiency of specific tort rules.Evaluate the relative efficiency of specific contract rules.Analyze the incentives to litigate or settle under different rules about which party pays the costs of the litigation.Analyze the incentives created by criminal sanctions.Synthesize the relevant economics and legal literature, including Federal and Supreme Court rulings, via a substantial survey paper on a specific tort, contract or property issue.

ECON 431 : Economic Development. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 380; Econ 388 (or concurrent enrollment) or Pl Sc 328.

DESCRIPTION: Microeconomic analysis of the causes of income differences across countries.

**Course Outcomes**

- Discuss the labor and consumption patterns among the world’s poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property Rights.Discuss the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Explain the potential role of government in economic development, especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

ECON 432 : Economic Growth. (3:3:0)

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Econ 388.

DESCRIPTION: Theory and evidence relating to economic growth, including physical and human capital accumulation, population, technological change, institutions, and government.

**Course Outcomes**

- Adjust values in one currency to values in another currency controlling for purchasing power parity (PPP) deviations.Demonstrate an understanding of basic dynamic models of economic growth, including:The Solow modelThe Solow model with population growthThe Harrod-Domar modelAK modelsModels of product varietySchumpeterian models.Discuss growth and development accounting, and decompose observed differences across countries into efficiency and technology components.Discuss Lorenz curves and Gini coefficients.Discuss how growth interacts with:Population & demographyHuman capitalTechnical progressOpennessGovernmentInequalityCultureGeography, Climate & Resources.

ECON 440 : Natural Resources and Environmental Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 380 & ECON 388

RECOMMENDED: Econ 382.

DESCRIPTION: Economic theory applied to allocation of natural resources and environmental amenities. Issues relating to externalities, common property resources, public goods, allocation of depletable natural resources over time, economic factors of environmental polarization, and others.

**Course Outcomes**

- Utilize economic principles and models to address private and public policy issues related to allocating natural resources and environmental amenities.Demonstrate an active understanding of the following elements of economic theory as it relates to natural resource and environmental economics:Welfare economics and concepts of Pareto optimality, efficiency, and equityThe role of property, property rights, and the bundle of rights conceptThe role of externalities, common property resources, and public goodsConcepts and measures of economic value including non-market valuation.Demonstrate a basic knowledge of the role of markets and market failure with regards to the allocation of natural resources and environmental amenities.Gain a basic understanding of the effects and relative merits of public environmental policy efforts, including cap-and-trade schemes, Pigovian taxes, regulation, and public ownership and/or management.Become knowledgeable about and be able to use economic principles and non-market valuation techniques to address a variety of continuing and contemporary natural resource and environmental issues. These issues may include, but are not exclusive to:Population growth and the environmentGlobal warmingWilderness protection and related public lands issuesAir pollution and public healthIntergenerational allocation of soil, forest, and other depleteable natural resourcesImpacts of environmental features on property values.

ECON 450 : Financial Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 382 & ECON 388

DESCRIPTION: Theory of financial economics, emphasizing capital markets, investment decisions, choice, capital asset pricing model, futures and options markets, efficient markets, and capital structures.

**Course Outcomes**

- Understand and derive the fundamental relationship between risk and return that is implied by the Capital Asset Pricing Model (CAPM). Students should also know the assumptions necessary for this model to hold and be capable of identifying when potential investment projects satisfy these assumptions.Use linear regression to calculate an asset's historical sensitivity to broad market indices, its implied historical mispricing and an estimate of the asset's idiosyncratic risk. Students should also be capable of performing hypothesis testing on these values.Replicate traditional tests of the CAPM using currently available data.Be capable of collecting and analyzing asset market data to estimate the efficient frontier of risky assets using either Excel or another software package. Students should also be able to understand the efficient frontier mathematically and the reasons that it is useful.Calculate the present value of a stream of payments given an appropriate discount factor. Students should know how to use the CAPM to derive potential discount factors for payment streams.Calculate the yield to maturity of a stream of payments given an observed price. Students should also understand the relationship between the coupon rate of traditional bonds, their price and their yield to maturity.Calculate forward rates for all future periods given the observed yield curve.Understand the liquidity preference theory of bond markets as well as the expectations hypothesis. They should also be able to price complicated payment streams using observations of the yield curve and the expectations hypothesis.Calculate the duration and modified duration of a stream of payments and use these to calculate optimal hedges given an arbitrary position in the fixed income market.Calculate and understand bond convexity and its role (along with duration) in hedging.Price forward contracts by arbitrage given a risk-free rate.Price futures contracts whose payoffs are not correlated with the market reinvestment rate. Understand currently used hypotheses regarding futures contract pricing.Understand the structure of call and put options.Price put options given a call option (and vice versa) using the put-call parity relationship.Apply the Black-Scholes option pricing formula to price call and put options given beliefs about the volatility of the underlying asset.Apply the Black-Scholes option pricing formula to calculate the implied volatility of an asset given its price.

ECON 453 : Monetary Theory and Policy. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Concurrent enrollment in Econ 388.

DESCRIPTION: Macroeconomic aspects of money demand, money supply, the monetary transmission mechanism, central bank policy, and other current issues.

**Course Outcomes**

- Summarize the broad empirical evidence regarding the long-run and short-run relationships between money and inflation and money and output.Demonstrate a fundamental knowledge of the institutional and regulatory structure of the U.S. financial system.Explain the macroeconomic role of central banks with special emphasis on the role of the Federal Reserve System in the U.S. economy.Demonstrate an active understanding of the following elements of modern monetary theory:The role of expectations, especially rational expectationsSolve simple rational expectations modelsAnalyze the rudimentary new Keynesian dynamic stochastic general equilibrium modelsTheories of the transmission mechanism of monetary policyIdentify the current issues in the conduct of monetary policy.Demonstrate a general understanding of the causes and consequences of financial crises with a focus on the financial crisis of 2007-2009.Identify and evaluate the principal issues regarding financial regulation.

ECON 458 : International Trade Theory and Applications. (3:3:0)

PREREQUISITE: ECON 380

DESCRIPTION: Microeconomic analysis of why nations trade, who wins and loses from trade, and the costs and benefits of various trade policies.

**Course Outcomes**

- Discuss why all kinds of nations—rich and poor, large and small—gain from international trade.Demonstrate an understanding of comparative advantage and how it creates gains from trade.Analyze the Ricardian model of trade and thereby learn how different technologies in different nations create comparative advantage and gains from trade.Analyze the Heckscher-Ohlin model of trade and thereby learn: 1) How different factor endowments in different nations create comparative advantage and gains from trade, and 2) Why some people lose from

trade even though nations as a whole gain from trade.Discuss economies of scale and how they can generate gains from trade.Discuss how trade generates extra gains by reducing market power.Demonstrate an understanding of the main causes and effects of direct foreign investment.Demonstrate an understanding of the main causes and effects of international migration.Discuss how various trade policies affect national welfare and why such policies help some while hurting others.Discuss the politics of trade.

ECON 459 : International Monetary Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 381 & ECON 388; or ECON 381 & PL SC 328

DESCRIPTION: Monetary and macroeconomic aspects of international relations dealing primarily with short-run balance-of-payments disequilibrium and adjustments.

**Course Outcomes**

- Demonstrate a familiarity with the key issues in two broad fields:International Finance, particularly exchange rate behavior, Open Economy Macroeconomics.Discuss the nature of the foreign exchange market, including:It's market organizationThe role of vehicle currenciesThe instruments tradedThe role of arbitrage.Understand and use models of exchange rate behavior:Covered and uncovered interest rate parityLong-run monetary and equilibrium models.Understand financial portfolio theory to the extent that it is useful in explaining exchange rate behavior, including:The determination of risk premiaHow it may explain the "forward bias" puzzle.Discuss the history of the international financial system since the late 1700's.Discuss the international aspects of the national income and product accounts, along with the balance of payments accounts.Apply simple dynamic models of consumption smoothing to the current account.

ECON 461 : Economics of Education. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: ECON 388

DESCRIPTION: Evaluation of education policy from an economic perspective, focusing on the benefits and costs of policy outcomes. Introduction to quantitative methods used by empirical education researchers.

NOTE: Concurrent enrollment accepted for Econ 388; see professor.

**Course Outcomes**

- Evaluate education policy from an economics perspectiveIncorporate costs and benefits in education policy analysisIdentify unintended consequences associated with alternative policy optionsBase analysis on research literature findings.Demonstrate an understanding of the theoretical underpinnings of the fieldEducation productionHuman Capital formationRole of incentives.Speak fluently and intelligently about current issues in education policy, includingUS and International policyTeacher labor marketsK-12 education policyHigher education.Evaluate the economics of education research literatureKnow the seminal papers in the field, and how they shaped the disciplineKnow the current "cutting edge" papers and how they are pushing the frontiers of knowledge.Demonstrate an understanding of the quantitative methods and research tools that empirical education economists use to conduct research, includingCross sectional and panel data modelsMethods to account for selection biasThe importance of obtaining causal effects.

ECON 463 : Economics of the Labor Market. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 388

DESCRIPTION: Economic analysis and institutional background of labor markets in developed countries, particularly the United States. Typical topics include labor supply and demand analysis, determination of wages and employment, investment in education, wage differences by gender and race, immigration, and unions.

**Course Outcomes**

- Demonstrate an understanding of standard optimization models to set up and solve the labor supply problem facing the individual and the labor demand problem facing the firm and show the important comparative statics results of both models. Students will understand how these models produce the neoclassical market framework and be able to solve problems using that framework.Solve and use other microeconomic optimizing models of agent behavior, such as models of job search, human capital choices, labor supply, and demand in risky occupations, union wage setting, and behavior under alternative compensation schemes.Demonstrate an understanding of the basic institutional structure of the U.S. labor market, including broad trends in labor supply behavior and wages and the institutional details and likely labor market effects of major government programs.Read and discuss high quality empirical research on labor economic topics and explain how these results interrelate to the predictions of formal economic models.Complete an empirical project demonstrating competence in basic econometric techniques.Identify some of the ways in which government policy choices affect labor market outcomes

ECON 465 : Health Economics. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: ECON 382 & ECON 388

DESCRIPTION: Economic models of health-care markets, including the supply and demand for health and health care, insurance, market imperfections, public-sector involvement, and regulation.

NOTE: Concurrent enrollment accepted for Econ 388; see professor.

**Course Outcomes**

- Read, understand, and discuss the academic literature in health economics. A daily quiz will be administered to test understanding of the reading.Participate in linking academic research to contemporary policy discussions through class discussion and preparation of occasional class presentations.Complete a major research project in which they either 1) summarize and evaluate the available evidence on a particular policy question, or 2) conduct an original research project where they identify a question, assemble a dataset, thoughtfully apply appropriate empirical methods, and clearly describe their methodology, assumptions, and findings.

ECON 468 : Urban Economics. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380; Econ 388 or concurrent enrollment.

DESCRIPTION: Economic models relating to spatial location of economic activities and development of cities. Application of economic theory to problems and policies associated with housing, urban transportation, congestion, local government finance, and other urban problems.

**Course Outcomes**

- Demonstrate an understanding of the role of transportation costs in determining land uses and land prices.Demonstrate a familiarity with the monocentric city model of land use and its use in understanding the impact of local land use and transportation policies.Apply the basic models of housing demand and the role of filtering in determining the stock of housing in a city.Demonstrate an understanding of the economic concepts of external costs and how these play a role in air pollution and highway congestion. Apply the concept of Pigouvian pricing as a solution to externality problems in the case of highway congestion.Discuss the role of time costs in consumers' choice of transportation mode, and why collection and distribution parts of urban trips are so important in determining the proper design of mass transit systems. Demonstrate an understanding of the role of economies of scale in efficient mass transit design.Use the basic economic model of "rational" crime to predict the impact of various anti-crime policies.

ECON 474 : Topics in Economic History. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ECON 380; Econ 388 or concurrent enrollment.

**Course Outcomes**

There are no course outcomes available

ECON 475 : Public Economics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Evaluation of the role of government from an economic perspective. Typical topics include taxation, externalities, public goods, corruption, public choice, Social Security, Medicare and Medicaid, education, income redistribution, and crime.

**Course Outcomes**

- Discuss the revenue, expenditure, and debt patterns of the U.S federal government.Analyze how modifying the neoclassical assumptions learned in 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property RightsInformation ProblemsHyperbolic Discounting or Loss AversionDemonstrate an understanding of the function and incentive effects of the major redistribution programs in the United States.Discuss the efficiency and distributional effects of taxation and the theory of optimal taxation for both income and commodity taxes.Read papers in the public economics literature andProvide written and oral critiques of the papersApply modern tools of econometric analysis in discussing the papers

ECON 476 : Industrial Organization. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ECON 378; or STAT 201 & MATH 313

DESCRIPTION: Industrial organization focuses on firm behavior in imperfectly competitive markets. Typical topics include the acquisition and use of market power by firms, strategic interactions among firms, and an introduction to noncooperative game theory.

**Course Outcomes**

- Analyze basic models of competition among firms producing homogeneous goods: competition, monopoly, Cournot oligopoly, Bertrand oligopoly, Stackelberg oligopoly.Apply basic game theory including solution concepts for normal and extensive form games.Demonstrate an understanding of extensions to these basic model, including supergames, models of product differentiation, and games of incomplete information.Apply these models to key issues in theoretical and applied industrial organization: mergers, collusion, advertising, R&D competition, antitrust policy, entry accommodation and entry deterrence, and business strategy.Discuss the role of government in the market in determining antitrust policy, patent policy, and regulation.Read, synthesize, and write short review papers on applied or empirical papers from the industrial organization literature.

ECON 477 : Political Economics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 382

DESCRIPTION: Economic models of government structure and function: electoral competition, voter participation and cycles, preference aggregation, information aggregation, externalities and public goods, electoral structure, political agency, influence, and bargaining.

**Course Outcomes**

There are no course outcomes available

ECON 478 : Game Theory and Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Application of game theory to study strategic interaction between individuals and organizations. Applications include imperfect competition, insurance markets, and bargaining.

**Course Outcomes**

- Demonstrate an understanding of the game theoretic method of analysis.Define a Nash Equilibrium and discuss refinements of the Nash Equilibrium Concept.Think abstractly and rigorously about strategic interaction.

ECON 482 : Welfare Economics. (3:3.0:0.0)

PREREQUISITE: ECON 378 & ECON 382; or STAT 201 & MATH 313 & ECON 382

DESCRIPTION: General equilibrium theorems and considerations that must guide applied economic work and provide quantitative information on the effects of alternative policy measures.

**Course Outcomes**

No outcomes are available at this time.

ECON 486 : Mathematical Economics. (3:3:0)

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Further development of optimization and comparative statics. Differential equations and dynamic analysis.

**Course Outcomes**

No outcomes are available at this time.

ECON 488 : Applied Econometrics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 388

DESCRIPTION: Application of econometric methods, introduction to research design, and evaluation of empirical research. Special attention given to linking economic theory and econometrics, and causal inference.

**Course Outcomes**

- Demonstrate an understanding of the assumptions underlying commonly used empirical approaches for the identification of causal effects, including:Ordinary least squaresMatchingInterrupted time seriesDifference in differencesFixed effectsInstrumental variablesDemonstrate an understanding of the interplay between economic theory and empirical work.Read and understand contemporary academic literature in economics. Students will provide written evaluations of selected academic papers, including a clear description and critique of the empirical methods used.Apply modern empirical methods using data analysis exercises.Complete a research project in which they identify a question, assemble a dataset, thoughtfully apply appropriate empirical methods, and clearly describe their methodology, assumptions, and findings.

ECON 490 : Senior Paper. (1:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- Demonstrate competency of research skills by writing an original, independent research paper that makes a contribution to the literature in an area of economics.

ECON 498R : Readings in Economics. (.5-2:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

NOTE: P/F grade only; maximum of 2 credit hours; 3 hours of reading per week required for each credit hour taken. Not counted toward required major hours.

**Course Outcomes**

- Develop a rigorous understanding of a specific area of economics through intensive study of the research literature.

## 500-Level Graduate Courses (available to advanced undergraduates)

ECON 580 : Advanced Price Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 382; or STAT 201 & MATH 313 & ECON 382

DESCRIPTION: Modern theories of consumers, producers, and competitive equilibria.

**Course Outcomes**

- Use the tools of constrained optimization in analyzing comparative statics results arising in the study of economic phenomena.

ECON 581 : Advanced Macroeconomics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 381 & ECON 382 & ECON 388

DESCRIPTION: Theory of determining national income, employment, inflation, and interest rates. Issues of economic fluctuations, economic growth, and monetary and fiscal policy.

**Course Outcomes**

- Acquire a toolset for analyzing modern macroeconomic models.Demonstrate an understanding of basic dynamic stochastic general equilibrium (DSGE) macroeconomic modeling, including:How to set up a model.How to render it stationary, if necessary.How to solve for the model's steady state both analytically and numerically.How to solve for the model's dynamics using various numerical techniques.How to calibrate the model.How to simulate the model economy.How to generate impulse response functions.How to generate data moments.How to estimate model parameters using simulated method of momentsUse MATLAB and Dynare, software packages widely used in macroeconomic model simulation.Demonstrate an understanding of other macroeconomic models, such as:Overlapping generations (OLG) models.Continuous-time Ramsey-style models.Estimate and interpret structural vector autoregression (SVAR) empirical models.Demonstrate an understanding of current issues being addressed in macroeconomics research.Be prepared to perform well in the macroeconomics classes in the top Ph.D. programs in economics.

ECON 582 : Topics in Mathematical Economics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 580

DESCRIPTION: Advanced topics such as risk and uncertainty, game theory, and capital theory.

**Course Outcomes**

- Economics 582 is a topics course with the goal of showing students the frontier. By its nature, the course exhibits different learning objectives each time it is taught.

ECON 586 : Advanced Mathematics for Economists. (3:3:0)

PREREQUISITE: ECON 380 & MATH 314

DESCRIPTION: Advanced mathematical methods that have proved useful in economic modeling.

**Course Outcomes**

No outcomes are available at this time.

ECON 588 : Advanced Econometrics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 388

DESCRIPTION: Theory and practice of formulating, estimating, and analyzing economic models.

**Course Outcomes**

- Demonstrate a familiarity with the properties and applications of several families of statistical distributions to econometric problems.Demonstrate an understanding of variations and generalizations of the basic regression model includingGeneralized least squaresGeneralized autoregressive conditional heteroskedasticity modelsInstrumental variablesSeemingly unrelated regression modelsPanel dataHausman specification tests.Demonstrate an understanding of estimation frameworks in econometric models includingParametric, semiparametric, and non parametric specificationsMaximum likelihood, M-, generalized method of moments, kernel, empirical likelihood, and extremum estimation.Formulate and estimate various nonlinear models.Identify and estimate autoregressive integrated moving average (ARIMA) models and obtain forecasts of economic variables.Demonstrate an understanding of dynamic (and static) structural econometric models including being able to discussReduced form, structural, and transfer function representationsThe identification problemIssues of estimation and statistical inferenceVector autoregression models.Complete a research project in which they formulate a research question, apply appropriate methods to answer the question, and prepare a paper summarizing their results.

ECON 599R : Academic Internship: Supervised Management and Training. (.5-6:0:ARR)

PREREQUISITE: Course work pertinent to proposed experience.

**Course Outcomes**

No outcomes are available at this time.

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Majors

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Course Information

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Faculty

# Economics Faculty

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## Professors

Butler, Richard John

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1972
PhD, University of Chicago, 1979

Eide, Eric Raymond

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1988
MS, Brigham Young University, 1989
PhD, University of California, Santa Barbara, 1993

Kearl, J. R.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BA, Utah State University, 1971
PhD, Massachusetts Institute of Technology, 1975
PD, Harvard University, 1978

Lambson, Val Eugene

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1979
MA, University of Rochester, 1982
PhD, University of Rochester, 1983

Lefgren, Lars John

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1996
PhD, University of Chicago, 2001

McDonald, James B.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1964
MS, Utah State University, 1966
PhD, Purdue University, 1970

Pope, Rulon Dean

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
PhD, University of California, Berkeley, 1976

Pope, Clive Arden

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
MS, Iowa State University, 1981
PhD, Iowa State University, 1981

Ransom, Michael R
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MA, Princeton University, 1980
PhD, Princeton University, 1983

Showalter, Mark H.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1986
PhD, Massachusetts Institute of Technology, 1991

Spencer, David Eugene
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1971
MS, Texas A&M University, 1973
PhD, Texas A&M University, 1974

## Associate Professors

Bradford, Scott C.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
MPA, Princeton University, 1991
PhD, Harvard University, 1998

Cardon, James Harold
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, Princeton University, 1995
PhD, Princeton University, 1996

Phillips, Kerk Layne
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1986
MA, University of Rochester, 1990
PhD, University of Rochester, 1991

Platt, Brennan
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Associate Professor
**DEGREES:** BS, Arizona State University, 2001
MA, University of Minnesota, 2005
PhD, University of Minnesota, 2006

Pope, Jaren C.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 2001
PhD, North Carolina State University, 2006

Price, Joseph

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 2003
PhD, Cornell University, 2007

Sims, David

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
PhD, Massachusetts Institute of Technology, 2004

## Assistant Professors

Condie, Scott

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
PhD, Cornell University, 2007

Evans, Richard W.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, Brigham Young University, 2001
MS, The University of Texas, Austin, 2005
PhD, The University of Texas, Austin, 2008

Frandsen, Brigham R.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2004
PhD, Massachusetts Institute of Technology, 2010

McMurray, Joseph C.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Economics
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2004
PhD, University of Rochester, 2010

**Family, Home, and Social Sciences Home**

**FHSS Minor and Courses Home**

**Minor**

- Minor in Civic Engagement Leadership

**Course Information**

- FHSS Courses

# Family, Home, and Social Sciences Minor and Courses

## Undergraduate Programs and Degrees

**Minor in Civic Engagement Leadership**

For help or information on the undergraduate program, please see the Family, Home, and Social Sciences Advisement Center.

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**Minor**

- Minor in Civic Engagement Leadership

**Course Information**

- FHSS Courses

# Minor in Civic Engagement Leadership (15 hours)

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## The Discipline

The Civic Engagement minor is designed to provide students with knowledge and competencies that will prepare them to compete more effectively for, and work more successfully in, jobs in non-profit organizations, interest groups, education, or government. The minor also helps students who do not have career ambitions in any of these areas, but desire to possess the information and skills that will help them make a difference in their communities.

## Program Requirements

1. Complete the following:

FHSS 200 : Introduction to Civic Engagement Leadership. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to community involvement, public service, and leadership through lectures from external speakers and discussion of civic engagement.

**Course Outcomes**

There are no course outcomes available

FHSS 400 : Civic Engagement Leadership. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: FHSS 200 or instructor's consent.

DESCRIPTION: Promote leadership in civic engagement through discussion of community involvement and public service, lectures from external speakers, and development of a hands-on project involving some form of public service.

**Course Outcomes**

There are no course outcomes available

2. Complete 12 credit hours of upper-division courses from the following (one course must be outside your major):

GEOG 310 : Introduction to Urban and Regional Planning. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to the profession and practice of urban and regional planning.

**Course Outcomes**

There are no course outcomes available

GEOG 341 : Political Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Spatial analysis of global politics; focus on geopolitics, territory and conflict, nationalism, and the politics of resources.

**Course Outcomes**

There are no course outcomes available

GEOG 399R : Academic Internship. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: GEOG 100

DESCRIPTION: On-the-job experience.

NOTE: 3 hours required. No more than 3 hours total in cooperative education may be counted in major.

**Course Outcomes**

- Complete a supervised internship in an employment setting or agency related to geography.Link academic learning with these professional experiences.Complete a minimum of 45 hands-on hours per credit.

GEOG 410 : Urban Planning Methods. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 310.

DESCRIPTION: Applications of methods and techniques commonly used in the urban planning process, emphasizing data collection and analysis, fieldwork, and writing skills.

**Course Outcomes**

There are no course outcomes available

GEOG 510 : Professional Planning Studio. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 410.

DESCRIPTION: Assessing problem and issue identification, goal formulation, data gathering, synthesis and summary, plan concept and format, and public policy adoption while writing a general plan for a community in Utah.

**Course Outcomes**

- Use problem solving skills to select, diagnose and solve relevant aspects of a complex planning problem including attention to the needs and interests of diverse stakeholders and the guidance provided by conceptual and empirical expertise. (PAB 4.2.3a)Use written, oral and graphic skills to compose clear, accurate and compelling text, images and maps in documents and oral presentations. (PAB 4.2.3c)Collaborate with peers in joint learning activities organized to produce a plan or planning product for a relevant professional clientele, to mediate disagreements, to interpret contested purposes, and to negotiate between diverse and competing interests. (PAB 4.2.3e)Use ideas about the creation of plans, programs or projects to prepare an individually crafted product for a specific planning purpose and audience; demonstrating skill and judgment preparing a planning project that meets minimum professional standards. (PAB 4.2.3f)Use techniques for the adoption and implementation of plans including relevant regulations, incentives, techniques and technologies. (PAB 4.2.3h)Work with diverse communities, especially communities consisting of disadvantaged groups and persons and racial and ethnic minorities, or immigrant communities. (PAB 4.2.3i)

POLI 311 : State and Local Government and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Poli 110 or Poli 210.

DESCRIPTION: Relation of state and national governments, forms of state governments and politics, types of municipal governments and their operation.

**Course Outcomes**

There are no course outcomes available

POLI 316 : American Political Parties. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Electoral and policy-making roles of American political parties today and their future in American politics.

**Course Outcomes**

There are no course outcomes available

POLI 317 : Public Opinion and Voting Behavior. (3-4:3:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: POLI 200

RECOMMENDED: Poli 328.

DESCRIPTION: Relationship between attitudes, opinion, and voting behavior in American politics and institutions.

**Course Outcomes**

There are no course outcomes available

POLI 318 : Campaigns and Elections. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Analyzes electoral process in the United States, including history, significance in governance, campaign strategy, finance, media role, etc.

**Course Outcomes**

There are no course outcomes available

POLI 391 : Advanced Seminar on Current Issues. (3:3:0)

PREREQUISITE: Acceptance to Washington Seminar.

DESCRIPTION: Briefings and lectures from government officials and agencies, as well as directed readings on current issues.

NOTE: For students interning in Washington, D.C.

**Course Outcomes**

There are no course outcomes available

POLI 397 : Utah Legislative Politics. (2:2:0)

DESCRIPTION: Preparatory seminar for students in the Utah State Legislature internship. Utah history and political structure. Relations between legislature and other branches of government. Challenges of legislative service.

**Course Outcomes**

There are no course outcomes available

POLI 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Acceptance into program.

DESCRIPTION: Work-study on the international, national, state, and local level.

**Course Outcomes**

There are no course outcomes available

: Washington DC Internship.

**Course Outcomes**

: International Internship.

**Course Outcomes**

: Congressional Internship.

**Course Outcomes**

: State Government Internship.

**Course Outcomes**

: City Government Intership.

**Course Outcomes**

: Pre-Law Internship.

**Course Outcomes**

: Utah Legislature Internship.

**Course Outcomes**

: Campaign Internship.

**Course Outcomes**

PSYCH 399R : Academic Internship. (.5-9:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310

NOTE: A maximum of 9 credit hours may be taken.

**Course Outcomes**

- The first and primary objective is the placement of each student in a professionally enhancing work setting. We intend to continuously improve the quality of internship experiences being offered through a process of continuous assessment of all internships, negotiations with agencies, and internship advisement and counseling of students at the beginning of the contractual process.Measurement: The Internship Profiling Questionnaire (IPQ) has been developed specifically to be used in the on-going process of comparative assessment and improvement of all internship offerings. They are evaluated both by the student participants and also by the internship class instructors.
- Students will critically reflect on the connections between their work experience and the content of psychology and articulate these work-related insights.Measurement:Short essays essay examinations, and applications book review.
- Students will develop professional skills and attitudes through readings on professional etiquette, in-class presentations to classmates, and poster presentation at open house.Measurement:Graded writing assignments, powerpoint presentation, and poster creation and presentation.

PSYCH 420R : Senior Practicum: Community Projects. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Capstone experience in community-based service learning related to practice of psychology. Structured record of student's experience required.

**Course Outcomes**

- Students will demonstrate knowledge of the application of the principles of psychology within a community setting.Measurement: Application of psychological principles in a community setting will be assessed through a mentor evaluation.

SFL 399R : Academic Internship. (1-9:Arr.:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Internship program coordinator's consent.

DESCRIPTION: Supervised professional experiences linking academic learning with experience in the field.

NOTE: Forty-five internship hours required per credit hour.

**Course Outcomes**

- Complete a supervised internship in an employment setting or agency related to human development, marriage, home, or family.Link academic learning with these professional experiences.Complete a minimum of 45 hands-on hours per credit.

SFL 489 : The Family and Public Policy. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Investigation of public policy processes related to legislation and laws affecting home economics/home and family life. Funding and grantsmanship.

**Course Outcomes**

- Demonstrate an understanding of why we are called to be aware and involved as “responsible citizens” (and “officers of government”) to “strengthen the family as the fundamental unit of society.”
- Demonstrate an in depth understanding of how law and public policy strive—and struggle—to help couples form and sustain healthy marriages and reduce divorce.
- Demonstrate a broader, general understanding of other family related policy and legislation designed to strengthen family life and children’s development.
- Utilize experience gained in the class in preparing to influence family policy bypreparing a legislative testimony or similar document on a chosen topic.
- Become involved in an effort to promote (or oppose) some legal or public policy initiative in an attempt to “strengthen the family as the fundamental unit of society”.

SFL 498 : Family Life Education: Integrating Theory, Research, and Practice. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Senior standing; instructor's consent.

DESCRIPTION: Integrating theory, research, and practice. Developing competencies to design, implement, and evaluate family flife education programs. Preparing to work preventively with couples, parents, and families in areas such as marriage preparation, marriage enhancement, and parenting.

**Course Outcomes**

- Develop and articulate a personal philosophy of family life education.
- Critically evaluate the quality of several examples of family life education programs.
- Design a family life education program using scholarly literature and best practices.
- Be able to apply a framework for the development of family life education programs.
- Be able to utilize a variety of approaches to evaluating family life education programs.
- Learn principles and practices for teaching about family life in a variety of traditional and contemporary venues, including workshop and self-directed approaches.
- Practice workshop teaching and receive peer, clientele, and instructor feedback.
- Be able to utilize principles and practices for reaching diverse audiences.
- Be able to utilize principles and strategies for multiplying their reach through collaborative partnerships and social marketing.

SOC 399R : Academic Internship. (1-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Consent of instructor required.

RECOMMENDED: Soc 307 and related 300-level courses.

DESCRIPTION: Individualized work or volunteer experience in either a research setting or some kind of field placement with an organization.

**Course Outcomes**

- Establish a lifelong practice of making connections and creating a network of people that will help the student develop professionally
- Develop a professional sense of the work that will help the students identify personal learning outcomes for the semester
- Learn about what sociologists call "interactive service work" or jobs that require working with individuals
- Produce a professional analysis of the organization where the student works
- Complete a research project that addresses some need in the organization for which the student is working

SOC 455R : Senior Capstone Part 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: SOC 307 & SOC 310

DESCRIPTION: This is the first semester of a two-semester capstone with advanced substantive material and the integration and application of concepts and skills from earlier courses to produce a professional research paper.

NOTE: Fulfills GE Advanced Writing and Oral Communication credit if both Soc 455R and Soc 456R are completed.

**Course Outcomes**

There are no course outcomes available

SOC 528 : Sociology of Rural Communities. (3:3:0)

PREREQUISITE: Soc 311, 370, or instructor's consent.

DESCRIPTION: Review and critique of major theoretical and methodological approaches to the study of community, with a focus on rural communities.

**Course Outcomes**

There are no course outcomes available

SOC 598R : Pro-Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Current developments in sociology including research, proposals, professional meetings, teaching, and finding a job.

**Course Outcomes**

There are no course outcomes available

SOC W 200 : Introduction to Social Work. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Social welfare as a social institution; social work as a profession.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

SOC W 331 : Social Welfare Policy. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: SOC W 200

DESCRIPTION: Social legislation processes; analysis of social policy and the knowledge available to social workers for involvement in social planning and policy change.

**Course Outcomes**

There are no course outcomes available

SOC W 360 : Social Work Practice with Individuals. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: SOC W 200

DESCRIPTION: Methods of social work practice within a generalist framework; interventions at the individual, family, group, organization, and community levels.

**Course Outcomes**

There are no course outcomes available

**Departments/Schools/Centers/Programs**

- American Heritage Course
- Anthropology
- Economics
- FHSS minor and courses
- School of Family Life
- Geography
- History
- Political Science
- Psychology
- School of Social Work
- Sociology
- Women's Studies Program

# Family, Home, and Social Sciences College (FHSS) Courses

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 200-Level Courses

FHSS 200 : Introduction to Civic Engagement Leadership. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to community involvement, public service, and leadership through lectures from external speakers and discussion of civic engagement.

**Course Outcomes**

There are no course outcomes available

### 400-Level Courses

FHSS 400 : Civic Engagement Leadership. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: FHSS 200 or instructor's consent.

DESCRIPTION: Promote leadership in civic engagement through discussion of community involvement and public service, lectures from external speakers, and development of a hands-on project involving some form of public service.

**Course Outcomes**

There are no course outcomes available

**Back to Family, Home, and Social Sciences College Home**

**College of Family, Home, and Social Sciences Home**

**School of Family Life Home**

**Majors**

- BS in Family and Consumer Sciences Education

BS in Family Life:
Emphases:
- Family Studies Emphasis
- Human Development Emphasis

**Minors**

- Family Life
- Gerontology

**Certificate**

- Gerontology

**Course Information**

- School of Family Life Courses

**Faculty**

# School of Family Life

Dean M. Busby, Director
2086-B JFSB, (801) 422-8529

Clyde Robinson, Associate Director, Undergraduate Curriculum
2086-C JFSB, (801) 422-4065

College of Family, Home, and Social Sciences Advisement Center
151 SWKT, (801) 422-3541

The School of Family Life is committed to enhancing the quality of life of individuals and families within homes and communities. Accordingly, the mission of the school is to:

- Provide instruction that fosters commitment to the principles in *The Family: A Proclamation to the World.*
- Conduct research that contributes to the understanding and enhancement of human development, temporal well-being in the home, marriage and family relationships.
- Help students develop the attitudes, beliefs, behaviors, and skills that characterize persons of positive influence—in their own marriage and families, in their professions, in church and public service, and in other personal relationships.

## Admission to Degree Program

All degree programs in the School of Family Life are open enrollment.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Family and Consumer Sciences Education** (Program Outcomes)
**BS in Family Life**
**Family Studies Emphasis** (Program Outcomes)
**Human Development Emphasis** (Program Outcomes)

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Marriage, Family, and Human Development
MS in Marriage and Family Therapy
PhD in Marriage, Family, and Human Development
PhD in Marriage and Family Therapy

For more information see the BYU 2014–2015 Graduate Catalog.

**College of Family, Home, and Social Sciences Home**

**School of Family Life Home**

**Majors**

- BS in Family and Consumer Sciences Education

BS in Family Life:
Emphases:
- Family Studies Emphasis
- Human Development Emphasis

**Minors**

- Family Life
- Gerontology

**Certificate**

- Gerontology

**Course Information**

- School of Family Life Courses

**Faculty**

# BS in Family and Consumer Sciences Education (76 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## The Discipline

Academic preparation in this interdisciplinary education program includes study in the areas of early childhood development, marriage and family relationships, parenting education, housing and interiors, clothing and textiles, and nutrition and wellness.

With the development of a knowledge base in these critical areas, graduates will be prepared to provide valuable content to secondary education students as they confront life's challenges. These students can become a resource to their own families empowering them to become healthy community contributors.

This program interfaces with the McKay School of Education and includes professional education courses.

## Careers

The family and consumer sciences education program prepares students to be licensed by the State of Utah for teaching in the secondary schools. This teaching license can be transferred to other states upon meeting individual state requirements. Students may also find employment in business and Cooperative Extension.

## Program Requirements | View MAP | View Program Outcomes

1. The School of Family Life requires a minimum of 18 hours of major credit to be taken in residency at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
2. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
3. Complete the following human development course:

   SFL 210 : Human Development. (3:3:0)

   OFFERED: Independent Study also.
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: Growth and development of the child from conception through adolescence; influences of family, peers, and schools.
   NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

   **Course Outcomes**
   - Comprehend the dynamic and complex interaction among the domains of human development (e.g., biological, cognitive, emotional, social, etc.)Critically apply information learned in class to your own life.Provide knowledge and skills that will benefit the lives of the children for whom you will have stewardship in this life.Acquire a broad base of knowledge of human development.Be conversant with the major human development theories as well as their strengths and weaknesses.
   - Improve your writing and critical thinking skills.
   - Understand the research methodology utilized in the study of human development.

4. Complete the following marriage, family relationships, and parenting courses:

   SFL 240 : Parenting and Child Guidance. (3:3:0)

   WHEN TAUGHT: Fall; Winter; Spring
   DESCRIPTION: Theories and skills related to quality parent-child relationships.

   **Course Outcomes**
   - Critically examine theories of overall parenting styles and the impact of these styles upon optimal parenting.Critically examine parenting practices within the overall parenting styles and the impact of these practices upon optimal parenting.Identify effective parenting practices in the context of various life stages.Understand parenting principles that may heighten professional and/or parental potential.
   - Synthesize in writing an analysis of parenting styles and practices of your family of origin and how you may modify those styles and practices with the principles obtained in this class.Examine and write in depth a specific area of interest related to parenting styles and practices.

**And** complete one of the following courses:

**Either**

SFL 160 : Introduction to Family Processes. (3:3:0)

OFFERED: Honors also; Independent Study also.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Ways of strengthening family life by understanding such family processes as generations, emotions, communication, and rituals.

**Course Outcomes**

- Critically examine the main theoretical frameworks used in the family sciences.Demonstrate understanding of basic terms, concepts, and ideas used to describe family systems.Apply family systems ideas and concepts to your own family (past and future) in order to learn how they might improve your own family well-being.
- Identify and discuss how researchers uniquely study families and family systems.

**Or**

SFL 223 : Preparation for Marriage. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Factors related to quality relationships, mate selection, and the transition into marriage.

**Course Outcomes**

- Understand the Lord's "divine design" (Proc. ¶ 7) for marriage relationships (e.g., the nature of the marriage covenant, equal partnership, stewardships of husbands & wives, etc).Increase awareness of marriage as a social institution.Become sensitized to the modern threats to marriage.Increase understanding of the LDS doctrines of marriage, including prophetic counsel on dating, courtship, intimacy, weddings, finances, divorce, and other aspects of the marital stewardship.Increase awareness of the factors that social science research has shown to contribute to the formation and maintenance of healthy and stable marriages.Enhance spiritual awareness and academic skills in order to help them weigh scholarly and contemporary ideas about marriage relationships and use both faith and scholarship.Critically explicate your awareness of marriage as a social institution.Identify and be sensitive to modern cultural threats to marriage.Be able to grasp and understand the LDS doctrines of marriage, including prophetic counsel on dating, courtship, intimacy, weddings, finances, divorce, and other aspects of the marital stewardship.Increase your awareness of the factors that social science research has shown to contribute to the formation and maintenance of healthy and stable marriages.Enhance your spiritual awareness and academic skills in order to help you critically weigh scholarly and contemporary ideas about marriage relationships and use both faith and scholarship to "hold fast to that which is good" (1Thess. 5:21).

5. Complete the following early childhood learning experiences practice with lab:

SFL 221 : Foundations of Developmentally Appropriate Practices in Programs for Young Children. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 210

DESCRIPTION: Historical, philosophical, organizational, and curricular issues related to developmentally appropriate practices in programs for young children.

NOTE: Due to enrollment constraints, SFL 221 may not be retaken to improve a grade unless approved by the Child and Family Studies Laboratory Steering Committee.

**Course Outcomes**

- Obtain an historical perspective of early childhood and a philosophical foundation in developmentally appropriate practices.Become conversant with the developmentally appropriate practice standards published by NAEYC (National Association for the Education of Young Children) and understand how they apply to making effective educational decisions that will benefit children and enhance their growth and development.Communicate the principles of developmentally appropriate practices to parents and colleagues.Understand how to create classrooms that incorporate the five guidelines or points of the "Mariner's Star":creating a caring community of learnersteaching to enhance development and learningconstructing an appropriate curriculumassessing children's learning and developmentestablishing reciprocal relationships with families.Gain a functional understanding of how teachers within a developmental model implement appropriate guidance and classroom management strategies, function in "lead" and "support" teacher roles, create and modify effective learning environments, facilitate and scaffold learning and, develop strategies to meet the diversity of needs in the children and families they serve.
- Utilize observational opportunities to assess teaching roles, learning environments, and young children's individual and/or group learning.

SFL 222 : Practicum in Developmentally Appropriate Practices. (2:0:12)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: SFL 240; SFL 221 (must be taken within 5 years of SFL 222).

DESCRIPTION: Initial practicum with young children to increase understanding of socialization and learning processes, to create meaningful learning opportunities, and to implement developmentally appropriate practices.

NOTE: Due to enrollment constraints, SFL 222 may not be retaken to improve a grade unless approved by the Child and Family Studies Laboratory Steering Committee.

**Course Outcomes**

- Demonstrate understanding of how children develop and learn by assisting in and developing learning opportunities that support social, intellectual and personal growth.Develop instructional strategies for teaching children in small group and large group classroom settings.Evaluate and record student learning to assess instructional goals and objectives to drive continuing classroom instructionUse understanding of individual and group behavior to establish a learning environment that encourages active engagement, positive interactions and self motivation.Reflectively evaluate daily and weekly goals, assignment objectives and program expectations to refine personal development in teaching.Demonstrate professional habits that will guide interpersonal and caree choices.

6. Complete the following consumer and the market, family finance, family resource management courses:

SFL 260 : Family Finance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Introduction to time value of money, budgeting, saving, credit, taxes, housing, insurance, and investing emphasizing practical application in the home.

**Course Outcomes**

- Identify areas of financial risk in your personal lives.Differentiate between a good financial decision and a poor financial decision.Use financial calculators or financial equations for time value of money to classify various financial products to determine the most appropriate product for their family given their current financial situation.Generate a family budget and evaluate home and automobile purchasing and financing options.Analyze and plan for present and future needs by understanding investing option available.

SFL 261 : Consumerism and the Marketplace for Secondary Teachers. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: A pre-service preparation course designed to prepare FACSED classroom teachers to teach content regarding dynamics of consumerism and the marketplace and develop skills for implementing a discipline-based approach for teaching consumerism in secondary schools.

**Course Outcomes**

- Identify consumer rights, responsibilities, and remedies and identify effective practices for purchasing consumer goods and services.
- Synthesize legal and ethical considerations of being an informed consumer in today's market.
- Identify and explain the purposes and features of private and government agencies providing assistance, information, and published materials that are consumer resources for decision making.
- Distinguish the roles of labels, warranties, guarantees, and advocate groups in wise consumer behavior.
- Determine how government, business, and the consumer interact for the mutual benefit of each other in the marketplace.
- Analyze prudent steps in the selection of healthcare, childcare, elder care, repair services, household materials, automobiles, toys, and equipment.
- Describe ways to avoid identity theft, fraud, deceptions, and rip-offs.
- Explain the importance of understanding financial contracts (disclosure information, grace period, payment penalties, method of interest calculation).
- Perform a market analysis exercise and exercise better shopping practices.

7. Complete the following nutrition through the life cycle course:

NDFS 100 : Essentials of Human Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Food-oriented study of nutritional facts and principles as a basis for dietary choices; consequences of choices; scientifically examining controversial topics.

**Course Outcomes**

- Apply the scientific method to identify and interpret credible nutrition information.
- Identify, interpret, and apply nutrition information.
- Identify functions of nutrients and their major food sources.

8. Complete the following food preparation and meal management courses:

SFL 110 : Food Preparation in the Home. (2:1:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Principles of cooking and skill development in food preparation techniques. Lab required.

NOTE: Fee.

**Course Outcomes**

- Understand food preparation principles and techniques and apply them while mixing, cooking, and baking food products for home use.Identify and prevent food borne illness and safety hazards with appropriate food handling and preparation techniques.Understand and apply knowledge of nutrition to food preparation.Develop confidence in selecting and following recipes.Demonstrate proper use of equipment for baking and cooking.

SFL 340 : Family Meal Management. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 110 or instructor's consent.

DESCRIPTION: Organizing and managing time, energy, finance, and nutrition in planning, preparing, and serving

family meals; ethnic and cultural diversity in etiquette and meal planning. Lab required.

NOTE: Fee.

**Course Outcomes**

- Develop a philosophy of why meal preparation and consumption at the family table is an important component in development and stability of families.Plan attractive meals with consideration for nutritional adequacy, income level, social, cultural, psychological, palatability, and aesthetic factors.Employ sanitation standards and safety procedures in food handling and in the use and care of kitchen utensils, equipment, and food storage.Demonstrate an understanding of factors affecting food habits, meal consumption patterns, and trends in food cost.Utilize managerial skills and available resources in food purchasing, and meal planning, preparation, and service

9. Complete the following food science with lab courses:

NDFS 250 : Essentials of Food Science. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 101; or CHEM 105; or SFL 110; concurrent enrollment in NDFS 251

DESCRIPTION: Overview of food science, including chemical, physical and microbiological principles related to food processing, storage, and utilization. Current issues in food science.

NOTE: This class should be taken concurrently with NDFS 251.

**Course Outcomes**

- Explain the basic concepts and principles of Food Science
- Recognize (distinguish) current topics in the news and in lay literature as being related to Food Science and Technology
- Evaluate the scientific validity of various consumer concerns regarding food production, distribution, preservation, storage and utilization
- Obtain further information on Food Science topics through library research of the scientific literature
- Explain how Food Science knowledge applies to your major field of study, and make the connection between what you're learning and what you plan to do after graduation
- Solve Food Science related problems.
- Determine if you more fully enjoy eating, understanding what happens to food between farm gate and dinner plate

NDFS 251 : Essentials of Food Science Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 101; or CHEM 105; or SFL 110; Concurrent enrollment in NDFS 250.

DESCRIPTION: Laboratory experience in the chemistry of changes occurring during food processing, storage, and utilization.

NOTE: This class should be taken concurrently with NDFS 250.

**Course Outcomes**

- Understand the basic chemistry involved in ripening, processing, and storing food*Relates to Program Learning Outcome: Demonstrate an understanding of the chemical changes occurring during food processing and storage, including reactions involving carbohydrates, protein and fats
- Develop the ability to work in teams to carry out laboratory experiments
- Understand key elements of food required for proper preservation and safety*Relates to Program Learning Outcome: Demonstrate an understanding of the role of microorganisms in food processing, food preservation, and food safety with respect to pathogens, spoilage, and fermentative microorganisms, and apply the basic elements of sanitation and quality assurance programs to understand and control microbial effects in food

10. Complete the following introduction to housing and interior design course:

SFL 102 : Introduction to Interiors. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Interior design, emphasizing history and development of the American home.

**Course Outcomes**

There are no course outcomes available

11. Complete the following textiles course:

SFL 282 : Textiles. (3:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Natural and synthetic textile fibers, yarns, fabric construction, dyes, and finishes. Care and performance of textile fabrics for clothing and household use.

**Course Outcomes**

- Distinguish between fibers, yarns and fabrics.Predict behavior of fabric based on fiber content, as much as possible without having studied finishes and dying. That is, they will be able to use fiber and yarn and weave or knit properties to predict behavior.Choose among alternatives in the creation of simple yarns for specific purposes.Distinguish a woven fabric from a knitted one.Identify the basic weaves used in woven fabrics, and the 2 basic classes of knits, with several of the subclasses of common knits.Utilize correct terminology for the many items and processes used in the textile industry.Make choices among the many variables to create a particular fabric for a particular use.Identify forty-six common fabrics on sight.

12. Complete the following residential technology or housing: societal/environmental issues course:

SFL 202 : Design in the Home. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 102

DESCRIPTION: Intermediate application of elements and principles of design in the home.

**Course Outcomes**

- Develop or reinforce basic vocabulary of design.Increase awareness of design possibilities and the aesthetic and spiritual effect of different designs.Develop an understanding of design as a problem-solving process.Become a life-long observer of design and the designed environment.

13. Complete the following intermediate clothing construction and alterations course:

SFL 287 : Intermediate Clothing Construction. (3:3:5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 185R or equivalent sewing skills.

DESCRIPTION: Assessing and executing various construction methods, including construction of several full-scale garments.

NOTE: Student-supplied materials required. Fee.

**Course Outcomes**

- Increase your ability in making appropriate choices among various construction methods given various fabric and style variablesStrengthen and broaden your experience in apparel construction techniques.Learn and use correct/appropriate construction terminologyRecognize and describe quality characteristics of various construction techniques, understand and apply processes necessary to produce them, and accurately evaluate resulting quality.Create examples of construction techniques which illustrate personal skill improvement over the course of the semester.Assemble a sample portfolio with materials prepared, mounted, and presented professionally.Continue to feel a sense of accomplishment and personal satisfaction in sewing.Understand and apply garment assembly sequencing as it relates to fabric and style variables.Demonstrate the “sample making” teaching approach and the “garment making” teaching approach in order to evaluate and have both in the professional repertoire.

14. Complete one of the following flat pattern design or advanced clothing construction courses:

SFL 387 : Advanced Clothing Studies: Patternmaking. (3:3:5)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: SFL 287

DESCRIPTION: Flat pattern design, basic drafting, and basic draping for women's apparel.

NOTE: Student-supplied materials required.

**Course Outcomes**

- Understand and apply flat pattern principles and methods to create patterns for women's apparel.Demonstrate how to manipulate fabrics through draping to create basic styles for women's apparel.Demonstrate how to apply basic pattern drafting techniques to create basic patterns from measurements for women.Create a record of work done with accompanying examples of styles made in class.Demonstrate the use of correct terminology.Apply pattern making principles in fabric test items.

SFL 487 : Advanced Clothing Studies: Construction. (3:3:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 287 or equivalent sewing skills.

DESCRIPTION: Three-dimensional fitting of apparel and advanced garment construction.

NOTE: Fee.

**Course Outcomes**

- Apply the four aspects of fit and apply them to create correct fit in the basic garment.Be able to identify a new range of construction and style details and execute them well.Become more independent in sewing activities.Develop and improve skill levels of sewing techniques.Assemble a professional quality planned and organized portfolio of assigned techniques.Demonstrate sewing and fitting vocabulary and use terms correctly.

15. Complete the following clothing selection and psychology of clothing course:

SFL 280 : Dynamics of Clothing. (3:3:0)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Introduction to the influences, meanings, and dimensions of individual clothing selection processes and its effect on families, communities, and cultures.

**Course Outcomes**

- · Develop critical judgment about the effects of clothing upon the physical, social, psychological, and economic well-being of individuals, families, and social groups.· Understand the terminology, concepts, and theories in clothing, fashion, and consumer behavior.· Identify and understand the interrelationships among areas in the fashion industry and become aware of related careers.· Learn the history of fashion through the 20th century and influential fashion designers and capitals.· Become acquainted with types of research conducted in the field.· Develop critical thinking skills, and use these skills to communicate ideas related to clothing in the family.

16. Complete the following teaching methods for family consumer science course:

SFL 377 : Teaching Methods and Instruction in Family and Consumer Sciences Education. (3:6:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 276R

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Understand the central concepts, tools of inquiry, and structures of the discipline(s} you teach and can create learning experiences that make these aspects of subject matter meaningful for students.
- Understand how children learn and develop, and provide learning opportunities that support students' intellectual social and personal development.
- Understand how students differ in their approaches to learning and create instructional opportunities that are adapted to diverse learners.
- Understand and use a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.
- Develop an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self motivation.
- Utilize knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.
- Plan instruction based upon knowledge of subject matter, students, the community, and curriculum goals.
- Understand and use formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social and physical development of the learner.
- Critically evaluate the effects of choices and actions on others (students, parents, and other professionals in the learning community} and actively seek out opportunities to grow professionally.
- Understand how to foster relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well- being.

17. Complete the Professional Education Component:
    - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

SC ED 350 : Adolescent Development in an Education Context. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or HIth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Adolescent development and its implications for integrated school culture, curriculum design, instructional practices, and assessment.

**Course Outcomes**

- The students will demonstrate how the stages of development impact instructional practices.
- The students will understand the social, physical, and cognitive developmental stages of adolescence in relation to the tasks of automony, identity and intimacy.
- The students will demonstrate how the stages of development impact classroom environments and management.

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SFL 276R : Exploration of Teaching: Family and Consumer Sciences. (3-4:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major-area preadmission requirements; FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

There are no course outcomes available

(4 hours required)

SFL 378 : Practicum in Secondary Education. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: SFL 276R

RECOMMENDED: SFL 110, 185, and 276R.

DESCRIPTION: Field-based teaching experience directed at helping prospective teachers learn to give demonstrations, prepare for lab experiences, and execute the experience using meaningful and engaging instruction for students in the Family and Consumer Sciences content.

**Course Outcomes**

There are no course outcomes available

**Note:** FBI fingerprinting and background clearance must be completed before registration in SFL 276R.

- Complete 12 hours from the following:

SC ED 496R : Academic Internship: Secondary Education. (12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will demonstrate that they can teach, manage, and assess content area knowledge and skills in the 7-12 classroom.
- Foster relationships with school colleagues, parents, and the larger community.

: Academic Internship: Social Sciences.

**Course Outcomes**

: Academic Internship: English.

**Course Outcomes**

: Academic Internship: Mathematics.

**Course Outcomes**

: Academic Internship: Biological Sciences.

**Course Outcomes**

: Academic Internship: Physical Sciences.

**Course Outcomes**

**Or**

SFL 476 : Secondary Student Teaching - Consumer Science. (12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

RECOMMENDED: All core and education classes.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

18. Complete the PRAXIS II test.

**Note:** Due to an emphasis on math and sciences in schools, some public school principals have stated that preference would be given to FACSED applicants who have chemistry (e.g., Chem 101 or 105) on their transcript. This does not change program requirements; rather, it is a strong recommendation.

*Hours include courses that may fulfill university core requirements.

## Show all School of Family Life (SFL) Courses

**College of Family, Home, and Social Sciences Home**

**School of Family Life Home**

**Majors**

- BS in Family and Consumer Sciences Education

BS in Family Life:
Emphases:
- Family Studies Emphasis
- Human Development Emphasis

**Minors**

- Family Life
- Gerontology

**Certificate**

- Gerontology

**Course Information**

- School of Family Life Courses

**Faculty**

# BS in Family Life: Family Studies Emphasis (43 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## The Discipline

Family studies designates a curriculum for those who wish to become skilled in a discipline of inquiry (theory, research, and practice) regarding all aspects of family life, including the temporal welfare of families, the interactions within a family, and the family's central role in community and culture.

Students will study the theories, contexts, and processes used to understand the dynamics of family interaction within and outside of the home. Students can study the practical skills required to meet human needs such as feeding, housing, clothing, and financing the family. The family studies major seeks to promote religious and community involvement that maintains and strengthens home and family as the fundamental unit of society.

This curriculum offers a foundation to understand the conduct and value of human social science. It also offers the student a specific focus, an identity and expertise, and freedom to create a program that best meets their professional and life goals. Specific goals for students include how to: (a) conduct and evaluate research efforts—reported both in journals and in the press, (b) use interpretive frameworks to offer coherent renditions of the meaning of human experience, (c) evaluate contexts of family interaction, and (d) apply family science knowledge to real-life issues that emerge in practice and daily family life.

## Careers

Many possible careers are open to family studies majors. Because of the variety of options, SFL 101 has been created to help students create a course of study that will best fit their goals. The family studies faculty can provide individual consultation as students demand. An internship as a capstone experience is also an excellent way to integrate theory, research, and practice.

## Research Opportunities

Students are encouraged to work with professors on research projects that help them experience the "how to" of being a family scientist. Students may contact faculty individually, seek mentoring grants from the university, register for internships (the capstone course) that help them integrate classroom learning with real-world experience, and create projects of their own.

## Preparation for Graduate Studies

Students who plan to attend graduate school should take SFL 336 and 460. In addition, SFL 330 and Psych 342 will help students explore options for graduate study in marriage and family therapy. Other 300- and 400-level courses that emphasize human development or family studies will prepare students for the marriage, family, and human development graduate program.

## Internships

Contact the Family and Social Services Internship Office, 945 SWKT, (801) 422-2168, for information.

## Clubs

School of Family Life Student Association (SFLSA)
Cougar FACS

## Program Requirements | View MAP | View Program Outcomes

1. The School of Family Life requires a minimum of 18 hours of SFL upper-division course work to be taken in residency at BYU. These hours count toward BYU's 30-hour residency requirement for graduation.

2. Complete the following School of Family Life core courses:
   SFL 100 : Strengthening Marriage and Family: Proclamation Principles and Scholarship. (3:3:0)
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: Understanding, applying, and sharing principles of successful marriage and family life from the LDS proclamation on the family, using sacred and scholarly perspectives.

   **Course Outcomes**
   - Critically understand your testimony of the principles of the Restored Gospel pertaining to marriage,

home and family.Synthesize and be able to apply principles from revealed truth and supportive scholarship to strengthen marriage, home, and family life.Be able to confidently share and defend principles of successful marriage, home and family life using support from sacred and scholarly sources.
- Demonstrate improvement in writing skills, speaking, and critical thinking skills to be more effective advocates for marriage, home, and family in a variety of settings.

SFL 101 : Introduction to School of Family Life. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Required seminar for all students entering the major. Overview of curriculum and major requirements, faculty research programs and specialties, campus resources, future opportunities, and career possibilities.

**Course Outcomes**

- Create a realistic major or minor plan in the School of Family Life.Identify possible post-graduation pathways with a major in the School of Family Life.Participate in and develop a sense of community that includes both faculty and students.Be able to utilize important resources to become an effective learner during college and after.

SFL 160 : Introduction to Family Processes. (3:3:0)

OFFERED: Honors also; Independent Study also.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Ways of strengthening family life by understanding such family processes as generations, emotions, communication, and rituals.

**Course Outcomes**

- Critically examine the main theoretical frameworks used in the family sciences.Demonstrate understanding of basic terms, concepts, and ideas used to describe family systems.Apply family systems ideas and concepts to your own family (past and future) in order to learn how they might improve your own family well-being.
- Identify and discuss how researchers uniquely study families and family systems.

SFL 210 : Human Development. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Growth and development of the child from conception through adolescence; influences of family, peers, and schools.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Comprehend the dynamic and complex interaction among the domains of human development (e.g., biological, cognitive, emotional, social, etc.)Critically apply information learned in class to your own life.Provide knowledge and skills that will benefit the lives of the children for whom you will have stewardship in this life.Acquire a broad base of knowledge of human development.Be conversant with the major human development theories as well as their strengths and weaknesses.
- Improve your writing and critical thinking skills.
- Understand the research methodology utilized in the study of human development.

SFL 290 : Critical Inquiry and Research Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Philosophies of critical inquiry. Principles of designing, conducting, and reporting social science investigations.

**Course Outcomes**

- Evaluate the strengths and weaknesses of different methods of inquiry used in investigating the human contexts of human development, home, and family.
- Conduct a research study and write up the results.
- Gain practical experience in using research methods.
- Use library search engines to identify articles targeted toward a specific research question.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation

Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

3. Complete the following family studies core courses:

SFL 336 : Theories in Family Perspective. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Introduction of major theoretical perspectives and of philosophical issues. Readings include representative papers applying theoretical and philosophic tenets.

**Course Outcomes**

- Recognize important philosophical foundations of social research methods and theory.Identify and understand the basic components of eight family theories.Compare and contrast the philosophical underpinnings (assumptions and implications) of theories.
- Apply theory to family focused research.
- Represent your own ideas about family life using theoretical language.Write more clearly about your ideas and the ideas of other family social scientists.

SFL 460 : Advanced Family Processes. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Integrating theory, research, and application of ideas introduced in SFL 160, focusing on key theoretical points, how research is conducted and applied, communication patterns, ritualization, conflict, distance regulation, crises, stress, and building family strengths.

**Course Outcomes**

- Understand the research on family processesCritically evaluate the research on family processesSynthesize the research on family processes
- Create recommendations for family issues using your understanding, evaluation, and synthesis of the research on family processes.

4. Complete 12 hours from any SFL upper-division (300-level and above) courses based on personal interests/professional goals. SFL 101 will provide guidance.

5. Complete 6 hours from any SFL courses not already taken above.

6. Complete three hours from one of the following capstone courses:

SFL 399R : Academic Internship. (1-9:Arr.:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Internship program coordinator's consent.

DESCRIPTION: Supervised professional experiences linking academic learning with experience in the field.

NOTE: Forty-five internship hours required per credit hour.

**Course Outcomes**

- Complete a supervised internship in an employment setting or agency related to human development, marriage, home, or family.Link academic learning with these professional experiences.Complete a minimum of 45 hands-on hours per credit.

SFL 403R : Research/Creative Works Practicum. (.5-3:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Research/Creative works experience in a project directed by a faculty member.

**Course Outcomes**

- Students will conduct research with a mentoring professor which may include literature reviews, data collection, data coding, data management, data analysis, constructing statistical tables, writing proposals for conferences, and writing manuscripts to be submitted for publication.

SFL 498 : Family Life Education: Integrating Theory, Research, and Practice. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Senior standing; instructor's consent.

DESCRIPTION: Integrating theory, research, and practice. Developing competencies to design, implement, and evaluate family flife education programs. Preparing to work preventively with couples, parents, and families in areas such as marriage preparation, marriage enhancement, and parenting.

**Course Outcomes**

- Develop and articulate a personal philosophy of family life education.
- Critically evaluate the quality of several examples of family life education programs.

- Design a family life education program using scholarly literature and best practices.
- Be able to apply a framework for the development of family life education programs.
- Be able to utilize a variety of approaches to evaluating family life education programs.
- Learn principles and practices for teaching about family life in a variety of traditional and contemporary venues, including workshop and self-directed approaches.
- Practice workshop teaching and receive peer, clientele, and instructor feedback.
- Be able to utilize principles and practices for reaching diverse audiences.
- Be able to utilize principles and strategies for multiplying their reach through collaborative partnerships and social marketing.

**Note:** Students who take a full-time semester internship may earn up to 6 additional credit hours for SFL 399R. These additional hours will count toward graduation but not toward emphasis requirements. (A student in the Family Studies Emphasis may petition for 3 of the additional internship hours to count toward an upper-division elective.) For exceptions for capstone courses, contact department.

*Hours include courses that may fulfill university core requirements.

## Show all School of Family Life (SFL) Courses

**College of Family, Home, and Social Sciences Home**

**School of Family Life Home**

**Majors**

- BS in Family and Consumer Sciences Education

BS in Family Life:
Emphases:
- Family Studies Emphasis
- Human Development Emphasis

**Minors**

- Family Life
- Gerontology

**Certificate**

- Gerontology

**Course Information**

- School of Family Life Courses

**Faculty**

# BS in Family Life: Human Development Emphasis (46 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## The Discipline

The human development emphasis centers on theories, research, and practices related to optimal human development within the context of family life. Human development scholarship provides a life-span perspective for understanding human development within the family context by helping students learn how children, youth, and adults develop, change, and face challenges throughout the life course (infancy, childhood, adolescence, and adulthood). Our teaching strategy reflects a strong commitment to better critical thinking and problem solving skills as students become involved in mentored learning research, internships, and outreach experiences.

## Careers

The program in human development is a broad, liberal arts training designed to assist students as they seek professional activity (as volunteers or for pay) in settings where knowledge of human development and behavior is valued. An emphasis in human development prepares graduates to make significant contributions locally (e.g., one's own family, church, and local community) and professionally (e.g., working in the community services professions, and as volunteers or paid professionals for worldwide human service-based organizations). Coursework in the human development emphasis also helps students to fulfill part of the requirements to become a certified Child-Life Specialist and work with children and families in hospital settings.

Some graduates with a human development emphasis are employed in community action centers, childcare centers, residential treatment centers, programs for the elderly, juvenile correction programs, and youth programs. Still other students prepare for volunteer-based community intervention (e.g., Habitat for Humanity, Red Cross, and The Muscular Dystrophy Association).

Additionally, a human development emphasis is an excellent undergraduate preparation for those pursuing graduate school in human development research. Others seek professional certification by obtaining advanced degrees in school counseling, special education, clinical gerontology, and clinical psychology.

For students who are interested in teaching opportunities in public schools, a major in early childhood education teacher certification is available through the Teacher Education Department in the McKay School of Education. This certification qualifies individuals to teach kindergarten through third grade in public and private schools. The human development emphasis provides foundation courses for those preparing to enter early childhood education teacher certification programs (see Teacher Education Department for a list of these courses).

In addition, an early childhood focus within the human development emphasis prepares students for vocations that do not require teacher certifications (e.g., Head Start).

## Research Opportunities

Students are encouraged to work with professors on research projects that help them experience the "how to" of being a family scientist. Students may contact faculty individually, seek mentoring grants from the university, register for internships (the capstone course) that help them integrate classroom learning with real-world experience, and create projects of their own.

## Preparation for Graduate Studies

Students who plan to attend graduate school are encouraged to take as many of the upper-division human development topic courses as possible. Other 300- and 400-level courses that emphasize human development or family studies will serve as a springboard to masters or PhD programs in human development, developmental psychology, and family studies related programs.

## Internships

Contact the Family and Social Services Internship Office, 945 SWKT, (801) 422-2168, for information.

## Clubs

School of Family Life Student Association (SFLSA)
Cougar FACS

## Program Requirements | View MAP | View Program Outcomes

1. The School of Family Life requires a minimum of 18 hours of upper-division major course work to be taken in residency at BYU for this degree program. (This requirement includes taking at least 12 hours minimum of the human development core

in residency at BYU.) These hours may also go toward BYU's 30-hour residency requirement for graduation.

2. Complete the following School of Family Life core courses:

SFL 100 : Strengthening Marriage and Family: Proclamation Principles and Scholarship. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Understanding, applying, and sharing principles of successful marriage and family life from the LDS proclamation on the family, using sacred and scholarly perspectives.

**Course Outcomes**

- Critically understand your testimony of the principles of the Restored Gospel pertaining to marriage, home and family.Synthesize and be able to apply principles from revealed truth and supportive scholarship to strengthen marriage, home, and family life.Be able to confidently share and defend principles of successful marriage, home and family life using support from sacred and scholarly sources.
- Demonstrate improvement in writing skills, speaking, and critical thinking skills to be more effective advocates for marriage, home, and family in a variety of settings.

SFL 101 : Introduction to School of Family Life. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Required seminar for all students entering the major. Overview of curriculum and major requirements, faculty research programs and specialties, campus resources, future opportunities, and career possibilities.

**Course Outcomes**

- Create a realistic major or minor plan in the School of Family Life.Identify possible post-graduation pathways with a major in the School of Family Life.Participate in and develop a sense of community that includes both faculty and students.Be able to utilize important resources to become an effective learner during college and after.

SFL 160 : Introduction to Family Processes. (3:3:0)

OFFERED: Honors also; Independent Study also.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Ways of strengthening family life by understanding such family processes as generations, emotions, communication, and rituals.

**Course Outcomes**

- Critically examine the main theoretical frameworks used in the family sciences.Demonstrate understanding of basic terms, concepts, and ideas used to describe family systems.Apply family systems ideas and concepts to your own family (past and future) in order to learn how they might improve your own family well-being.
- Identify and discuss how researchers uniquely study families and family systems.

SFL 210 : Human Development. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Growth and development of the child from conception through adolescence; influences of family, peers, and schools.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Comprehend the dynamic and complex interaction among the domains of human development (e.g., biological, cognitive, emotional, social, etc.)Critically apply information learned in class to your own life.Provide knowledge and skills that will benefit the lives of the children for whom you will have stewardship in this life.Acquire a broad base of knowledge of human development.Be conversant with the major human development theories as well as their strengths and weaknesses.
- Improve your writing and critical thinking skills.
- Understand the research methodology utilized in the study of human development.

SFL 290 : Critical Inquiry and Research Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Philosophies of critical inquiry. Principles of designing, conducting, and reporting social science investigations.

**Course Outcomes**

- Evaluate the strengths and weaknesses of different methods of inquiry used in investigating the human contexts of human development, home, and family.
- Conduct a research study and write up the results.
- Gain practical experience in using research methods.
- Use library search engines to identify articles targeted toward a specific research question.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals

and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

3. Complete the following human development life-span core courses:

SFL 331 : Infant Development in the Family. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.

DESCRIPTION: Conception, prenatal development, pregnancy. Physical, cognitive, and social development of the first twenty-four months. Implications for guidance and care in the family.

**Course Outcomes**

There are no course outcomes available

SFL 333 : (SFL-Soc 318) Adolescent Development in the Family and Other Social Contexts. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.

DESCRIPTION: Examining the developmental and social contexts of adolescents with emphasis on the importance of the family. Other contexts include peers, religion, community, schools, and cross-cultural issues.

**Course Outcomes**

- Critically examine and discuss selected topics in adolescent development, as well as being able to apply the information and skills learned in this class to your own life.Identify and discuss the major theories of adolescent development, as well as the various research methods used in the study of adolescent development.Understand the important developmental changes that young people experience during this period and during their transition to adulthood.Discuss why at-risk issues are so pronounced during this period and understand prevention and intervention measures that can be taken by families to help them cope with this transition.
- Synthesize (both in thought and writing) information on adolescent development, and apply this information to “real” adolescents with whom you come into contact.

SFL 334 : Adult Development and Aging in the Family. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 160

DESCRIPTION: Adjustments to physical, emotional, social, and economic changes. Needs arising from changes in family relationships, living arrangements, and employment; retirement planning.

**Course Outcomes**

- Interact with older adults (parents, grandparents, neighbors, ward members, research participants, clients, etc.) in an informed (accurate knowledge of relevant issues) and sensitive (aware of “life course” perspective) manner.Apply complex interactions of gerontology concepts to real-life situations, including current issues in local, national, and world communities.Understand and articulate basic age-related biological, psychological, and sociological processes and learn how to access and evaluate information about those age-related experiences.Synthesize course concepts through observing, serving, and interacting with older adults in the community.

SFL 351 : Socialization Across Childhood. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.

DESCRIPTION: Processes and sequences of social development across childhood.

**Course Outcomes**

There are no course outcomes available

4. Complete 9 hours from the following human development topic courses:

SFL 352 : Cognitive Development. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

TAUGHT:
PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.
DESCRIPTION: Development of mental abilities; effects of maturation and learning on memory, perception, attention processes, intelligence, social cognition.

**Course Outcomes**

- Critically examine and discuss selected topics in cognitive development.Identify and discuss selected theories and theoretical models of cognitive development, as well as the various research methods used in the study of cognitive develop. Understand how cognitive development changes throughout life span.
- Evaluate in empirical research studies a specific topic in cognitive development and synthesize in each study the research questions, methodology, findings, and discussions of the findings.
- Succinctly summarize in writing a collection of empirical studies on a topic in cognitive development of your interest.

SFL 355 : Language Development. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Philosophical, social, intellectual, and emotional contexts of language acquisition and usage.

**Course Outcomes**

There are no course outcomes available

SFL 358 : Media, Family, and Human Development. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Aspects of media and their potential effects on family interactions and human development across the lifespan.

**Course Outcomes**

- Discuss the frequency of use of forms of media.Describe the major theories and associated research that are used to describe media research.Critically examine media theory and research in the field and apply course material to your own experiences.Understand how media may influence human development.Discuss how media can shape the family.
- Demonstrate research skills by researching a topic area relevant to the media.

SFL 359 : Child Life in Healthcare Settings. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: SFL 210
RECOMMENDED: SFL 331, 333, 351.
DESCRIPTION: Roles of child life specialists in preparing children and families for healthcare experiences. Content includes psychosocial and developmental needs of children, adolescents, and families in healthcare settings and impact of illness, injury, and hospitalization on the child and family.

**Course Outcomes**

- Describe the contents of the official documents of the Child Life Council (CLC), including the Code of Ethical Responsibility, Child Life Competencies, and Standards of Clinical Practice, the Child Life Mission, Values and Vision Statements, and the Code of Professional Practice.
- Identify the elements of child life practice in direct and non-direct services in pediatric health care including a historical review of the profession and its development in the evolution of children's healthcare.
- Use developmental theory to assess the impact of illness, injury and health care on patients and families, identifying the stressors and developmental and psychosocial treatment issues that affect the healthcare experience of a child and family including siblings.
- Be able to apply the key principles of patient- and family-centered care, including principles of respect and dignity, information sharing, supporting participation in care, and collaboration in relationship to child life practice.
- Compare both historical and current perspectives on the rationale for, and techniques and outcomes of preparation, as well as accepted preparation methods for healthcare encounters and life-changing events.

SFL 449 : Biological Foundations of Human Development. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.
DESCRIPTION: Biological, genetic, and neurological foundations of human development and their interactions with family socialization processes.

**Course Outcomes**

- Understand how biological process influences human development.Understand and synthesize the intersections between biology, psychology, and behavior in a developmental context.
- Critically examine and analyze current research in the areas of developmental psychobiology.
- Demonstrate critical thinking/writing skills.

SFL 453 : Moral Development. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.
DESCRIPTION: Theories and applications of moral development, including moral reasoning, moral emotions, contextual factors, and socialization influences that influence moral decisions and moral behavior.

**Course Outcomes**

- Critically examine and discuss selected topics in moral development, as well as being able to apply the information and skills learned in this class to your own life.Understand the different constructs that contribute to moral development, such as cognition, emotion, identity, context, and culture.Be able to discuss socialization influences that impact children's moral development, such as parents, peers, teachers, and media.
- Identify and discuss the major theories of moral development, as well as the various research methods used in the study of moral and prosocial development.
- Think and write in a synthesized, analytical fashion, combining information across sources rather than merely summarizing information.

**Note:** Courses taken beyond the 9 required hours may count towards the 6-hour electives/prerequisites requirement below.

5. Complete 6 hours of any SFL course as electives/prerequisites.
6. Complete 3 hours of a capstone experience from the following:

SFL 399R : Academic Internship. (1-9:Arr.:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Internship program coordinator's consent.
DESCRIPTION: Supervised professional experiences linking academic learning with experience in the field.
NOTE: Forty-five internship hours required per credit hour.

**Course Outcomes**

- Complete a supervised internship in an employment setting or agency related to human development, marriage, home, or family.Link academic learning with these professional experiences.Complete a minimum of 45 hands-on hours per credit.

SFL 403R : Research/Creative Works Practicum. (.5-3:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.
DESCRIPTION: Research/Creative works experience in a project directed by a faculty member.

**Course Outcomes**

- Students will conduct research with a mentoring professor which may include literature reviews, data collection, data coding, data management, data analysis, constructing statistical tables, writing proposals for conferences, and writing manuscripts to be submitted for publication.

SFL 490 : Advanced Issues in Human Development. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.
DESCRIPTION: Evaluation of research on physical, mental, emotional, and social development.

**Course Outcomes**

- Critically evaluate issues related to studying developmental processes as well as study and practice critical thinking skills.Critically synthesize information learned from previous human development courses by examining how biological (e.g., temperament) and environmental (e.g., parents and peers) processes interact to shape development.Demonstrate how to examine current issues in human development developmentally.Critically synthesize the information, skills, and abilities learned in the first three units in an examination of the period of development recently termed “emerging adulthood” (ages 18-27).

**Note 1:** If SFL 490 is not used to fulfill the capstone requirement, it may be used to fulfill 3 of the 6-hour elective/prerequisite requirements above.

**Note 2:** For SFL 399R and 403R human development related experiences are preferred. Only 3 credit hours of 399R or 403R may count towards the 46-hour degree requirement. Additional credits may, however, count towards the overall 120-hour graduation requirement.

*Hours include courses that may fulfill university core requirements.

## Show all School of Family Life (SFL) Courses

**College of Family, Home, and Social Sciences Home**

**School of Family Life Home**

**Majors**

- BS in Family and Consumer Sciences Education

BS in Family Life:
Emphases:
- Family Studies Emphasis
- Human Development Emphasis

**Minors**

- Family Life
- Gerontology

**Certificate**

- Gerontology

**Course Information**

- School of Family Life Courses

**Faculty**

# Minor in Family Life (17–18 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. This minor is intended for non-School of Family Life majors only.
2. The School of Family Life requires a minimum of nine hours to be taken in residency at BYU and from the School of Family Life for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
3. Complete the following:

SFL 100 : Strengthening Marriage and Family: Proclamation Principles and Scholarship. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Understanding, applying, and sharing principles of successful marriage and family life from the LDS proclamation on the family, using sacred and scholarly perspectives.

**Course Outcomes**

- Critically understand your testimony of the principles of the Restored Gospel pertaining to marriage, home and family.Synthesize and be able to apply principles from revealed truth and supportive scholarship to strengthen marriage, home, and family life.Be able to confidently share and defend principles of successful marriage, home and family life using support from sacred and scholarly sources.
- Demonstrate improvement in writing skills, speaking, and critical thinking skills to be more effective advocates for marriage, home, and family in a variety of settings.

SFL 160 : Introduction to Family Processes. (3:3:0)

OFFERED: Honors also; Independent Study also.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Ways of strengthening family life by understanding such family processes as generations, emotions, communication, and rituals.

**Course Outcomes**

- Critically examine the main theoretical frameworks used in the family sciences.Demonstrate understanding of basic terms, concepts, and ideas used to describe family systems.Apply family systems ideas and concepts to your own family (past and future) in order to learn how they might improve your own family well-being.
- Identify and discuss how researchers uniquely study families and family systems.

SFL 210 : Human Development. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Growth and development of the child from conception through adolescence; influences of family, peers, and schools.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Comprehend the dynamic and complex interaction among the domains of human development (e.g., biological, cognitive, emotional, social, etc.)Critically apply information learned in class to your own life.Provide knowledge and skills that will benefit the lives of the children for whom you will have stewardship in this life.Acquire a broad base of knowledge of human development.Be conversant with the major human development theories as well as their strengths and weaknesses.
- Improve your writing and critical thinking skills.
- Understand the research methodology utilized in the study of human development.

SFL 260 : Family Finance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Introduction to time value of money, budgeting, saving, credit, taxes, housing, insurance, and investing emphasizing practical application in the home.

**Course Outcomes**

- Identify areas of financial risk in your personal lives.Differentiate between a good financial decision and a poor financial decision.Use financial calculators or financial equations for time value of money to classify

various financial products to determine the most appropriate product for their family given their current financial situation.Generate a family budget and evaluate home and automobile purchasing and financing options.Analyze and plan for present and future needs by understanding investing option available.

4. Complete two additional courses from the School of Family Life.

*Hours include courses that may fulfill university core requirements.

## Show all School of Family Life (SFL) Courses

**College of Family, Home, and Social Sciences Home**

**School of Family Life Home**

**Majors**

- BS in Family and Consumer Sciences Education

BS in Family Life:
Emphases:
- Family Studies Emphasis
- Human Development Emphasis

**Minors**

- Family Life
- Gerontology

**Certificate**

- Gerontology

**Course Information**

- School of Family Life Courses

**Faculty**

# Minor in Gerontology (15 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete 3 hours from the following Mentored Research Experience courses:

EXSC 497R : Undergraduate Research and Study. (.5-4:0:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Individual research and study in any area of exercise science.

**Course Outcomes**
- To provide the undergraduate student with a mentored learning experience specifically in exercise science related research

HLTH 491R : Mentored Research. (.5-3:Arr.:0)
DESCRIPTION: Collaborate with professors on mentoring grants or other public health-related research and initiatives.

**Course Outcomes**
- Experience at least one subset of research skills while conducting supervised public health research with a faculty member.

NURS 491 : Nursing Capstone. (2:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Courses in Nursing Semester 5.
DESCRIPTION: Seminar in advanced theory and synthesis of concepts for the nursing profession focusing on planning, delivering, and managing patient care in complex environments including leadership in the health care environment.

**Course Outcomes**
- 1. Demonstrate critical thinking skills in conjunction with current trends in nursing.
- 2. Articulate an understanding and appreciation of the nursing profession.
- 3. Reflect through personal behavior an understanding of human and professional values.

***And***

NURS 492 : Clinical Practicum for Capstone Nursing. (5.5:0:Arr)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Courses in Nursing Semester 5.
DESCRIPTION: Clinical practicum focusing on planning, delivering, and managing patient care in complex environments. Leadership components incorporated into clinical experiences and practices.
NOTE: Requires 230 hours per semester (210 clinical hours; 20 bridging hours, 1.5 hours per week).

**Course Outcomes**
- 2. Demonstrate critical thinking skills through the understanding, use, and implementation of evidence based nursing practice.
- 1. Act in a responsible and accountable manner while providing safe, efficient, compassionate, evidence based nursing care.
- 3. Demonstrate appropriate, accurate, and effective communication skills with patient/family, health-care team, and faculty.

PSYCH 499R : Independent Research. (.5-3:0:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.

**Course Outcomes**
- Student(s) will demonstrate skill in several aspects of the research process: literature review and evaluation, data gathering, data analysis, writing, and publishing.Measurement: Student mastery of the research area will be assessed from a paper prepared by the end of the semester.

RECM 497R : Special Topics and Research. (.5-4:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Special topics, mentored research, and learning experiences, including attending professional conferences, Study Abroad participation, and other learning experiences.

**Course Outcomes**

There are no course outcomes available

SFL 403R : Research/Creative Works Practicum. (.5-3:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Research/Creative works experience in a project directed by a faculty member.

**Course Outcomes**

- Students will conduct research with a mentoring professor which may include literature reviews, data collection, data coding, data management, data analysis, constructing statistical tables, writing proposals for conferences, and writing manuscripts to be submitted for publication.

SOC 497R : Directed Research in Sociology. (1-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Consent of instructor required.

DESCRIPTION: Individualized research program supervised by faculty member. Student selects topic and completes a research project.

**Course Outcomes**

- Students will develop research project under direction of faculty mentor.
- Students will engage in a mentored research project that may involve reviewing the literature, data collection, data analysis, and/or preparing manuscripts, etc.

2. Complete 6 hours from the following core courses:

EXSC 387 : Lifestyle and Chronic Disease Prevention. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Current scientific evidence demonstrating how lifestyle affects disease processes. Healthy lifestyle concepts specifically needed by wellness professionals, health educators, and health promotion practitioners; influence of unhealthy lifestyle as basis for chronic diseases, i.e., cardiovascular disease, cancer, and diabetes.

**Course Outcomes**

- Develop an awareness of what constitutes a healthy lifestyle
- Understand the use and interpretation of statistical techniques used in scientific papers on health and lifestyle
- Become familiar with the scientific literature that supports healthy living
- Gain knowledge needed to help others adopt and maintain a healthy lifestyle

HLTH 466 : Health and the Aging Process. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Public health strategies to promote health and functional independence in the context of the inevitable consequence of aging.

**Course Outcomes**

- Understand the physiological aspects of the normal aging process.
- Understand aging as a pathological process and the factors in both the external and internal milieu, this may contribute to premature aging.
- Relate knowledge about the organic and infectious diseases, common disorders, and disabilities prevalent among the elderly to disease prevention and health promotion among the aged.
- Become exposed to professional literature pertaining to the biological, medical, and health aspects of aging including the use of clinical preventive services as noted by gerontology researchers.
- Understand the physiological aspects of aging and the experimental approaches used in studying the aging process.
- Identify and distinguish the federal, state, and community health programs and services for the aged, including medical care, hospitalization, extended care, rehabilitation, and health maintenance.
- Promote healthy lifestyle behaviors that help prevent premature aging, promote the health of the elderly, and contribute to the extension of the prime of life.
- Understand decision-making related to end-of-life planning.

NURS 291 : Nursing Care of the Older Adult. (2.5:2.5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

DESCRIPTION: Theory and content in the nursing care optimizing the functional status of older adults through health promotion, risk reduction, and disease prevention strategies.

**Course Outcomes**

- Generate a knowledge base of the processes and issues associated with aging including the needs and functional capabilities of the older adult.
- Use knowledge concepts to solve aging issues recognizing that interdisciplinary care is essential for quality care.
- Compare and connect aging for the individual, caregiver, family, and friends recognizing ethical/legal issues and the importance of culture.
- Compose a personal perspective on aging
- Create a perspective on the aging of God's children that recognizes the potential and the possible and acknowledges that the aging process includes spiritual, physical and psychosocial perspectives
- Reflect on how personal development is connected to professional development as a life-long learner.

***And***

NURS 292 : Clinical Practicum for Nursing Care of the Older Adult. (1.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

DESCRIPTION: Clinical practicum for assessment, communication, critical thinking, and technical skills optimizing the functional status of older adults through health promotion, risk reduction, and disease prevention strategies.

NOTE: 6-hour clinical per week for 11 weeks.

**Course Outcomes**

- Generate a knowledge base of the processes and issues associated with aging including the needs and functional capabilities of the older adult.
- Use knowledge concepts to solve aging issues recognizing that interdisciplinary care is essential for quality care.
- Compare and connect aging for the individual, caregiver, family, and friends recognizing ethical/legal issues and the importance of culture.
- Compose a personal perspective on aging
- Create a perspective on the aging of God's children that recognizes the potential and the possible and acknowledges that the aging process includes spiritual, physical and psychosocial perspectives
- Reflect on how personal development is connected to professional development as a life-long learner.

NURS 293 : Communication Lab for Nursing Majors. (.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

NOTE: Lab is 1.5 hours per week for 10 weeks.

**Course Outcomes**

- Identify factors that affect interpersonal communication across the lifespan.
- Recognize cultural, gender and disabilities factors that can affect communication.
- Demonstrate appropriate communication skills utilized in nursing practice.
- Formulate strategies to enhance communication that incorporate respect for God's children.

NURS 333 : (Nurs-Soc) End-of-Life Care. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: End-of-life (EOL) care from spiritual, physical, and psychosocial perspectives. Comparisons from various cultural/ethnic backgrounds. Complexities of EOL care including impact on families, health care system, and society. Personal perspectives about death, dying, and bereavement.

**Course Outcomes**

- Identify societal attitudes toward death
- Outline guiding principles of end-of-life care
- Compare and contrast palliative care versus hospice including historical factors.
- Distinguish between the medical model & patient-centered approach to dying
- Summarize discrepancies in patient and provider end-of-life preferences
- Compose personal attitudes toward death and dying

***Or***

SOC 333 : (Soc-Nurs) End-of-Life Care. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: End-of-life (EOL) care from spiritual, physical, and psychosocial perspectives. Comparisons from various cultural/ethnic backgrounds. Complexities of EOL care including impact on families, health care system, and society. Personal perspectives about death, dying, and bereavement.

**Course Outcomes**

There are no course outcomes available

PSYCH 220 : Human Development: Life Span. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Interaction of psychological, biological, and social influences on behavior and psychological development through the life span.

**Course Outcomes**

- Students will understand and remember the basic developments that occur across the lifespan, the basic patterns of thought, emotion, and behavior characteristic of individuals at each stage of the lifespan, and the important individual and contextual influences on human development.Measurement: Multiple choice and short essay questions.
- Students will understand the key concepts and theories that are predominant in the literature on human development.Measurement: Multiple choice and short essay questions.
- Students will be able to more effectively communicate verbally and in writing about human development.Measurement: Research papers.
- Students will be able to analyze and critically evaluate ideas, arguments, and points of view about human development.Measurement: Research papers.
- Students will be able to apply knowledge of human development to addressing real-world issues.Measurement: Short writing assignments and in-class activities.

SFL 334 : Adult Development and Aging in the Family. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 160

DESCRIPTION: Adjustments to physical, emotional, social, and economic changes. Needs arising from changes in family relationships, living arrangements, and employment; retirement planning.

**Course Outcomes**

- Interact with older adults (parents, grandparents, neighbors, ward members, research participants, clients, etc.) in an informed (accurate knowledge of relevant issues) and sensitive (aware of “life course” perspective) manner.Apply complex interactions of gerontology concepts to real-life situations, including current issues in local, national, and world communities.Understand and articulate basic age-related biological, psychological, and sociological processes and learn how to access and evaluate information about those age-related experiences.Synthesize course concepts through observing, serving, and interacting with older adults in the community.

SOC 365 : Sociology of Aging. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Demographic and social factors related to aging: agencies, serving older citizens, and role of community in solving problems of aged.

NOTE: Required for students in gerontology minor and/or certificate programs.

**Course Outcomes**

There are no course outcomes available

3. Complete 6 hours from the following elective courses:

HLTH 320 : Advanced First Aid and Safety. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: In-depth coverage of first aid procedures for injuries and sudden illness. Leads to first aid and CPR certifications.

**Course Outcomes**

- Demonstrate the skills involving cardiopulmonary rescuitation (CPR), automated external defibrillation (AED), bandaging, and splinting.
- Identify the importance of first aid and emergency care
- Recognize specific emergency problems (i.e., heart attack, fracture, open wound, burn insect sting) through their signs and symptoms.
- Identify the decisions involved during an emergency.
- Describe proper first aid and emergency care procedures for specific emergency problems.

NDFS 100 : Essentials of Human Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Food-oriented study of nutritional facts and principles as a basis for dietary choices; consequences of choices; scientifically examining controversial topics.

**Course Outcomes**

- Apply the scientific method to identify and interpret credible nutrition information.
- Identify, interpret, and apply nutrition information.
- Identify functions of nutrients and their major food sources.

PDBIO 205 : Human Biology. (3:3:0)

OFFERED: Independent Study online course.

DESCRIPTION: Body systems and influence of heredity.

NOTE: For nonbiology majors. Currently offered online only.

**Course Outcomes**

- Demonstrate understanding of the anatomic and physiologic terminology necessary forwritten and oral communication about the body, its functions, and its interaction with allother species on this planet.
- Students will demonstrate understanding of human biology at the chemical, microscopic,anatomical, physiological, and ecological levels.
- Demonstrate the ability to connect understanding of the body and its function with thefunction and

survival of the world we live in.

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

PSYCH 322 : Developmental Psychology: Adulthood. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Stability and change in psychological, physiological, and interpersonal processes through early, middle, and late adulthood.

NOTE: Contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

- Students will understand and remember the basic developments that occur during adulthood, the basic patterns of thought, emotion, and behavior characteristic of adults, and the important individual and contextual influences on adult psychology and development.Measurement: Multiple choice and short essay questions.
- Students will understand the key concepts and theories that are predominant in the literature on adult psychology and development.Measurement: Multiple choice and short essay questions.
- Students will be able to more effectively communicate verbally and in writing about adulthood.Measurement: Research papers.
- Students will be able to analyze and critically evaluate ideas, arguments, and points of view about adulthood.Measurement: Research papers.
- Students will be able to apply knowledge of adulthood to address real-world issues.Measurement: Short writing assignments and in-class activities.

PSYCH 342 : Abnormal Psychology. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Dynamics of maladjustment; major psychological disorders and therapeutic procedures. Fieldwork required.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and describe the major forms of psychological disorders and the major theories regarding the classification, etiology, and treatment of psychological disorders,and current data relevant to such theories.Measurement: Multiple choice, short answer and essay exams; short writing assignments.
- Students will engage in service learning by serving persons diagnosed with psychological disorders.Measurement: Participation assessment/field work report
- Students will critically examine key concepts and theories in abnormal psychology.Measurement: Essay exams, short writing assignments, in-class debates
- Students will examine and critique a topic in abnormal psychology using the current research literature.Measurement: APA style paper

SFL 210 : Human Development. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Growth and development of the child from conception through adolescence; influences of family, peers, and schools.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Comprehend the dynamic and complex interaction among the domains of human development (e.g., biological, cognitive, emotional, social, etc.)Critically apply information learned in class to your own life.Provide knowledge and skills that will benefit the lives of the children for whom you will have stewardship in this life.Acquire a broad base of knowledge of human development.Be conversant with the major human development theories as well as their strengths and weaknesses.
- Improve your writing and critical thinking skills.
- Understand the research methodology utilized in the study of human development.

SOC W 581 : Social Services for the Aging. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Process and impact of social service delivery systems on the aged.

NOTE: Utah state certificate available.

**Course Outcomes**

There are no course outcomes available

And other electives approved by the academic advisor.

*Hours include courses that may fulfill university core requirements.

## Show all School of Family Life (SFL) Courses

**College of Family, Home, and Social Sciences Home**

**School of Family Life Home**

**Majors**

- BS in Family and Consumer Sciences Education

BS in Family Life:
Emphases:
- Family Studies Emphasis
- Human Development Emphasis

**Minors**

- Family Life
- Gerontology

**Certificate**

- Gerontology

**Course Information**

- School of Family Life Courses

**Faculty**

# Certificate in Gerontology (15 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete 3 hours from the following Service Learning courses:

EXSC 399R : Exercise and Wellness Internship. (.5-9:0:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Internship coordinator's consent.
DESCRIPTION: On-the-job experience for exercise and wellness majors.

**Course Outcomes**
- Gain work-related experience through one or more internship experiences
- Apply, in a work-related setting, the skills and abilities attained through required course work in the Exercise and Wellness major

HLTH 496R : Academic Internship. (.5-9:ARR:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: HLTH 439
DESCRIPTION: Senior capstone experience.

**Course Outcomes**
- Obtain experience, as proctored by an approved internship supervisor, to apply professional competencies in public health as assessed through an internship report and internship supervisor rating

NURS 491 : Nursing Capstone. (2:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Courses in Nursing Semester 5.
DESCRIPTION: Seminar in advanced theory and synthesis of concepts for the nursing profession focusing on planning, delivering, and managing patient care in complex environments including leadership in the health care environment.

**Course Outcomes**
- 1. Demonstrate critical thinking skills in conjunction with current trends in nursing.
- 2. Articulate an understanding and appreciation of the nursing profession.
- 3. Reflect through personal behavior an understanding of human and professional values.

***And***

NURS 492 : Clinical Practicum for Capstone Nursing. (5.5:0:Arr)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Courses in Nursing Semester 5.
DESCRIPTION: Clinical practicum focusing on planning, delivering, and managing patient care in complex environments. Leadership components incorporated into clinical experiences and practices.
NOTE: Requires 230 hours per semester (210 clinical hours; 20 bridging hours, 1.5 hours per week).

**Course Outcomes**
- 2. Demonstrate critical thinking skills through the understanding, use, and implementation of evidence based nursing practice.
- 1. Act in a responsible and accountable manner while providing safe, efficient, compassionate, evidence based nursing care.
- 3. Demonstrate appropriate, accurate, and effective communication skills with patient/family, health-care team, and faculty.

PSYCH 399R : Academic Internship. (.5-9:ARR:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310
NOTE: A maximum of 9 credit hours may be taken.

**Course Outcomes**

- The first and primary objective is the placement of each student in a professionally enhancing work setting. We intend to continuously improve the quality of internship experiences being offered through a process of continuous assessment of all internships, negotiations with agencies, and internship advisement and counseling of students at the beginning of the contractual process.Measurement: The Internship Profiling Questionnaire (IPQ) has been developed specifically to be used in the on-going process of comparative assessment and improvement of all internship offerings. They are evaluated both by the student participants and also by the internship class instructors.
- Students will critically reflect on the connections between their work experience and the content of psychology and articulate these work-related insights.Measurement:Short essays essay examinations, and applications book review.
- Students will develop professional skills and attitudes through readings on professional etiquette, in-class presentations to classmates, and poster presentation at open house.Measurement:Graded writing assignments, powerpoint presentation, and poster creation and presentation.

RECM 496R : Senior Internship. (.5-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: RECM 486 & RECM 487
DESCRIPTION: Full-time work experience in a recreation or therapeutic recreation agency under the supervision of a recreation or venue management professional or a certified therapeutic recreation specialist. Applying academic skills and knowledge to solve problems and stimulate innovation.

**Course Outcomes**

There are no course outcomes available

SFL 399R : Academic Internship. (1-9:Arr.:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Internship program coordinator's consent.
DESCRIPTION: Supervised professional experiences linking academic learning with experience in the field.
NOTE: Forty-five internship hours required per credit hour.

**Course Outcomes**

- Complete a supervised internship in an employment setting or agency related to human development, marriage, home, or family.Link academic learning with these professional experiences.Complete a minimum of 45 hands-on hours per credit.

SOC 399R : Academic Internship. (1-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Consent of instructor required.
RECOMMENDED: Soc 307 and related 300-level courses.
DESCRIPTION: Individualized work or volunteer experience in either a research setting or some kind of field placement with an organization.

**Course Outcomes**

- Establish a lifelong practice of making connections and creating a network of people that will help the student develop professionally
- Develop a professional sense of the work that will help the students identify personal learning outcomes for the semester
- Learn about what sociologists call "interactive service work" or jobs that require working with individuals
- Produce a professional analysis of the organization where the student works
- Complete a research project that addresses some need in the organization for which the student is working

2. Complete 6 hours from the following core courses:

EXSC 387 : Lifestyle and Chronic Disease Prevention. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Current scientific evidence demonstrating how lifestyle affects disease processes. Healthy lifestyle concepts specifically needed by wellness professionals, health educators, and health promotion practitioners; influence of unhealthy lifestyle as basis for chronic diseases, i.e., cardiovascular disease, cancer, and diabetes.

**Course Outcomes**

- Develop an awareness of what constitutes a healthy lifestyle
- Understand the use and interpretation of statistical techniques used in scientific papers on health and lifestyle
- Become familiar with the scientific literature that supports healthy living
- Gain knowledge needed to help others adopt and maintain a healthy lifestyle

HLTH 466 : Health and the Aging Process. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Public health strategies to promote health and functional independence in the context of the inevitable consequence of aging.

**Course Outcomes**

- Understand the physiological aspects of the normal aging process.

- Understand aging as a pathological process and the factors in both the external and internal milieu, this may contribute to premature aging.
- Relate knowledge about the organic and infectious diseases, common disorders, and disabilities prevalent among the elderly to disease prevention and health promotion among the aged.
- Become exposed to professional literature pertaining to the biological, medical, and health aspects of aging including the use of clinical preventive services as noted by gerontology researchers.
- Understand the physiological aspects of aging and the experimental approaches used in studying the aging process.
- Identify and distinguish the federal, state, and community health programs and services for the aged, including medical care, hospitalization, extended care, rehabilitation, and health maintenance.
- Promote healthy lifestyle behaviors that help prevent premature aging, promote the health of the elderly, and contribute to the extension of the prime of life.
- Understand decision-making related to end-of-life planning.

NURS 291 : Nursing Care of the Older Adult. (2.5:2.5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

DESCRIPTION: Theory and content in the nursing care optimizing the functional status of older adults through health promotion, risk reduction, and disease prevention strategies.

**Course Outcomes**

- Generate a knowledge base of the processes and issues associated with aging including the needs and functional capabilities of the older adult.
- Use knowledge concepts to solve aging issues recognizing that interdisciplinary care is essential for quality care.
- Compare and connect aging for the individual, caregiver, family, and friends recognizing ethical/legal issues and the importance of culture.
- Compose a personal perspective on aging
- Create a perspective on the aging of God's children that recognizes the potential and the possible and acknowledges that the aging process includes spiritual, physical and psychosocial perspectives
- Reflect on how personal development is connected to professional development as a life-long learner.

***And***

NURS 292 : Clinical Practicum for Nursing Care of the Older Adult. (1.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

DESCRIPTION: Clinical practicum for assessment, communication, critical thinking, and technical skills optimizing the functional status of older adults through health promotion, risk reduction, and disease prevention strategies.

NOTE: 6-hour clinical per week for 11 weeks.

**Course Outcomes**

- Generate a knowledge base of the processes and issues associated with aging including the needs and functional capabilities of the older adult.
- Use knowledge concepts to solve aging issues recognizing that interdisciplinary care is essential for quality care.
- Compare and connect aging for the individual, caregiver, family, and friends recognizing ethical/legal issues and the importance of culture.
- Compose a personal perspective on aging
- Create a perspective on the aging of God's children that recognizes the potential and the possible and acknowledges that the aging process includes spiritual, physical and psychosocial perspectives
- Reflect on how personal development is connected to professional development as a life-long learner.

NURS 293 : Communication Lab for Nursing Majors. (.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

NOTE: Lab is 1.5 hours per week for 10 weeks.

**Course Outcomes**

- Identify factors that affect interpersonal communication across the lifespan.
- Recognize cultural, gender and disabilities factors that can affect communication.
- Demonstrate appropriate communication skills utilized in nursing practice.
- Formulate strategies to enhance communication that incorporate respect for God's children.

NURS 333 : (Nurs-Soc) End-of-Life Care. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: End-of-life (EOL) care from spiritual, physical, and psychosocial perspectives. Comparisons from various cultural/ethnic backgrounds. Complexities of EOL care including impact on families, health care system, and society. Personal perspectives about death, dying, and bereavement.

**Course Outcomes**

- Identify societal attitudes toward death
- Outline guiding principles of end-of-life care
- Compare and contrast palliative care versus hospice including historical factors.
- Distinguish between the medical model & patient-centered approach to dying
- Summarize discrepancies in patient and provider end-of-life preferences
- Compose personal attitudes toward death and dying

***Or***

SOC 333 : (Soc-Nurs) End-of-Life Care. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: End-of-life (EOL) care from spiritual, physical, and psychosocial perspectives. Comparisons from various cultural/ethnic backgrounds. Complexities of EOL care including impact on families, health care system, and society. Personal perspectives about death, dying, and bereavement.

**Course Outcomes**

There are no course outcomes available

SFL 334 : Adult Development and Aging in the Family. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 160

DESCRIPTION: Adjustments to physical, emotional, social, and economic changes. Needs arising from changes in family relationships, living arrangements, and employment; retirement planning.

**Course Outcomes**

- Interact with older adults (parents, grandparents, neighbors, ward members, research participants, clients, etc.) in an informed (accurate knowledge of relevant issues) and sensitive (aware of “life course” perspective) manner.Apply complex interactions of gerontology concepts to real-life situations, including current issues in local, national, and world communities.Understand and articulate basic age-related biological, psychological, and sociological processes and learn how to access and evaluate information about those age-related experiences.Synthesize course concepts through observing, serving, and interacting with older adults in the community.

SOC 365 : Sociology of Aging. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Demographic and social factors related to aging: agencies, serving older citizens, and role of community in solving problems of aged.

NOTE: Required for students in gerontology minor and/or certificate programs.

**Course Outcomes**

There are no course outcomes available

3. Complete 6 hours from the following elective courses:

HLTH 320 : Advanced First Aid and Safety. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: In-depth coverage of first aid procedures for injuries and sudden illness. Leads to first aid and CPR certifications.

**Course Outcomes**

- Demonstrate the skills involving cardiopulmonary rescuitation (CPR), automated external defibrillation (AED), bandaging, and splinting.
- Identify the importance of first aid and emergency care
- Recognize specific emergency problems (i.e., heart attack, fracture, open wound, burn insect sting) through their signs and symptoms.
- Identify the decisions involved during an emergency.
- Describe proper first aid and emergency care procedures for specific emergency problems.

NDFS 100 : Essentials of Human Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Food-oriented study of nutritional facts and principles as a basis for dietary choices; consequences of choices; scientifically examining controversial topics.

**Course Outcomes**

- Apply the scientific method to identify and interpret credible nutrition information.
- Identify, interpret, and apply nutrition information.
- Identify functions of nutrients and their major food sources.

PDBIO 205 : Human Biology. (3:3:0)

OFFERED: Independent Study online course.

DESCRIPTION: Body systems and influence of heredity.

NOTE: For nonbiology majors. Currently offered online only.

**Course Outcomes**

- Demonstrate understanding of the anatomic and physiologic terminology necessary forwritten and oral communication about the body, its functions, and its interaction with allother species on this planet.
- Students will demonstrate understanding of human biology at the chemical, microscopic,anatomical, physiological, and ecological levels.
- Demonstrate the ability to connect understanding of the body and its function with thefunction and

survival of the world we live in.

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

PSYCH 322 : Developmental Psychology: Adulthood. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Stability and change in psychological, physiological, and interpersonal processes through early, middle, and late adulthood.

NOTE: Contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

- Students will understand and remember the basic developments that occur during adulthood, the basic patterns of thought, emotion, and behavior characteristic of adults, and the important individual and contextual influences on adult psychology and development.Measurement: Multiple choice and short essay questions.
- Students will understand the key concepts and theories that are predominant in the literature on adult psychology and development.Measurement: Multiple choice and short essay questions.
- Students will be able to more effectively communicate verbally and in writing about adulthood.Measurement: Research papers.
- Students will be able to analyze and critically evaluate ideas, arguments, and points of view about adulthood.Measurement: Research papers.
- Students will be able to apply knowledge of adulthood to address real-world issues.Measurement: Short writing assignments and in-class activities.

PSYCH 342 : Abnormal Psychology. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Dynamics of maladjustment; major psychological disorders and therapeutic procedures. Fieldwork required.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and describe the major forms of psychological disorders and the major theories regarding the classification, etiology, and treatment of psychological disorders,and current data relevant to such theories.Measurement: Multiple choice, short answer and essay exams; short writing assignments.
- Students will engage in service learning by serving persons diagnosed with psychological disorders.Measurement: Participation assessment/field work report
- Students will critically examine key concepts and theories in abnormal psychology.Measurement: Essay exams, short writing assignments, in-class debates
- Students will examine and critique a topic in abnormal psychology using the current research literature.Measurement: APA style paper

SFL 210 : Human Development. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Growth and development of the child from conception through adolescence; influences of family, peers, and schools.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Comprehend the dynamic and complex interaction among the domains of human development (e.g., biological, cognitive, emotional, social, etc.)Critically apply information learned in class to your own life.Provide knowledge and skills that will benefit the lives of the children for whom you will have stewardship in this life.Acquire a broad base of knowledge of human development.Be conversant with the major human development theories as well as their strengths and weaknesses.
- Improve your writing and critical thinking skills.
- Understand the research methodology utilized in the study of human development.

SOC W 581 : Social Services for the Aging. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Process and impact of social service delivery systems on the aged.

NOTE: Utah state certificate available.

**Course Outcomes**

There are no course outcomes available

And other electives approved by the academic advisor.

*Hours include courses that may fulfill university core requirements.

## Show all School of Family Life (SFL) Courses

**College of Family, Home, and Social Sciences Home**

**School of Family Life Home**

**Majors**

- BS in Family and Consumer Sciences Education

BS in Family Life:
Emphases:
- Family Studies Emphasis
- Human Development Emphasis

**Minors**

- Family Life
- Gerontology

**Certificate**

- Gerontology

**Course Information**

- School of Family Life Courses

**Faculty**

# School of Family Life (SFL)

## Undergraduate Courses

Show All Course Descriptions
Hide All Course Descriptions

### 100-Level Courses

SFL 100 : Strengthening Marriage and Family: Proclamation Principles and Scholarship. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Understanding, applying, and sharing principles of successful marriage and family life from the LDS proclamation on the family, using sacred and scholarly perspectives.

**Course Outcomes**

- Critically understand your testimony of the principles of the Restored Gospel pertaining to marriage, home and family.Synthesize and be able to apply principles from revealed truth and supportive scholarship to strengthen marriage, home, and family life.Be able to confidently share and defend principles of successful marriage, home and family life using support from sacred and scholarly sources.
- Demonstrate improvement in writing skills, speaking, and critical thinking skills to be more effective advocates for marriage, home, and family in a variety of settings.

SFL 101 : Introduction to School of Family Life. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Required seminar for all students entering the major. Overview of curriculum and major requirements, faculty research programs and specialties, campus resources, future opportunities, and career possibilities.

**Course Outcomes**

- Create a realistic major or minor plan in the School of Family Life.Identify possible post-graduation pathways with a major in the School of Family Life.Participate in and develop a sense of community that includes both faculty and students.Be able to utilize important resources to become an effective learner during college and after.

SFL 102 : Introduction to Interiors. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Interior design, emphasizing history and development of the American home.

**Course Outcomes**

There are no course outcomes available

SFL 110 : Food Preparation in the Home. (2:1:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Principles of cooking and skill development in food preparation techniques. Lab required.

NOTE: Fee.

**Course Outcomes**

- Understand food preparation principles and techniques and apply them while mixing, cooking, and baking food products for home use.Identify and prevent food borne illness and safety hazards with appropriate food handling and preparation techniques.Understand and apply knowledge of nutrition to food preparation.Develop confidence in selecting and following recipes.Demonstrate proper use of equipment for baking and cooking.

SFL 160 : Introduction to Family Processes. (3:3:0)

OFFERED: Honors also; Independent Study also.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Ways of strengthening family life by understanding such family processes as generations, emotions, communication, and rituals.

**Course Outcomes**

- Critically examine the main theoretical frameworks used in the family sciences.Demonstrate understanding of basic terms, concepts, and ideas used to describe family systems.Apply family systems ideas and concepts to your own family (past and future) in order to learn how they might improve your own family well-being.

Identify and discuss how researchers uniquely study families and family systems.

SFL 185R : Beginning Clothing Construction. (3:3:5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basics of using a sewing machine for making apparel.

NOTE: Student-supplied materials required.

**Course Outcomes**

- Develop confidence and skill in using a sewing machine and other related items of equipment.Learn and use correct terminology of course content.Practice following instructions, both oral and written.Learn to enjoy sewing and feel satisfaction in creating articles of clothing.Recognize good and poor quality workmanship.Produce garments that are highly/appropriately wearable.Complete a set of samples prior to executing the technique in a project.

### 200-Level Courses

SFL 202 : Design in the Home. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 102

DESCRIPTION: Intermediate application of elements and principles of design in the home.

**Course Outcomes**

- Develop or reinforce basic vocabulary of design.Increase awareness of design possibilities and the aesthetic and spiritual effect of different designs.Develop an understanding of design as a problem-solving process.Become a life-long observer of design and the designed environment.

SFL 205 : Home and Family Living. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Principles for creating an optimal home environment for individual, marital, and family development; secular and sacred significance of temporal activities in the home; the influence of context and family processes on outcomes.

**Course Outcomes**

There are no course outcomes available

SFL 210 : Human Development. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Growth and development of the child from conception through adolescence; influences of family, peers, and schools.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Comprehend the dynamic and complex interaction among the domains of human development (e.g., biological, cognitive, emotional, social, etc.)Critically apply information learned in class to your own life.Provide knowledge and skills that will benefit the lives of the children for whom you will have stewardship in this life.Acquire a broad base of knowledge of human development.Be conversant with the major human development theories as well as their strengths and weaknesses.
- Improve your writing and critical thinking skills.
- Understand the research methodology utilized in the study of human development.

SFL 215 : Advanced Food Preparation. (3:2:3)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SFL 110

DESCRIPTION: Lecture, readings, and intense practicum in food preparation, food preservation and storage, presentation, consumerism, equipment usage, and social/familial aspects of food. Lab required.

NOTE: Fee.

**Course Outcomes**

- Understand advanced food preparation principles and techniques and apply them while mixing, cooking, and baking food products for home and commercial use.Identify and prevent food borne illness and safety hazards with appropriate food handling and preparation techniques.Apply knowledge of nutrition to food preparation.Develop confidence in selecting, presenting, and following recipes.Learn proper use of equipment for baking and cooking.Identify and discuss cultural influences in the use of foods throughout the world.

SFL 221 : Foundations of Developmentally Appropriate Practices in Programs for Young Children. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 210

DESCRIPTION: Historical, philosophical, organizational, and curricular issues related to developmentally appropriate practices in programs for young children.

NOTE: Due to enrollment constraints, SFL 221 may not be retaken to improve a grade unless approved by the Child and Family Studies Laboratory Steering Committee.

**Course Outcomes**

Obtain an historical perspective of early childhood and a philosophical foundation in developmentally appropriate practices.Become conversant with the developmentally appropriate practice standards published by NAEYC (National Association for the Education of Young Children) and understand how they apply to making effective educational decisions that will benefit children and enhance their growth and development.Communicate the principles of developmentally appropriate practices to parents and colleagues.Understand how to create classrooms that incorporate the five guidelines or points of the “Mariner’s Star”:creating a caring community of learnersteaching to enhance development and learningconstructing an appropriate curriculumassessing children’s learning and developmentestablishing reciprocal relationships with families.Gain a functional understanding of how teachers within a developmental model implement appropriate guidance and classroom management strategies, function in “lead” and “support” teacher roles, create and modify effective learning environments, facilitate and scaffold learning and, develop strategies to meet the diversity of needs in the children and families they serve.

- Utilize observational opportunities to assess teaching roles, learning environments, and young children’s individual and/or group learning.

SFL 222 : Practicum in Developmentally Appropriate Practices. (2:0:12)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: SFL 240; SFL 221 (must be taken within 5 years of SFL 222).

DESCRIPTION: Initial practicum with young children to increase understanding of socialization and learning processes, to create meaningful learning opportunities, and to implement developmentally appropriate practices.

NOTE: Due to enrollment constraints, SFL 222 may not be retaken to improve a grade unless approved by the Child and Family Studies Laboratory Steering Committee.

**Course Outcomes**

- Demonstrate understanding of how children develop and learn by assisting in and developing learning opportunities that support social, intellectual and personal growth.Develop instructional strategies for teaching children in small group and large group classroom settings.Evaluate and record student learning to assess instructional goals and objectives to drive continuing classroom instructionUse understanding of individual and group behavior to establish a learning environment that encourages active engagement, positive interactions and self motivation.Reflectively evaluate daily and weekly goals, assignment objectives and program expectations to refine personal development in teaching.Demonstrate professional habits that will guide interpersonal and caree choices.

SFL 223 : Preparation for Marriage. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Factors related to quality relationships, mate selection, and the transition into marriage.

**Course Outcomes**

- Understand the Lord’s “divine design” (Proc. ¶ 7) for marriage relationships (e.g., the nature of the marriage covenant, equal partnership, stewardships of husbands & wives, etc).Increase awareness of marriage as a social institution.Become sensitized to the modern threats to marriage.Increase understanding of the LDS doctrines of marriage, including prophetic counsel on dating, courtship, intimacy, weddings, finances, divorce, and other aspects of the marital stewardship.Increase awareness of the factors that social science research has shown to contribute to the formation and maintenance of healthy and stable marriages.Enhance spiritual awareness and academic skills in order to help them weigh scholarly and contemporary ideas about marriage relationships and use both faith and scholarship.Critically explicate your awareness of marriage as a social institution.Identify and be sensitive to modern cultural threats to marriage.Be able to grasp and understand the LDS doctrines of marriage, including prophetic counsel on dating, courtship, intimacy, weddings, finances, divorce, and other aspects of the marital stewardship.Increase your awareness of the factors that social science research has shown to contribute to the formation and maintenance of healthy and stable marriages.Enhance your spiritual awareness and academic skills in order to help you critically weigh scholarly and contemporary ideas about marriage relationships and use both faith and scholarship to “hold fast to that which is good” (1Thess. 5:21).

SFL 224 : Marriage Enhancement. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Enhancing marital communication skills, conflict resolution styles, intimacy, stress management, and developing a shared relationship vision using social science theories and research findings.

NOTE: Married, engaged, and couples seriously dating are encouraged to enroll together.

**Course Outcomes**

- Set and achieve marital goals in line with one’s marital visionBuild virtues of commitment, love, friendship, respect, fairness, generosity, and positivity in their marriageUnderstand themselves, their partner, and their relationship more completelyExpress themselves more clearly and listen more carefully to their partnerDeal more effectively with conflict, disagreements, and relationship issuesUnderstand how family-of-origin dynamics influence their marital behaviorIdentify how children potentially can influence marriage across the marital life cycleRelate sexually in a more fulfilling wayStrengthen marriage as the years pass

SFL 230 : Housing the Family. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Social-psychological, economic, and political aspects of housing families; making selections that will enhance the quality of housing, increase productivity, and protect the health, safety, and well-being of the family across the life cycle.

**Course Outcomes**

- Become versed in selecting and purchasing homes, including home quality, location and floor plans, building and functional and support systems, evaluation, purchase financing options, responsibilities and obligations of home ownership. This includes online research and in-person examination of model homes to learn about features, benefits and limitations of home layout and quality.Understand theory and application of interior

design concepts and the ways these relate to creating a home that meets the physical, emotional and psychological needs of the family.Critically compare features, benefits and pricing and selecting large home expenditures such as appliances, furnishings, lighting, textile products, flooring, window coverings and accessories through book learning, class lectures, on-line comparisons and field trip experiences.Become competent in e-design floor plan software programs in the selection, costing and placement of interior furnishing components, including cross-referencing and sourcing skills.Evaluate equally elements of living the gospel in all housing and family living decisions through preparation of assigned gospel living at home topics presented in class.Demonstrate competency in learning from each other through in class participation, field trips, in-class presentations, and through interactive teacher presentations.

SFL 240 : Parenting and Child Guidance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Theories and skills related to quality parent-child relationships.

**Course Outcomes**

- Critically examine theories of overall parenting styles and the impact of these styles upon optimal parenting.Critically examine parenting practices within the overall parenting styles and the impact of these practices upon optimal parenting.Identify effective parenting practices in the context of various life stages.Understand parenting principles that may heighten professional and/or parental potential.
- Synthesize in writing an analysis of parenting styles and practices of your family of origin and how you may modify those styles and practices with the principles obtained in this class.Examine and write in depth a specific area of interest related to parenting styles and practices.

SFL 260 : Family Finance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Introduction to time value of money, budgeting, saving, credit, taxes, housing, insurance, and investing emphasizing practical application in the home.

**Course Outcomes**

- Identify areas of financial risk in your personal lives.Differentiate between a good financial decision and a poor financial decision.Use financial calculators or financial equations for time value of money to classify various financial products to determine the most appropriate product for their family given their current financial situation.Generate a family budget and evaluate home and automobile purchasing and financing options.Analyze and plan for present and future needs by understanding investing option available.

SFL 261 : Consumerism and the Marketplace for Secondary Teachers. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: A pre-service preparation course designed to prepare FACSED classroom teachers to teach content regarding dynamics of consumerism and the marketplace and develop skills for implementing a discipline-based approach for teaching consumerism in secondary schools.

**Course Outcomes**

- Identify consumer rights, responsibilities, and remedies and identify effective practices for purchasing consumer goods and services.
- Synthesize legal and ethical considerations of being an informed consumer in today's market.
- Identify and explain the purposes and features of private and government agencies providing assistance, information, and published materials that are consumer resources for decision making.
- Distinguish the roles of labels, warranties, guarantees, and advocate groups in wise consumer behavior.
- Determine how government, business, and the consumer interact for the mutual benefit of each other in the marketplace.
- Analyze prudent steps in the selection of healthcare, childcare, elder care, repair services, household materials, automobiles, toys, and equipment.
- Describe ways to avoid identity theft, fraud, deceptions, and rip-offs.
- Explain the importance of understanding financial contracts (disclosure information, grace period, payment penalties, method of interest calculation).
- Perform a market analysis exercise and exercise better shopping practices.

SFL 276R : Exploration of Teaching: Family and Consumer Sciences. (3-4:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major-area preadmission requirements; FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

There are no course outcomes available

SFL 280 : Dynamics of Clothing. (3:3:0)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Introduction to the influences, meanings, and dimensions of individual clothing selection processes and its effect on families, communities, and cultures.

**Course Outcomes**

- · Develop critical judgment about the effects of clothing upon the physical, social, psychological, and economic well-being of individuals, families, and social groups.· Understand the terminology, concepts, and theories in clothing, fashion, and consumer behavior.· Identify and understand the interrelationships among areas in the fashion industry and become aware of related careers.· Learn the history of fashion

through the 20th century and influential fashion designers and capitals.· Become acquainted with types of research conducted in the field.· Develop critical thinking skills, and use these skills to communicate ideas related to clothing in the family.

SFL 282 : Textiles. (3:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Natural and synthetic textile fibers, yarns, fabric construction, dyes, and finishes. Care and performance of textile fabrics for clothing and household use.

**Course Outcomes**

- Distinguish between fibers, yarns and fabrics.Predict behavior of fabric based on fiber content, as much as possible without having studied finishes and dying. That is, they will be able to use fiber and yarn and weave or knit properties to predict behavior.Choose among alternatives in the creation of simple yarns for specific purposes.Distinguish a woven fabric from a knitted one.Identify the basic weaves used in woven fabrics, and the 2 basic classes of knits, with several of the subclasses of common knits.Utilize correct terminology for the many items and processes used in the textile industry.Make choices among the many variables to create a particular fabric for a particular use.Identify forty-six common fabrics on sight.

SFL 287 : Intermediate Clothing Construction. (3:3:5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 185R or equivalent sewing skills.

DESCRIPTION: Assessing and executing various construction methods, including construction of several full-scale garments.

NOTE: Student-supplied materials required. Fee.

**Course Outcomes**

- Increase your ability in making appropriate choices among various construction methods given various fabric and style variablesStrengthen and broaden your experience in apparel construction techniques.Learn and use correct/appropriate construction terminologyRecognize and describe quality characteristics of various construction techniques, understand and apply processes necessary to produce them, and accurately evaluate resulting quality.Create examples of construction techniques which illustrate personal skill improvement over the course of the semester.Assemble a sample portfolio with materials prepared, mounted, and presented professionally.Continue to feel a sense of accomplishment and personal satisfaction in sewing.Understand and apply garment assembly sequencing as it relates to fabric and style variables.Demonstrate the “sample making” teaching approach and the “garment making” teaching approach in order to evaluate and have both in the professional repertoire.

SFL 290 : Critical Inquiry and Research Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Philosophies of critical inquiry. Principles of designing, conducting, and reporting social science investigations.

**Course Outcomes**

- Evaluate the strengths and weaknesses of different methods of inquiry used in investigating the human contexts of human development, home, and family.
- Conduct a research study and write up the results.
- Gain practical experience in using research methods.
- Use library search engines to identify articles targeted toward a specific research question.

### 300-Level Courses

SFL 325 : Forming Marital Relationships. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Critical analysis of literature regarding dating, spouse selection, and transition to marriage processes leading to successful marriage. Preparation for research and teaching in the field.

**Course Outcomes**

- Critically explore and consider ideas and theories about why people form romantic relationships.Critically examine current cultural trends in relationship formation, duration, and dissolution.Synthesize and explore scientific findings about why marriages may succeed or fail.Understand principles that will allow you to integrate the information from class into your personal belief system so that it is useful for you in your professional and personal endeavors while strengthening your beliefs in the gospel.

SFL 328 : History of Interior Design and Architecture 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: History of interior design, architecture, and furnishings from ancient Egypt to beaux arts movement. French, English, and American design.

**Course Outcomes**

- Identify important motifs, interior, and exterior architectural styles from each of the historical periods covered in class.Identify furniture, designers, and minor/decorative arts from each of the historical periods covered in class.Understand the relationship of the design periods to history and culture.

SFL 329 : History of Interior Design and Architecture 2. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Furniture, interior design, and architecture from Industrial Revolution to present.

**Course Outcomes**

- Students will identify the popular types of housing styles of 1900-2011. Students will explain how each style was influenced by political and economic factors
- Students will identify the architects that had an impact on the various periods of architecture.
- Students will analyze how the various styles of architecture were influenced by society and culture.

SFL 330 : Preprofessional Preparation for Marriage and Family Therapy. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of profession, licensing, and application to graduate study.

**Course Outcomes**

- Review and evaluate at least two accredited Marriage and Family Therapy programs.Write a letter of application to an accredited Marriage and Family Therapy program of your choiceHave letter of application to an accredited Marriage and Family Therapy program reviewed by at least one Marriage and Family Therapy faculty member.Become familiar with career options in Marriage and Family Therapy and begin to formulate career choices.

SFL 331 : Infant Development in the Family. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.

DESCRIPTION: Conception, prenatal development, pregnancy. Physical, cognitive, and social development of the first twenty-four months. Implications for guidance and care in the family.

**Course Outcomes**

There are no course outcomes available

SFL 333 : (SFL-Soc 318) Adolescent Development in the Family and Other Social Contexts. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.

DESCRIPTION: Examining the developmental and social contexts of adolescents with emphasis on the importance of the family. Other contexts include peers, religion, community, schools, and cross-cultural issues.

**Course Outcomes**

- Critically examine and discuss selected topics in adolescent development, as well as being able to apply the information and skills learned in this class to your own life.Identify and discuss the major theories of adolescent development, as well as the various research methods used in the study of adolescent development.Understand the important developmental changes that young people experience during this period and during their transition to adulthood.Discuss why at-risk issues are so pronounced during this period and understand prevention and intervention measures that can be taken by families to help them cope with this transition.
- Synthesize (both in thought and writing) information on adolescent development, and apply this information to “real” adolescents with whom you come into contact.

SFL 334 : Adult Development and Aging in the Family. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 160

DESCRIPTION: Adjustments to physical, emotional, social, and economic changes. Needs arising from changes in family relationships, living arrangements, and employment; retirement planning.

**Course Outcomes**

- Interact with older adults (parents, grandparents, neighbors, ward members, research participants, clients, etc.) in an informed (accurate knowledge of relevant issues) and sensitive (aware of “life course” perspective) manner.Apply complex interactions of gerontology concepts to real-life situations, including current issues in local, national, and world communities.Understand and articulate basic age-related biological, psychological, and sociological processes and learn how to access and evaluate information about those age-related experiences.Synthesize course concepts through observing, serving, and interacting with older adults in the community.

SFL 335 : Family Adaptation and Resiliency. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Understanding family resiliency and building family strengths in normative transitions (birth, death, job) and nonnormative transitions (divorce, disability, remarriage, poverty, violence). Developing familial, social, religious, and instrumental resources to adapt positively to these transitions.

**Course Outcomes**

- Articulate the main conceptual frameworks which help us understand how families cope with stress.Demonstrate how a wide range of life events influence families both positively and negatively.Demonstrate what factors contribute to whether families respond positively or negatively to life events and transitions.Understand and apply how gospel principles regarding the family, charity, faith and trials interconnect with scholarly research on family stress.
- Demonstrate improvement in course content writing skills.

SFL 336 : Theories in Family Perspective. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Introduction of major theoretical perspectives and of philosophical issues. Readings include representative papers applying theoretical and philosophic tenets.

**Course Outcomes**

- Recognize important philosophical foundations of social research methods and theory.Identify and understand the basic components of eight family theories.Compare and contrast the philosophical underpinnings (assumptions and implications) of theories.
- Apply theory to family focused research.
- Represent your own ideas about family life using theoretical language.Write more clearly about your ideas and the ideas of other family social scientists.

SFL 340 : Family Meal Management. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 110 or instructor's consent.

DESCRIPTION: Organizing and managing time, energy, finance, and nutrition in planning, preparing, and serving family meals; ethnic and cultural diversity in etiquette and meal planning. Lab required.

NOTE: Fee.

**Course Outcomes**

- Develop a philosophy of why meal preparation and consumption at the family table is an important component in development and stability of families.Plan attractive meals with consideration for nutritional adequacy, income level, social, cultural, psychological, palatability, and aesthetic factors.Employ sanitation standards and safety procedures in food handling and in the use and care of kitchen utensils, equipment, and food storage.Demonstrate an understanding of factors affecting food habits, meal consumption patterns, and trends in food cost.Utilize managerial skills and available resources in food purchasing, and meal planning, preparation, and service

SFL 345 : Family Life in World Religions. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: How families of various faiths live their religion in their homes, with emphasis on practical, day-to-day home and family life rather than on abstract theology.

**Course Outcomes**

- Critically evaluate how families of other faiths live their faith in their homes.Synthesize and give thoughtful consideration on how to best to live LDS beliefs and practices in day-to-day home life.Evaluate and synthesize how to learn optimal characteristics from people of other faiths.Demonstrate critical thinking skills on practical living.

SFL 351 : Socialization Across Childhood. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.

DESCRIPTION: Processes and sequences of social development across childhood.

**Course Outcomes**

There are no course outcomes available

SFL 352 : Cognitive Development. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.

DESCRIPTION: Development of mental abilities; effects of maturation and learning on memory, perception, attention processes, intelligence, social cognition.

**Course Outcomes**

- Critically examine and discuss selected topics in cognitive development.Identify and discuss selected theories and theoretical models of cognitive development, as well as the various research methods used in the study of cognitive develop. Understand how cognitive development changes throughout life span.
- Evaluate in empirical research studies a specific topic in cognitive development and synthesize in each study the research questions, methodology, findings, and discussions of the findings.
- Succinctly summarize in writing a collection of empirical studies on a topic in cognitive development of your interest.

SFL 354 : Cross-Cultural Family and Human Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 101 & SFL 290; SFL 160 or SFL 210 or concurrent enrollment.

DESCRIPTION: Comparative study of familial, social, and other factors in development.

**Course Outcomes**

- Critically evaluate the importance of considering gender as an important contextual factor for understanding human development and relationships.Develop awareness of one's own cultural and gender-based values and

beliefs.Recognize and explicate biases inherent in the perspective of the dominant U.S. culture.Engage in class (and out-of-class) discussions about class topicsBe better positioned as a citizen of the world, in terms of valuing diversity and being able to analyze world cultures for how they might benefit (or cost) individual and family development.

SFL 355 : Language Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Philosophical, social, intellectual, and emotional contexts of language acquisition and usage.

**Course Outcomes**

There are no course outcomes available

SFL 358 : Media, Family, and Human Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Aspects of media and their potential effects on family interactions and human development across the lifespan.

**Course Outcomes**

- Discuss the frequency of use of forms of media.Describe the major theories and associated research that are used to describe media research.Critically examine media theory and research in the field and apply course material to your own experiences.Understand how media may influence human development.Discuss how media can shape the family.
- Demonstrate research skills by researching a topic area relevant to the media.

SFL 359 : Child Life in Healthcare Settings. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 210

RECOMMENDED: SFL 331, 333, 351.

DESCRIPTION: Roles of child life specialists in preparing children and families for healthcare experiences. Content includes psychosocial and developmental needs of children, adolescents, and families in healthcare settings and impact of illness, injury, and hospitalization on the child and family.

**Course Outcomes**

- Describe the contents of the official documents of the Child Life Council (CLC), including the Code of Ethical Responsibility, Child Life Competencies, and Standards of Clinical Practice, the Child Life Mission, Values and Vision Statements, and the Code of Professional Practice.
- Identify the elements of child life practice in direct and non-direct services in pediatric health care including a historical review of the profession and its development in the evolution of children's healthcare.
- Use developmental theory to assess the impact of illness, injury and health care on patients and families, identifying the stressors and developmental and psychosocial treatment issues that affect the healthcare experience of a child and family including siblings.
- Be able to apply the key principles of patient- and family-centered care, including principles of respect and dignity, information sharing, supporting participation in care, and collaboration in relationship to child life practice.
- Compare both historical and current perspectives on the rationale for, and techniques and outcomes of preparation, as well as accepted preparation methods for healthcare encounters and life-changing events.

SFL 360 : Advanced Family Finance. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 260

DESCRIPTION: Time value of money principles applied to family finance.

**Course Outcomes**

- Develop advanced critical analytical skills, financial knowledge, and planning capabilities applied to money in the family.Demonstrate knowledge of "best principles and practices" that simplify financial life, and builds wealth in ways that strengthen one's family, community, and financial future.
- Critically evaluate theories and methods used in family and personal finance research as reported in scientific and popular literature.

SFL 361 : Money in the Family. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: SFL 360

DESCRIPTION: Money attitudes and financial behaviors in the family - distinguishing between living high and living well. Mentored learning course.

**Course Outcomes**

- Identify gospel truths and principles that can ground and direct the use of money and financial resources in families.Examine current perspectives about family money use, with attention to core assumptions of these perspectives.Inspect and critique current issues regarding the use of money in families that are of concern to family members, family professionals and legislators.Critically evaluate academic literature regarding resource use in families especially regarding adolescent employment, gifting and entitlement.
- Develop skills to critically evaluate and make fine distinctions in the narrative of qualitative data.

SFL 370 : Work, Family, and Community: Exploring Interconnections. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: How family life and employment interact with each other and with other community contexts (school, church,

government, recreation, media, the economy, and health care, etc.) in patterns of mutual influence.

**Course Outcomes**

- Critically examine the reciprocal interactions of the course content concerning marriages, homes, and families.Analyze how current events, trends, and changes in these contexts affect marriages, homes, and families.Demonstrate writing, critical thinking, problem-solving, and presentation skills to be better prepared to personally make a difference in the contexts discussed in class.Understand how to better manage your own marriage, home, and family as they interface with the contexts discussed in class. Analyze how to be an effective advocate for shaping the contexts covered in class to be more supportive of strong marriages, homes, and families.

SFL 377 : Teaching Methods and Instruction in Family and Consumer Sciences Education. (3:6:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 276R

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Understand the central concepts, tools of inquiry, and structures of the discipline(s} you teach and can create learning experiences that make these aspects of subject matter meaningful for students.
- Understand how children learn and develop, and provide learning opportunities that support students' intellectual social and personal development.
- Understand how students differ in their approaches to learning and create instructional opportunities that are adapted to diverse learners.
- Understand and use a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.
- Develop an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self motivation.
- Utilize knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.
- Plan instruction based upon knowledge of subject matter, students, the community, and curriculum goals.
- Understand and use formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social and physical development of the learner.
- Critically evaluate the effects of choices and actions on others (students, parents, and other professionals in the learning community} and actively seek out opportunities to grow professionally.
- Understand how to foster relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well- being.

SFL 378 : Practicum in Secondary Education. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: SFL 276R

RECOMMENDED: SFL 110, 185, and 276R.

DESCRIPTION: Field-based teaching experience directed at helping prospective teachers learn to give demonstrations, prepare for lab experiences, and execute the experience using meaningful and engaging instruction for students in the Family and Consumer Sciences content.

**Course Outcomes**

There are no course outcomes available

SFL 380 : History of Apparel. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Costume, clothing, and textiles as mediums for understanding the stages and states of individuals, families, and societies; apparel diversity and cultural identity.

**Course Outcomes**

- Critically analyze how western cultural heritage is evidenced in the evolution of clothing through time periods.Be able to distinguish clothing from various points in time by their characteristics and details.Be able to recognize the importance of catalytic events, people and technological developments and how they influenced fashion.Demonstrate how to use vocabulary and terminology specific to particular periods of time in order that we may more accurately express ourselves and communicate clearly.Understand how the value systems and beliefs of societies are reflected in their clothing.Be able to conduct personal research of interest and share those findings in a professional manner with the class.

SFL 387 : Advanced Clothing Studies: Patternmaking. (3:3:5)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: SFL 287

DESCRIPTION: Flat pattern design, basic drafting, and basic draping for women's apparel.

NOTE: Student-supplied materials required.

**Course Outcomes**

- Understand and apply flat pattern principles and methods to create patterns for women's apparel.Demonstrate how to manipulate fabrics through draping to create basic styles for women's apparel.Demonstrate how to apply basic pattern drafting techniques to create basic patterns from measurements for women.Create a record of work done with accompanying examples of styles made in class.Demonstrate the use of correct terminology.Apply pattern making principles in fabric test items.

SFL 395R : Special Topics in Family Life. (1-3:Arr.:0)

WHEN Fall; Winter; Spring; Summer

TAUGHT:

PREREQUISITE: Instructor's consent.

DESCRIPTION: Specific topics in home and family living, human development, marriage and family studies, or marriage and family therapy.

**Course Outcomes**

- Under the direction of a mentoring professor, students will critically examine, investigate, and integrate the literature for a topic of interest in human development and family studies.

SFL 399R : Academic Internship. (1-9:Arr.:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Internship program coordinator's consent.

DESCRIPTION: Supervised professional experiences linking academic learning with experience in the field.

NOTE: Forty-five internship hours required per credit hour.

**Course Outcomes**

- Complete a supervised internship in an employment setting or agency related to human development, marriage, home, or family.Link academic learning with these professional experiences.Complete a minimum of 45 hands-on hours per credit.

**400-Level Courses**

SFL 403R : Research/Creative Works Practicum. (.5-3:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Research/Creative works experience in a project directed by a faculty member.

**Course Outcomes**

- Students will conduct research with a mentoring professor which may include literature reviews, data collection, data coding, data management, data analysis, constructing statistical tables, writing proposals for conferences, and writing manuscripts to be submitted for publication.

SFL 420 : Administering Programs for Young Children. (2:2:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SFL 222

DESCRIPTION: Strategies for planning and administering quality programs in settings for young children. Budgeting, staffing, accrediting, selecting equipment, etc.

**Course Outcomes**

- Demonstrate how to operationalize appropriate curriculum based on your understanding of development and be able to critically design early childhood programs.Plan the physical environment including financing and budgeting of an early childhood program.Obtain information and guidelines on nutrition, health, and safety services for young children.
- Develop strategies for assessing, recording, and reporting children's progress as well as evaluating the overall effectiveness of the program.Critically evaluate ways to contribute to the profession by addressing the individual needs of the families; influencing public policy; and becoming involved in research.

SFL 449 : Biological Foundations of Human Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.

DESCRIPTION: Biological, genetic, and neurological foundations of human development and their interactions with family socialization processes.

**Course Outcomes**

- Understand how biological process influences human development.Understand and synthesize the intersections between biology, psychology, and behavior in a developmental context.
- Critically examine and analyze current research in the areas of developmental psychobiology.
- Demonstrate critical thinking/writing skills.

SFL 453 : Moral Development. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.

DESCRIPTION: Theories and applications of moral development, including moral reasoning, moral emotions, contextual factors, and socialization influences that influence moral decisions and moral behavior.

**Course Outcomes**

- Critically examine and discuss selected topics in moral development, as well as being able to apply the information and skills learned in this class to your own life.Understand the different constructs that contribute to moral development, such as cognition, emotion, identity, context, and culture.Be able to discuss socialization influences that impact children's moral development, such as parents, peers, teachers, and media.
- Identify and discuss the major theories of moral development, as well as the various research methods used in the study of moral and prosocial development.
- Think and write in a synthesized, analytical fashion, combining information across sources rather than merely summarizing information.

SFL 460 : Advanced Family Processes. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Integrating theory, research, and application of ideas introduced in SFL 160, focusing on key theoretical points, how research is conducted and applied, communication patterns, ritualization, conflict, distance regulation, crises, stress, and building family strengths.

**Course Outcomes**

- Understand the research on family processesCritically evaluate the research on family processesSynthesize the research on family processes
- Create recommendations for family issues using your understanding, evaluation, and synthesis of the research on family processes.

SFL 461 : The Family and the Law. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Legal environment of the family system, with emphasis on husband-wife and parent-child relationships, rights, and responsibilities.

**Course Outcomes**

- Critically analyze the historical and practical application of the law to your family.Critically analyze the profound implications that family law has on your relationships.Critically analyze the legitimacy of laws governing unnerving and sometimes painful issues.Be able to discuss sensitive issues different than your own in order to broaden your understanding as well as hone your ability to judge.Understand and synthesize issues addressed in class such as marriage, adoption, infertility, divorce, addiction, etc.

SFL 465 : Marital and Family Therapy/Enrichment Techniques. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Theories and techniques. Professional family enrichment and therapy applied to couples and families.

**Course Outcomes**

- Analyze and assess marital and family behavior.Describe ways of modifying marital and family systems using both educational/enrichment approaches and therapy approaches.
- Interview and evaluate couples and families.Use appropriately self-report measures.Observe marital and family behavior in meaningful ways.Set intervention goals based on observation and assessment.
- Write reports describing interpersonal dynamics.

SFL 471 : Philosophies of Family Work and Relationships. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Changes in household labor across time, current issues around gender and household labor, and philosophical perspectives of family work and family relationships.

**Course Outcomes**

- Understand and synthesize the historical evolution of family work and the roots of home management.Demonstrate knowledge of the core assumptions of current theoretical and research perspectives on family work.Analyze gendered perspectives on men's and women's "unique" contributions to family life.Communicate ideas clearly and engage in critical thinking as you write essays, take quizzes, and take exams.Critique and think more clearly about your own family work paradigms.

SFL 472 : Temporal Welfare in Families. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Assumptions, philosophy, and theory accounting for resource allocation, use, and meaning in families.

**Course Outcomes**

- Critically apply knowledge of principles of provident living as methods of economy in the creation of home as a sacred center for family life.Critically apply knowledge of principles of provident living as methods of economy in treating practical human needs as opportunity for moral and temporal growth in family members.Critically apply knowledge of principles of provident living as methods of economy in helping to establish a vital community.

SFL 476 : Secondary Student Teaching - Consumer Science. (12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

RECOMMENDED: All core and education classes.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

SFL 480 : Moral Foundations of Family Life. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: How the moral domain is central to human experience; implications for family life of theories and practices that acknowledge agency and the ethical.

**Course Outcomes**

- 1a. Explain how all theory and research in human science is based on a philosophy of science and a philosophy of human being. 1b. Give examples of specific assumptions we make when we attempt to explain ourselves—when we seek to understand the meaning of our experience.
- 2. Describe and give an example of how our concepts of human being (what it means to be human) connect to how we understand what or who we are and to how we explain our experience.
- 3. Create (or report examples from your experience) of how seeing the moral domain as central to human experience changes how we explain attitudes and behavior. (Or, “Give examples of how we explain human experience when we take the idea of moral agency seriously.”)
- 4. Explain (using at least two contrasting philosophies as examples) the implications of how philosophies and assumptions inform how we make sense out of research results and the directions we choose when we intervene in people’s lives. [For example, what informs how we do family life education and therapy?]
- 5. Identify and give examples of how the Restored Gospel either strengthens, revises, or obliterates academic philosophies used to understand human experience.

SFL 487 : Advanced Clothing Studies: Construction. (3:3:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 287 or equivalent sewing skills.

DESCRIPTION: Three-dimensional fitting of apparel and advanced garment construction.

NOTE: Fee.

**Course Outcomes**

- Apply the four aspects of fit and apply them to create correct fit in the basic garment.Be able to identify a new range of construction and style details and execute them well.Become more independent in sewing activities.Develop and improve skill levels of sewing techniques.Assemble a professional quality planned and organized portfolio of assigned techniques.Demonstrate sewing and fitting vocabulary and use terms correctly.

SFL 488R : Women's Home-Based Entrepreneurs. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Exploration of home-based businesses through interaction with practicing professionals.

**Course Outcomes**

There are no course outcomes available

SFL 489 : The Family and Public Policy. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Investigation of public policy processes related to legislation and laws affecting home economics/home and family life. Funding and grantsmanship.

**Course Outcomes**

- Demonstrate an understanding of why we are called to be aware and involved as “responsible citizens” (and “officers of government”) to “strengthen the family as the fundamental unit of society.”
- Demonstrate an in depth understanding of how law and public policy strive—and struggle—to help couples form and sustain healthy marriages and reduce divorce.
- Demonstrate a broader, general understanding of other family related policy and legislation designed to strengthen family life and children’s development.
- Utilize experience gained in the class in preparing to influence family policy bypreparing a legislative testimony or similar document on a chosen topic.
- Become involved in an effort to promote (or oppose) some legal or public policy initiative in an attempt to “strengthen the family as the fundamental unit of society”.

SFL 490 : Advanced Issues in Human Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 210 or concurrent enrollment.

DESCRIPTION: Evaluation of research on physical, mental, emotional, and social development.

**Course Outcomes**

- Critically evaluate issues related to studying developmental processes as well as study and practice critical thinking skills.Critically synthesize information learned from previous human development courses by examining how biological (e.g., temperament) and environmental (e.g., parents and peers) processes interact to shape development.Demonstrate how to examine current issues in human development developmentally.Critically synthesize the information, skills, and abilities learned in the first three units in an examination of the period of development recently termed “emerging adulthood” (ages 18-27).

SFL 498 : Family Life Education: Integrating Theory, Research, and Practice. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Senior standing; instructor's consent.

DESCRIPTION: Integrating theory, research, and practice. Developing competencies to design, implement, and evaluate family flife education programs. Preparing to work preventively with couples, parents, and families in areas such as marriage preparation, marriage enhancement, and parenting.

**Course Outcomes**

- Develop and articulate a personal philosophy of family life education.
- Critically evaluate the quality of several examples of family life education programs.
- Design a family life education program using scholarly literature and best practices.
- Be able to apply a framework for the development of family life education programs.
- Be able to utilize a variety of approaches to evaluating family life education programs.
- Learn principles and practices for teaching about family life in a variety of traditional and contemporary venues, including workshop and self-directed approaches.
- Practice workshop teaching and receive peer, clientele, and instructor feedback.
- Be able to utilize principles and practices for reaching diverse audiences.
- Be able to utilize principles and strategies for multiplying their reach through collaborative partnerships and social marketing.

**Back to School of Family Life Home**

**College of Family, Home, and Social Sciences Home**

**School of Family Life Home**

**Majors**

- BS in Family and Consumer Sciences Education

BS in Family Life:
Emphases:
- Family Studies Emphasis
- Human Development Emphasis

**Minors**

- Family Life
- Gerontology

**Certificate**

- Gerontology

**Course Information**

- School of Family Life Courses

**Faculty**

# School of Family Life Faculty

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## Professors

Beutler, Ivan Felix
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1969
MS, Purdue University, Lafayette, 1972
PhD, Purdue University, Lafayette, 1974

Busby, Dean
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1986
MS, Brigham Young University, 1988
PhD, Brigham Young University, 1990

Butler, Mark H.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1986
MS, Brigham Young University, 1990
PhD, Texas Tech University, 1996

Carroll, Jason S.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Brigham Young University, 1998
PhD, University of Minnesota, 2001

Crane, D. Russell
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** AA, Chabot College, 1973
BA, California State University, Hayward, 1975
MS, Brigham Young University, 1978
PhD, Brigham Young University, 1979

Day, Randal D.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1973
MS, Brigham Young University, 1974
MS, University of Wisconsin, Madison, 1975
PhD, Brigham Young University, 1979

Dollahite, David C.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor

**DEGREES:** BA, Brigham Young University, 1983
MS, Brigham Young University, 1985
PhD, University of Minnesota, St Paul, 1988

Draper, Thomas William
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
MS, Brigham Young University, 1973
PhD, Emory University, 1976

Duncan, Stephen Farr
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1980
MS, Brigham Young University, 1985
PhD, Purdue University, 1988

Galbraith, Richard C.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
MS, Northwestern University, 1973
PhD, Northwestern University, 1975

Harper, James M.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, Brigham Young University, 1976
PhD, University of Minnesota, Minneapolis, 1979

Hart, Craig H.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 1982
PhD, Purdue University, 1987

Hawkins, Alan J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1979
MOB, Brigham Young University, 1984
PhD, Pennsylvania State University, 1990

Hill, Edward Jeffrey
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MOB, Brigham Young University, 1984
PhD, Utah State University, 1995

Holman, Thomas B.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BA, Utah State University, 1970
MEd, Brigham Young University, 1976
PhD, Brigham Young University, 1981

Larson, Jeffry Hale
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
MS, Brigham Young University, 1974

PhD, Texas Tech University, 1980

Miller, Richard B.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, Brigham Young University, 1984
PhD, University of Southern California, 1989

Nelson, Larry J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1996
PhD, University of Maryland, College Park, 2000

Olson, Terrance D.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1967
MS, Brigham Young University, 1969
PhD, Florida State University, 1973

Sandberg, Jonathan G.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Brigham Young University, 1995
PhD, Kansas State University, 1998

## Associate Professors

Bean, Roy A.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MS, Brigham Young University, 1995
PhD, Brigham Young University, 1997

Coyne, Sarah Marie
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 2001
PhD, University of Central Lancashire, 2004

Gibbs, Richard W. II
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, University of Minnesota-Twin Cities, 2000
PhD, University of Minnesota-Twin Cities, 2007

Israelsen, Craig L.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1983
MS, Utah State University, 1984
PhD, Brigham Young University, 1990

Johnson, Lee N.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor

**DEGREES:** BS, Brigham Young University, 1993
MS, Utah State University, 1996
PhD, Kansas State University, 1998

Nelson, David A.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1995
PhD, University of Minnesota, 1999

Porter, Chris L.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Purdue University, West Lafayette, 1992
PhD, Purdue University, West Lafayette, 1996

Robinson, Clyde Clark
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1972
MS, Brigham Young University, 1975
PhD, University of North Carolina, Greensboro, 1982

Roper, Susanne Olsen
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1975
MS, Brigham Young University, 1981
PhD, University of Georgia, 1992

Walker, Laura Padilla
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Central Michigan University, 1999
MA, University of Nebraska, Lincoln, 2001
PhD, University of Nebraska, Lincoln, 2005

Yorgason, Jeremy B.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1997
MS, Kansas State University, 2000
PhD, Virginia Polytechnic Institute and State University, 2003

## Assistant Professors

Baugh, Dawna
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Utah State University, 1985
EdD, Brigham Young University, 1997

Bradford, Angela
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MS, Auburn University, 2005
PhD, Auburn University, 2012

Dyer, Justin
**COLLEGE:** Family, Home, and Social Sciences

**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2004
PhD, University of Illinois—Champaign Urbana, 2009

Holmes, Erin Kramer
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1998
MS, University of Delaware, 2001
PhD, University of Texas, Austin, 2006

James, Spencer
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2006
MS, Brigham Young University, 2008
PhD, Pennsylvania State University, 2012

Jensen, Alexander C.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2009
MS, Purdue University, 2011
PhD, Purdue University, 2013

Lambert, Nathaniel
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2005
PhD, Florida State University, 2010

Lee, Chien-Ti
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Taipei Municipal University, 2002
MS, National Chengchi University, 2005
PhD, Utah State University, 2010

Willoughby, Brian
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2004
MS, University of Minnesota, 2006
PhD, University of Minnesota, 2009

## Assistant Clinical Professor

Barnes, Lauren A.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Family Life
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2008
MS, Brigham Young University, 2010
PhD, Brigham Young University

**College of Family, Home, and Social Sciences Home**

**Geography Department Home**

**Majors**

BS in Geography
Emphases
- Environmental Studies
- Geographic Information Systems
- Geospatial Intelligence
- Global Studies
- Tourism Studies
- Urban & Regional Planning

**Minors**

- Geographic Information Systems
- Geography Teaching
- Global Studies
- Travel and Tourism Studies
- Urban & Regional Planning

**Course Information**

- Geography (Geog) Courses

**Faculty**

# Geography

Ryan Jensen, Chair
690 SWKT, (801) 422-5386

College of Family, Home, and Social Sciences Advisement Center
151 SWKT, (801) 422-3541

## Admission to Degree Program

All degree programs in the Department of Geography are open enrollment. However, special limitations apply for teaching majors.

## The Discipline

Geography offers a variety of programs centered around spatial analysis and tailored, so far as possible, to meet the future needs of individual students. Our modern computer laboratory allows students to gain practical experience with geographical information systems (GIS), remote sensing, cartography, and other programs in urban and regional planning, travel, and population studies.

## Career Opportunities

Graduates are employed in a wide range of private and governmental positions. Job titles include geographer; teacher of geography; city or regional planner; cartographer; photo interpreter; commodities and industrial location analyst; intelligence, travel industry, or environmental and GIS specialist; and many others.

Skills in spatial analysis make geography a valuable minor or supporting field for many other disciplines.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Geography**
- **Environmental Studies Emphasis** (Program Outcomes)
- **Geographic Information Systems Emphasis** (Program Outcomes)
- **Geospatial Intelligence Emphasis** (Program Outcomes)
- **Global Studies Emphasis** (Program Outcomes)
- **Tourism Studies Emphasis** (Program Outcomes)
- **Urban and Regional Planning Emphasis** (Program Outcomes)

**Minor in Geographic Information Systems**
**Minor in Geography Teaching**
**Minor in Global Studies**
**Minor in Tourism Studies**
**Minor in Urban and Regional Planning**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## General Information

1. The Department of Geography offers one major with six emphases. The emphases are designed to enable students to gain an appreciation of our world as well as prepare them for either a career or graduate school. All students are required to take a set of core courses that emphasize basic geographic concepts and ways of knowing that are common to all six emphases. These courses prepare students for specialization in upper-division courses.

   Geography at Brigham Young University focuses on our interdependent world: the spatial relationships between the physical landscape, diverse societies, and current events. The major nourishes a sense of curiosity about the world around us, a desire to serve our local and global communities, and the skills necessary to solve significant problems that are inherently spatial.

   Hundreds of students major in geography to prepare for a professional career, for graduate study, or because of an interest in exploring and understanding the world around them. We emphasize both technical and critical thinking skills, including geographic information systems (GIS) and remote sensing, statistics, data collection, interpretation, and communication

using the written and spoken word and visual data display (maps, charts, and graphs).

2. Prerequisite: all students admitted to one of the geography majors listed above must complete the following courses within one year of declaring a major:
   Geog 100, 101, 110, 120, 130, 211.

3. Exit assessment: Students must complete an exit assessment during their final semester no later than one month before graduating. The assessment is meant to evaluate the department's program goals and student learning outcome. Although the assessment is a formal requirement, the results are anonymous and will not be part of the student's academic records.

**College of Family, Home, and Social Sciences Home**

**Geography Department Home**

**Majors**

BS in Geography

Emphases

- Environmental Studies
- Geographic Information Systems
- Geospatial Intelligence
- Global Studies
- Tourism Studies
- Urban & Regional Planning

**Minors**

- Geographic Information Systems
- Geography Teaching
- Global Studies
- Travel and Tourism Studies
- Urban & Regional Planning

**Course Information**

- Geography (Geog) Courses

**Faculty**

# BS in Geography: Environmental Studies Emphasis (50–59 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following core courses:

GEOG 100 : The Geographic Approach. (1:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Overview of the discipline of geography and the faculty and geography major at BYU.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 101 : Global Environment: Understanding Physical Geography. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Physical environment, distribution and interrelationships of climates, landforms, ecosystems and their human significance.

**Course Outcomes**
There are no course outcomes available

*GEOG 110 : Landscapes of Disaster: An Introduction to Natural Hazards. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Exploring natural and social science of disturbances by analyzing causes, consequences, and role of human behavior in causing and mitigating natural disasters.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

*GEOG 120 : Geography and World Affairs. (3:3:0)
OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Survey of the world, stressing geography of major political regions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

*GEOG 130 : Introduction to Human Geography. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Culture distributions and their relationship to existing geographic phenomena.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 211 : Map Use and Interpretation. (4:4:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Maps as tools for spatial analysis of problems in physical and cultural geography.

**Course Outcomes**
- Identify each component of the â Big Threeâ when using or observing geographic technologies.

The Big Three includes 1) Geographic Information Systems, 2) Global Positioning Systems, and 3) Remote Sensing.
- Complete all typical map scale calculations related to land distance and area including unit conversions.
- Give and take coordinate references in UTM and lat / long and convert between the two. select a datum and coordinate system appropriate for a given job-related task. Explain the logic of and give / take a reference in the PLSS
- Configure a GPS receiver properly to use both with and without a map. Lay-in and follow the course in a GPS receiver.
- Measure elevation, distance, direction, slope, and aspect from digital or paper topographic maps. Perform a simple statistical analysis of data on a USGS topographic map.
- When presented with a typical specimen, perform a simple interpretation of a thematic map (e.g. Choropleth, Isoline)

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

*GEOG 222 : Statistics for Geographers 1. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Methodology of spatial analysis. Theory and techniques in geographic data description and population inference.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 322 : Statistics for Geographers 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GEOG 222

DESCRIPTION: Advanced techniques in geospatial analysis.

**Course Outcomes**

- To master an advanced set of quantitative methods that are particularly appropriate for geographers, becoming especially skilled in one statistical area.
- To determine what quantitative methods are appropriate for answering different research questions.
- To apply statistical analysis to geographic problems in a competent and worthwhile way
- To develop and carry out an excellent research project complete with collaborative work and a crisp oral and professional visual presentation.
- To understand and appreciate published academic geographic research that uses a variety of quantitative methods.

2. Complete the following environmental studies core courses:

GEOG 213 : Earth Observation and Image Interpretation. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Principles of earth observation: primarily air photo/large-scale satellite imagery interpretation, basic field methods, photogrammetry.

**Course Outcomes**

- Students will be able to perform a simple cultural / physical interpretation of simple monoscopic imagery.
- Students will be able to complete simple measurements from historical air photos including height, distance, area, scale, and coordinate-related problems.
- Students wil be able to complete simple problems related to electromagnetic radiation and atmospheric effects.

GEOG 303 : Biogeography. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 101.

DESCRIPTION: Broad-scale distribution of plants and animals. Theoretical and practical applications to conservation and effects of global environmental change.

**Course Outcomes**

- Demonstrate an understanding of basic concepts and processes in biogeography
- Recognize and be able to explain patterns of plant and animal life at many different scales
- Explain how humans have affected the distribution and diversity of plants and animals, and apply concepts to decisions regarding human use of the environment
- Demonstrate a knowledge of prominent professional biogeographers and ecologists and their current research themes

- Plan for future changes in species distributions and diversity as a result of environmental and human-induced pressures

GEOG 304 : Geography of Climates. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 101.

DESCRIPTION: Elements, controls, distribution, and classification of the earth's climates.

**Course Outcomes**

- Gain an understanding of the key determinants of the world's main climates
- Gain an appreciation of the complex nature and implications of human climate change.
- Understand how extreme weather events occur and their potential impacts on humans.
- Understand the methods climatologists use to collect data about past and present climate.
- Improve writing, critical thinking and your ability to apply knowledge to solve geographic problems.

GEOG 306 : Public Land Conservation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Environmental and social geography of public lands; analyzing historical, planning, management, and ecological issues.

**Course Outcomes**

There are no course outcomes available

GEOG 307 : Landscape Ecology. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 101, 212, 213.

DESCRIPTION: Interaction between spatial patterns and spatial processes in an ecological context. Methods, theories, and practical applications of landscapes at various scales.

**Course Outcomes**

- Demonstrate an understanding of the basic concepts of landscape ecology
- Understand the relation between pattern and process in landscapes across multiple spatial and temporal scales
- Read, understand, and critique research articles in scholarly journals related to landscape ecology
- Understand and be able to use landscape metrics and associated methodologies and technologies to quantitatively analyze landscapes
- Identify and address a research question in landscape ecology, and effectively communicate the results orally and in writing
- Apply landscape ecology concepts to environmental planning and conservation biology

*PWS 150 : Environmental Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Conservation and management of natural resources concurrent with increasing socioeconomic and human population demands; factors such as soil, water, and air pollution, resources management, bioremediation, nutrient cycles, and global climate changes

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Gain a deep appreciation for the Lord's admonition to Adam and Eve regarding the Earth to dress it and keep it
- Engage others and participate in discussions about major environmental problems, movements, and solutions (e.g., desertification, invasive species, water pollution, green revolution, and renewable energy).
- Understand how "science" is conducted.
- Demonstrate a fundamental knowledge (i.e., scientific literacy) of the environment and current environmental problems facing us locally, regionally, and globally.
- Devise experiments with testable hypotheses based the scientific method—process of making observations and logically integrating those observations into a model of how the world works.
- Foster and promote environmental stewardship within your realm of influence and your community.

3. Complete four elective courses from the following:

BIO 350 : Ecology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth.

**Course Outcomes**

- Understand the major physical processes that form and characterize the biosphere, including global scale energy flow, the carbon cycle, climate, and soil formation.
- Understand the processes that drive major levels of organization of the biotic world, including energetics in the ecosystem, population dynamics, and species interactions.
- Understand the importance of writing as a way of synthesizing and solidifying critical thought.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Understand the importance of ecology to issues regarding human well-being
- See the connectivity and relevance of ecology to other fields of study

BIO 370 : Bioethics. (2:1:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Introductory biology course.

DESCRIPTION: In-depth lecture and small group discussion of varied bioethical issues. LDS Church positions emphasized when appropriate.

**Course Outcomes**

- Students will understand the ethical and philosophical underpinnings of bioethics and to develop ethical intuitions on bioethical issues.
- Students will learn the terminology, vocabulary, and objectives of bioethics.
- Students will understand the tools and approaches needed to make a bioethical decision and to communicate that decision in rationally informed ways.
- Students will understand the bioethical primary literature, to understand how to read case studies, and familiarity with the major issues being discussed in bioethics today.

BIO 450 : Conservation Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A & BIO 350; or BIO 220B & BIO 350

DESCRIPTION: Scientific principles of conservation: applying population genetics, and phylogenetic and ecological theory to preservation of biological diversity; developing sustainable ecological systems compatible with human resource use.

**Course Outcomes**

- Apply an understanding of ecological processes to conservation of populations, species, and ecosystems.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Demonstrate the ability to apply the scientific method and analytical thinking to ecological and conservation issues.
- Demonstrate the ability to synthesize literature relevant to a topic in conservation bioloigy
- Demonstrate the ability to write a scientific term paper

GEOG 305 : Geography of Landforms. (3:3:0)

WHEN TAUGHT: Fall Contact Department

RECOMMENDED: Geog 101.

DESCRIPTION: Elements of landforms: distributions and cultural significance.

**Course Outcomes**

- Examine the history of landform study and the key individuals in the history of geomorphology.
- Explain the physical processes that produce landforms.
- Examine a physical landscape and describe why it looks the way it does.
- Describe how human settlement and recreation patterns are influenced by landforms.
- Understand dating techniques geomorphologists use to understand earth's history.

GEOG 310 : Introduction to Urban and Regional Planning. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to the profession and practice of urban and regional planning.

**Course Outcomes**

There are no course outcomes available

GEOG 311 : Intermediate Geographic Information Systems. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GEOG 212

DESCRIPTION: Collecting, managing, and analyzing spatial data to solve common geographic tasks.

**Course Outcomes**

There are no course outcomes available

GEOG 312 : Cartographic Design. (4:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: GEOG 211 & GEOG 212

DESCRIPTION: Graphic perception, layout, typography, color, statistical methods, and symbolization of thematic maps through computer-aided techniques.

**Course Outcomes**

- Develop a map-based solution to a need, focusing on purpose and audience.
- Gather and process data needed for a map.
- Design maps to be clear, useful, and attractive, employing appropriate techniques such as thematic map types, composition, symbology, color, and text.
- Continue to learn design skills through map critique and self-training
- Appreciate quality work and put forth the effort necessary to produce quality results

GEOG 313 : Remote Sensing 1. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: GEOG 213
DESCRIPTION: Introduction to airborne and spaceborne sensors, including characteristics and image acquisition. Emphasizes land cover mapping applications appropriate for environment monitoring.

**Course Outcomes**

There are no course outcomes available

GEOG 399R : Academic Internship. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: GEOG 100
DESCRIPTION: On-the-job experience.
NOTE: 3 hours required. No more than 3 hours total in cooperative education may be counted in major.

**Course Outcomes**

- Complete a supervised internship in an employment setting or agency related to geography.Link academic learning with these professional experiences.Complete a minimum of 45 hands-on hours per credit.

GEOG 414 : Applied Urban Environmental Modeling. (3:3:0)

WHEN TAUGHT: Winter Contact Department
RECOMMENDED: Geog 212, 213, 313.
DESCRIPTION: Complexities of urban environment through use of geographic techniques, including remote sensing, GIS, GPS, aerial photo and map interpretation, and fieldwork. Modeling human impact on the physical environment by examining local case studies and completing group projects. Developing and building technical skills as tools in understanding the urban environment.

**Course Outcomes**

There are no course outcomes available

GEOG 415R : Geographic Field Methods. (1-3:Arr:0)

WHEN TAUGHT: Spring Contact Department; Summer Contact Department
PREREQUISITE: GEOG 101
DESCRIPTION: Learning different methods used by geographers in the field through hands-on involvement in real faculty research.

**Course Outcomes**

There are no course outcomes available

GEOG 423 : Planning for Unique and Sensitive Lands. (2:2:0)

WHEN TAUGHT: Winter
RECOMMENDED: Geog 310.
DESCRIPTION: Unique aspects of land affecting land-use planning positively or negatively depending on sensitivity of design. Landscape ecological principles introduced and examined for usefulness in land-use planning.

**Course Outcomes**

- Explain the environmental sciences (biology, ecology, environmental studies) including knowledge about ecological and physical systems in relation to human activity at different geographic scales.

GEOL 411 : Geomorphology and Remote Sensing. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: GEOL 111; or GEOL 330
DESCRIPTION: Interpretive analysis of landforms and their geologic significance. Use of aerial/satellite images of Earth and other planets, topographic/bathymetric maps, multi-wavelength image data. Field trips.

**Course Outcomes**

- Understand the relationships between landscapes and the processes that created them
- Develop an ability to read and interpret geology and geomorphology from topographic maps, air photos, and satellite data
- Become comfortable with quantitative analyses of landforms and geomorphic processes
- Acquire an appreciation for the unique and complex way the landscapes of Earth and the planets evolved to their present-day morphologies

PWS 225 : Principles of Wildlife and Fisheries Management. (3:3:0)

WHEN TAUGHT: Winter
RECOMMENDED: PWS 115.
DESCRIPTION: Basic principles of fish and wildlife management, their habitats, and their human users. Ecological concepts, population dynamics, nutrition, behavior, population assessment, management strategies, habitat sampling and management.

**Course Outcomes**

- Learning Outcome #1: Identify and articulate stewardship for the creation as a basis for professional judgment.This course not only provides an understanding of tools used by wildlife and fisheries managers to restore, revive, and maintain wildlife and fish populations, but also discusses our stewardship roles and responsibilities for those aspects of the creation.
- Learning Outcome #2: Identify wildland plants, soils, and wildlife species and understand how they function in the environment.This course introduces students to a number of wildlife and fish species, and basic ecological concepts as they relate to wildlife and fisheries. Students will understand the ecological roles, habitat needs, and interactions of fish and wildlife at various levels in an ecosystem
- Learning Outcome #3: Apply an understanding of ecological processes to wildlife management.This course includes an extensive overview of basic ecological processes and how to use them for fish and wildlife management.
- Learning Outcome #4: Demonstrate the ability to apply the scientific method and analytical thinking to ecological and management issues.In this course students will be rigorously taught the scientific method and given opportunities to demonstrate the understanding through fish and wildlife management problem solving. They will have writing assignments that provide opportunities for the synthesis and expression of the depth of their understanding. The term paper required in this course may be used for one of the "three written papers relating to stewardship ethics and management situations" that will be placed in the student's portfolio required for graduation with a Wildlife and Wildlands Conservation BS degree.

PWS 303 : Soils Conservation and Resources. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 282 & CHEM 105; or PWS 282 & CHEM 101; PWS 100 or equivalent; Math 110 or equivalent.

RECOMMENDED: Geol 111.

DESCRIPTION: Taxonomy of world soils; conservation and management of agricultural, wildland, wetland, and urban soils.

**Course Outcomes**

- Understand soil physics, chemistry, taxonomy, and water movement to maintain natural resources.
- Apply soil conservation practices and principles to regions sensitive to soil degradation.
- Understand the history, development, and terminology associated with USDA Soil Taxonomy and be familiar with other soil taxonomic systems. Recognize soil orders and suborders from the physical and chemical characteristics of the soil

PWS 305 : Soils and Water Quality. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 282 & CHEM 105; or PWS 282 & CHEM 101; PWS 100 or equivalent; Math 110 or equivalent.

DESCRIPTION: Principles and practices of safe management of agricultural and urban wastes; amendments and nutrients including remediation methods for conservation of soils and water quality.

**Course Outcomes**

- Evaluate case studies in current topics soil and water quality
- Demonstrate a fundamental knowledge in water quality and water resource conservation as influenced by soil-water-atmosphere interactions
- Enhance critically thinking skills as it relates to issues in water quality management and resource conservation
- Improve mathematical and statistical skills related to nutrient, salinity, sodicity, and toxicity evaluation and management

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

PWS 375 : Environmental Policies and Laws. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Inception, current state, and future directions of seminal environmental policies and laws established in the US to improve environmental quality. Application of policies and laws in resource conservation and management, including a National Environmental Policy Act certification program.

**Course Outcomes**

- Demonstrate a fundamental understanding of the inception, current state, and future needs of the five seminal developments in environmental policy and law (i.e., Clean Air Act; Clean Water Act; National Environmental Policy Act; Comprehensive Environmental Response, Compensation, and Liability Act or Superfund; and the Endangered Species Act)
- Create your own conceptual framework for analyzing policy change in the United States and abroad, and

understand the role of government, society, and economics in shaping this framework
- Understand the formal institutional setting in which policy is developed, the major participants involved, and the role of science in shaping policy
- Gain a basic understanding of how environmental laws (e.g., statutes, cases, and common laws) operate to regulate our interaction with the environment and one another
- Write more effectively and concisely

PWS 419 : Forest Management and Ecology. (3:2:3)

WHEN TAUGHT: Fall
DESCRIPTION: Managing forests, emphasizing ecosystem managment.
NOTE: Field trips required.

**Course Outcomes**

- 1. Articulate their role as stewards over forested environments.
- 2. Appreciate the diversity of forests world-wide and their importance to human populations.
- 3. Apply knowledge of forest structure, function, and process in making management decisions
- 4. Be able to quantify forest structure and production
- 5. Recognize forest pests and diseases and know appropriate control techniques.
- 6. Relate forests to wildlife habitat
- 7. Identify 75 tree species located in Utah and on BYU campus.

4. Complete the exit assessment during the final semester, no later than one month before graduation.

*Hours include courses that may fulfill university core requirements.

## Show all Geography (Geog) Courses

College of Family, Home, and Social Sciences Home

Geography Department Home

Majors

BS in Geography

Emphases

- Environmental Studies
- Geographic Information Systems
- Geospatial Intelligence
- Global Studies
- Tourism Studies
- Urban & Regional Planning

Minors

- Geographic Information Systems
- Geography Teaching
- Global Studies
- Travel and Tourism Studies
- Urban & Regional Planning

Course Information

- Geography (Geog) Courses

Faculty

# BS in Geography: Geographic Information Systems Emphasis (54-56 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following core courses:

GEOG 100 : The Geographic Approach. (1:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Overview of the discipline of geography and the faculty and geography major at BYU.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 101 : Global Environment: Understanding Physical Geography. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Physical environment, distribution and interrelationships of climates, landforms, ecosystems and their human significance.

**Course Outcomes**
There are no course outcomes available

*GEOG 110 : Landscapes of Disaster: An Introduction to Natural Hazards. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Exploring natural and social science of disturbances by analyzing causes, consequences, and role of human behavior in causing and mitigating natural disasters.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

*GEOG 120 : Geography and World Affairs. (3:3:0)
OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Survey of the world, stressing geography of major political regions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

*GEOG 130 : Introduction to Human Geography. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Culture distributions and their relationship to existing geographic phenomena.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 211 : Map Use and Interpretation. (4:4:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Maps as tools for spatial analysis of problems in physical and cultural geography.

**Course Outcomes**
- Identify each component of the â Big Threeâ when using or observing geographic technologies.

The Big Three includes 1) Geographic Information Systems, 2) Global Positioning Systems, and 3) Remote Sensing.
- Complete all typical map scale calculations related to land distance and area including unit conversions.
- Give and take coordinate references in UTM and lat / long and convert between the two. select a datum and coordinate system appropriate for a given job-related task. Explain the logic of and give / take a reference in the PLSS
- Configure a GPS receiver properly to use both with and without a map. Lay-in and follow the course in a GPS receiver.
- Measure elevation, distance, direction, slope, and aspect from digital or paper topographic maps. Perform a simple statistical analysis of data on a USGS topographic map.
- When presented with a typical specimen, perform a simple interpretation of a thematic map (e.g. Choropleth, Isoline)

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

*GEOG 222 : Statistics for Geographers 1. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Methodology of spatial analysis. Theory and techniques in geographic data description and population inference.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 322 : Statistics for Geographers 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GEOG 222

DESCRIPTION: Advanced techniques in geospatial analysis.

**Course Outcomes**

- To master an advanced set of quantitative methods that are particularly appropriate for geographers, becoming especially skilled in one statistical area.
- To determine what quantitative methods are appropriate for answering different research questions.
- To apply statistical analysis to geographic problems in a competent and worthwhile way
- To develop and carry out an excellent research project complete with collaborative work and a crisp oral and professional visual presentation.
- To understand and appreciate published academic geographic research that uses a variety of quantitative methods.

2. Complete two physical, regional, or human geography courses from the following:

GEOG 305 : Geography of Landforms. (3:3:0)

WHEN TAUGHT: Fall Contact Department

RECOMMENDED: Geog 101.

DESCRIPTION: Elements of landforms: distributions and cultural significance.

**Course Outcomes**

- Examine the history of landform study and the key individuals in the history of geomorphology.
- Explain the physical processes that produce landforms.
- Examine a physical landscape and describe why it looks the way it does.
- Describe how human settlement and recreation patterns are influenced by landforms.
- Understand dating techniques geomorphologists use to understand earth's history.

GEOG 306 : Public Land Conservation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Environmental and social geography of public lands; analyzing historical, planning, management, and ecological issues.

**Course Outcomes**

There are no course outcomes available

GEOG 307 : Landscape Ecology. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 101, 212, 213.

DESCRIPTION: Interaction between spatial patterns and spatial processes in an ecological context. Methods,

theories, and practical applications of landscapes at various scales.

**Course Outcomes**

- Demonstrate an understanding of the basic concepts of landscape ecology
- Understand the relation between pattern and process in landscapes across multiple spatial and temporal scales
- Read, understand, and critique research articles in scholarly journals related to landscape ecology
- Understand and be able to use landscape metrics and associated methodologies and technologies to quantitatively analyze landscapes
- Identify and address a research question in landscape ecology, and effectively communicate the results orally and in writing
- Apply landscape ecology concepts to environmental planning and conservation biology

GEOG 310 : Introduction to Urban and Regional Planning. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to the profession and practice of urban and regional planning.

**Course Outcomes**

There are no course outcomes available

GEOG 331 : Economic Geography. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Geog 100 or instructor's consent.

DESCRIPTION: Introduction to economic processes and spatial patterns, emphasizing theoretical approaches, locational strategies, and changing economic land-use patterns.

**Course Outcomes**

There are no course outcomes available

GEOG 336 : Urban Geography. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: History and theory of urban development, including why cities exist and how cities function.

**Course Outcomes**

There are no course outcomes available

GEOG 346 : Population Geography. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Geog 100 or instructor's consent.

DESCRIPTION: Spatial perspective on wide field of population studies, focusing on distribution, development, structure, and movement of populations, emphasizing basic demographic measures.

**Course Outcomes**

There are no course outcomes available

GEOG 410 : Urban Planning Methods. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 310.

DESCRIPTION: Applications of methods and techniques commonly used in the urban planning process, emphasizing data collection and analysis, fieldwork, and writing skills.

**Course Outcomes**

There are no course outcomes available

GEOG 421 : Urban Planning Law. (2-3:Arr:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 310.

DESCRIPTION: The political and legal context within which urban planning takes place.

**Course Outcomes**

There are no course outcomes available

GEOG 422 : Principles of Urban Design. (2:2:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 310.

DESCRIPTION: Theories and principles of urban design emphasizing specific design criteria. Planning and design tools used within the U.S. by local government. Basic principles of architecture and landscape architecture. Field trips.

**Course Outcomes**

- Demonstrate knowledge of the design arts (architecture, landscape architecture, art, urban design)

including knowledge about the relationship between the design of the built environment and its functional, aesthetic and social precedents and consequences.
- Use written, oral and graphic skills to compose clear, accurate and compelling text, images and maps in documents and oral presentations.

GEOG 423 : Planning for Unique and Sensitive Lands. (2:2:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 310.

DESCRIPTION: Unique aspects of land affecting land-use planning positively or negatively depending on sensitivity of design. Landscape ecological principles introduced and examined for usefulness in land-use planning.

**Course Outcomes**

- Explain the environmental sciences (biology, ecology, environmental studies) including knowledge about ecological and physical systems in relation to human activity at different geographic scales.

GEOG 424 : Urban Transportation Planning. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 310, 410.

DESCRIPTION: Theories and principles of transportation planning emphasizing environmental, energy, economic, and social issues.

**Course Outcomes**

There are no course outcomes available

GEOG 510 : Professional Planning Studio. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 410.

DESCRIPTION: Assessing problem and issue identification, goal formulation, data gathering, synthesis and summary, plan concept and format, and public policy adoption while writing a general plan for a community in Utah.

**Course Outcomes**

- Use problem solving skills to select, diagnose and solve relevant aspects of a complex planning problem including attention to the needs and interests of diverse stakeholders and the guidance provided by conceptual and empirical expertise. (PAB 4.2.3a)Use written, oral and graphic skills to compose clear, accurate and compelling text, images and maps in documents and oral presentations. (PAB 4.2.3c)Collaborate with peers in joint learning activities organized to produce a plan or planning product for a relevant professional clientele, to mediate disagreements, to interpret contested purposes, and to negotiate between diverse and competing interests. (PAB 4.2.3e)Use ideas about the creation of plans, programs or projects to prepare an individually crafted product for a specific planning purpose and audience; demonstrating skill and judgment preparing a planning project that meets minimum professional standards. (PAB 4.2.3f)Use techniques for the adoption and implementation of plans including relevant regulations, incentives, techniques and technologies. (PAB 4.2.3h)Work with diverse communities, especially communities consisting of disadvantaged groups and persons and racial and ethnic minorities, or immigrant communities. (PAB 4.2.3i)

3. Complete the following major courses:

GEOG 213 : Earth Observation and Image Interpretation. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Principles of earth observation: primarily air photo/large-scale satellite imagery interpretation, basic field methods, photogrammetry.

**Course Outcomes**

- Students will be able to perform a simple cultural / physical interpretation of simple monoscopic imagery.
- Students will be able to complete simple measurements from historical air photos including height, distance, area, scale, and coordinate-related problems.
- Students wil be able to complete simple problems related to electromagnetic radiation and atmospheric effects.

GEOG 217 : Programming for Geographers. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Object-oriented analysis of geographic information using Visual Basic.

**Course Outcomes**

There are no course outcomes available

GEOG 311 : Intermediate Geographic Information Systems. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GEOG 212

DESCRIPTION: Collecting, managing, and analyzing spatial data to solve common geographic tasks.

**Course Outcomes**

There are no course outcomes available

GEOG 312 : Cartographic Design. (4:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: GEOG 211 & GEOG 212

DESCRIPTION: Graphic perception, layout, typography, color, statistical methods, and symbolization of thematic maps through computer-aided techniques.

**Course Outcomes**

- Develop a map-based solution to a need, focusing on purpose and audience.
- Gather and process data needed for a map.
- Design maps to be clear, useful, and attractive, employing appropriate techniques such as thematic map types, composition, symbology, color, and text.
- Continue to learn design skills through map critique and self-training
- Appreciate quality work and put forth the effort necessary to produce quality results

GEOG 313 : Remote Sensing 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOG 213

DESCRIPTION: Introduction to airborne and spaceborne sensors, including characteristics and image acquisition. Emphasizes land cover mapping applications appropriate for environment monitoring.

**Course Outcomes**

There are no course outcomes available

GEOG 317 : Analytical Cartography. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GEOG 217

DESCRIPTION: Geocoding, spatial data representation, spatial algorithms, and map based transformations.

**Course Outcomes**

- Students will be able to express simple data structures and algorithms in computer code. These data structures and algorithms will be illustrative of either raster or vector GIS.
- When given a simple geographic problem specification, students will be able to create computer methods and classes that address the problem or meet the specification.
- When presented with a problem amenable to the application of geographic computer programming (intermediate level difficulty), students will design and implement a software system including computer program(s) to solve the problem.

4. Complete two courses (6 credit hours) from the following:

GEOG 399R : Academic Internship. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: GEOG 100

DESCRIPTION: On-the-job experience.

NOTE: 3 hours required. No more than 3 hours total in cooperative education may be counted in major.

**Course Outcomes**

- Complete a supervised internship in an employment setting or agency related to geography.Link academic learning with these professional experiences.Complete a minimum of 45 hands-on hours per credit.

GEOG 411 : Issues in Computer Cartography. (3:3:0)

WHEN TAUGHT: Winter Contact Department

PREREQUISITE: GEOG 312

DESCRIPTION: Current techniques for compilation, integration, and display of digital map data.

**Course Outcomes**

There are no course outcomes available

GEOG 412 : Advanced Geographic Information Systems. (3:3:1)

WHEN TAUGHT: Fall Contact Department

PREREQUISITE: GEOG 212 & GEOG 311

RECOMMENDED: Geog 222.

DESCRIPTION: Performing geographic tasks in resource management decision support and scientific research using spatial data management and analysis tools and techniques.

**Course Outcomes**

There are no course outcomes available

GEOG 413 : Remote Sensing 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GEOG 313

DESCRIPTION: Computer processing of low-altitude and satellite images for geographic analysis of physical and cultural phenomena on earth.

**Course Outcomes**

- Understand and implement remote sensing pre-processing techniques.
- Perform image classification and evaluate classification accuracy.
- Understand and perform change detection.
- Complete an entire remote sensing project from beginning to end.

GEOG 414 : Applied Urban Environmental Modeling. (3:3:0)

WHEN TAUGHT: Winter Contact Department

RECOMMENDED: Geog 212, 213, 313.

DESCRIPTION: Complexities of urban environment through use of geographic techniques, including remote sensing, GIS, GPS, aerial photo and map interpretation, and fieldwork. Modeling human impact on the physical environment by examining local case studies and completing group projects. Developing and building technical skills as tools in understanding the urban environment.

**Course Outcomes**

There are no course outcomes available

GEOG 495R : Mentored Research. (1-3:Arr.:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Participating in research integrating material learned in major. Emphasizes individual or collaborative research and creative thinking through active learning and reflective analysis.

**Course Outcomes**

- Students will conduct research with a mentoring professor which may include literature reviews, data collection, data coding, data management, data analysis, constructing statistical tables, writing proposals for conferences, and writing manuscripts to be submitted for publication.

GEOG 521R : Geographic Information Practicum. (3:3:0)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department; Spring Contact Department

PREREQUISITE: GEOG 212 & GEOG 217

RECOMMENDED: Geog 222, 311, 312, 313, 317, 412.

DESCRIPTION: Integration of various geographic technologies to solve a practical problem. Advanced topics in GIS, remote sensing, cartography, and programming as needed.

**Course Outcomes**

- Students will learn integration of various geographic technologies to solve a practical problem using advanced topics in GIS, remote sensing, cartography, and programming as needed.

5. Complete the exit assessment during the final semester, no later than one month before graduation.

*Hours include courses that may fulfill university core requirements.

## Show all Geography (Geog) Courses

**College of Family, Home, and Social Sciences Home**

**Geography Department Home**

**Majors**

BS in Geography

Emphases

- Environmental Studies
- Geographic Information Systems
- Geospatial Intelligence
- Global Studies
- Tourism Studies
- Urban & Regional Planning

**Minors**

- Geographic Information Systems
- Geography Teaching
- Global Studies
- Travel and Tourism Studies
- Urban & Regional Planning

**Course Information**

- Geography (Geog) Courses

**Faculty**

# BS in Geography: Geospatial Intelligence Emphasis (58–59 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following core courses:

GEOG 100 : The Geographic Approach. (1:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Overview of the discipline of geography and the faculty and geography major at BYU.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 101 : Global Environment: Understanding Physical Geography. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Physical environment, distribution and interrelationships of climates, landforms, ecosystems and their human significance.

**Course Outcomes**
There are no course outcomes available

*GEOG 110 : Landscapes of Disaster: An Introduction to Natural Hazards. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Exploring natural and social science of disturbances by analyzing causes, consequences, and role of human behavior in causing and mitigating natural disasters.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

*GEOG 120 : Geography and World Affairs. (3:3:0)
OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Survey of the world, stressing geography of major political regions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

*GEOG 130 : Introduction to Human Geography. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Culture distributions and their relationship to existing geographic phenomena.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 211 : Map Use and Interpretation. (4:4:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Maps as tools for spatial analysis of problems in physical and cultural geography.

**Course Outcomes**
- Identify each component of the â Big Threeâ when using or observing geographic technologies.

The Big Three includes 1) Geographic Information Systems, 2) Global Positioning Systems, and 3) Remote Sensing.
- Complete all typical map scale calculations related to land distance and area including unit conversions.
- Give and take coordinate references in UTM and lat / long and convert between the two. select a datum and coordinate system appropriate for a given job-related task. Explain the logic of and give / take a reference in the PLSS
- Configure a GPS receiver properly to use both with and without a map. Lay-in and follow the course in a GPS receiver.
- Measure elevation, distance, direction, slope, and aspect from digital or paper topographic maps. Perform a simple statistical analysis of data on a USGS topographic map.
- When presented with a typical specimen, perform a simple interpretation of a thematic map (e.g. Choropleth, Isoline)

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

GEOG 213 : Earth Observation and Image Interpretation. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Principles of earth observation: primarily air photo/large-scale satellite imagery interpretation, basic field methods, photogrammetry.

**Course Outcomes**

- Students will be able to perform a simple cultural / physical interpretation of simple monoscopic imagery.
- Students will be able to complete simple measurements from historical air photos including height, distance, area, scale, and coordinate-related problems.
- Students wil be able to complete simple problems related to electromagnetic radiation and atmospheric effects.

*GEOG 222 : Statistics for Geographers 1. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Methodology of spatial analysis. Theory and techniques in geographic data description and population inference.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

*GEOG 271 : Middle East. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Physical and cultural geography of Southwest Asia and North Africa, emphasizing the cultural mosaic, geopolitics, environment, and resources of the region.

**Course Outcomes**

There are no course outcomes available

GEOG 304 : Geography of Climates. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 101.

DESCRIPTION: Elements, controls, distribution, and classification of the earth's climates.

**Course Outcomes**

- Gain an understanding of the key determinants of the world's main climates
- Gain an appreciation of the complex nature and implications of human climate change.
- Understand how extreme weather events occur and their potential impacts on humans.
- Understand the methods climatologists use to collect data about past and present climate.
- Improve writing, critical thinking and your ability to apply knowledge to solve geographic problems.

GEOG 313 : Remote Sensing 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOG 213

DESCRIPTION: Introduction to airborne and spaceborne sensors, including characteristics and image acquisition. Emphasizes land cover mapping applications appropriate for environment monitoring.

**Course Outcomes**

There are no course outcomes available

GEOG 322 : Statistics for Geographers 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GEOG 222

DESCRIPTION: Advanced techniques in geospatial analysis.

**Course Outcomes**

- To master an advanced set of quantitative methods that are particularly appropriate for geographers, becoming especially skilled in one statistical area.
- To determine what quantitative methods are appropriate for answering different research questions.
- To apply statistical analysis to geographic problems in a competent and worthwhile way
- To develop and carry out an excellent research project complete with collaborative work and a crisp oral and professional visual presentation.
- To understand and appreciate published academic geographic research that uses a variety of quantitative methods.

GEOG 331 : Economic Geography. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Geog 100 or instructor's consent.

DESCRIPTION: Introduction to economic processes and spatial patterns, emphasizing theoretical approaches, locational strategies, and changing economic land-use patterns.

**Course Outcomes**

There are no course outcomes available

GEOG 341 : Political Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Spatial analysis of global politics; focus on geopolitics, territory and conflict, nationalism, and the politics of resources.

**Course Outcomes**

There are no course outcomes available

2. Complete one course from the following GIS courses:

GEOG 217 : Programming for Geographers. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Object-oriented analysis of geographic information using Visual Basic.

**Course Outcomes**

There are no course outcomes available

GEOG 311 : Intermediate Geographic Information Systems. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GEOG 212

DESCRIPTION: Collecting, managing, and analyzing spatial data to solve common geographic tasks.

**Course Outcomes**

There are no course outcomes available

GEOG 312 : Cartographic Design. (4:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: GEOG 211 & GEOG 212

DESCRIPTION: Graphic perception, layout, typography, color, statistical methods, and symbolization of thematic maps through computer-aided techniques.

**Course Outcomes**

- Develop a map-based solution to a need, focusing on purpose and audience.
- Gather and process data needed for a map.
- Design maps to be clear, useful, and attractive, employing appropriate techniques such as thematic map types, composition, symbology, color, and text.
- Continue to learn design skills through map critique and self-training
- Appreciate quality work and put forth the effort necessary to produce quality results

GEOG 317 : Analytical Cartography. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GEOG 217

DESCRIPTION: Geocoding, spatial data representation, spatial algorithms, and map based transformations.

**Course Outcomes**

- Students will be able to express simple data structures and algorithms in computer code. These data structures and algorithms will be illustrative of either raster or vector GIS.
- When given a simple geographic problem specification, students will be able to create computer methods and classes that address the problem or meet the specification.
- When presented with a problem amenable to the application of geographic computer programming (intermediate level difficulty), students will design and implement a software system including computer program(s) to solve the problem.

GEOG 412 : Advanced Geographic Information Systems. (3:3:1)

WHEN TAUGHT: Fall Contact Department
PREREQUISITE: GEOG 212 & GEOG 311
RECOMMENDED: Geog 222.
DESCRIPTION: Performing geographic tasks in resource management decision support and scientific research using spatial data management and analysis tools and techniques.

**Course Outcomes**

There are no course outcomes available

GEOG 413 : Remote Sensing 2. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: GEOG 313
DESCRIPTION: Computer processing of low-altitude and satellite images for geographic analysis of physical and cultural phenomena on earth.

**Course Outcomes**

- Understand and implement remote sensing pre-processing techniques.
- Perform image classification and evaluate classification accuracy.
- Understand and perform change detection.
- Complete an entire remote sensing project from beginning to end.

3. Complete two regional geography courses from the following:

*GEOG 255 : Middle and South America. (3:3:0)

WHEN TAUGHT: Winter Contact Department
DESCRIPTION: Environmental, cultural, economic, and political parameters of Latin American societies.

**Course Outcomes**

- To link how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to the overall study of the Latin American realm.
- To gain a working knowledge of the connection of the underlying physical "stage" of Latin America to the distributions of people and their activities.
- To gain an understanding of the geographic structure of Latin America’s cultural components including languages, ethnic groups, settlement patterns, and religious beliefs.
- To develop geographic writing and research skills that result in papers that are fluent, relevant, and creative.
- To use other students’ input to effectively enhance Latin American geographic understanding through group work and discussions
- To discover the significance of Latin America's increasing impact on the world's economy, as well as the growing Hispanization of the United States and the Church of Jesus Christ of Latter-day Saints

*GEOG 265 : Russia and the Former Soviet Union. (3:3:0)

DESCRIPTION: Physical features, resources, political issues, economy and industries, population concerns, and role in world affairs.

**Course Outcomes**

- To use other students input to effectively enhance geographic understanding of the region.
- To comprehend the regional geographic structure of the region's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in the region including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era, including relationship to the European Union and other political entities.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of this region.
- To demonstrate the connection of the underlying physical "stage" of the region to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To write geographic research that is fluent, relevant, and creative.

*GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.
DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

*GEOG 273 : Southeast Asia. (3:3.0:0)

WHEN TAUGHT: Fall Contact Department

DESCRIPTION: Fundamental issues of geography relating to Southeast Asia, including the extraction and marketing of natural resources, economic development, neighborly relations, and how diffusion has influenced the unique cultural, religious, and linguistic characteristics of the region.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

*GEOG 285 : Africa South of the Sahara. (3:3:0)

WHEN TAUGHT: Winter Contact Department

DESCRIPTION: Geographical analysis focusing on resource management, political issues, development, environmental problems, economic development, and urban-rural change; case studies from selected countries.

**Course Outcomes**

There are no course outcomes available

4. Complete the following:

GEOG 441 : Seminar in Geography and Geospatial Intelligence 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Instructor's consent.

DESCRIPTION: Capstone seminar, part 1, for students in geospatial intelligence emphasis, emphasizing synthesis of material learned in major and application of knowledge and skills through research project.

**Course Outcomes**

- Demonstrate to the student the unending need for Intelligence in a time of endless warfare. Discuss the propriety and honor in being involved in efforts to preserve freedom.
- Demonstrate the encompassing relationship of geography to war, and thus to Intelligence.
- Identify the types of war.
- Survey the types of Intelligence, Imint, Sigint, and Humint.
- Investigate the proper Ethics of an Intelligence Officer.
- Demonstrate the need for All-Source Intelligence.
- Develop skills in oral presentation, including slide design, speaking, and awareness of personal appearance. Develop skills in writing pithy reports in the style used in the intelligence community.

GEOG 442 : Seminar in Geography and Geospatial Intelligence 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GEOG 441

DESCRIPTION: Capstone seminar part 2 for students in geospatial intelligence emphasis, emphasizing synthesis of material learned in major and application of knowledge and skills through research project.

**Course Outcomes**

- Demonstrate the political processes and attitudes that led to diminished US Intelligence capability in 2001.
- Study the enemy of today's war, and learn to stay abreast of current events and predict future events in other regions of the world.
- Investigate other regional potential (low current day conflict) political/wars for Intelligencestudy and awareness.
- All students will participate as Team Members in completeing major research projects in timely and vital National security issues.

5. Complete the exit assessment during the final semester, no later than one month before graduation.

*Hours include courses that may fulfill university core requirements.

## Show all Geography (Geog) Courses

**College of Family, Home, and Social Sciences Home**

**Geography Department Home**

**Majors**

BS in Geography

Emphases

- Environmental Studies
- Geographic Information Systems
- Geospatial Intelligence
- Global Studies
- Tourism Studies
- Urban & Regional Planning

**Minors**

- Geographic Information Systems
- Geography Teaching
- Global Studies
- Travel and Tourism Studies
- Urban & Regional Planning

**Course Information**

- Geography (Geog) Courses

**Faculty**

# BS in Geography: Global Studies Emphasis (41 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following geography core courses:

GEOG 100 : The Geographic Approach. (1:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Overview of the discipline of geography and the faculty and geography major at BYU.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 101 : Global Environment: Understanding Physical Geography. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Physical environment, distribution and interrelationships of climates, landforms, ecosystems and their human significance.

**Course Outcomes**
There are no course outcomes available

*GEOG 110 : Landscapes of Disaster: An Introduction to Natural Hazards. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Exploring natural and social science of disturbances by analyzing causes, consequences, and role of human behavior in causing and mitigating natural disasters.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

*GEOG 120 : Geography and World Affairs. (3:3:0)
OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Survey of the world, stressing geography of major political regions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

*GEOG 130 : Introduction to Human Geography. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Culture distributions and their relationship to existing geographic phenomena.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 211 : Map Use and Interpretation. (4:4:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Maps as tools for spatial analysis of problems in physical and cultural geography.

**Course Outcomes**
- Identify each component of the â Big Threeâ when using or observing geographic technologies.

The Big Three includes 1) Geographic Information Systems, 2) Global Positioning Systems, and 3) Remote Sensing.
- Complete all typical map scale calculations related to land distance and area including unit conversions.
- Give and take coordinate references in UTM and lat / long and convert between the two. select a datum and coordinate system appropriate for a given job-related task. Explain the logic of and give / take a reference in the PLSS
- Configure a GPS receiver properly to use both with and without a map. Lay-in and follow the course in a GPS receiver.
- Measure elevation, distance, direction, slope, and aspect from digital or paper topographic maps. Perform a simple statistical analysis of data on a USGS topographic map.
- When presented with a typical specimen, perform a simple interpretation of a thematic map (e.g. Choropleth, Isoline)

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

*GEOG 222 : Statistics for Geographers 1. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Methodology of spatial analysis. Theory and techniques in geographic data description and population inference.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

2. Complete three regional courses from the following:

GEOG 245 : Geography of Utah. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

RECOMMENDED: Geog 101,120, 130.

DESCRIPTION: Exploring geography of Utah. Topics include land forms, climate, agricultural and recreational economics, historical migration, Mormon cultural landscape, ethnic patterns, and rural-urban contrasts.

**Course Outcomes**

There are no course outcomes available

GEOG 250 : United States and Canada. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Analysis of the natural environment, historical development, cultural patterns, economic systems, and political structures of geographic regions.

**Course Outcomes**

There are no course outcomes available

*GEOG 255 : Middle and South America. (3:3:0)

WHEN TAUGHT: Winter Contact Department

DESCRIPTION: Environmental, cultural, economic, and political parameters of Latin American societies.

**Course Outcomes**

- To link how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to the overall study of the Latin American realm.
- To gain a working knowledge of the connection of the underlying physical "stage" of Latin America to the distributions of people and their activities.
- To gain an understanding of the geographic structure of Latin America’s cultural components including languages, ethnic groups, settlement patterns, and religious beliefs.
- To develop geographic writing and research skills that result in papers that are fluent, relevant, and creative.
- To use other students’ input to effectively enhance Latin American geographic understanding through group work and discussions
- To discover the significance of Latin America's increasing impact on the world's economy, as well as the growing Hispanization of the United States and the Church of Jesus Christ of Latter-day Saints

GEOG 260 : Europe. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Systematic approach to physical base, social and political problems, economic issues, and regional summary.

**Course Outcomes**

- To use other students input to effectively enhance European geographic understanding.
- To demonstrate the connection of the underlying physical "stage" of Europe to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To comprehend the regional geographic structure of Europe's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in Europe including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era. Emphasis will be given to the formation and spread of the European Union.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of the European realm.
- To write geographic research that is fluent, relevant, and creative.

*GEOG 265 : Russia and the Former Soviet Union. (3:3:0)

DESCRIPTION: Physical features, resources, political issues, economy and industries, population concerns, and role in world affairs.

**Course Outcomes**

- To use other students input to effectively enhance geographic understanding of the region.
- To comprehend the regional geographic structure of the region's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in the region including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era, including relationship to the European Union and other political entities.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of this region.
- To demonstrate the connection of the underlying physical "stage" of the region to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To write geographic research that is fluent, relevant, and creative.

*GEOG 271 : Middle East. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Physical and cultural geography of Southwest Asia and North Africa, emphasizing the cultural mosaic, geopolitics, environment, and resources of the region.

**Course Outcomes**

There are no course outcomes available

*GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

*GEOG 273 : Southeast Asia. (3:3.0:0)

WHEN TAUGHT: Fall Contact Department

DESCRIPTION: Fundamental issues of geography relating to Southeast Asia, including the extraction and marketing of natural resources, economic development, neighborly relations, and how diffusion has influenced the unique cultural, religious, and linguistic characteristics of the region.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

*GEOG 285 : Africa South of the Sahara. (3:3:0)

WHEN TAUGHT: Winter Contact Department

DESCRIPTION: Geographical analysis focusing on resource management, political issues, development, environmental problems, economic development, and urban-rural change; case studies from selected countries.

**Course Outcomes**

There are no course outcomes available

3. Complete three systematic courses from the following:

GEOG 303 : Biogeography. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 101.

DESCRIPTION: Broad-scale distribution of plants and animals. Theoretical and practical applications to conservation and effects of global environmental change.

**Course Outcomes**

- Demonstrate an understanding of basic concepts and processes in biogeography
- Recognize and be able to explain patterns of plant and animal life at many different scales
- Explain how humans have affected the distribution and diversity of plants and animals, and apply concepts to decisions regarding human use of the environment
- Demonstrate a knowledge of prominent professional biogeographers and ecologists and their current research themes
- Plan for future changes in species distributions and diversity as a result of environmental and human-induced pressures

GEOG 304 : Geography of Climates. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 101.

DESCRIPTION: Elements, controls, distribution, and classification of the earth's climates.

**Course Outcomes**

- Gain an understanding of the key determinants of the world's main climates
- Gain an appreciation of the complex nature and implications of human climate change.
- Understand how extreme weather events occur and their potential impacts on humans.
- Understand the methods climatologists use to collect data about past and present climate.
- Improve writing, critical thinking and your ability to apply knowledge to solve geographic problems.

GEOG 305 : Geography of Landforms. (3:3:0)

WHEN TAUGHT: Fall Contact Department

RECOMMENDED: Geog 101.

DESCRIPTION: Elements of landforms: distributions and cultural significance.

**Course Outcomes**

- Examine the history of landform study and the key individuals in the history of geomorphology.
- Explain the physical processes that produce landforms.
- Examine a physical landscape and describe why it looks the way it does.
- Describe how human settlement and recreation patterns are influenced by landforms.
- Understand dating techniques geomorphologists use to understand earth's history.

GEOG 306 : Public Land Conservation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Environmental and social geography of public lands; analyzing historical, planning, management, and ecological issues.

**Course Outcomes**

There are no course outcomes available

GEOG 331 : Economic Geography. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Geog 100 or instructor's consent.

DESCRIPTION: Introduction to economic processes and spatial patterns, emphasizing theoretical approaches, locational strategies, and changing economic land-use patterns.

**Course Outcomes**

There are no course outcomes available

GEOG 336 : Urban Geography. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: History and theory of urban development, including why cities exist and how cities function.

**Course Outcomes**

There are no course outcomes available

GEOG 341 : Political Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Spatial analysis of global politics; focus on geopolitics, territory and conflict, nationalism, and the

politics of resources.

**Course Outcomes**

There are no course outcomes available

GEOG 346 : Population Geography. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Geog 100 or instructor's consent.

DESCRIPTION: Spatial perspective on wide field of population studies, focusing on distribution, development, structure, and movement of populations, emphasizing basic demographic measures.

**Course Outcomes**

There are no course outcomes available

GEOG 348 : Tourism: Patterns and Analysis. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Patterns in domestic and international tourism; interrelationship between geography and tourism in understanding the patterns and their impact.

**Course Outcomes**

There are no course outcomes available

GEOG 349 : Global Adventure Travel. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Historical and emerging trends in global adventure travel and tourism. Detailed case studies selected from across world regions.

**Course Outcomes**

There are no course outcomes available

4. Complete the exit assessment during the final semester, no later than one month before graduation.

*Hours include courses that may fulfill university core requirements.

## Show all Geography (Geog) Courses

**College of Family, Home, and Social Sciences Home**

**Geography Department Home**

**Majors**

BS in Geography

Emphases

- Environmental Studies
- Geographic Information Systems
- Geospatial Intelligence
- Global Studies
- Tourism Studies
- Urban & Regional Planning

**Minors**

- Geographic Information Systems
- Geography Teaching
- Global Studies
- Travel and Tourism Studies
- Urban & Regional Planning

**Course Information**

- Geography (Geog) Courses

**Faculty**

# BS in Geography: Tourism Studies Emphasis (47 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following geography core courses:

GEOG 100 : The Geographic Approach. (1:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Overview of the discipline of geography and the faculty and geography major at BYU.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 101 : Global Environment: Understanding Physical Geography. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Physical environment, distribution and interrelationships of climates, landforms, ecosystems and their human significance.

**Course Outcomes**
There are no course outcomes available

*GEOG 110 : Landscapes of Disaster: An Introduction to Natural Hazards. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Exploring natural and social science of disturbances by analyzing causes, consequences, and role of human behavior in causing and mitigating natural disasters.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

*GEOG 120 : Geography and World Affairs. (3:3:0)
OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Survey of the world, stressing geography of major political regions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

*GEOG 130 : Introduction to Human Geography. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Culture distributions and their relationship to existing geographic phenomena.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 211 : Map Use and Interpretation. (4:4:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Maps as tools for spatial analysis of problems in physical and cultural geography.

**Course Outcomes**
- Identify each component of the â Big Threeâ when using or observing geographic technologies.

The Big Three includes 1) Geographic Information Systems, 2) Global Positioning Systems, and 3) Remote Sensing.
- Complete all typical map scale calculations related to land distance and area including unit conversions.
- Give and take coordinate references in UTM and lat / long and convert between the two. select a datum and coordinate system appropriate for a given job-related task. Explain the logic of and give / take a reference in the PLSS
- Configure a GPS receiver properly to use both with and without a map. Lay-in and follow the course in a GPS receiver.
- Measure elevation, distance, direction, slope, and aspect from digital or paper topographic maps. Perform a simple statistical analysis of data on a USGS topographic map.
- When presented with a typical specimen, perform a simple interpretation of a thematic map (e.g. Choropleth, Isoline)

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

*GEOG 222 : Statistics for Geographers 1. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Methodology of spatial analysis. Theory and techniques in geographic data description and population inference.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 250 : United States and Canada. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Analysis of the natural environment, historical development, cultural patterns, economic systems, and political structures of geographic regions.

**Course Outcomes**

There are no course outcomes available

2. Complete one regional course from the following:

GEOG 245 : Geography of Utah. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

RECOMMENDED: Geog 101,120, 130.

DESCRIPTION: Exploring geography of Utah. Topics include land forms, climate, agricultural and recreational economics, historical migration, Mormon cultural landscape, ethnic patterns, and rural-urban contrasts.

**Course Outcomes**

There are no course outcomes available

*GEOG 255 : Middle and South America. (3:3:0)

WHEN TAUGHT: Winter Contact Department

DESCRIPTION: Environmental, cultural, economic, and political parameters of Latin American societies.

**Course Outcomes**

- To link how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to the overall study of the Latin American realm.
- To gain a working knowledge of the connection of the underlying physical "stage" of Latin America to the distributions of people and their activities.
- To gain an understanding of the geographic structure of Latin America’s cultural components including languages, ethnic groups, settlement patterns, and religious beliefs.
- To develop geographic writing and research skills that result in papers that are fluent, relevant, and creative.
- To use other students’ input to effectively enhance Latin American geographic understanding through group work and discussions
- To discover the significance of Latin America's increasing impact on the world's economy, as well as the growing Hispanization of the United States and the Church of Jesus Christ of Latter-day Saints

GEOG 260 : Europe. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Systematic approach to physical base, social and political problems, economic issues, and regional summary.

**Course Outcomes**

- To use other students input to effectively enhance European geographic understanding.
- To demonstrate the connection of the underlying physical "stage" of Europe to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To comprehend the regional geographic structure of Europe's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in Europe including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era. Emphasis will be given to the formation and spread of the European Union.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of the European realm.
- To write geographic research that is fluent, relevant, and creative.

*GEOG 265 : Russia and the Former Soviet Union. (3:3:0)

DESCRIPTION: Physical features, resources, political issues, economy and industries, population concerns, and role in world affairs.

**Course Outcomes**

- To use other students input to effectively enhance geographic understanding of the region.
- To comprehend the regional geographic structure of the region's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in the region including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era, including relationship to the European Union and other political entities.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of this region.
- To demonstrate the connection of the underlying physical "stage" of the region to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To write geographic research that is fluent, relevant, and creative.

*GEOG 271 : Middle East. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Physical and cultural geography of Southwest Asia and North Africa, emphasizing the cultural mosaic, geopolitics, environment, and resources of the region.

**Course Outcomes**

There are no course outcomes available

*GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

*GEOG 273 : Southeast Asia. (3:3.0:0)

WHEN TAUGHT: Fall Contact Department

DESCRIPTION: Fundamental issues of geography relating to Southeast Asia, including the extraction and marketing of natural resources, economic development, neighborly relations, and how diffusion has influenced the unique cultural, religious, and linguistic characteristics of the region.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

*GEOG 285 : Africa South of the Sahara. (3:3:0)

WHEN TAUGHT: Winter Contact Department

DESCRIPTION: Geographical analysis focusing on resource management, political issues, development, environmental problems, economic development, and urban-rural change; case studies from selected countries.

**Course Outcomes**

There are no course outcomes available

3. Complete the following major courses:

GEOG 347 : Tourism: A Conceptual Framework. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to tourism as a field of study; four elements of tourism: dynamic, service, functional, and consequential.

**Course Outcomes**

There are no course outcomes available

GEOG 348 : Tourism: Patterns and Analysis. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Patterns in domestic and international tourism; interrelationship between geography and tourism in understanding the patterns and their impact.

**Course Outcomes**

There are no course outcomes available

4. Complete four advanced tourism courses from the following:

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

GEOG 322 : Statistics for Geographers 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GEOG 222

DESCRIPTION: Advanced techniques in geospatial analysis.

**Course Outcomes**

- To master an advanced set of quantitative methods that are particularly appropriate for geographers, becoming especially skilled in one statistical area.
- To determine what quantitative methods are appropriate for answering different research questions.
- To apply statistical analysis to geographic problems in a competent and worthwhile way
- To develop and carry out an excellent research project complete with collaborative work and a crisp oral and professional visual presentation.
- To understand and appreciate published academic geographic research that uses a variety of quantitative methods.

GEOG 349 : Global Adventure Travel. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Historical and emerging trends in global adventure travel and tourism. Detailed case studies selected from across world regions.

**Course Outcomes**

There are no course outcomes available

GEOG 350 : Tourism Planning. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Geog 347.

DESCRIPTION: Applying regional development and planning concepts, principles, and approaches to tourism destinations to enhance sustainable economic, ecological, and social development.

**Course Outcomes**

There are no course outcomes available

GEOG 353 : Heritage and Cultural Tourism. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 120, 130, 347, 348.

DESCRIPTION: Heritage and culture (places, people, relics, and traditions) as tourism resources examined within the context of supply and demand, conservation, interpretation, management, planning, and politics.

**Course Outcomes**

There are no course outcomes available

GEOG 399R : Academic Internship. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: GEOG 100
DESCRIPTION: On-the-job experience.
NOTE: 3 hours required. No more than 3 hours total in cooperative education may be counted in major.

**Course Outcomes**

- Complete a supervised internship in an employment setting or agency related to geography.Link academic learning with these professional experiences.Complete a minimum of 45 hands-on hours per credit.

HIST 369 : Travel and Tourism in America. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.
DESCRIPTION: The history of travel and tourism in America to the present. Themes include changing technology, consumerism, nationalism, and social identities in contructing the tourist experience.

**Course Outcomes**

- Understand the theoretical approaches in the field, including concepts such as authenticity, tourist gaze, scripted space, leisure and modernity, and social science approaches to the study of tourism.
- Demonstrate knowledge of the major developments in travel and tourism infrastructure and explain the causal forces driving those changes.
- Explain how social identities of race, class, gender, and nationality have shaped the tourist experience.
- Assess primary sources for historical analysis of tourism and understand the limits and possibilities of each, including travel narratives, ephemera, still images, guides, memoirs, etc.
- Demonstrate historical change in tourism by researching and writing about a specific topic or approach to tourism in a paper that follows conventions of historical scholarship, and by presenting findings to the class.
- Appreciate global impact of tourism on the environment, international relations, and commerce.

RECM 300 : Creating a Good Life through Recreation. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Considering foundational recreation concepts and contemporary issues. Exploring professional opportunities in recreation.

**Course Outcomes**

There are no course outcomes available

RECM 330 : Hospitality Management. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Introducing hospitality management; integrating with venue and experience management; considering foundational principles, best professional practices; exploring professional opportunities.

**Course Outcomes**

There are no course outcomes available

5. Complete the exit assessment during the final semester, no later than one month before graduation.

*Hours include courses that may fulfill university core requirements.

## Show all Geography (Geog) Courses

**College of Family, Home, and Social Sciences Home**

**Geography Department Home**

**Majors**

BS in Geography

Emphases

- Environmental Studies
- Geographic Information Systems
- Geospatial Intelligence
- Global Studies
- Tourism Studies
- Urban & Regional Planning

**Minors**

- Geographic Information Systems
- Geography Teaching
- Global Studies
- Travel and Tourism Studies
- Urban & Regional Planning

**Course Information**

- Geography (Geog) Courses

**Faculty**

# BS in Geography: Urban and Regional Planning Emphasis (59 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following geography core courses:

GEOG 100 : The Geographic Approach. (1:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Overview of the discipline of geography and the faculty and geography major at BYU.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 101 : Global Environment: Understanding Physical Geography. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Physical environment, distribution and interrelationships of climates, landforms, ecosystems and their human significance.

**Course Outcomes**
There are no course outcomes available

*GEOG 110 : Landscapes of Disaster: An Introduction to Natural Hazards. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Exploring natural and social science of disturbances by analyzing causes, consequences, and role of human behavior in causing and mitigating natural disasters.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

*GEOG 120 : Geography and World Affairs. (3:3:0)
OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Survey of the world, stressing geography of major political regions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

*GEOG 130 : Introduction to Human Geography. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Culture distributions and their relationship to existing geographic phenomena.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 211 : Map Use and Interpretation. (4:4:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Maps as tools for spatial analysis of problems in physical and cultural geography.

**Course Outcomes**
- Identify each component of the â Big Threeâ when using or observing geographic technologies.

The Big Three includes 1) Geographic Information Systems, 2) Global Positioning Systems, and 3) Remote Sensing.
- Complete all typical map scale calculations related to land distance and area including unit conversions.
- Give and take coordinate references in UTM and lat / long and convert between the two. select a datum and coordinate system appropriate for a given job-related task. Explain the logic of and give / take a reference in the PLSS
- Configure a GPS receiver properly to use both with and without a map. Lay-in and follow the course in a GPS receiver.
- Measure elevation, distance, direction, slope, and aspect from digital or paper topographic maps. Perform a simple statistical analysis of data on a USGS topographic map.
- When presented with a typical specimen, perform a simple interpretation of a thematic map (e.g. Choropleth, Isoline)

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

*GEOG 222 : Statistics for Geographers 1. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Methodology of spatial analysis. Theory and techniques in geographic data description and population inference.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 322 : Statistics for Geographers 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GEOG 222

DESCRIPTION: Advanced techniques in geospatial analysis.

**Course Outcomes**

- To master an advanced set of quantitative methods that are particularly appropriate for geographers, becoming especially skilled in one statistical area.
- To determine what quantitative methods are appropriate for answering different research questions.
- To apply statistical analysis to geographic problems in a competent and worthwhile way
- To develop and carry out an excellent research project complete with collaborative work and a crisp oral and professional visual presentation.
- To understand and appreciate published academic geographic research that uses a variety of quantitative methods.

2. Complete the following urban planning core courses:

GEOG 310 : Introduction to Urban and Regional Planning. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to the profession and practice of urban and regional planning.

**Course Outcomes**

There are no course outcomes available

GEOG 336 : Urban Geography. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: History and theory of urban development, including why cities exist and how cities function.

**Course Outcomes**

There are no course outcomes available

GEOG 410 : Urban Planning Methods. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 310.

DESCRIPTION: Applications of methods and techniques commonly used in the urban planning process, emphasizing data collection and analysis, fieldwork, and writing skills.

**Course Outcomes**

There are no course outcomes available

GEOG 421 : Urban Planning Law. (2-3:Arr:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 310.

DESCRIPTION: The political and legal context within which urban planning takes place.

**Course Outcomes**

There are no course outcomes available

GEOG 422 : Principles of Urban Design. (2:2:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 310.

DESCRIPTION: Theories and principles of urban design emphasizing specific design criteria. Planning and design tools used within the U.S. by local government. Basic principles of architecture and landscape architecture. Field trips.

**Course Outcomes**

- Demonstrate knowledge of the design arts (architecture, landscape architecture, art, urban design) including knowledge about the relationship between the design of the built environment and its functional, aesthetic and social precedents and consequences.
- Use written, oral and graphic skills to compose clear, accurate and compelling text, images and maps in documents and oral presentations.

GEOG 424 : Urban Transportation Planning. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 310, 410.

DESCRIPTION: Theories and principles of transportation planning emphasizing environmental, energy, economic, and social issues.

**Course Outcomes**

There are no course outcomes available

GEOG 510 : Professional Planning Studio. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 410.

DESCRIPTION: Assessing problem and issue identification, goal formulation, data gathering, synthesis and summary, plan concept and format, and public policy adoption while writing a general plan for a community in Utah.

**Course Outcomes**

- Use problem solving skills to select, diagnose and solve relevant aspects of a complex planning problem including attention to the needs and interests of diverse stakeholders and the guidance provided by conceptual and empirical expertise. (PAB 4.2.3a)Use written, oral and graphic skills to compose clear, accurate and compelling text, images and maps in documents and oral presentations. (PAB 4.2.3c)Collaborate with peers in joint learning activities organized to produce a plan or planning product for a relevant professional clientele, to mediate disagreements, to interpret contested purposes, and to negotiate between diverse and competing interests. (PAB 4.2.3e)Use ideas about the creation of plans, programs or projects to prepare an individually crafted product for a specific planning purpose and audience; demonstrating skill and judgment preparing a planning project that meets minimum professional standards. (PAB 4.2.3f)Use techniques for the adoption and implementation of plans including relevant regulations, incentives, techniques and technologies. (PAB 4.2.3h)Work with diverse communities, especially communities consisting of disadvantaged groups and persons and racial and ethnic minorities, or immigrant communities. (PAB 4.2.3i)

3. Complete three elective courses from the following list, at least one of which must be Geog 306, 307, or 423:

GEOG 306 : Public Land Conservation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Environmental and social geography of public lands; analyzing historical, planning, management, and ecological issues.

**Course Outcomes**

There are no course outcomes available

GEOG 307 : Landscape Ecology. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 101, 212, 213.

DESCRIPTION: Interaction between spatial patterns and spatial processes in an ecological context. Methods, theories, and practical applications of landscapes at various scales.

**Course Outcomes**

- Demonstrate an understanding of the basic concepts of landscape ecology
- Understand the relation between pattern and process in landscapes across multiple spatial and temporal scales
- Read, understand, and critique research articles in scholarly journals related to landscape ecology
- Understand and be able to use landscape metrics and associated methodologies and technologies to quantitatively analyze landscapes
- Identify and address a research question in landscape ecology, and effectively communicate the results

orally and in writing
- Apply landscape ecology concepts to environmental planning and conservation biology

GEOG 313 : Remote Sensing 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOG 213

DESCRIPTION: Introduction to airborne and spaceborne sensors, including characteristics and image acquisition. Emphasizes land cover mapping applications appropriate for environment monitoring.

**Course Outcomes**

There are no course outcomes available

GEOG 346 : Population Geography. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Geog 100 or instructor's consent.

DESCRIPTION: Spatial perspective on wide field of population studies, focusing on distribution, development, structure, and movement of populations, emphasizing basic demographic measures.

**Course Outcomes**

There are no course outcomes available

GEOG 412 : Advanced Geographic Information Systems. (3:3:1)

WHEN TAUGHT: Fall Contact Department

PREREQUISITE: GEOG 212 & GEOG 311

RECOMMENDED: Geog 222.

DESCRIPTION: Performing geographic tasks in resource management decision support and scientific research using spatial data management and analysis tools and techniques.

**Course Outcomes**

There are no course outcomes available

GEOG 414 : Applied Urban Environmental Modeling. (3:3:0)

WHEN TAUGHT: Winter Contact Department

RECOMMENDED: Geog 212, 213, 313.

DESCRIPTION: Complexities of urban environment through use of geographic techniques, including remote sensing, GIS, GPS, aerial photo and map interpretation, and fieldwork. Modeling human impact on the physical environment by examining local case studies and completing group projects. Developing and building technical skills as tools in understanding the urban environment.

**Course Outcomes**

There are no course outcomes available

GEOG 423 : Planning for Unique and Sensitive Lands. (2:2:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 310.

DESCRIPTION: Unique aspects of land affecting land-use planning positively or negatively depending on sensitivity of design. Landscape ecological principles introduced and examined for usefulness in land-use planning.

**Course Outcomes**

- Explain the environmental sciences (biology, ecology, environmental studies) including knowledge about ecological and physical systems in relation to human activity at different geographic scales.

4. Complete one professonal experience course (three hours required) from the following:

GEOG 399R : Academic Internship. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: GEOG 100

DESCRIPTION: On-the-job experience.

NOTE: 3 hours required. No more than 3 hours total in cooperative education may be counted in major.

**Course Outcomes**

- Complete a supervised internship in an employment setting or agency related to geography.Link academic learning with these professional experiences.Complete a minimum of 45 hands-on hours per credit.

GEOG 495R : Mentored Research. (1-3:Arr.:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Participating in research integrating material learned in major. Emphasizes individual or collaborative research and creative thinking through active learning and reflective analysis.

**Course Outcomes**

- Students will conduct research with a mentoring professor which may include literature reviews, data collection, data coding, data management, data analysis, constructing statistical tables, writing proposals for conferences, and writing manuscripts to be submitted for publication.

5. Complete the exit assessment during the final semester, no later than one month before graduation.

*Hours include courses that may fulfill university core requirements.

## Show all Geography (Geog) Courses

**College of Family, Home, and Social Sciences Home**

**Geography Department Home**

**Majors**

BS in Geography

Emphases

- Environmental Studies
- Geographic Information Systems
- Geospatial Intelligence
- Global Studies
- Tourism Studies
- Urban & Regional Planning

**Minors**

- Geographic Information Systems
- Geography Teaching
- Global Studies
- Travel and Tourism Studies
- Urban & Regional Planning

**Course Information**

- Geography (Geog) Courses

**Faculty**

# Minor in Geographic Information Systems (22-23 hours)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

GEOG 211 : Map Use and Interpretation. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Maps as tools for spatial analysis of problems in physical and cultural geography.

**Course Outcomes**

- Identify each component of the â Big Threeâ when using or observing geographic technologies. The Big Three includes 1) Geographic Information Systems, 2) Global Positioning Systems, and 3) Remote Sensing.
- Complete all typical map scale calculations related to land distance and area including unit conversions.
- Give and take coordinate references in UTM and lat / long and convert between the two. select a datum and coordinate system appropriate for a given job-related task. Explain the logic of and give / take a reference in the PLSS
- Configure a GPS receiver properly to use both with and without a map. Lay-in and follow the course in a GPS receiver.
- Measure elevation, distance, direction, slope, and aspect from digital or paper topographic maps. Perform a simple statistical analysis of data on a USGS topographic map.
- When presented with a typical specimen, perform a simple interpretation of a thematic map (e.g. Choropleth, Isoline)

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

GEOG 312 : Cartographic Design. (4:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: GEOG 211 & GEOG 212

DESCRIPTION: Graphic perception, layout, typography, color, statistical methods, and symbolization of thematic maps through computer-aided techniques.

**Course Outcomes**

- Develop a map-based solution to a need, focusing on purpose and audience.
- Gather and process data needed for a map.
- Design maps to be clear, useful, and attractive, employing appropriate techniques such as thematic map types, composition, symbology, color, and text.
- Continue to learn design skills through map critique and self-training
- Appreciate quality work and put forth the effort necessary to produce quality results

GEOG 412 : Advanced Geographic Information Systems. (3:3:1)

WHEN TAUGHT: Fall Contact Department

PREREQUISITE: GEOG 212 & GEOG 311

RECOMMENDED: Geog 222.

DESCRIPTION: Performing geographic tasks in resource management decision support and scientific research using spatial data management and analysis tools and techniques.

**Course Outcomes**

There are no course outcomes available

2. Complete three courses from the following:

GEOG 213 : Earth Observation and Image Interpretation. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Principles of earth observation: primarily air photo/large-scale satellite imagery interpretation, basic field methods, photogrammetry.

**Course Outcomes**

- Students will be able to perform a simple cultural / physical interpretation of simple monoscopic imagery.
- Students will be able to complete simple measurements from historical air photos including height, distance, area, scale, and coordinate-related problems.
- Students wil be able to complete simple problems related to electromagnetic radiation and atmospheric effects.

GEOG 217 : Programming for Geographers. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Object-oriented analysis of geographic information using Visual Basic.

**Course Outcomes**

There are no course outcomes available

GEOG 313 : Remote Sensing 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOG 213

DESCRIPTION: Introduction to airborne and spaceborne sensors, including characteristics and image acquisition. Emphasizes land cover mapping applications appropriate for environment monitoring.

**Course Outcomes**

There are no course outcomes available

GEOG 411 : Issues in Computer Cartography. (3:3:0)

WHEN TAUGHT: Winter Contact Department

PREREQUISITE: GEOG 312

DESCRIPTION: Current techniques for compilation, integration, and display of digital map data.

**Course Outcomes**

There are no course outcomes available

GEOG 413 : Remote Sensing 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GEOG 313

DESCRIPTION: Computer processing of low-altitude and satellite images for geographic analysis of physical and cultural phenomena on earth.

**Course Outcomes**

- Understand and implement remote sensing pre-processing techniques.
- Perform image classification and evaluate classification accuracy.
- Understand and perform change detection.
- Complete an entire remote sensing project from beginning to end.

## Show all Geography (Geog) Courses

**College of Family, Home, and Social Sciences Home**

**Geography Department Home**

**Majors**

BS in Geography

Emphases

- Environmental Studies
- Geographic Information Systems
- Geospatial Intelligence
- Global Studies
- Tourism Studies
- Urban & Regional Planning

**Minors**

- Geographic Information Systems
- Geography Teaching
- Global Studies
- Travel and Tourism Studies
- Urban & Regional Planning

**Course Information**

- Geography (Geog) Courses

**Faculty**

# Minor in Geography Teaching (20 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following:

GEOG 101 : Global Environment: Understanding Physical Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Physical environment, distribution and interrelationships of climates, landforms, ecosystems and their human significance.

**Course Outcomes**

There are no course outcomes available

*GEOG 120 : Geography and World Affairs. (3:3:0)

OFFERED: Honors also. Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Survey of the world, stressing geography of major political regions.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

*GEOG 130 : Introduction to Human Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Culture distributions and their relationship to existing geographic phenomena.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 211 : Map Use and Interpretation. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Maps as tools for spatial analysis of problems in physical and cultural geography.

**Course Outcomes**

- Identify each component of the â Big Threeâ when using or observing geographic technologies. The Big Three includes 1) Geographic Information Systems, 2) Global Positioning Systems, and 3) Remote Sensing.
- Complete all typical map scale calculations related to land distance and area including unit conversions.
- Give and take coordinate references in UTM and lat / long and convert between the two. select a datum and coordinate system appropriate for a given job-related task. Explain the logic of and give / take a reference in the PLSS
- Configure a GPS receiver properly to use both with and without a map. Lay-in and follow the course in a GPS receiver.
- Measure elevation, distance, direction, slope, and aspect from digital or paper topographic maps. Perform a simple statistical analysis of data on a USGS topographic map.
- When presented with a typical specimen, perform a simple interpretation of a thematic map (e.g. Choropleth, Isoline)

3. Complete one course from the following:

GEOG 245 : Geography of Utah. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

RECOMMENDED: Geog 101,120, 130.

DESCRIPTION: Exploring geography of Utah. Topics include land forms, climate, agricultural and recreational economics, historical migration, Mormon cultural landscape, ethnic patterns, and rural-urban contrasts.

**Course Outcomes**

There are no course outcomes available

GEOG 250 : United States and Canada. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Analysis of the natural environment, historical development, cultural patterns, economic systems, and political structures of geographic regions.

**Course Outcomes**

There are no course outcomes available

4. Complete the following:

HIST 477 : History and Social Science Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SC ED 276R; Fingerprinting and FBI clearance.

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

NOTE: Check with Hist 477 instructor for specific prerequisites for the major or minor program.

**Course Outcomes**

There are no course outcomes available

HIST 478 : Practicum in Secondary Education. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SC ED 276R; Concurrent enrollment in Hist 477 or comparable major course.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Prospective teachers will consider the characteristics of learning-centered classrooms that are based on current theories of learning
- Students will study and apply research-supported teaching methods that foster students' content knowledge, content and literacy skills, and learning and democratic dispositions.
- Students will consider various methods of assessing student learning.
- They will be assisted in the preparation of the teacher work sample and a multiple text inquiry activity.
- Students will be assisted in the preparation of the teacher work sample and a multiple text inquiry activity.
- The course will provide a forum to coordinate and reflect on the prospective teachers' clinical experiences.

*Hours include courses that may fulfill university core requirements.

## Show all Geography (Geog) Courses

College of Family, Home, and Social Sciences Home

Geography Department Home

Majors

BS in Geography

Emphases

- Environmental Studies
- Geographic Information Systems
- Geospatial Intelligence
- Global Studies
- Tourism Studies
- Urban & Regional Planning

Minors

- Geographic Information Systems
- Geography Teaching
- Global Studies
- Travel and Tourism Studies
- Urban & Regional Planning

Course Information

- Geography (Geog) Courses

Faculty

# Minor in Global Studies (19 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

GEOG 101 : Global Environment: Understanding Physical Geography. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Physical environment, distribution and interrelationships of climates, landforms, ecosystems and their human significance.

**Course Outcomes**
There are no course outcomes available

*GEOG 120 : Geography and World Affairs. (3:3:0)
OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Survey of the world, stressing geography of major political regions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

*GEOG 130 : Introduction to Human Geography. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Culture distributions and their relationship to existing geographic phenomena.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 211 : Map Use and Interpretation. (4:4:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Maps as tools for spatial analysis of problems in physical and cultural geography.

**Course Outcomes**
- Identify each component of the â Big Threeâ when using or observing geographic technologies. The Big Three includes 1) Geographic Information Systems, 2) Global Positioning Systems, and 3) Remote Sensing.
- Complete all typical map scale calculations related to land distance and area including unit conversions.
- Give and take coordinate references in UTM and lat / long and convert between the two. select a datum and coordinate system appropriate for a given job-related task. Explain the logic of and give / take a reference in the PLSS
- Configure a GPS receiver properly to use both with and without a map. Lay-in and follow the course in a GPS receiver.
- Measure elevation, distance, direction, slope, and aspect from digital or paper topographic maps. Perform a simple statistical analysis of data on a USGS topographic map.
- When presented with a typical specimen, perform a simple interpretation of a thematic map (e.g. Choropleth, Isoline)

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**
- Understand basic spatial concepts and data models that form the foundation of GIS.

- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

2. Complete 3 hours of electives. Electives cannot include Geog 222, 399R, 493R, or any Geog 500 or above courses.

*Hours include courses that may fulfill university core requirements.

## Show all Geography (Geog) Courses

**College of Family, Home, and Social Sciences Home**

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**Majors**

BS in Geography

Emphases

- Environmental Studies
- Geographic Information Systems
- Geospatial Intelligence
- Global Studies
- Tourism Studies
- Urban & Regional Planning

**Minors**

- Geographic Information Systems
- Geography Teaching
- Global Studies
- Travel and Tourism Studies
- Urban & Regional Planning

**Course Information**

- Geography (Geog) Courses

**Faculty**

# Minor in Travel and Tourism Studies (18 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

*GEOG 120 : Geography and World Affairs. (3:3:0)

OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Survey of the world, stressing geography of major political regions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 347 : Tourism: A Conceptual Framework. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: Introduction to tourism as a field of study; four elements of tourism: dynamic, service, functional, and consequential.

**Course Outcomes**
There are no course outcomes available

GEOG 348 : Tourism: Patterns and Analysis. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Patterns in domestic and international tourism; interrelationship between geography and tourism in understanding the patterns and their impact.

**Course Outcomes**
There are no course outcomes available

2. Complete two courses from the following:

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**
There are no course outcomes available

*GEOG 130 : Introduction to Human Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Culture distributions and their relationship to existing geographic phenomena.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

HIST 369 : Travel and Tourism in America. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.
DESCRIPTION: The history of travel and tourism in America to the present. Themes include changing technology,

consumerism, nationalism, and social identities in contructing the tourist experience.

**Course Outcomes**

- Understand the theoretical approaches in the field, including concepts such as authenticity, tourist gaze, scripted space, leisure and modernity, and social science approaches to the study of tourism.
- Demonstrate knowledge of the major developments in travel and tourism infrastructure and explain the causal forces driving those changes.
- Explain how social identities of race, class, gender, and nationality have shaped the tourist experience.
- Assess primary sources for historical analysis of tourism and understand the limits and possibilities of each, including travel narratives, ephemera, still images, guides, memoirs, etc.
- Demonstrate historical change in tourism by researching and writing about a specific topic or approach to tourism in a paper that follows conventions of historical scholarship, and by presenting findings to the class.
- Appreciate global impact of tourism on the environment, international relations, and commerce.

RECM 404 : Foundations of Recreation Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 201 & BUS M 241 & RECM 300; or FIN 201 & BUS M 241 & RECM 300

DESCRIPTION: Overview of theories, philosophies, and rationale for recreation, experience, and venue management.

NOTE: If you are taking this course to satisfy the Nonprofit Management minor requirement, you do not need to have the prerequisites completed.

**Course Outcomes**

There are no course outcomes available

RECM 425 : Advanced Event and Experience Management. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Advanced understanding and application of event and experience management principles; designing, planning, implementing and evaluating a special event.

**Course Outcomes**

There are no course outcomes available

3. Complete one regional course from the following:

GEOG 245 : Geography of Utah. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

RECOMMENDED: Geog 101,120, 130.

DESCRIPTION: Exploring geography of Utah. Topics include land forms, climate, agricultural and recreational economics, historical migration, Mormon cultural landscape, ethnic patterns, and rural-urban contrasts.

**Course Outcomes**

There are no course outcomes available

GEOG 250 : United States and Canada. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Analysis of the natural environment, historical development, cultural patterns, economic systems, and political structures of geographic regions.

**Course Outcomes**

There are no course outcomes available

*GEOG 255 : Middle and South America. (3:3:0)

WHEN TAUGHT: Winter Contact Department

DESCRIPTION: Environmental, cultural, economic, and political parameters of Latin American societies.

**Course Outcomes**

- To link how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to the overall study of the Latin American realm.
- To gain a working knowledge of the connection of the underlying physical "stage" of Latin America to the distributions of people and their activities.
- To gain an understanding of the geographic structure of Latin America’s cultural components including languages, ethnic groups, settlement patterns, and religious beliefs.
- To develop geographic writing and research skills that result in papers that are fluent, relevant, and creative.
- To use other students' input to effectively enhance Latin American geographic understanding through group work and discussions
- To discover the significance of Latin America's increasing impact on the world's economy, as well as the growing Hispanization of the United States and the Church of Jesus Christ of Latter-day Saints

GEOG 260 : Europe. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Systematic approach to physical base, social and political problems, economic issues, and regional summary.

**Course Outcomes**

- To use other students input to effectively enhance European geographic understanding.
- To demonstrate the connection of the underlying physical "stage" of Europe to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To comprehend the regional geographic structure of Europe's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in Europe including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era. Emphasis will be given to the formation and spread of the European Union.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of the European realm.
- To write geographic research that is fluent, relevant, and creative.

*GEOG 265 : Russia and the Former Soviet Union. (3:3:0)

DESCRIPTION: Physical features, resources, political issues, economy and industries, population concerns, and role in world affairs.

**Course Outcomes**

- To use other students input to effectively enhance geographic understanding of the region.
- To comprehend the regional geographic structure of the region's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in the region including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era, including relationship to the European Union and other political entities.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of this region.
- To demonstrate the connection of the underlying physical "stage" of the region to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To write geographic research that is fluent, relevant, and creative.

*GEOG 271 : Middle East. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Physical and cultural geography of Southwest Asia and North Africa, emphasizing the cultural mosaic, geopolitics, environment, and resources of the region.

**Course Outcomes**

There are no course outcomes available

*GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

*GEOG 285 : Africa South of the Sahara. (3:3:0)

WHEN TAUGHT: Winter Contact Department

DESCRIPTION: Geographical analysis focusing on resource management, political issues, development, environmental problems, economic development, and urban-rural change; case studies from selected countries.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

## Show all Geography (Geog) Courses

**College of Family, Home, and Social Sciences Home**

**Geography Department Home**

**Majors**

BS in Geography

Emphases

- Environmental Studies
- Geographic Information Systems
- Geospatial Intelligence
- Global Studies
- Tourism Studies
- Urban & Regional Planning

**Minors**

- Geographic Information Systems
- Geography Teaching
- Global Studies
- Travel and Tourism Studies
- Urban & Regional Planning

**Course Information**

- Geography (Geog) Courses

**Faculty**

# Minor in Urban and Regional Planning (18 hours)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following core planning courses:

GEOG 310 : Introduction to Urban and Regional Planning. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Introduction to the profession and practice of urban and regional planning.

**Course Outcomes**
There are no course outcomes available

GEOG 336 : Urban Geography. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: History and theory of urban development, including why cities exist and how cities function.

**Course Outcomes**
There are no course outcomes available

GEOG 410 : Urban Planning Methods. (3:3:0)
WHEN TAUGHT: Winter
RECOMMENDED: Geog 310.
DESCRIPTION: Applications of methods and techniques commonly used in the urban planning process, emphasizing data collection and analysis, fieldwork, and writing skills.

**Course Outcomes**
There are no course outcomes available

GEOG 421 : Urban Planning Law. (2-3:Arr:0)
WHEN TAUGHT: Fall
RECOMMENDED: Geog 310.
DESCRIPTION: The political and legal context within which urban planning takes place.

**Course Outcomes**
There are no course outcomes available

2. Complete two of the following planning elective courses:

GEOG 306 : Public Land Conservation. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Environmental and social geography of public lands; analyzing historical, planning, management, and ecological issues.

**Course Outcomes**
There are no course outcomes available

GEOG 422 : Principles of Urban Design. (2:2:0)
WHEN TAUGHT: Fall
RECOMMENDED: Geog 310.
DESCRIPTION: Theories and principles of urban design emphasizing specific design criteria. Planning and design tools used within the U.S. by local government. Basic principles of architecture and landscape architecture. Field trips.

**Course Outcomes**

- Demonstrate knowledge of the design arts (architecture, landscape architecture, art, urban design)

including knowledge about the relationship between the design of the built environment and its functional, aesthetic and social precedents and consequences.
- Use written, oral and graphic skills to compose clear, accurate and compelling text, images and maps in documents and oral presentations.

GEOG 424 : Urban Transportation Planning. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 310, 410.

DESCRIPTION: Theories and principles of transportation planning emphasizing environmental, energy, economic, and social issues.

**Course Outcomes**

There are no course outcomes available

GEOG 510 : Professional Planning Studio. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 410.

DESCRIPTION: Assessing problem and issue identification, goal formulation, data gathering, synthesis and summary, plan concept and format, and public policy adoption while writing a general plan for a community in Utah.

**Course Outcomes**

- Use problem solving skills to select, diagnose and solve relevant aspects of a complex planning problem including attention to the needs and interests of diverse stakeholders and the guidance provided by conceptual and empirical expertise. (PAB 4.2.3a)Use written, oral and graphic skills to compose clear, accurate and compelling text, images and maps in documents and oral presentations. (PAB 4.2.3c)Collaborate with peers in joint learning activities organized to produce a plan or planning product for a relevant professional clientele, to mediate disagreements, to interpret contested purposes, and to negotiate between diverse and competing interests. (PAB 4.2.3e)Use ideas about the creation of plans, programs or projects to prepare an individually crafted product for a specific planning purpose and audience; demonstrating skill and judgment preparing a planning project that meets minimum professional standards. (PAB 4.2.3f)Use techniques for the adoption and implementation of plans including relevant regulations, incentives, techniques and technologies. (PAB 4.2.3h)Work with diverse communities, especially communities consisting of disadvantaged groups and persons and racial and ethnic minorities, or immigrant communities. (PAB 4.2.3i)

## Show all Geography (Geog) Courses

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Geography Department Home

Majors

BS in Geography

Emphases

- Environmental Studies
- Geographic Information Systems
- Geospatial Intelligence
- Global Studies
- Tourism Studies
- Urban & Regional Planning

Minors

- Geographic Information Systems
- Geography Teaching
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- Travel and Tourism Studies
- Urban & Regional Planning

Course Information

- Geography (Geog) Courses

Faculty

# Geography (Geog) Courses

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

GEOG 100 : The Geographic Approach. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of the discipline of geography and the faculty and geography major at BYU.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 101 : Global Environment: Understanding Physical Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Physical environment, distribution and interrelationships of climates, landforms, ecosystems and their human significance.

**Course Outcomes**

There are no course outcomes available

GEOG 110 : Landscapes of Disaster: An Introduction to Natural Hazards. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Exploring natural and social science of disturbances by analyzing causes, consequences, and role of human behavior in causing and mitigating natural disasters.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 120 : Geography and World Affairs. (3:3:0)

OFFERED: Honors also. Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Survey of the world, stressing geography of major political regions.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 130 : Introduction to Human Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Culture distributions and their relationship to existing geographic phenomena.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

GEOG 211 : Map Use and Interpretation. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Maps as tools for spatial analysis of problems in physical and cultural geography.

**Course Outcomes**

- Identify each component of the â Big Threeâ when using or observing geographic technologies. The Big Three includes 1) Geographic Information Systems, 2) Global Positioning Systems, and 3) Remote Sensing.
- Complete all typical map scale calculations related to land distance and area including unit conversions.
- Give and take coordinate references in UTM and lat / long and convert between the two. select a datum and coordinate system appropriate for a given job-related task. Explain the logic of and give / take a reference in the PLSS
- Configure a GPS receiver properly to use both with and without a map. Lay-in and follow the course in a GPS receiver.
- Measure elevation, distance, direction, slope, and aspect from digital or paper topographic maps. Perform a simple statistical analysis of data on a USGS topographic map.
- When presented with a typical specimen, perform a simple interpretation of a thematic map (e.g. Choropleth, Isoline)

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

GEOG 213 : Earth Observation and Image Interpretation. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Principles of earth observation: primarily air photo/large-scale satellite imagery interpretation, basic field methods, photogrammetry.

**Course Outcomes**

- Students will be able to perform a simple cultural / physical interpretation of simple monoscopic imagery.
- Students will be able to complete simple measurements from historical air photos including height, distance, area, scale, and coordinate-related problems.
- Students wil be able to complete simple problems related to electromagnetic radiation and atmospheric effects.

GEOG 217 : Programming for Geographers. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Object-oriented analysis of geographic information using Visual Basic.

**Course Outcomes**

There are no course outcomes available

GEOG 222 : Statistics for Geographers 1. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Methodology of spatial analysis. Theory and techniques in geographic data description and population inference.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 245 : Geography of Utah. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

RECOMMENDED: Geog 101,120, 130.

DESCRIPTION: Exploring geography of Utah. Topics include land forms, climate, agricultural and recreational economics, historical migration, Mormon cultural landscape, ethnic patterns, and rural-urban contrasts.

**Course Outcomes**

There are no course outcomes available

GEOG 250 : United States and Canada. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Analysis of the natural environment, historical development, cultural patterns, economic systems, and political structures of geographic regions.

**Course Outcomes**

There are no course outcomes available

GEOG 255 : Middle and South America. (3:3:0)

WHEN TAUGHT: Winter Contact Department

DESCRIPTION: Environmental, cultural, economic, and political parameters of Latin American societies.

**Course Outcomes**

- To link how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to the overall study of the Latin American realm.
- To gain a working knowledge of the connection of the underlying physical "stage" of Latin America to the distributions of people and their activities.
- To gain an understanding of the geographic structure of Latin America’s cultural components including languages, ethnic groups, settlement patterns, and religious beliefs.
- To develop geographic writing and research skills that result in papers that are fluent, relevant, and creative.
- To use other students’ input to effectively enhance Latin American geographic understanding through group work and discussions
- To discover the significance of Latin America's increasing impact on the world's economy, as well as the growing Hispanization of the United States and the Church of Jesus Christ of Latter-day Saints

GEOG 260 : Europe. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Systematic approach to physical base, social and political problems, economic issues, and regional summary.

**Course Outcomes**

- To use other students input to effectively enhance European geographic understanding.
- To demonstrate the connection of the underlying physical "stage" of Europe to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To comprehend the regional geographic structure of Europe's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in Europe including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era. Emphasis will be given to the formation and spread of the European Union.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of the European realm.
- To write geographic research that is fluent, relevant, and creative.

GEOG 265 : Russia and the Former Soviet Union. (3:3:0)

DESCRIPTION: Physical features, resources, political issues, economy and industries, population concerns, and role in world affairs.

**Course Outcomes**

- To use other students input to effectively enhance geographic understanding of the region.
- To comprehend the regional geographic structure of the region's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in the region including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era, including relationship to the European Union and other political entities.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of this region.
- To demonstrate the connection of the underlying physical "stage" of the region to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To write geographic research that is fluent, relevant, and creative.

GEOG 271 : Middle East. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Physical and cultural geography of Southwest Asia and North Africa, emphasizing the cultural mosaic, geopolitics, environment, and resources of the region.

**Course Outcomes**

There are no course outcomes available

GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 273 : Southeast Asia. (3:3.0:0)

WHEN TAUGHT: Fall Contact Department

DESCRIPTION: Fundamental issues of geography relating to Southeast Asia, including the extraction and marketing of natural resources, economic development, neighborly relations, and how diffusion has influenced the unique cultural, religious, and linguistic characteristics of the region.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 285 : Africa South of the Sahara. (3:3:0)

WHEN TAUGHT: Winter Contact Department

DESCRIPTION: Geographical analysis focusing on resource management, political issues, development, environmental problems, economic development, and urban-rural change; case studies from selected countries.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

GEOG 303 : Biogeography. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 101.

DESCRIPTION: Broad-scale distribution of plants and animals. Theoretical and practical applications to conservation and effects of global environmental change.

**Course Outcomes**

- Demonstrate an understanding of basic concepts and processes in biogeography
- Recognize and be able to explain patterns of plant and animal life at many different scales
- Explain how humans have affected the distribution and diversity of plants and animals, and apply concepts to decisions regarding human use of the environment
- Demonstrate a knowledge of prominent professional biogeographers and ecologists and their current research themes
- Plan for future changes in species distributions and diversity as a result of environmental and human-induced pressures

GEOG 304 : Geography of Climates. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 101.

DESCRIPTION: Elements, controls, distribution, and classification of the earth's climates.

**Course Outcomes**

- Gain an understanding of the key determinants of the world's main climates
- Gain an appreciation of the complex nature and implications of human climate change.
- Understand how extreme weather events occur and their potential impacts on humans.
- Understand the methods climatologists use to collect data about past and present climate.
- Improve writing, critical thinking and your ability to apply knowledge to solve geographic problems.

GEOG 305 : Geography of Landforms. (3:3:0)

WHEN TAUGHT: Fall Contact Department

RECOMMENDED: Geog 101.

DESCRIPTION: Elements of landforms: distributions and cultural significance.

**Course Outcomes**

- Examine the history of landform study and the key individuals in the history of geomorphology.
- Explain the physical processes that produce landforms.
- Examine a physical landscape and describe why it looks the way it does.
- Describe how human settlement and recreation patterns are influenced by landforms.
- Understand dating techniques geomorphologists use to understand earth's history.

GEOG 306 : Public Land Conservation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Environmental and social geography of public lands; analyzing historical, planning, management, and ecological issues.

**Course Outcomes**

There are no course outcomes available

GEOG 307 : Landscape Ecology. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 101, 212, 213.

DESCRIPTION: Interaction between spatial patterns and spatial processes in an ecological context. Methods, theories, and practical applications of landscapes at various scales.

**Course Outcomes**

- Demonstrate an understanding of the basic concepts of landscape ecology
- Understand the relation between pattern and process in landscapes across multiple spatial and temporal scales
- Read, understand, and critique research articles in scholarly journals related to landscape ecology
- Understand and be able to use landscape metrics and associated methodologies and technologies to quantitatively analyze landscapes
- Identify and address a research question in landscape ecology, and effectively communicate the results orally and in writing

- Apply landscape ecology concepts to environmental planning and conservation biology

GEOG 310 : Introduction to Urban and Regional Planning. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to the profession and practice of urban and regional planning.

**Course Outcomes**

There are no course outcomes available

GEOG 311 : Intermediate Geographic Information Systems. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GEOG 212

DESCRIPTION: Collecting, managing, and analyzing spatial data to solve common geographic tasks.

**Course Outcomes**

There are no course outcomes available

GEOG 312 : Cartographic Design. (4:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: GEOG 211 & GEOG 212

DESCRIPTION: Graphic perception, layout, typography, color, statistical methods, and symbolization of thematic maps through computer-aided techniques.

**Course Outcomes**

- Develop a map-based solution to a need, focusing on purpose and audience.
- Gather and process data needed for a map.
- Design maps to be clear, useful, and attractive, employing appropriate techniques such as thematic map types, composition, symbology, color, and text.
- Continue to learn design skills through map critique and self-training
- Appreciate quality work and put forth the effort necessary to produce quality results

GEOG 313 : Remote Sensing 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOG 213

DESCRIPTION: Introduction to airborne and spaceborne sensors, including characteristics and image acquisition. Emphasizes land cover mapping applications appropriate for environment monitoring.

**Course Outcomes**

There are no course outcomes available

GEOG 317 : Analytical Cartography. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GEOG 217

DESCRIPTION: Geocoding, spatial data representation, spatial algorithms, and map based transformations.

**Course Outcomes**

- Students will be able to express simple data structures and algorithms in computer code. These data structures and algorithms will be illustrative of either raster or vector GIS.
- When given a simple geographic problem specification, students will be able to create computer methods and classes that address the problem or meet the specification.
- When presented with a problem amenable to the application of geographic computer programming (intermediate level difficulty), students will design and implement a software system including computer program(s) to solve the problem.

GEOG 322 : Statistics for Geographers 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GEOG 222

DESCRIPTION: Advanced techniques in geospatial analysis.

**Course Outcomes**

- To master an advanced set of quantitative methods that are particularly appropriate for geographers, becoming especially skilled in one statistical area.
- To determine what quantitative methods are appropriate for answering different research questions.
- To apply statistical analysis to geographic problems in a competent and worthwhile way
- To develop and carry out an excellent research project complete with collaborative work and a crisp oral and professional visual presentation.
- To understand and appreciate published academic geographic research that uses a variety of quantitative methods.

GEOG 331 : Economic Geography. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Geog 100 or instructor's consent.

DESCRIPTION: Introduction to economic processes and spatial patterns, emphasizing theoretical approaches, locational strategies, and changing economic land-use patterns.

**Course Outcomes**

There are no course outcomes available

GEOG 336 : Urban Geography. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: History and theory of urban development, including why cities exist and how cities function.

**Course Outcomes**

There are no course outcomes available

GEOG 341 : Political Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Spatial analysis of global politics; focus on geopolitics, territory and conflict, nationalism, and the politics of resources.

**Course Outcomes**

There are no course outcomes available

GEOG 346 : Population Geography. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Geog 100 or instructor's consent.

DESCRIPTION: Spatial perspective on wide field of population studies, focusing on distribution, development, structure, and movement of populations, emphasizing basic demographic measures.

**Course Outcomes**

There are no course outcomes available

GEOG 347 : Tourism: A Conceptual Framework. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to tourism as a field of study; four elements of tourism: dynamic, service, functional, and consequential.

**Course Outcomes**

There are no course outcomes available

GEOG 348 : Tourism: Patterns and Analysis. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Patterns in domestic and international tourism; interrelationship between geography and tourism in understanding the patterns and their impact.

**Course Outcomes**

There are no course outcomes available

GEOG 349 : Global Adventure Travel. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Historical and emerging trends in global adventure travel and tourism. Detailed case studies selected from across world regions.

**Course Outcomes**

There are no course outcomes available

GEOG 350 : Tourism Planning. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Geog 347.

DESCRIPTION: Applying regional development and planning concepts, principles, and approaches to tourism destinations to enhance sustainable economic, ecological, and social development.

**Course Outcomes**

There are no course outcomes available

GEOG 353 : Heritage and Cultural Tourism. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 120, 130, 347, 348.

DESCRIPTION: Heritage and culture (places, people, relics, and traditions) as tourism resources examined within the context of supply and demand, conservation, interpretation, management, planning, and politics.

**Course Outcomes**

There are no course outcomes available

GEOG 399R : Academic Internship. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: GEOG 100
DESCRIPTION: On-the-job experience.
NOTE: 3 hours required. No more than 3 hours total in cooperative education may be counted in major.

**Course Outcomes**

- Complete a supervised internship in an employment setting or agency related to geography.Link academic learning with these professional experiences.Complete a minimum of 45 hands-on hours per credit.

### 400-Level Courses

GEOG 410 : Urban Planning Methods. (3:3:0)

WHEN TAUGHT: Winter
RECOMMENDED: Geog 310.
DESCRIPTION: Applications of methods and techniques commonly used in the urban planning process, emphasizing data collection and analysis, fieldwork, and writing skills.

**Course Outcomes**

There are no course outcomes available

GEOG 411 : Issues in Computer Cartography. (3:3:0)

WHEN TAUGHT: Winter Contact Department
PREREQUISITE: GEOG 312
DESCRIPTION: Current techniques for compilation, integration, and display of digital map data.

**Course Outcomes**

There are no course outcomes available

GEOG 412 : Advanced Geographic Information Systems. (3:3:1)

WHEN TAUGHT: Fall Contact Department
PREREQUISITE: GEOG 212 & GEOG 311
RECOMMENDED: Geog 222.
DESCRIPTION: Performing geographic tasks in resource management decision support and scientific research using spatial data management and analysis tools and techniques.

**Course Outcomes**

There are no course outcomes available

GEOG 413 : Remote Sensing 2. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: GEOG 313
DESCRIPTION: Computer processing of low-altitude and satellite images for geographic analysis of physical and cultural phenomena on earth.

**Course Outcomes**

- Understand and implement remote sensing pre-processing techniques.
- Perform image classification and evaluate classification accuracy.
- Understand and perform change detection.
- Complete an entire remote sensing project from beginning to end.

GEOG 414 : Applied Urban Environmental Modeling. (3:3:0)

WHEN TAUGHT: Winter Contact Department
RECOMMENDED: Geog 212, 213, 313.
DESCRIPTION: Complexities of urban environment through use of geographic techniques, including remote sensing, GIS, GPS, aerial photo and map interpretation, and fieldwork. Modeling human impact on the physical environment by examining local case studies and completing group projects. Developing and building technical skills as tools in understanding the urban environment.

**Course Outcomes**

There are no course outcomes available

GEOG 415R : Geographic Field Methods. (1-3:Arr:0)

WHEN TAUGHT: Spring Contact Department; Summer Contact Department
PREREQUISITE: GEOG 101
DESCRIPTION: Learning different methods used by geographers in the field through hands-on involvement in real faculty research.

**Course Outcomes**

There are no course outcomes available

GEOG 421 : Urban Planning Law. (2-3:Arr:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 310.

DESCRIPTION: The political and legal context within which urban planning takes place.

**Course Outcomes**

There are no course outcomes available

GEOG 422 : Principles of Urban Design. (2:2:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 310.

DESCRIPTION: Theories and principles of urban design emphasizing specific design criteria. Planning and design tools used within the U.S. by local government. Basic principles of architecture and landscape architecture. Field trips.

**Course Outcomes**

- Demonstrate knowledge of the design arts (architecture, landscape architecture, art, urban design) including knowledge about the relationship between the design of the built environment and its functional, aesthetic and social precedents and consequences.
- Use written, oral and graphic skills to compose clear, accurate and compelling text, images and maps in documents and oral presentations.

GEOG 423 : Planning for Unique and Sensitive Lands. (2:2:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 310.

DESCRIPTION: Unique aspects of land affecting land-use planning positively or negatively depending on sensitivity of design. Landscape ecological principles introduced and examined for usefulness in land-use planning.

**Course Outcomes**

- Explain the environmental sciences (biology, ecology, environmental studies) including knowledge about ecological and physical systems in relation to human activity at different geographic scales.

GEOG 424 : Urban Transportation Planning. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 310, 410.

DESCRIPTION: Theories and principles of transportation planning emphasizing environmental, energy, economic, and social issues.

**Course Outcomes**

There are no course outcomes available

GEOG 441 : Seminar in Geography and Geospatial Intelligence 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Instructor's consent.

DESCRIPTION: Capstone seminar, part 1, for students in geospatial intelligence emphasis, emphasizing synthesis of material learned in major and application of knowledge and skills through research project.

**Course Outcomes**

- Demonstrate to the student the unending need for Intelligence in a time of endless warfare. Discuss the propriety and honor in being involved in efforts to preserve freedom.
- Demonstrate the encompassing relationship of geography to war, and thus to Intelligence.
- Identify the types of war.
- Survey the types of Intelligence, Imint, Sigint, and Humint.
- Investigate the proper Ethics of an Intelligence Officer.
- Demonstrate the need for All-Source Intelligence.
- Develop skills in oral presentation, including slide design, speaking, and awareness of personal appearance. Develop skills in writing pithy reports in the style used in the intelligence community.

GEOG 442 : Seminar in Geography and Geospatial Intelligence 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GEOG 441

DESCRIPTION: Capstone seminar part 2 for students in geospatial intelligence emphasis, emphasizing synthesis of material learned in major and application of knowledge and skills through research project.

**Course Outcomes**

- Demonstrate the political processes and attitudes that led to diminished US Intelligence capability in 2001.
- Study the enemy of today's war, and learn to stay abreast of current events and predict future events in other regions of the world.
- Investigate other regional potential (low current day conflict) political/wars for Intelligencestudy and awareness.
- All students will participate as Team Members in completeing major research projects in timely and vital National security issues.

GEOG 493R : Special Problems. (.5-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Geography major or departmental approval.

**Course Outcomes**

- Under the direction of a mentoring professor, students will critically examine, investigate, and integrate the literature for a topic of interest in geography.

GEOG 495R : Mentored Research. (1-3:Arr.:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Participating in research integrating material learned in major. Emphasizes individual or collaborative research and creative thinking through active learning and reflective analysis.

**Course Outcomes**

- Students will conduct research with a mentoring professor which may include literature reviews, data collection, data coding, data management, data analysis, constructing statistical tables, writing proposals for conferences, and writing manuscripts to be submitted for publication.

## 500-Level Graduate Courses (available to advanced undergraduates)

GEOG 501R : Seminar in Geography. (.5-3:ARR:0)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Detailed investigation of selected systematic and regional geographic topics.

**Course Outcomes**

No outcomes are available at this time.

GEOG 503 : Geographic Information Systems. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring Contact Department
PREREQUISITE: Graduate standing.
DESCRIPTION: Using geographic information for solving advanced spatial problems. Introduction to using and producing maps and computer-based geographic information systems (GIS) as geographic tools. Hands-on research applications in the students' disciplines.
NOTE: For nonmajors who have not taken Geog 211 or 212 or equivalent.

**Course Outcomes**

There are no course outcomes available

GEOG 510 : Professional Planning Studio. (3:3:0)

WHEN TAUGHT: Fall
RECOMMENDED: Geog 410.
DESCRIPTION: Assessing problem and issue identification, goal formulation, data gathering, synthesis and summary, plan concept and format, and public policy adoption while writing a general plan for a community in Utah.

**Course Outcomes**

- Use problem solving skills to select, diagnose and solve relevant aspects of a complex planning problem including attention to the needs and interests of diverse stakeholders and the guidance provided by conceptual and empirical expertise. (PAB 4.2.3a)Use written, oral and graphic skills to compose clear, accurate and compelling text, images and maps in documents and oral presentations. (PAB 4.2.3c)Collaborate with peers in joint learning activities organized to produce a plan or planning product for a relevant professional clientele, to mediate disagreements, to interpret contested purposes, and to negotiate between diverse and competing interests. (PAB 4.2.3e)Use ideas about the creation of plans, programs or projects to prepare an individually crafted product for a specific planning purpose and audience; demonstrating skill and judgment preparing a planning project that meets minimum professional standards. (PAB 4.2.3f)Use techniques for the adoption and implementation of plans including relevant regulations, incentives, techniques and technologies. (PAB 4.2.3h)Work with diverse communities, especially communities consisting of disadvantaged groups and persons and racial and ethnic minorities, or immigrant communities. (PAB 4.2.3i)

GEOG 521R : Geographic Information Practicum. (3:3:0)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department; Spring Contact Department
PREREQUISITE: GEOG 212 & GEOG 217
RECOMMENDED: Geog 222, 311, 312, 313, 317, 412.
DESCRIPTION: Integration of various geographic technologies to solve a practical problem. Advanced topics in GIS, remote sensing, cartography, and programming as needed.

**Course Outcomes**

- Students will learn integration of various geographic technologies to solve a practical problem using advanced topics in GIS, remote sensing, cartography, and programming as needed.

# Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**College of Family, Home, and Social Sciences Home**

**Geography Department Home**

**Majors**

BS in Geography

Emphases

- Environmental Studies
- Geographic Information Systems
- Geospatial Intelligence
- Global Studies
- Tourism Studies
- Urban & Regional Planning

**Minors**

- Geographic Information Systems
- Geography Teaching
- Global Studies
- Travel and Tourism Studies
- Urban & Regional Planning

**Course Information**

- Geography (Geog) Courses

**Faculty**

# Geography Faculty

Show All
Hide All

## Professors

Hardin, Perry J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1982
MA, Brigham Young University, 1984
PhD, University of Utah, 1989

Jensen, Ryan R.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Professor
**DEGREES:** AS, Ricks College (now BYU-Idaho), 1992
BS, Brigham Young University, 1996
MS, Brigham Young University, 1997
PhD, University of Florida, 2000

Otterstrom, Samuel M.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Brigham Young University, 1994
PhD, Louisiana State University A&M, 1997

Shumway, J. Matthew
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1984
MS, Brigham Young University, 1987
PhD, Indiana University, 1991

## Associate Professors

Bekker, Matthew F.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Pennsylvania State University, 1996
PhD, University of Iowa, 2002

Clay, Michael J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MCRP, Iowa State University, 2001
PhD, University of California, Davis, 2005

Davis, James A.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1978
MA, California State University, Fullerton, 1987
PhD, Arizona State University, 1993

Durrant, Jeffrey Olani

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1995
MS, Brigham Young University, 1996
PhD, University of Hawaii, Manoa, 2001

Emmett, Chad F.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Associate Professor
**DEGREES:** BA, Utah State University, 1979
MA, Brigham Young University, 1983
PhD, University of Chicago, 1991

## Assistant Professors

Monson, Clark

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1985
MS, Brigham Young University, 1996
PhD, University of Hawaii, 2004

Plewe, Brandon

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Geography
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1992
MA, State University of New York, Buffalo, 1995
PhD, State University of New York, Buffalo, 1997

**College of Family, Home, and Social Sciences Home**

**History Department Home**

**Majors**

- BA in Family History—Genealogy
- BA in History
- BA in History Teaching
- BS in Teaching Social Science

**Minors**

- Family History—Genealogy
- History
- History Teaching

**Certificate**

- Family History—Genealogy

**Course Information**

- History (Hist) Courses

**Native American Studies**

**Minor**

- Native American Studies

**Faculty**

# History

Donald J. Harreld, Chair
2130 JFSB, (801) 422-4335

College of Family, Home, and Social Sciences Advisement Center
151 SWKT, (801) 422-3541

## Admission to Degree Program

All degree programs in the Department of History are open enrollment. However, special limitations apply for teaching majors.

## The Discipline

History stands at the heart of a liberal arts bridge between the humanities and social sciences. Historical understanding is thus basic to the life of an educated human being. As such, it is the ideal major for the student who wants the broad educational background for entrance into professions such as law, government service, or business, or who wants a liberal arts education. History can also be valuable training for someone who plans to teach.

## Career Opportunities

In recognition of the broad range of uses to which historical education can be put, the field of public history has emerged in recent years. Today people whom others would consider bankers, lawyers, corporate executives, or public servants view themselves as historians—public historians. They are the people with analytical skills provided by their historical education who work outside the university but who consider themselves historians by virtue of the value of the training they have received. A significant percentage of the jobs listed by firms and agencies with BYU's Employment Office specify no major. Many of these will be taken by public historians anxious to serve their employers with the valuable skills learned in their history major.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in Family History-Genealogy** (Program Outcomes)
**BA in History** (Program Outcomes)
**BA in History Teaching** (Program Outcomes)
**BS in Teaching Social Science (composite teaching major)** (Program Outcomes)

**Minor in Family History-Genealogy**
**Minor in History**
**Minor in History Teaching**
**Minor in Native American Studies**

**Certificate in Family History-Genealogy**

Students should see their college advisement center for help or information concerning the undergraduate programs.

**College of Family, Home, and Social Sciences Home**

**History Department Home**

**Majors**

- BA in Family History—Genealogy
- BA in History
- BA in History Teaching
- BS in Teaching Social Science

**Minors**

- Family History—Genealogy
- History
- History Teaching

**Certificate**

- Family History—Genealogy

**Course Information**

- History (Hist) Courses

**Native American Studies**

**Minor**

- Native American Studies

**Faculty**

# BA in Family History—Genealogy (55–77 hours*)

Show All Course Descriptions
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## Program Requirements | View MAP | View Program Outcomes

1. Complete one course from the following in fulfillment of the university core First-Year Writing requirement:

WRTG 150 : Writing and Rhetoric. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Processes of writing, reading, and research with an emphasis on argumentation and rhetorical analysis.
NOTE: Fulfills General Education First-Year Writing requirement.

**Course Outcomes**

- Use rhetoric responsibly to compose arguments in a variety of genres for specific audiences and purposes.
- Critically read texts. This includesanalyzing how a text functions in a specific situation, community, or public;analyzing the nuances of language (diction, figures of speech, tone, etc.);identifying and evaluating the elements of an argument—claims, reasons, assumptions, and ethical, emotional, and logical appeals.
- Write coherent and unified texts (effective introductions, clear theses, supporting details, transitions, and strong conclusions) using a flexible and effective writing process, including prewriting, drafting, revising, and editing.
- Use style—diction, figurative language, tone, grammar, punctuation, spelling, mechanics—genre, conventions, and document design correctly and for rhetorical effect.
- Navigate the library to locate primary and secondary sources, evaluate the appropriateness and credibility of those sources, and effectively incorporate and accurately document outside sources in a research paper.

PHIL 150 : Reasoning and Writing. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Recommended for philosophy majors and minors.
DESCRIPTION: Informal grammar, logic, and rhetoric as tools for reading and writing. Library research.
NOTE: Fulfills GE First-Year Writing requirement. No course challenges accepted.

**Course Outcomes**

There are no course outcomes available

**Note:** Waivers based on Advanced Placement (AP) or other test scores do not apply to this requirement. Students with AP credit for Engl 115 should take Wrtg 150 or Phil 150.

2. Complete one course from the following in fulfillment of the university core Languages of Learning requirement:

PHIL 305 : Intermediate Formal Logic. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PHIL 205
DESCRIPTION: History and use of first-order logic and second-order logic; natural-deduction and axiomatic proofs; modal logic; set theory and foundations of mathematics.
NOTE: Fulfills GE Languages of Learning requirement.

**Course Outcomes**

- Master first order logic including the correct use of symbols and the construction of proofs.
- Learn to construct proofs within axiom systems in such areas as identity, set theory, arithmetic, and modal logic.
- Understand key historical developments such as Cantor's theory of transfinite numbers, Frege's attempt to reduce arithmetic to logic, the logical paradoxes, and Gödel's theorems.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

An approved culminating foreign language course.

**Note:** These courses, and their prerequisites, impart linguistic or quantitative skills advantageous to historical research.

3. Complete the following in fulfillment of the university core Civilization 1 and 2 requirements:

HIST 201 : World Civilization to 1500. (3:3:0)

OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: World civilization from Greek antiquity to Renaissance; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development
- Be able to identify major societies of the pre-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles
- Gain an appreciation of influential cultural works produced in a variety of pre-modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (pre-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

HIST 202 : World Civilization from 1500. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: World civilization from Renaissance to present; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development.
- Be able to identify major societies of the post-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles.
- Gain an appreciation of influential cultural works produced in a variety of modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (post-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

: Honors World Civilization from 1500.

**Course Outcomes**

4. Complete the following (may be used as partial fulfillment of the university core doctrinal foundation and religion requirement):

REL C 261 : Introduction to Family History (Genealogy). (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Introduction to the doctrinal significance, necessary skills, and available resources dealing with family history and genealogy.

**Course Outcomes**

There are no course outcomes available

REL C 293R : Specialized Studies in Family History (Genealogy). (1:1.0:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Using documents from specific regional and organizational sources to identify ancestors and submit their names for temple ordinances.

**Course Outcomes**

No outcomes are available at this time.

: LDS Family History.

**Course Outcomes**

: United States and Canada Family History.

**Course Outcomes**

: British Family History.

**Course Outcomes**

: Scandinavian Family History.

**Course Outcomes**

: Native American Family History.

**Course Outcomes**

: French and Italian Family History.

**Course Outcomes**

: Latin American, Spanish, and Portuguese Family History.

**Course Outcomes**

: Slavic Family History.

**Course Outcomes**

: Germanic Family History.

**Course Outcomes**

5. Complete the following:

HIST 200 : The Historian's Craft. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: History within the broader framework of liberal education; nature of history; questions historians ask; skills and resources needed to study, understand, and write history.
NOTE: Required of all history majors.

**Course Outcomes**

- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

HIST 217 : The Family Historian's Craft. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction to genealogical methods applicable in American and international research. Discussion of technology in genealogical research and introduction to censuses and vital records (US and international).

**Course Outcomes**

There are no course outcomes available

HIST 220 : The United States Through 1877. (3:3:0)

OFFERED: Independent study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Discovery, colonization, American Revolution, estabishment of the Constitution, foreign affairs, westward expansion, slavery, sectionalism, Civil War, and reconstruction.

**Course Outcomes**

There are no course outcomes available

HIST 317 : The Family and the Law in American History. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HIST 217

DESCRIPTION: The interaction of families with law and government as illustrated in original American sources; individual family histories reconstructed in the broader perspective of history.

**Course Outcomes**

There are no course outcomes available

**Note:** Hist 200, 217, and 317 should be completed no later than the sophomore year or in the first semester/term after the major is declared. Majors should consult with the family history coordinator soon after declaring. Hist 220 must be completed as a college course; it cannot be fulfilled with AP or other test scores. Hist 200 and 490 combined satisfy the university core Advanced Written and Oral Communications requirement. Advanced Placement U.S. History courses are not equivalent.

6. Complete one course from the following:

HIST 280 : Northern US Family, Local, and Social History Research Since 1790. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of invididual families and development of family history studies in the northern states, including New England, the Midwest, and some Mid-Atlantic states in the 19th and 20th centuries.

**Course Outcomes**

There are no course outcomes available

HIST 281 : Southern US Family, Local, and Social History Research Since 1790. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: HIST 217

DESCRIPTION: 19th and 20th century records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in the southern states.

**Course Outcomes**

There are no course outcomes available

HIST 282 : Colonial US Family, Local and Social History Research. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in colonial American studies.

**Course Outcomes**

There are no course outcomes available

7. Complete three courses from the following:

HIST 280 : Northern US Family, Local, and Social History Research Since 1790. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of invididual families and development of family history studies in the northern states, including New England, the Midwest, and some Mid-Atlantic states in the 19th and 20th centuries.

**Course Outcomes**

There are no course outcomes available

HIST 281 : Southern US Family, Local, and Social History Research Since 1790. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: HIST 217

DESCRIPTION: 19th and 20th century records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in the southern states.

**Course Outcomes**

There are no course outcomes available

HIST 282 : Colonial US Family, Local and Social History Research. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in colonial American studies.

**Course Outcomes**

There are no course outcomes available

HIST 350 : British Family, Local and Social History Research. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methods for reconstruction of individual families and development of demographic and family history studies in England, Scotland, and Wales.

**Course Outcomes**

- Students will be able to explain and use fundamental genealogical (and some historical) resources and methodologies for English and Welsh research since 1700
- Students will evaluate, analyze, and corroborate genealogical information from both original and compiled sources. Students will know and use established citation standards.
- Students will explain how various pieces of information are combined in order to trace the same individual over various records and across the lifespan
- Students demonstrate how evidence is used to prove the links between generations

HIST 351 : Germanic Family, Local, and Social History Research. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in Germanic areas of Europe.

**Course Outcomes**

There are no course outcomes available

HIST 352 : Scandinavian Family, Local, and Social History Research. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in Denmark, Norway, Iceland, Sweden, and/or Finland.

**Course Outcomes**

There are no course outcomes available

HIST 353 : Southern European and Latin American Family, Local, and Social History Research. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: HIST 217

DESCRIPTION: Records, geo-historical background, paleography, and methods for reconstruction of individual families; development of demographic and family history studies which may include Portugal, Spain, France, and Italy and their colonies in the Americas.

**Course Outcomes**

There are no course outcomes available

HIST 354 : Slavic Family, Local, and Social History Research. (3:3:0)

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families; development of family history studies in Slavic areas of Europe.

**Course Outcomes**

- Students will be able to describe the key content of major family history sources in Slavic research.
- Students will become somewhat proficient at reading old Slavic documents.
- Students will become acquainted with actually using family history primary and secondary sources, on film or otherwise available, at the world's largest genealogical repository, the Family History Library in Salt Lake City

HIST 390R : Special Topics in History. (.5-3:Arr:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Presented by visiting or regular faculty. Varied topics include oral history, demographics, psychohistory, Christianity in history, family history research, etc.

**Course Outcomes**

There are no course outcomes available

: Family History Research.

**Course Outcomes**

: Family History Research in Ireland. (.5-3:Arr:Arr)

**Course Outcomes**

: Family History Research in the Netherlands.

**Course Outcomes**

: Advanced Southern European Family History Research.

**Course Outcomes**

: Advanced British Family History Research.

**Course Outcomes**

: Native American Family History Research. (.5-3:Arr:Arr)

**Course Outcomes**

(Family History section only.)

HIST 396 : Historical Narrative: A Writing Workshop. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

RECOMMENDED: Hist 200, 220, 221.

DESCRIPTION: Workshop in writing narrative history, emphasizing the problems of writing historical narrative. Theories and examples of narrative history.

**Course Outcomes**

- Students will demonstrate an understanding of the genres of historical writing and their historiography
- Students will be able to critically evaluate primary and secondary sources
- Students will be able to write historical narratives in several different genres
- Students will be able to identify and critically respond to arguments of historical monographs, articles, and primary sources

HIST 434 : Computers in Family Historical Research and Publication. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: HIST 217

DESCRIPTION: Use of computer programs and the internet in researching family, local, and social history; including programs and techniques for publishing.

**Course Outcomes**

- Students will be able to stay current on newly published historical materials by using RSS feeds and Google Alerts to notify them of changes in websites, podcasts, weblogs, etc.
- Students will be able to communicate the findings of their historical research and demonstrate a high level of analytical skill through the use of a variety of computerized and online resources.
- Students will be able to locate and use primary source material online, as it continues to be made more available.
- Students will be able to design and use basic, custom relational databases for historical research and analysis.

**Note:** Hist 280, 281, or 282 may be used to fulfill this requirement only if not fulfilling requirement 6.

8. Complete one course from the following:

HIST 420 : Latin Language Handwriting and Documents. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Interpretation of handwriting within historical contexts in Latin ecclesiastical and notarial documents useful in family, local, and social history research, including church registers, notarial settlements of estates, probate records, and inventories; medieval to modern periods.

**Course Outcomes**

- Students will learn the most common Latin scripts
- Students will read, transcribe, and where necessary, translate documents
- Students will demonstrate transcription techniques and methodologies
- Students will analyze and explain the cultural, historical, and legal context for documents, the scripts used in them, and the coverage and availability

HIST 421 : English Language Handwriting and Documents. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Interpretation of handwriting within historical contexts in vernacular scripts in the British Isles, sixteenth through eighteenth centuries, in sources useful in family, local, and social history research.

**Course Outcomes**

- Students will learn the most common scripts (hands) and documents in use in Britain and its colonies between 1500 and 1850.
- Students will read, transcribe, and where necessary, translate documents
- Students will demonstrate transcription techniques and methodologies
- Students will analyze and explain the cultural, historical, and legal context for documents, the scripts used in them, and the coverage and availability

HIST 422 : Germanic Language Handwriting and Documents. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Interpretation of handwriting in vernacular scripts in the German kingdoms, sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

- Students will be able to: 1. Use various types of German reference and research tools 2. Recognize different types of German written and printed documents 3. Understand important historical and cultural aspects of Germany 4. Know the procedures for resolving difficult genealogical and historical research problems

HIST 423 : Slavic Language Handwriting and Documents. (3:3:0)

DESCRIPTION: Interpretation of handwriting in vernacular scripts in the Slavic language areas of Eastern Europe, sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

There are no course outcomes available

HIST 424 : Romance Language Handwriting and Documents. (3:3:0)

DESCRIPTION: Interpretation of handwriting in vernacular scripts in the Romance languages of Europe (especially Spanish, French, and Italian), sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

- Students will be able to read with fluency documents in italic style handwriting;
- Students will be able to recognize and use documents and understand the legal, ecclesiastical and civil systems behind them;
- Students will be able to understand basic concepts of paleography and the impacts of language on the historical development of handwriting
- Students will be able to develop familiarity with secretary (cortesana or procesal) handwriting

HIST 425 : Scandinavian Language Handwriting and Documents. (3:3:0)

DESCRIPTION: Interpretation of old Gothic script handwriting in Scandinavian areas of Europe (including Denmark, Norway, Sweden, Finland, and Iceland), sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

- Students will be able to read at a basic level, old gothic-script Norwegian, Danish, Swedish and Finnish documents, from the 1600s on up.
- Students will be able to use Scandinavian conversion calendars, to convert Latin feast dates to regular Julian calendar dates.
- Students will be able to read, at a basic level for content from Scandinavian printed documents. of the 1700s and 1800s.

9. Complete the following:

HIST 439 : Seminar on Professional Family History Research. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HIST 217

DESCRIPTION: Practicum in professional client research exploring advanced genealogical methodologies.

**Course Outcomes**

- Students will learn the key methods of family history research in US sources, to solve difficult research problems from the 1700s and 1800s.
- Students will learn, on an advanced level, to analyze sources and read between the lines, to reconstitute

complete families from records of the 1700s and 1800s in US sources.
- Students will be able to write and/or compile a variety of research reports for clients, namely, analytical, crossing the pond, bibliographic, and the like, for persons who (in theory) hire them to conduct research on an ancestral family or families.

HIST 496R : Academic Internship: Family, Local, and Social History. (1-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Work-study involving family, local, and/or social history at one or more archives, libraries, publishers, data providers, or research organizations on the international, national, state, or local level, under supervision of a professional genealogist, historian, archivist, or librarian.

**Course Outcomes**

There are no course outcomes available

10. Complete one course from the following list of social and cultural history courses. Seek faculty advice in choosing electives:

HIST 244 : Jewish History: A.D. 70 to the Present. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Jewish diaspora, Jewish life in Moslem and Christian countries; Jewish religious movements; development of Zionism; Jewish communities in modern Israel and the United States.

**Course Outcomes**

- Gain a historical consciousness by demonstrating an understanding of major developments in Jewish and history, and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately and distinguish between questionable and valid historical assertions.
- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using interdisciplinary prinary and secondary sources.
- Skillfully integrate sources into a coherent argument expressed through a clear, well-written style and throrough oral communication.
- Recognize anti-Semitic arguments.
- Gain an understanding of the complexities of modern Jewish identity.
- Appreciate the contribution of Jewish people to the world.

HIST 290 : Nature and History: The Earth's Environmental Past. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Human historical interactions with animals, plants, and landscapes. Global histories of climate, population, whaling, fossil fuels, the car, animal rights, suburban sprawl, eco-theology, environmentalism, ecotourism, etc.

**Course Outcomes**

- Students will become academically conversant with the major historical developments in our global relationship with nature.
- Students will be able to analyze and evaluate the content and meaning of primary sources, and through critical interpretation, draw reasonable conclusions.
- Students will be able to formulate historical questions and answer them by careful and systematic research in primary and secondary sources.
- Students will be able to write history that is coherent and persuasive by following discipline's norms for writing and careful documentation.

HIST 318 : European Women's History. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

RECOMMENDED: Hist 200.

DESCRIPTION: European women and gender from 1400 to the present.

**Course Outcomes**

- Students will be able to understand and explain major trends in European women's experiences and history since 1400
- Students will be able to analyze and synthesize historiographyof women's history, gender history, and feminism
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another
- Students will interpret important shifts or trends in the experience of women and attitudes about gender. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate contemporary attitudes to women and men's history and gender and how these affect interpretations of the past.

HIST 319 : The Family in Europe. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Nature and development of marriage and family life and structure from the ancient to modern era.

NOTE: Independent Study also.

**Course Outcomes**

- Students will be able to understand and explain major trends in European family life, relationships, and

law between 1100 and the present
- Students will be able to analyze and synthesize historiography of family history
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another.
- Students will interpret important shifts or trends in the experience of family functions and relationships and their connections with the law. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends.
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate historical experiences and historiographic interpretations

HIST 320 : Society in Europe. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Common life in Europe from 1500 to the present: family problems, social customs, marriage, superstition, death, diet, work, hardships, migration, and childhood.

**Course Outcomes**

- Students will be able to explain and analyze themes and trends in European social history in both the early modern and modern periods.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze and interpret secondary source documents
- Students will be able to interpret and debate the meanings and historical value of primary and secondary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 358 : Gender and History in Latin America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: How gender roles have been defined legally, socially, and culturally in Latin America from the colonial period to the present, emphasizing the nineteenth and twentieth centuries.

**Course Outcomes**

- To understand how gender relations and gender roles developed in Latin America from colonial times to the present.
- To be able to discuss and explain those developments through the written and spoken word with clarity, persuasiveness, and proper use of evidence.
- To write a well written, organized, and developed term paper using the critical thinking and writing skills of a historian.
- To be able to read primary sources and discuss their utility in constructing historical arguments.

HIST 378 : American Family History. (3:3:0)

DESCRIPTION: History of American families from colonial period to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major intellectual, economic, religious, social, cultural, and political developments affecting changes in American families of various races, classes, and regions from 1607 to the present.
- Students will be able to analyze an important historical question in the history of American families
- Students will be able to research, analyze, and integrate primary and secondary sources into a coherent and well-written argument.
- Students will be able to isolate the theses and supporting arguments of secondary sources on the history of American families.

HIST 379 : U.S. Religious History to 1860. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Religious developments from colonial times to 1860.

**Course Outcomes**

There are no course outcomes available

HIST 380 : U.S. Religious History Since 1860. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Examines religious people, institutions, beliefs, and practices in U.S. history since the Civil War.

**Course Outcomes**

There are no course outcomes available

HIST 384 : United States Women's History. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Survey course of women's experience in American culture and society from the Puritans to the present.

**Course Outcomes**

- Students will be able to explain and analyze the experiences of women in America from the colonial period to the present, the ways that ideas about gender have shaped American life, and significant issues and debates in U.S. Women's history.
- Students will be able to analyze, interpret, and evaluate primary sources.

- Students will be able to interpret and debate the meanings and historical value of primary sources with their peers.
- Students will be able to analyze and create historical questions and place them in a historiographical context.
- Students will demonstrate proficiency in using historical methods of research and in integrating data into a coherent argument expressed through a clear, well-written style.
- Students will be able to apply their understanding of American women's history to current issues and events.

11. Complete one course from list of history courses that (1) does not appear above and (2) relates to your selected geographical area of emphasis. Seek faculty advice in choosing electives.

12. Complete the following capstone course:

HIST 490 : Capstone Research Seminar. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: HIST 200
DESCRIPTION: Research seminar; critical, analytical, and writing skills in preparation of a senior thesis.
NOTE: Required of all history majors.

**Course Outcomes**

- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using primary and secondary sources
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid assertions;
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

**Note:** It is recommended that students select the section designated for family history majors only; offered annually.

*Hours include courses that may fulfill university core requirements.

## Show all History (Hist) Courses

**College of Family, Home, and Social Sciences Home**

**History Department Home**

**Majors**

- BA in Family History—Genealogy
- BA in History
- BA in History Teaching
- BS in Teaching Social Science

**Minors**

- Family History—Genealogy
- History
- History Teaching

**Certificate**

- Family History—Genealogy

**Course Information**

- History (Hist) Courses

**Native American Studies**

**Minor**

- Native American Studies

**Faculty**

# BA in History (45–62 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. The History Department requires a minimum of 24 hours of history credit to be taken in residency at BYU's Provo campus for this degree program. BYU Independent Study courses do not count toward residency. These hours may also go toward BYU's 30-hour residency requirement for graduation.

2. Complete one of the following courses in fulfillment of the university core First-Year Writing requirement:

   WRTG 150 : Writing and Rhetoric. (3:3:0)

   OFFERED: Honors also.
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: Processes of writing, reading, and research with an emphasis on argumentation and rhetorical analysis.
   NOTE: Fulfills General Education First-Year Writing requirement.

   **Course Outcomes**

   - Use rhetoric responsibly to compose arguments in a variety of genres for specific audiences and purposes.
   - Critically read texts. This includesanalyzing how a text functions in a specific situation, community, or public;analyzing the nuances of language (diction, figures of speech, tone, etc.);identifying and evaluating the elements of an argument—claims, reasons, assumptions, and ethical, emotional, and logical appeals.
   - Write coherent and unified texts (effective introductions, clear theses, supporting details, transitions, and strong conclusions) using a flexible and effective writing process, including prewriting, drafting, revising, and editing.
   - Use style—diction, figurative language, tone, grammar, punctuation, spelling, mechanics—genre, conventions, and document design correctly and for rhetorical effect.
   - Navigate the library to locate primary and secondary sources, evaluate the appropriateness and credibility of those sources, and effectively incorporate and accurately document outside sources in a research paper.

   PHIL 150 : Reasoning and Writing. (3:3:0)

   OFFERED: Honors also.
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   RECOMMENDED: Recommended for philosophy majors and minors.
   DESCRIPTION: Informal grammar, logic, and rhetoric as tools for reading and writing. Library research.
   NOTE: Fulfills GE First-Year Writing requirement. No course challenges accepted.

   **Course Outcomes**

   There are no course outcomes available

   **Note:** Waivers based on Advanced Placement (AP) or other test scores do not apply to this requirement. Students with AP credit for Engl 115 should take Wrtg 150 or Phil 150.

3. Complete one course from the following in fulfillment of the university core Languages of Learning requirement:

   PHIL 305 : Intermediate Formal Logic. (3:3:0)

   WHEN TAUGHT: Fall; Winter
   PREREQUISITE: PHIL 205
   DESCRIPTION: History and use of first-order logic and second-order logic; natural-deduction and axiomatic proofs; modal logic; set theory and foundations of mathematics.
   NOTE: Fulfills GE Languages of Learning requirement.

   **Course Outcomes**

   - Master first order logic including the correct use of symbols and the construction of proofs.
   - Learn to construct proofs within axiom systems in such areas as identity, set theory, arithmetic, and modal logic.
   - Understand key historical developments such as Cantor's theory of transfinite numbers, Frege's attempt to reduce arithmetic to logic, the logical paradoxes, and Gödel's theorems.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

An approved culminating foreign language course.

**Note:** These courses, and their prerequisites, impart linguistic or quantitative skills advantageous to historical research.

4. Complete the following:

HIST 200 : The Historian's Craft. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: History within the broader framework of liberal education; nature of history; questions historians ask; skills and resources needed to study, understand, and write history.

NOTE: Required of all history majors.

**Course Outcomes**

- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

**Note:** For majors Hist 200 should be completed prior to elective courses. It must be completed no later than the sophomore year or in the first semester/term after the major is declared. Hist 200 and 490 combined satisfy the university core Advanced Written and Oral Communications requirement.

5. Complete the following core courses:

HIST 201 : World Civilization to 1500. (3:3:0)

OFFERED: Honors also. Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: World civilization from Greek antiquity to Renaissance; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development
- Be able to identify major societies of the pre-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles
- Gain an appreciation of influential cultural works produced in a variety of pre-modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (pre-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

HIST 202 : World Civilization from 1500. (3:3:0)

OFFERED: Honors also.

WHEN Fall; Winter; Spring; Summer

TAUGHT:
DESCRIPTION: World civilization from Renaissance to present; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development.
- Be able to identify major societies of the post-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles.
- Gain an appreciation of influential cultural works produced in a variety of modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (post-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

: Honors World Civilization from 1500.

**Course Outcomes**

HIST 220 : The United States Through 1877. (3:3:0)
OFFERED: Independent study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Discovery, colonization, American Revolution, estabishment of the Constitution, foreign affairs, westward expansion, slavery, sectionalism, Civil War, and reconstruction.

**Course Outcomes**
There are no course outcomes available

HIST 221 : The United States Since 1877. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Industrialization, immigration, urbanization, political and social movements, and foreign policy.

**Course Outcomes**
There are no course outcomes available

**Note:** Majors must complete all four core courses in history at the college level. University core Civilization courses (201/202) offered by other departments are not equivalent. Advanced Placement U.S. history courses are not equivalent.

6. Complete seven electives (21 total hours) from the approved list. Seek faculty advice in choosing electives. Students must not present all their preparation in a single region. Complete three electives (9 hours) by taking at least one course in three of the following areas of study: Asia, Europe, Latin America, Near East, United States, Africa, or the world. (Course regions are identified on the approved list.) Majors are urged to focus their remaining four electives on a single theme, region, or period.

**Note:** No more than 6 combined hours of 199R, 495R, and 498R will count toward elective credit.

7. Complete the following capstone course:
   HIST 490 : Capstone Research Seminar. (3:3:0)
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   PREREQUISITE: HIST 200
   DESCRIPTION: Research seminar; critical, analytical, and writing skills in preparation of a senior thesis.
   NOTE: Required of all history majors.

**Course Outcomes**

- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using primary and secondary sources
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid assertions;
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

## Recommended

REL C 261 : Introduction to Family History (Genealogy). (2:2:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Introduction to the doctrinal significance, necessary skills, and available resources dealing with family history and genealogy.

**Course Outcomes**

There are no course outcomes available

Majors are strongly encouraged to minor in a field that further enhances their preparation for employment or graduate school. Consult with faculty.

*Hours include courses that may fulfill university core requirements.

## Show all History (Hist) Courses

**College of Family, Home, and Social Sciences Home**

**History Department Home**

**Majors**

- BA in Family History—Genealogy
- BA in History
- BA in History Teaching
- BS in Teaching Social Science

**Minors**

- Family History—Genealogy
- History
- History Teaching

**Certificate**

- Family History—Genealogy

**Course Information**

- History (Hist) Courses

**Native American Studies**

**Minor**

- Native American Studies

**Faculty**

# BA in History Teaching (67—84 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

1. The History Department requires a minimum of 18 hours of history credit to be taken in residency at BYU's Provo campus for this degree program. BYU Independent Study courses do not count toward residency. These hours may also go toward BYU's 30-hour residency requirement for graduation.

2. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

3. Complete one of the following courses in fulfillment of the university core First-Year Writing requirement:

   WRTG 150 : Writing and Rhetoric. (3:3:0)

   OFFERED: Honors also.
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: Processes of writing, reading, and research with an emphasis on argumentation and rhetorical analysis.
   NOTE: Fulfills General Education First-Year Writing requirement.

   **Course Outcomes**

   - Use rhetoric responsibly to compose arguments in a variety of genres for specific audiences and purposes.
   - Critically read texts. This includesanalyzing how a text functions in a specific situation, community, or public;analyzing the nuances of language (diction, figures of speech, tone, etc.);identifying and evaluating the elements of an argument—claims, reasons, assumptions, and ethical, emotional, and logical appeals.
   - Write coherent and unified texts (effective introductions, clear theses, supporting details, transitions, and strong conclusions) using a flexible and effective writing process, including prewriting, drafting, revising, and editing.
   - Use style—diction, figurative language, tone, grammar, punctuation, spelling, mechanics—genre, conventions, and document design correctly and for rhetorical effect.
   - Navigate the library to locate primary and secondary sources, evaluate the appropriateness and credibility of those sources, and effectively incorporate and accurately document outside sources in a research paper.

   PHIL 150 : Reasoning and Writing. (3:3:0)

   OFFERED: Honors also.
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   RECOMMENDED: Recommended for philosophy majors and minors.
   DESCRIPTION: Informal grammar, logic, and rhetoric as tools for reading and writing. Library research.
   NOTE: Fulfills GE First-Year Writing requirement. No course challenges accepted.

   **Course Outcomes**

   There are no course outcomes available

   **Note:** Waivers based on Advanced Placement (AP) or other test scores do not apply to this requirement. Students with AP credit for Engl 115 should take Wrtg 150 or Phil 150.

4. Complete one course from the following in fulfillment of the university core Languages of Learning requirement:

   PHIL 305 : Intermediate Formal Logic. (3:3:0)

   WHEN TAUGHT: Fall; Winter
   PREREQUISITE: PHIL 205
   DESCRIPTION: History and use of first-order logic and second-order logic; natural-deduction and axiomatic proofs; modal logic; set theory and foundations of mathematics.
   NOTE: Fulfills GE Languages of Learning requirement.

**Course Outcomes**

- Master first order logic including the correct use of symbols and the construction of proofs.
- Learn to construct proofs within axiom systems in such areas as identity, set theory, arithmetic, and modal logic.
- Understand key historical developments such as Cantor's theory of transfinite numbers, Frege's attempt to reduce arithmetic to logic, the logical paradoxes, and Gödel's theorems.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

An approved culminating foreign language course.

**Note:** These courses, and their prerequisites, impart linguistic or quantitative skills advantageous to historical research.

5. Complete the following:

HIST 200 : The Historian's Craft. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: History within the broader framework of liberal education; nature of history; questions historians ask; skills and resources needed to study, understand, and write history.
NOTE: Required of all history majors.

**Course Outcomes**

- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

**Note:** For majors Hist 200 should be taken prior to elective courses. It must be completed no later than the sophomore year or in the first semester/term after the major is declared. Hist 200 and 490 combined satisfy the university core Advanced Written and Oral Communications requirement.

6. Complete the following core courses:

HIST 201 : World Civilization to 1500. (3:3:0)

OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: World civilization from Greek antiquity to Renaissance; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development
- Be able to identify major societies of the pre-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles
- Gain an appreciation of influential cultural works produced in a variety of pre-modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (pre-1500 C.E.).
- Improve the clarity and grace of analytical writing.

- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

HIST 202 : World Civilization from 1500. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: World civilization from Renaissance to present; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development.
- Be able to identify major societies of the post-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles.
- Gain an appreciation of influential cultural works produced in a variety of modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (post-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

: Honors World Civilization from 1500.

**Course Outcomes**

HIST 220 : The United States Through 1877. (3:3:0)

OFFERED: Independent study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Discovery, colonization, American Revolution, estabishment of the Constitution, foreign affairs, westward expansion, slavery, sectionalism, Civil War, and reconstruction.

**Course Outcomes**

There are no course outcomes available

HIST 221 : The United States Since 1877. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Industrialization, immigration, urbanization, political and social movements, and foreign policy.

**Course Outcomes**

There are no course outcomes available

**Note:** Majors must complete all four core courses in history at the college level. University core Civilization courses (201/202) offered by other departments are not equivalent. Advanced Placement U.S. history courses are not equivalent.

7. Complete the following:

HIST 364 : Utah. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Contributions of Native Americans, explorers, mountain men, miners, government officials, Mormons, and other groups in the nineteenth century. Impact of national movements, various peoples, politics, economics, and social and cultural change in the twentieth century.

**Course Outcomes**

There are no course outcomes available

8. Complete four electives (12 total hours) from the approved list. Seek faculty advice in choosing electives. Students must not present all their preparation in a single region. Complete no more than two electives (6 hours) in each of the following areas of study: Asia, Europe, Latin America, Near East, United States, Africa, or the world. (Course regions are identified on the approved list.)

**Note:** No more than 6 combined hours of 199R, 495R, and 498R will count toward elective credit.

9. Complete the following capstone course:

HIST 490 : Capstone Research Seminar. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: HIST 200

DESCRIPTION: Research seminar; critical, analytical, and writing skills in preparation of a senior thesis.
NOTE: Required of all history majors.

**Course Outcomes**

- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using primary and secondary sources
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid assertions;
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

10. A teaching minor is strongly recommended.

11. Complete the Professional Education Component:
    - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.
DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

HIST 477 : History and Social Science Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: SC ED 276R; Fingerprinting and FBI clearance.
DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.
NOTE: Check with Hist 477 instructor for specific prerequisites for the major or minor program.

**Course Outcomes**

There are no course outcomes available

HIST 478 : Practicum in Secondary Education. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: SC ED 276R; Concurrent enrollment in Hist 477 or comparable major course.
DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Prospective teachers will consider the characteristics of learning-centered classrooms that are based on current theories of learning
- Students will study and apply research-supported teaching methods that foster students' content knowledge, content and literacy skills, and learning and democratic dispositions.
- Students will consider various methods of assessing student learning.
- They will be assisted in the preparation of the teacher work sample and a multiple text inquiry activity.
- Students will be assisted in the preparation of the teacher work sample and a multiple text inquiry activity.
- The course will provide a forum to coordinate and reflect on the prospective teachers' clinical experiences.

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

SC ED 276R : Exploration of Teaching. (3-4:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major-area preadmission requirements; FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

No outcomes are available at this time.

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.

DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

**Note:** FBI fingerprinting and background clearance must be completed prior to enrollment in Sc Ed 276R.

- Complete 12 hours of one of the following:

SC ED 476R : Secondary Student-Teaching. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will put into practice the theories they have learned in content and pedagogy courses including planning lessons, assessing students of all abilities and cultural backgrounds, using a variety of instructional strategies, and collaborating with other teachers and with the community.

: Secondary Student Teaching - Art.

**Course Outcomes**

: Secondary Student Teaching - Foreign Language. (12:ARR:ARR)

**Course Outcomes**

: Secondary Student Teaching - French.

**Course Outcomes**

: Secondary Student Teaching - Mathematics.

**Course Outcomes**

: Secondary Student Teaching - Physical Science.

**Course Outcomes**

: Secondary Student Teaching - Social Science.

**Course Outcomes**

: Secondary Student Teaching - Spanish.

**Course Outcomes**

SC ED 496R : Academic Internship: Secondary Education. (12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will demonstrate that they can teach, manage, and assess content area knowledge and skills in the 7-12 classroom.
- Foster relationships with school colleagues, parents, and the larger community.

: Academic Internship: Social Sciences.

**Course Outcomes**

: Academic Internship: English.

**Course Outcomes**

: Academic Internship: Mathematics.

**Course Outcomes**

: Academic Internship: Biological Sciences.

**Course Outcomes**

: Academic Internship: Physical Sciences.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

## Show all History (Hist) Courses

**College of Family, Home, and Social Sciences Home**

**History Department Home**

**Majors**

- BA in Family History—Genealogy
- BA in History
- BA in History Teaching
- BS in Teaching Social Science

**Minors**

- Family History—Genealogy
- History
- History Teaching

**Certificate**

- Family History—Genealogy

**Course Information**

- History (Hist) Courses

**Native American Studies**

**Minor**

- Native American Studies

**Faculty**

# BS in Teaching Social Science (76 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following:

   GEOG 120 : Geography and World Affairs. (3:3:0)

   OFFERED: Honors also. Independent Study also.
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: Survey of the world, stressing geography of major political regions.
   NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

   **Course Outcomes**

   There are no course outcomes available

3. Complete the following:

   HIST 201 : World Civilization to 1500. (3:3:0)

   OFFERED: Honors also. Independent Study also.
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: World civilization from Greek antiquity to Renaissance; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.

   **Course Outcomes**

   - Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development
   - Be able to identify major societies of the pre-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles
   - Gain an appreciation of influential cultural works produced in a variety of pre-modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
   - Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions
   - Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (pre-1500 C.E.).
   - Improve the clarity and grace of analytical writing.
   - Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

   HIST 202 : World Civilization from 1500. (3:3:0)

   OFFERED: Honors also.
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: World civilization from Renaissance to present; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.
   NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

   **Course Outcomes**

   - Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development.

- Be able to identify major societies of the post-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles.
- Gain an appreciation of influential cultural works produced in a variety of modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (post-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

: Honors World Civilization from 1500.

**Course Outcomes**

HIST 220 : The United States Through 1877. (3:3:0)

OFFERED: Independent study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Discovery, colonization, American Revolution, estabishment of the Constitution, foreign affairs, westward expansion, slavery, sectionalism, Civil War, and reconstruction.

**Course Outcomes**

There are no course outcomes available

HIST 221 : The United States Since 1877. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Industrialization, immigration, urbanization, political and social movements, and foreign policy.

**Course Outcomes**

There are no course outcomes available

**Note:** Majors must complete all four courses in history at the college level. Advanced placement (AP) U.S. history courses are not equivalent.

4. Complete the following:

HIST 364 : Utah. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Contributions of Native Americans, explorers, mountain men, miners, government officials, Mormons, and other groups in the nineteenth century. Impact of national movements, various peoples, politics, economics, and social and cultural change in the twentieth century.

**Course Outcomes**

There are no course outcomes available

(must be completed before Sc Ed 476R/496R).

5. Complete one course from 300-level or above history courses.

6. Complete one course from the following:

GEOG 101 : Global Environment: Understanding Physical Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Physical environment, distribution and interrelationships of climates, landforms, ecosystems and their human significance.

**Course Outcomes**

There are no course outcomes available

GEOG 130 : Introduction to Human Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Culture distributions and their relationship to existing geographic phenomena.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

GEOG 245 : Geography of Utah. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
RECOMMENDED: Geog 101,120, 130.
DESCRIPTION: Exploring geography of Utah. Topics include land forms, climate, agricultural and recreational economics, historical migration, Mormon cultural landscape, ethnic patterns, and rural-urban contrasts.

**Course Outcomes**

There are no course outcomes available

GEOG 250 : United States and Canada. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Analysis of the natural environment, historical development, cultural patterns, economic systems, and political structures of geographic regions.

**Course Outcomes**

There are no course outcomes available

GEOG 336 : Urban Geography. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: History and theory of urban development, including why cities exist and how cities function.

**Course Outcomes**

There are no course outcomes available

GEOG 341 : Political Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Spatial analysis of global politics; focus on geopolitics, territory and conflict, nationalism, and the politics of resources.

**Course Outcomes**

There are no course outcomes available

GEOG 346 : Population Geography. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Geog 100 or instructor's consent.
DESCRIPTION: Spatial perspective on wide field of population studies, focusing on distribution, development, structure, and movement of populations, emphasizing basic demographic measures.

**Course Outcomes**

There are no course outcomes available

7. Complete one course from the following:

GEOG 250 : United States and Canada. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Analysis of the natural environment, historical development, cultural patterns, economic systems, and political structures of geographic regions.

**Course Outcomes**

There are no course outcomes available

GEOG 255 : Middle and South America. (3:3:0)

WHEN TAUGHT: Winter Contact Department
DESCRIPTION: Environmental, cultural, economic, and political parameters of Latin American societies.

**Course Outcomes**

- To link how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to the overall study of the Latin American realm.
- To gain a working knowledge of the connection of the underlying physical "stage" of Latin America to the distributions of people and their activities.
- To gain an understanding of the geographic structure of Latin America’s cultural components including

languages, ethnic groups, settlement patterns, and religious beliefs.
- To develop geographic writing and research skills that result in papers that are fluent, relevant, and creative.
- To use other students' input to effectively enhance Latin American geographic understanding through group work and discussions
- To discover the significance of Latin America's increasing impact on the world's economy, as well as the growing Hispanization of the United States and the Church of Jesus Christ of Latter-day Saints

GEOG 260 : Europe. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Systematic approach to physical base, social and political problems, economic issues, and regional summary.

**Course Outcomes**

- To use other students input to effectively enhance European geographic understanding.
- To demonstrate the connection of the underlying physical "stage" of Europe to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To comprehend the regional geographic structure of Europe's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in Europe including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era. Emphasis will be given to the formation and spread of the European Union.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of the European realm.
- To write geographic research that is fluent, relevant, and creative.

GEOG 265 : Russia and the Former Soviet Union. (3:3:0)

DESCRIPTION: Physical features, resources, political issues, economy and industries, population concerns, and role in world affairs.

**Course Outcomes**

- To use other students input to effectively enhance geographic understanding of the region.
- To comprehend the regional geographic structure of the region's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in the region including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era, including relationship to the European Union and other political entities.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of this region.
- To demonstrate the connection of the underlying physical "stage" of the region to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To write geographic research that is fluent, relevant, and creative.

GEOG 271 : Middle East. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Physical and cultural geography of Southwest Asia and North Africa, emphasizing the cultural mosaic, geopolitics, environment, and resources of the region.

**Course Outcomes**

There are no course outcomes available

GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 304 : Geography of Climates. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 101.

DESCRIPTION: Elements, controls, distribution, and classification of the earth's climates.

**Course Outcomes**

- Gain an understanding of the key determinants of the world’s main climates
- Gain an appreciation of the complex nature and implications of human climate change.

- Understand how extreme weather events occur and their potential impacts on humans.
- Understand the methods climatologists use to collect data about past and present climate.
- Improve writing, critical thinking and your ability to apply knowledge to solve geographic problems.

GEOG 305 : Geography of Landforms. (3:3:0)

WHEN TAUGHT: Fall Contact Department

RECOMMENDED: Geog 101.

DESCRIPTION: Elements of landforms: distributions and cultural significance.

**Course Outcomes**

- Examine the history of landform study and the key individuals in the history of geomorphology.
- Explain the physical processes that produce landforms.
- Examine a physical landscape and describe why it looks the way it does.
- Describe how human settlement and recreation patterns are influenced by landforms.
- Understand dating techniques geomorphologists use to understand earth's history.

GEOG 331 : Economic Geography. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Geog 100 or instructor's consent.

DESCRIPTION: Introduction to economic processes and spatial patterns, emphasizing theoretical approaches, locational strategies, and changing economic land-use patterns.

**Course Outcomes**

There are no course outcomes available

GEOG 336 : Urban Geography. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: History and theory of urban development, including why cities exist and how cities function.

**Course Outcomes**

There are no course outcomes available

GEOG 341 : Political Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Spatial analysis of global politics; focus on geopolitics, territory and conflict, nationalism, and the politics of resources.

**Course Outcomes**

There are no course outcomes available

GEOG 346 : Population Geography. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Geog 100 or instructor's consent.

DESCRIPTION: Spatial perspective on wide field of population studies, focusing on distribution, development, structure, and movement of populations, emphasizing basic demographic measures.

**Course Outcomes**

There are no course outcomes available

8. Complete the following:

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

**and**

**Either** any 200-level or above economics course

**Or** one of the following courses:

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

BUS M 372 : Basic Entrepreneurship Skills. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Practical aspects of business formation and growth; key skills and principles needed to successfully start up and grow a business.

NOTE: For non-Marriott School of Management students.

**Course Outcomes**

There are no course outcomes available

GEOG 331 : Economic Geography. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Geog 100 or instructor's consent.

DESCRIPTION: Introduction to economic processes and spatial patterns, emphasizing theoretical approaches, locational strategies, and changing economic land-use patterns.

**Course Outcomes**

There are no course outcomes available

POLI 344 : Comparative Political Economy. (3:3:0)

PREREQUISITE: Poli 150 or 250; Poli 200.

DESCRIPTION: Overview of political economy from a comparative perspective. Classic theorists (Smith, Marx, Schumpeter, etc.); classic questions (industrialization, national economic policy, property, globalization, law, and economics).

**Course Outcomes**

There are no course outcomes available

POLI 372 : International Political Economy. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Political implications of international trade, investment, and monetary policies within an increasingly interdependent global context; transnationalism.

**Course Outcomes**

There are no course outcomes available

**Go to 480 TNRB to receive permission to register for these courses.

9. Complete the following:

POLI 110 : American Government and Politics. (3:3:0)

OFFERED: Honors also. Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Origin and development of federal Constitution; national, state, and local governments and politics.

**Course Outcomes**

There are no course outcomes available

10. Complete the following:

**Either**

POLI 150 : Comparative Government and Politics. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Patterns of European, Asian, Latin American, and other political systems.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

**Or** any 300-level or higher political science course.

11. Complete the following:

PSYCH 111 : Introduction to Psychological Science. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic course in modern scientific psychology.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Objective: Apply psychological principles to personal and social issues and problems.Measurement:Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper.
- Objective: Demonstrate a broad knowledge of the basic theoretical perspectives that guide psychological inquiry.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Pyychology 111 sections.
- Objective: Understand the basic research methods used in psychology, including classical and current experiments.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper, participation as a subject in actual psychological research.

12. Complete one course from the following:

PSYCH 321 : Developmental Psychology: Adolescence. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.
DESCRIPTION: Development and maturation during adolescence; research methodology.
NOTE: Contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

- Students will understand and remember the basic developments that occur during adolescence, the basic patterns of thought, emotion, and behavior characteristic of adolescents, and the important individual and contextual influences on adolescent psychology and development.Measurement: Multiple choice and short essay questions.
- Students will understand the key concepts and theories that are predominant in the literature on adolescent psychology and development.Measurement: Multiple choice and short essay questions.
- 3. Students will be able to more effectively communicate verbally and in writing about adolescence.Measurement: Research papers.
- Students will be able to analyze and critically evaluate ideas, arguments, and points of view about adolescence.Measurement: Research papers.
- Students will be able to apply knowledge of adolescence to address real-world issues.Measurement: Short writing assignments and in-class activities.

PSYCH 341 : Personality. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.
DESCRIPTION: Individual patterns of behavior, thought, and emotion; personality theories and their associated strategies of research, assessments, and personality change.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and distinguish the major personality theories of psychology.Measurement:Multiple choice/Short essay.
- Students will identify and give examples of contemporary research or applications of these theories.Measurement:Multiple choice/Short essay.
- Students will identify the theoretical assumptions that underlie these personality theories.Measurement:Multiple choice.
- Students will articulate some of the practical and religious implications of these theories.Measurement:Essay assignments.

PSYCH 342 : Abnormal Psychology. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Dynamics of maladjustment; major psychological disorders and therapeutic procedures. Fieldwork required.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and describe the major forms of psychological disorders and the major theories regarding the classification, etiology, and treatment of psychological disorders,and current data relevant to such theories.Measurement: Multiple choice, short answer and essay exams; short writing assignments.
- Students will engage in service learning by serving persons diagnosed with psychological disorders.Measurement: Participation assessment/field work report
- Students will critically examine key concepts and theories in abnormal psychology.Measurement: Essay exams, short writing assignments, in-class debates
- Students will examine and critique a topic in abnormal psychology using the current research literature.Measurement: APA style paper

PSYCH 350 : (Psych-Soc) Introduction to Social Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Conformity and obedience; socialization, norms, roles; attitudes, leadership, group processes.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will be able toidentify the unique contribution of social psychology to social science, situating the discipline within the larger domain of psychology and contrasting it with related disciplines, such as sociology.Measurement: Multiple choice tests, short essays.
- Students will be able to understand the use of surveys, laboratory and field experiments in conducting social psychological research, and understand the ethical principles of informed consent, deception and debriefing when conducting research with human participants.Measurement: Multiple choice tests, short essays.
- Students will be able to identify substantive areas of social psychological inquiry, including the self, person perception, attitudes and persuasion, group processes, stereotyping and prejudice, interpersonal attraction, helping behavior and aggression.Measurement: Multiple choice tests, short essays.
- Students will be able to identify and explain the contributions of major thinkers and contributors of classic and contemporary theory and research in social psychology, such as Leon Festinger and Stanley Milgram.Measurement: Multiple choice tests, short essays.
- Students will be able to identify how social psychological theory and research have been applied to domains outside the discipline, such as in health settings and the law.Measurement: Multiple choice tests, short essays.

PSYCH 361 : Principles of Learning. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Principles of learning; representative experiments.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will develop their understanding of and facility with the concepts by which behavior analysis makes sense of selected learning phenomena.Measurement: In-class quizzes, both individual- and team-based, on assigned textbook and other reading.
- Students will connect the concepts to the behavior of a virtual laboratory rat.Measurement: Individual- and team-based written reports and in-class presentations of the results of virtual experiments. Team-based manuscripts in multiple drafts both peer- and instructor- reviewed.
- Students will apply the concepts to human behavior, including one's own.Measurement: Out-of-class team-based application activities summarized in written reports. Essay exams that emphasize applications to real-life phenomena.

PSYCH 365 : Motivation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Determinants of motivation, relationship of motives to emotion, cognition, personality, and action. Implications for understanding self and others.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will compare and contrast a wide range of theories and research findings within the subdiscipline of the psychology of motivation.Measurement: In-class quizzes, both individual- and team-based, on assigned textbook and other reading.
- Students will categorize and apply theories and concepts to specific fictional characters and settings in film.Measurement: Out-of-class application activities that focus on four films shown in class and that require application of specific concepts to the characters, plots, and themes of the films.
- Students will analyze connections between the subject matter and one's own experience of motivation.Measurement: Individual essays and essay exams that focus on the personal application of concepts to one's experience.

13. Complete one course from the following:

SOC 111 : Introductory Sociology. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Social group influence; social interaction, processes, organization, and change; family, religion, government, population, culture, race relations.

**Course Outcomes**

There are no course outcomes available

ANTHR 101 : Social/Cultural Anthropology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Aspects of society and culture: kinship, beliefs, economy, and political order among peoples worldwide. Methods and perspectives used in social/cultural anthropology.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Come to understand culture as a way of interpreting experience, and realize that culture informs both social life and individual psychology, shaping and coloring how people perceive and act in the world.Grasp the social scientific principles and reasoning involved in ethnography, and recognize the value, limitations, and ethical implications of this way of making sense of social conduct.Acquire an informed awareness of other cultural worlds—an appreciation of other ways of being human—of

believing, behaving, and belonging, including their kinship organization and ritual, economic, and political practices.— Learn to see personal beliefs, values, attitudes, and conduct—including kinship organization and ritual, economic and political practices—from the perspective of people with different ideas about the way the world works.Develop an increased ability to write effectively.

ANTHR 110 : Introduction to Archaeology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Studying past human behaviors and cultures by applying scientific principles and reasoning; exploring case studies concerning archaeological discoveries.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- This course should help students to demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process. Students will learn to appreciate the excitement of discovery that has accompanied important scientific developments as well as demonstrate how scientific methodology can be used to analyze real-world science-related problems. Students will become adept at evaluating scientific data and claims in order to make rational decisions on public-policy science issues that affect their community. As students complete the course they will learn to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data, as well as reflect rationally upon the interface between science and religion.

14. Complete the Professional Education Component:
    - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

HIST 477 : History and Social Science Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SC ED 276R; Fingerprinting and FBI clearance.

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

NOTE: Check with Hist 477 instructor for specific prerequisites for the major or minor program.

**Course Outcomes**

There are no course outcomes available

HIST 478 : Practicum in Secondary Education. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SC ED 276R; Concurrent enrollment in Hist 477 or comparable major course.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Prospective teachers will consider the characteristics of learning-centered classrooms that are based on current theories of learning
- Students will study and apply research-supported teaching methods that foster students' content knowledge, content and literacy skills, and learning and democratic dispositions.
- Students will consider various methods of assessing student learning.

- They will be assisted in the preparation of the teacher work sample and a multiple text inquiry activity.
- Students will be assisted in the preparation of the teacher work sample and a multiple text inquiry activity.
- The course will provide a forum to coordinate and reflect on the prospective teachers' clinical experiences.

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

SC ED 276R : Exploration of Teaching. (3-4:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major-area preadmission requirements; FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

No outcomes are available at this time.

(4 hours)

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.

DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

**Note:** FBI fingerprint and backgound clearance must be completed before enrollment in Sc Ed 276R.

- Complete 12 hours of one of the following:

SC ED 476R : Secondary Student Teaching - Social Science. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will put into practice the theories they have learned in content and pedagogy courses including planning lessons, assessing students of all abilities and cultural backgrounds, using a variety of instructional strategies, and collaborating with other teachers and with the community.

SC ED 496R : Academic Internship: Secondary Education. (12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will demonstrate that they can teach, manage, and assess content area knowledge and skills in the 7-12 classroom.
- Foster relationships with school colleagues, parents, and the larger community.

: Academic Internship: Social Sciences.

**Course Outcomes**

: Academic Internship: English.

**Course Outcomes**

: Academic Internship: Mathematics.

**Course Outcomes**

: Academic Internship: Biological Sciences.

**Course Outcomes**

: Academic Internship: Physical Sciences.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

## Show all History (Hist) Courses

**College of Family, Home, and Social Sciences Home**

**History Department Home**

**Majors**

- BA in Family History—Genealogy
- BA in History
- BA in History Teaching
- BS in Teaching Social Science

**Minors**

- Family History—Genealogy
- History
- History Teaching

**Certificate**

- Family History—Genealogy

**Course Information**

- History (Hist) Courses

**Native American Studies**

**Minor**

- Native American Studies

**Faculty**

# Minor in Family History—Genealogy (24 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

HIST 217 : The Family Historian's Craft. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction to genealogical methods applicable in American and international research. Discussion of technology in genealogical research and introduction to censuses and vital records (US and international).

**Course Outcomes**
There are no course outcomes available

HIST 317 : The Family and the Law in American History. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: HIST 217
DESCRIPTION: The interaction of families with law and government as illustrated in original American sources; individual family histories reconstructed in the broader perspective of history.

**Course Outcomes**
There are no course outcomes available

REL C 261 : Introduction to Family History (Genealogy). (2:2:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Introduction to the doctrinal significance, necessary skills, and available resources dealing with family history and genealogy.

**Course Outcomes**
There are no course outcomes available

REL C 293R : Specialized Studies in Family History (Genealogy). (1:1.0:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Using documents from specific regional and organizational sources to identify ancestors and submit their names for temple ordinances.

**Course Outcomes**
No outcomes are available at this time.

: LDS Family History.
**Course Outcomes**

: United States and Canada Family History.
**Course Outcomes**

: British Family History.
**Course Outcomes**

: Scandinavian Family History.
**Course Outcomes**

: Native American Family History.

**Course Outcomes**

: French and Italian Family History.

**Course Outcomes**

: Latin American, Spanish, and Portuguese Family History.

**Course Outcomes**

: Slavic Family History.

**Course Outcomes**

: Germanic Family History.

**Course Outcomes**

**Note:** Minors should consult with the family history coordinator soon after declaring.

2. Complete 2 courses (6 credit hours) from the following:

HIST 280 : Northern US Family, Local, and Social History Research Since 1790. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of invididual families and development of family history studies in the northern states, including New England, the Midwest, and some Mid-Atlantic states in the 19th and 20th centuries.

**Course Outcomes**

There are no course outcomes available

HIST 281 : Southern US Family, Local, and Social History Research Since 1790. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: HIST 217

DESCRIPTION: 19th and 20th century records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in the southern states.

**Course Outcomes**

There are no course outcomes available

HIST 282 : Colonial US Family, Local and Social History Research. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in colonial American studies.

**Course Outcomes**

There are no course outcomes available

HIST 350 : British Family, Local and Social History Research. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methods for reconstruction of individual families and development of demographic and family history studies in England, Scotland, and Wales.

**Course Outcomes**

- Students will be able to explain and use fundamental genealogical (and some historical) resources and methodologies for English and Welsh research since 1700
- Students will evaluate, analyze, and corroborate genealogical information from both original and compiled sources. Students will know and use established citation standards.
- Students will explain how various pieces of information are combined in order to trace the same individual over various records and across the lifespan
- Students demonstrate how evidence is used to prove the links between generations

HIST 351 : Germanic Family, Local, and Social History Research. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in Germanic areas of Europe.

**Course Outcomes**

There are no course outcomes available

HIST 352 : Scandinavian Family, Local, and Social History Research. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in Denmark, Norway, Iceland, Sweden, and/or Finland.

**Course Outcomes**

There are no course outcomes available

HIST 353 : Southern European and Latin American Family, Local, and Social History Research. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: HIST 217

DESCRIPTION: Records, geo-historical background, paleography, and methods for reconstruction of individual families; development of demographic and family history studies which may include Portugal, Spain, France, and Italy and their colonies in the Americas.

**Course Outcomes**

There are no course outcomes available

HIST 354 : Slavic Family, Local, and Social History Research. (3:3:0)

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families; development of family history studies in Slavic areas of Europe.

**Course Outcomes**

- Students will be able to describe the key content of major family history sources in Slavic research.
- Students will become somewhat proficient at reading old Slavic documents.
- Students will become acquainted with actually using family history primary and secondary sources, on film or otherwise available, at the world's largest genealogical repository, the Family History Library in Salt Lake City

HIST 390R : Special Topics in History. (.5-3:Arr:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Presented by visiting or regular faculty. Varied topics include oral history, demographics, psychohistory, Christianity in history, family history research, etc.

**Course Outcomes**

There are no course outcomes available

: Family History Research.

**Course Outcomes**

: Family History Research in Ireland. (.5-3:Arr:Arr)

**Course Outcomes**

: Family History Research in the Netherlands.

**Course Outcomes**

: Advanced Southern European Family History Research.

**Course Outcomes**

: Advanced British Family History Research.

**Course Outcomes**

: Native American Family History Research. (.5-3:Arr:Arr)

**Course Outcomes**

HIST 396 : Historical Narrative: A Writing Workshop. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

RECOMMENDED: Hist 200, 220, 221.

DESCRIPTION: Workshop in writing narrative history, emphasizing the problems of writing historical narrative. Theories and examples of narrative history.

**Course Outcomes**

- Students will demonstrate an understanding of the genres of historical writing and their historiography
- Students will be able to critically evaluate primary and secondary sources
- Students will be able to write historical narratives in several different genres
- Students will be able to identify and critically respond to arguments of historical monographs, articles, and primary sources

HIST 434 : Computers in Family Historical Research and Publication. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: HIST 217

DESCRIPTION: Use of computer programs and the internet in researching family, local, and social history; including programs and techniques for publishing.

**Course Outcomes**

- Students will be able to stay current on newly published historical materials by using RSS feeds and Google Alerts to notify them of changes in websites, podcasts, weblogs, etc.
- Students will be able to communicate the findings of their historical research and demonstrate a high level of analytical skill through the use of a variety of computerized and online resources.
- Students will be able to locate and use primary source material online, as it continues to be made more available.
- Students will be able to design and use basic, custom relational databases for historical research and analysis.

3. Complete one course from the following:

HIST 420 : Latin Language Handwriting and Documents. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Interpretation of handwriting within historical contexts in Latin ecclesiastical and notarial documents useful in family, local, and social history research, including church registers, notarial settlements of estates, probate records, and inventories; medieval to modern periods.

**Course Outcomes**

- Students will learn the most common Latin scripts
- Students will read, transcribe, and where necessary, translate documents
- Students will demonstrate transcription techniques and methodologies
- Students will analyze and explain the cultural, historical, and legal context for documents, the scripts used in them, and the coverage and availability

HIST 421 : English Language Handwriting and Documents. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Interpretation of handwriting within historical contexts in vernacular scripts in the British Isles, sixteenth through eighteenth centuries, in sources useful in family, local, and social history research.

**Course Outcomes**

- Students will learn the most common scripts (hands) and documents in use in Britain and its colonies between 1500 and 1850.
- Students will read, transcribe, and where necessary, translate documents
- Students will demonstrate transcription techniques and methodologies
- Students will analyze and explain the cultural, historical, and legal context for documents, the scripts used in them, and the coverage and availability

HIST 422 : Germanic Language Handwriting and Documents. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Interpretation of handwriting in vernacular scripts in the German kingdoms, sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

- Students will be able to: 1. Use various types of German reference and research tools 2. Recognize different types of German written and printed documents 3. Understand important historical and cultural aspects of Germany 4. Know the procedures for resolving difficult genealogical and historical research problems

HIST 423 : Slavic Language Handwriting and Documents. (3:3:0)

DESCRIPTION: Interpretation of handwriting in vernacular scripts in the Slavic language areas of Eastern Europe, sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

There are no course outcomes available

HIST 424 : Romance Language Handwriting and Documents. (3:3:0)

DESCRIPTION: Interpretation of handwriting in vernacular scripts in the Romance languages of Europe (especially Spanish, French, and Italian), sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

- Students will be able to read with fluency documents in italic style handwriting;
- Students will be able to recognize and use documents and understand the legal, ecclesiastical and civil systems behind them;
- Students will be able to understand basic concepts of paleography and the impacts of language on the historical development of handwriting
- Students will be able to develop familiarity with secretary (cortesana or procesal) handwriting

HIST 425 : Scandinavian Language Handwriting and Documents. (3:3:0)

DESCRIPTION: Interpretation of old Gothic script handwriting in Scandinavian areas of Europe (including Denmark, Norway, Sweden, Finland, and Iceland), sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

- Students will be able to read at a basic level, old gothic-script Norwegian, Danish, Swedish and Finnish documents, from the 1600s on up.
- Students will be able to use Scandinavian conversion calendars, to convert Latin feast dates to regular Julian calendar dates.
- Students will be able to read, at a basic level for content from Scandinavian printed documents. of the 1700s and 1800s.

4. Complete one course from the following social and cultural history courses. Seek faculty advice in choosing electives:

HIST 244 : Jewish History: A.D. 70 to the Present. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Jewish diaspora, Jewish life in Moslem and Christian countries; Jewish religious movements; development of Zionism; Jewish communities in modern Israel and the United States.

**Course Outcomes**

- Gain a historical consciousness by demonstrating an understanding of major developments in Jewish and history, and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately and distinguish between questionable and valid historical assertions.
- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using interdisciplinary prinary and secondary sources.
- Skillfully integrate sources into a coherent argument expressed through a clear, well-written style and throrough oral communication.
- Recognize anti-Semitic arguments.
- Gain an understanding of the complexities of modern Jewish identity.
- Appreciate the contribution of Jewish people to the world.

HIST 290 : Nature and History: The Earth's Environmental Past. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Human historical interactions with animals, plants, and landscapes. Global histories of climate, population, whaling, fossil fuels, the car, animal rights, suburban sprawl, eco-theology, environmentalism, ecotourism, etc.

**Course Outcomes**

- Students will become academically conversant with the major historical developments in our global relationship with nature.
- Students will be able to analyze and evaluate the content and meaning of primary sources, and through critical interpretation, draw reasonable conclusions.
- Students will be able to formulate historical questions and answer them by careful and systematic research in primary and secondary sources.
- Students will be able to write history that is coherent and persuasive by following discipline's norms for writing and careful documentation.

HIST 318 : European Women's History. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

RECOMMENDED: Hist 200.

DESCRIPTION: European women and gender from 1400 to the present.

**Course Outcomes**

- Students will be able to understand and explain major trends in European women's experiences and history since 1400
- Students will be able to analyze and synthesize historiographyof women's history, gender history, and feminism
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another
- Students will interpret important shifts or trends in the experience of women and attitudes about gender. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate contemporary attitudes to women and men's history and gender and how these affect interpretations of the past.

HIST 319 : The Family in Europe. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Nature and development of marriage and family life and structure from the ancient to modern era.

NOTE: Independent Study also.

**Course Outcomes**

- Students will be able to understand and explain major trends in European family life, relationships, and law between 1100 and the present
- Students will be able to analyze and synthesize historiography of family history
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another.
- Students will interpret important shifts or trends in the experience of family functions and relationships and their connections with the law. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends.
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate historical experiences and historiographic interpretations

HIST 320 : Society in Europe. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Common life in Europe from 1500 to the present: family problems, social customs, marriage, superstition, death, diet, work, hardships, migration, and childhood.

**Course Outcomes**

- Students will be able to explain and analyze themes and trends in European social history in both the early modern and modern periods.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze and interpret secondary source documents
- Students will be able to interpret and debate the meanings and historical value of primary and secondary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 358 : Gender and History in Latin America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: How gender roles have been defined legally, socially, and culturally in Latin America from the colonial period to the present, emphasizing the nineteenth and twentieth centuries.

**Course Outcomes**

- To understand how gender relations and gender roles developed in Latin America from colonial times to the present.
- To be able to discuss and explain those developments through the written and spoken word with clarity, persuasiveness, and proper use of evidence.
- To write a well written, organized, and developed term paper using the critical thinking and writing skills of a historian.
- To be able to read primary sources and discuss their utility in constructing historical arguments.

HIST 378 : American Family History. (3:3:0)

DESCRIPTION: History of American families from colonial period to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major intellectual, economic, religious, social, cultural, and political developments affecting changes in American families of various races, classes, and regions from 1607 to the present.
- Students will be able to analyze an important historical question in the history of American families
- Students will be able to research, analyze, and integrate primary and secondary sources into a coherent and well-written argument.
- Students will be able to isolate the theses and supporting arguments of secondary sources on the history of American families.

HIST 379 : U.S. Religious History to 1860. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Religious developments from colonial times to 1860.

**Course Outcomes**

There are no course outcomes available

HIST 380 : U.S. Religious History Since 1860. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Examines religious people, institutions, beliefs, and practices in U.S. history since the Civil War.

**Course Outcomes**

There are no course outcomes available

HIST 384 : United States Women's History. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Survey course of women's experience in American culture and society from the Puritans to the present.

**Course Outcomes**

- Students will be able to explain and analyze the experiences of women in America from the colonial period to the present, the ways that ideas about gender have shaped American life, and significant issues and debates in U.S. Women's history.
- Students will be able to analyze, interpret, and evaluate primary sources.
- Students will be able to interpret and debate the meanings and historical value of primary sources with their peers.
- Students will be able to analyze and create historical questions and place them in a historiographical context.
- Students will demonstrate proficiency in using historical methods of research and in integrating data into a coherent argument expressed through a clear, well-written style.
- Students will be able to apply their understanding of American women's history to current issues and events.

5. Complete one course (3 credit hours) from the following advanced skills courses:

HIST 434 : Computers in Family Historical Research and Publication. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: HIST 217

DESCRIPTION: Use of computer programs and the internet in researching family, local, and social history; including programs and techniques for publishing.

**Course Outcomes**

- Students will be able to stay current on newly published historical materials by using RSS feeds and Google Alerts to notify them of changes in websites, podcasts, weblogs, etc.
- Students will be able to communicate the findings of their historical research and demonstrate a high level of analytical skill through the use of a variety of computerized and online resources.
- Students will be able to locate and use primary source material online, as it continues to be made more available.
- Students will be able to design and use basic, custom relational databases for historical research and analysis.

HIST 439 : Seminar on Professional Family History Research. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HIST 217

DESCRIPTION: Practicum in professional client research exploring advanced genealogical methodologies.

**Course Outcomes**

- Students will learn the key methods of family history research in US sources, to solve difficult research problems from the 1700s and 1800s.
- Students will learn, on an advanced level, to analyze sources and read between the lines, to reconstitute complete families from records of the 1700s and 1800s in US sources.
- Students will be able to write and/or compile a variety of research reports for clients, namely, analytical, crossing the pond, bibliographic, and the like, for persons who (in theory) hire them to conduct research on an ancestral family or families.

HIST 496R : Academic Internship: Family, Local, and Social History. (1-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Work-study involving family, local, and/or social history at one or more archives, libraries, publishers, data providers, or research organizations on the international, national, state, or local level, under supervision of a professional genealogist, historian, archivist, or librarian.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

## Show all History (Hist) Courses

**College of Family, Home, and Social Sciences Home**

**History Department Home**

**Majors**

- BA in Family History—Genealogy
- BA in History
- BA in History Teaching
- BS in Teaching Social Science

**Minors**

- Family History—Genealogy
- History
- History Teaching

**Certificate**

- Family History—Genealogy

**Course Information**

- History (Hist) Courses

**Native American Studies**

**Minor**

- Native American Studies

**Faculty**

# Minor in History (21 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. The History Department requires a minimum of 9 hours of history credit to be completed in residency at BYU's Provo campus for this minor program. BYU Independent Study courses do not count toward residency. These hours may also go toward BYU's 30-hour residency requirement for graduation.

2. Complete the following core courses:

HIST 201 : World Civilization to 1500. (3:3:0)

OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: World civilization from Greek antiquity to Renaissance; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development
- Be able to identify major societies of the pre-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles
- Gain an appreciation of influential cultural works produced in a variety of pre-modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (pre-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

HIST 202 : World Civilization from 1500. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: World civilization from Renaissance to present; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development.
- Be able to identify major societies of the post-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles.
- Gain an appreciation of influential cultural works produced in a variety of modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (post-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

: Honors World Civilization from 1500.

**Course Outcomes**

HIST 220 : The United States Through 1877. (3:3:0)

OFFERED: Independent study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Discovery, colonization, American Revolution, estabishment of the Constitution, foreign affairs, westward expansion, slavery, sectionalism, Civil War, and reconstruction.

**Course Outcomes**

There are no course outcomes available

HIST 221 : The United States Since 1877. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Industrialization, immigration, urbanization, political and social movements, and foreign policy.

**Course Outcomes**

There are no course outcomes available

**Note:** Minors must complete all four core courses in history at the college level. University core Civilization courses (201/202) offered by other departments are not equivalent. Advanced Placement U.S. history courses are not equivalent.

3. Complete 9 hours from the approved list of elective courses.

*Hours include courses that may fulfill university core requirements.

## Show all History (Hist) Courses

**College of Family, Home, and Social Sciences Home**

**History Department Home**

**Majors**

- BA in Family History—Genealogy
- BA in History
- BA in History Teaching
- BS in Teaching Social Science

**Minors**

- Family History—Genealogy
- History
- History Teaching

**Certificate**

- Family History—Genealogy

**Course Information**

- History (Hist) Courses

**Native American Studies**

**Minor**

- Native American Studies

**Faculty**

# Minor in History Teaching (25 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. The History Department requires a minimum of 6 hours of history credit to be completed in residency at BYU's Provo campus for this minor program. BYU Independent Study courses do not count toward residency. These hours may also go toward BYU's 30-hour residency requirement for graduation.

2. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

3. Complete the following core courses:

HIST 201 : World Civilization to 1500. (3:3:0)

OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: World civilization from Greek antiquity to Renaissance; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development
- Be able to identify major societies of the pre-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles
- Gain an appreciation of influential cultural works produced in a variety of pre-modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (pre-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

HIST 202 : World Civilization from 1500. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: World civilization from Renaissance to present; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development.
- Be able to identify major societies of the post-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles.
- Gain an appreciation of influential cultural works produced in a variety of modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world

history (post-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

: Honors World Civilization from 1500.

**Course Outcomes**

HIST 220 : The United States Through 1877. (3:3:0)

OFFERED: Independent study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Discovery, colonization, American Revolution, estabishment of the Constitution, foreign affairs, westward expansion, slavery, sectionalism, Civil War, and reconstruction.

**Course Outcomes**

There are no course outcomes available

HIST 221 : The United States Since 1877. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Industrialization, immigration, urbanization, political and social movements, and foreign policy.

**Course Outcomes**

There are no course outcomes available

HIST 364 : Utah. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Contributions of Native Americans, explorers, mountain men, miners, government officials, Mormons, and other groups in the nineteenth century. Impact of national movements, various peoples, politics, economics, and social and cultural change in the twentieth century.

**Course Outcomes**

There are no course outcomes available

**Note:** Minors must complete all core courses in history at the college level. University core Civilization courses (201/202) offered by other departments are not equivalent. Advanced Placement U.S. history courses are not equivalent.

4. Complete 6 hours from the approved list of elective courses.
5. Complete the following:

HIST 477 : History and Social Science Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: SC ED 276R; Fingerprinting and FBI clearance.
DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.
NOTE: Check with Hist 477 instructor for specific prerequisites for the major or minor program.

**Course Outcomes**

There are no course outcomes available

HIST 478 : Practicum in Secondary Education. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: SC ED 276R; Concurrent enrollment in Hist 477 or comparable major course.
DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Prospective teachers will consider the characteristics of learning-centered classrooms that are based on current theories of learning
- Students will study and apply research-supported teaching methods that foster students' content knowledge, content and literacy skills, and learning and democratic dispositions.
- Students will consider various methods of assessing student learning.
- They will be assisted in the preparation of the teacher work sample and a multiple text inquiry activity.
- Students will be assisted in the preparation of the teacher work sample and a multiple text inquiry activity.
- The course will provide a forum to coordinate and reflect on the prospective teachers' clinical experiences.

*Hours include courses that may fulfill university core requirements.

## Show all History (Hist) Courses

**College of Family, Home, and Social Sciences Home**

**History Department Home**

**Majors**

- BA in Family History—Genealogy
- BA in History
- BA in History Teaching
- BS in Teaching Social Science

**Minors**

- Family History—Genealogy
- History
- History Teaching

**Certificate**

- Family History—Genealogy

**Course Information**

- History (Hist) Courses

**Native American Studies**

**Minor**

- Native American Studies

**Faculty**

# Certificate in Family History—Genealogy (18 hours)

Show All Course Descriptions
Hide All Course Descriptions

The certificate is administered by the History Department at the BYU-Provo campus; however, courses can also be taken at the Salt Lake Center or through Independent Study.

## Certificate Requirements

1. Complete the following:

HIST 217 : The Family Historian's Craft. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to genealogical methods applicable in American and international research. Discussion of technology in genealogical research and introduction to censuses and vital records (US and international).

**Course Outcomes**

There are no course outcomes available

HIST 317 : The Family and the Law in American History. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HIST 217

DESCRIPTION: The interaction of families with law and government as illustrated in original American sources; individual family histories reconstructed in the broader perspective of history.

**Course Outcomes**

There are no course outcomes available

**Note:** Certificate candidates should consult with the family history coordinator soon after selecting the certificate program.

2. Complete one course from the following:

HIST 421 : English Language Handwriting and Documents. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Interpretation of handwriting within historical contexts in vernacular scripts in the British Isles, sixteenth through eighteenth centuries, in sources useful in family, local, and social history research.

**Course Outcomes**

- Students will learn the most common scripts (hands) and documents in use in Britain and its colonies between 1500 and 1850.
- Students will read, transcribe, and where necessary, translate documents
- Students will demonstrate transcription techniques and methodologies
- Students will analyze and explain the cultural, historical, and legal context for documents, the scripts used in them, and the coverage and availability

HIST 422 : Germanic Language Handwriting and Documents. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Interpretation of handwriting in vernacular scripts in the German kingdoms, sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

- Students will be able to: 1. Use various types of German reference and research tools 2. Recognize different types of German written and printed documents 3. Understand important historical and cultural aspects of Germany 4. Know the procedures for resolving difficult genealogical and historical research problems

HIST 423 : Slavic Language Handwriting and Documents. (3:3:0)

DESCRIPTION: Interpretation of handwriting in vernacular scripts in the Slavic language areas of Eastern Europe, sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

There are no course outcomes available

HIST 424 : Romance Language Handwriting and Documents. (3:3:0)

DESCRIPTION: Interpretation of handwriting in vernacular scripts in the Romance languages of Europe (especially Spanish, French, and Italian), sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

- Students will be able to read with fluency documents in italic style handwriting;
- Students will be able to recognize and use documents and understand the legal, ecclesiastical and civil systems behind them;
- Students will be able to understand basic concepts of paleography and the impacts of language on the historical development of handwriting
- Students will be able to develop familiarity with secretary (cortesana or procesal) handwriting

HIST 425 : Scandinavian Language Handwriting and Documents. (3:3:0)

DESCRIPTION: Interpretation of old Gothic script handwriting in Scandinavian areas of Europe (including Denmark, Norway, Sweden, Finland, and Iceland), sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

- Students will be able to read at a basic level, old gothic-script Norwegian, Danish, Swedish and Finnish documents, from the 1600s on up.
- Students will be able to use Scandinavian conversion calendars, to convert Latin feast dates to regular Julian calendar dates.
- Students will be able to read, at a basic level for content from Scandinavian printed documents. of the 1700s and 1800s.

3. Complete two courses (6 credit hours) from the following:

HIST 280 : Northern US Family, Local, and Social History Research Since 1790. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of invididual families and development of family history studies in the northern states, including New England, the Midwest, and some Mid-Atlantic states in the 19th and 20th centuries.

**Course Outcomes**

There are no course outcomes available

HIST 281 : Southern US Family, Local, and Social History Research Since 1790. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: HIST 217

DESCRIPTION: 19th and 20th century records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in the southern states.

**Course Outcomes**

There are no course outcomes available

HIST 282 : Colonial US Family, Local and Social History Research. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in colonial American studies.

**Course Outcomes**

There are no course outcomes available

HIST 350 : British Family, Local and Social History Research. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methods for reconstruction of individual families and development of demographic and family history studies in England, Scotland, and Wales.

**Course Outcomes**

- Students will be able to explain and use fundamental genealogical (and some historical) resources and

methodologies for English and Welsh research since 1700
- Students will evaluate, analyze, and corroborate genealogical information from both original and compiled sources. Students will know and use established citation standards.
- Students will explain how various pieces of information are combined in order to trace the same individual over various records and across the lifespan
- Students demonstrate how evidence is used to prove the links between generations

HIST 351 : Germanic Family, Local, and Social History Research. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in Germanic areas of Europe.

**Course Outcomes**

There are no course outcomes available

HIST 352 : Scandinavian Family, Local, and Social History Research. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in Denmark, Norway, Iceland, Sweden, and/or Finland.

**Course Outcomes**

There are no course outcomes available

HIST 353 : Southern European and Latin American Family, Local, and Social History Research. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: HIST 217

DESCRIPTION: Records, geo-historical background, paleography, and methods for reconstruction of individual families; development of demographic and family history studies which may include Portugal, Spain, France, and Italy and their colonies in the Americas.

**Course Outcomes**

There are no course outcomes available

HIST 354 : Slavic Family, Local, and Social History Research. (3:3:0)

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families; development of family history studies in Slavic areas of Europe.

**Course Outcomes**

- Students will be able to describe the key content of major family history sources in Slavic research.
- Students will become somewhat proficient at reading old Slavic documents.
- Students will become acquainted with actually using family history primary and secondary sources, on film or otherwise available, at the world's largest genealogical repository, the Family History Library in Salt Lake City

HIST 390R : Special Topics in History. (.5-3:Arr:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Presented by visiting or regular faculty. Varied topics include oral history, demographics, psychohistory, Christianity in history, family history research, etc.

**Course Outcomes**

There are no course outcomes available

: Family History Research.

**Course Outcomes**

: Family History Research in Ireland. (.5-3:Arr:Arr)

**Course Outcomes**

: Family History Research in the Netherlands.

**Course Outcomes**

: Advanced Southern European Family History Research.

**Course Outcomes**

: Advanced British Family History Research.

**Course Outcomes**

: Native American Family History Research. (.5-3:Arr:Arr)

**Course Outcomes**

HIST 396 : Historical Narrative: A Writing Workshop. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

RECOMMENDED: Hist 200, 220, 221.

DESCRIPTION: Workshop in writing narrative history, emphasizing the problems of writing historical narrative. Theories and examples of narrative history.

**Course Outcomes**

- Students will demonstrate an understanding of the genres of historical writing and their historiography
- Students will be able to critically evaluate primary and secondary sources
- Students will be able to write historical narratives in several different genres
- Students will be able to identify and critically respond to arguments of historical monographs, articles, and primary sources

HIST 434 : Computers in Family Historical Research and Publication. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: HIST 217

DESCRIPTION: Use of computer programs and the internet in researching family, local, and social history; including programs and techniques for publishing.

**Course Outcomes**

- Students will be able to stay current on newly published historical materials by using RSS feeds and Google Alerts to notify them of changes in websites, podcasts, weblogs, etc.
- Students will be able to communicate the findings of their historical research and demonstrate a high level of analytical skill through the use of a variety of computerized and online resources.
- Students will be able to locate and use primary source material online, as it continues to be made more available.
- Students will be able to design and use basic, custom relational databases for historical research and analysis.

4. Complete one course from the following:

HIST 434 : Computers in Family Historical Research and Publication. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: HIST 217

DESCRIPTION: Use of computer programs and the internet in researching family, local, and social history; including programs and techniques for publishing.

**Course Outcomes**

- Students will be able to stay current on newly published historical materials by using RSS feeds and Google Alerts to notify them of changes in websites, podcasts, weblogs, etc.
- Students will be able to communicate the findings of their historical research and demonstrate a high level of analytical skill through the use of a variety of computerized and online resources.
- Students will be able to locate and use primary source material online, as it continues to be made more available.
- Students will be able to design and use basic, custom relational databases for historical research and analysis.

HIST 439 : Seminar on Professional Family History Research. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HIST 217

DESCRIPTION: Practicum in professional client research exploring advanced genealogical methodologies.

**Course Outcomes**

- Students will learn the key methods of family history research in US sources, to solve difficult research problems from the 1700s and 1800s.
- Students will learn, on an advanced level, to analyze sources and read between the lines, to reconstitute complete families from records of the 1700s and 1800s in US sources.
- Students will be able to write and/or compile a variety of research reports for clients, namely, analytical, crossing the pond, bibliographic, and the like, for persons who (in theory) hire them to conduct research on an ancestral family or families.

HIST 481R : Directed Research in Family History. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Student research directed by faculty member on family history topic of mutual interest.

**Course Outcomes**

- Students will identify and clearly articulate a substantive family history research problem.
- Students will produce a written report, project or portfolio demonstrating knowledge of the studied material.

HIST 496R : Academic Internship: Family, Local, and Social History. (1-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Work-study involving family, local, and/or social history at one or more archives, libraries, publishers, data providers, or research organizations on the international, national, state, or local level, under supervision of a professional genealogist, historian, archivist, or librarian.

**Course Outcomes**

There are no course outcomes available

**Note:** The certificate program can help prepare for certification or accreditation but should not be confused with these two separate, private methods of credentialing professional genealogists.

## Show all History (Hist) Courses

**College of Family, Home, and Social Sciences Home**

**History Department Home**

**Majors**

- BA in Family History—Genealogy
- BA in History
- BA in History Teaching
- BS in Teaching Social Science

**Minors**

- Family History—Genealogy
- History
- History Teaching

**Certificate**

- Family History—Genealogy

**Course Information**

- History (Hist) Courses

**Native American Studies**

**Minor**

- Native American Studies

**Faculty**

# History (Hist)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

HIST 190R : Thetean Publication. (1-2:0:Arr)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: HIST 200
DESCRIPTION: Editing, production, and publication of student academic journal "The Thetean."

**Course Outcomes**

No outcomes are available at this time.

HIST 199R : Academic Internship. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Department chair's and cooperative education coordinator's consent
DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Together with internship and academic supervisors, students will develop individual learning objectives based on internship assignment or position
- Students will master the skills and abillities required during the internship experience.
- Students will write interim and final reports demonstrating historical knowledge, analysis and application during the internship experience.

### 200-Level Courses

HIST 200 : The Historian's Craft. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: History within the broader framework of liberal education; nature of history; questions historians ask; skills and resources needed to study, understand, and write history.
NOTE: Required of all history majors.

**Course Outcomes**

- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

HIST 201 : World Civilization to 1500. (3:3:0)

OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: World civilization from Greek antiquity to Renaissance; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development
- Be able to identify major societies of the pre-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles
- Gain an appreciation of influential cultural works produced in a variety of pre-modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and

distinguish between questionable and valid historical assertions
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (pre-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

HIST 202 : World Civilization from 1500. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: World civilization from Renaissance to present; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development.
- Be able to identify major societies of the post-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles.
- Gain an appreciation of influential cultural works produced in a variety of modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (post-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

: Honors World Civilization from 1500.

**Course Outcomes**

HIST 217 : The Family Historian's Craft. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction to genealogical methods applicable in American and international research. Discussion of technology in genealogical research and introduction to censuses and vital records (US and international).

**Course Outcomes**

There are no course outcomes available

HIST 220 : The United States Through 1877. (3:3:0)

OFFERED: Independent study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Discovery, colonization, American Revolution, estabishment of the Constitution, foreign affairs, westward expansion, slavery, sectionalism, Civil War, and reconstruction.

**Course Outcomes**

There are no course outcomes available

HIST 221 : The United States Since 1877. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Industrialization, immigration, urbanization, political and social movements, and foreign policy.

**Course Outcomes**

There are no course outcomes available

HIST 225 : In Quest of the American Character. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: HIST 200 & HIST 220 & HIST 221
DESCRIPTION: An exploration of the American character and the idea of a distinctive American culture.

**Course Outcomes**

There are no course outcomes available

HIST 231 : Introduction to East Asian History. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: Major themes in the history, thought, and culture of Asian societies from antiquity to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, and social developments in the history of China, Korea, and Japan from antiquity to the present

- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meaning and significance of historical events on contemporary identity and foreign relations.
- Students will be able to analyze historical arguments.

HIST 232 : Introduction to the History of Christianity. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Survey of major developments in Christianity from its origins in the ancient Roman Empire to its global presence today.

**Course Outcomes**

There are no course outcomes available

HIST 238 : Ancient Near East to 330 BC. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Ancient cultures of the Near East (Egypt, Mesopotamia, Syro-Palestine, Anatolia, Iran) from the beginnings of civilization to the conquests of Alexander the Great.

**Course Outcomes**

- Students will gain a historical consciousness of the Ancient Near East by demonstrating a critical literacy of major developments in Ancient Near East history, key historical terms, primary sources, and narratives of Ancient Near East history up to Alexander.
- Students will develop an ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions about ancient Near East primary sources.
- Students will develop use of the historical method of research effectively by skillfully and honestly using primary and secondary sources in the formation of answers to major questions surrounding the narratives of the ancient Near East
- Students will develop their writing ability through a range of pre-writing and writing assignments.

HIST 239 : Ancient Near East, 330 BC - 640 AD. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Cultures and empires of the Near East (Persia, Hellenistic kingdoms, Judaism, early Christianity, Rome, and Byzantium) from Alexander the Great to the Arab conquests.

**Course Outcomes**

- Gain a firsthand understanding of the Hellenistic and Christian Near East through studying and analyzing primary sources, using a template of (suggested) questions
- Understand basic issues of faith and reason, as they relate to Christianity and Judaism in the formative period of the former
- Master an early Christian primary source well enough to present, as a group, its gist, meaning, and significance
- Understand how the political and social changes in the Eastern Mediterranean in the Hellenistic period contributed to the development of science, technology, philosophy, and religion
- Understand the basic historical issues surrounding the origin of Christianity
- Understand the development of the Christian Roman Empire (Byzantium)

HIST 240 : Middle East History to 1800. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: History of the Middle East from the rise of of Islam until 1800.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, cultural and religious developments in the Islamic Near East between approximately AD 640-1800.
- Students will be able to analyze and interpret translations of primary source documents from the Islamic Near East.
- Students will be able to analyze historical questions and place them in a historiographical context..

HIST 241 : Middle East History from 1800. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: History of the Middle East in the modern period form 1800; rise of nation states, relationship with West, role of Islam.

**Course Outcomes**

- Gain a historical consciousness by demonstrating a knowledge of major developments in Middle East and world history and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions by using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.
- Demonstrate how faith and reason intersect.

HIST 242R : (Hist-NES 347R) Arab and Islamic Civilization. (1-2:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Social science/humanities core course covering Arab and Islamic civilization; historical evolution of Middle East to present. Overview of modern Palestinian society.

NOTE: Elective credit for major and minor in Near Eastern Studies. Offered at the Jerusalem Center for Near Eastern Studies only. Does not receive GE credit.

**Course Outcomes**

No outcomes are available at this time.

HIST 243R : (Hist-NES 349R) Jewish Civilization. (1-2:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Social science/humanities core course; broad introduction to Jewish self-understanding and history, focusing on relationships among people, faith, and land.

NOTE: Elective credit for major and minor. Offered at the Jerusalem Center for Near Eastern Studies only. Does not receive GE credit.

**Course Outcomes**

No outcomes are available at this time.

HIST 244 : Jewish History: A.D. 70 to the Present. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Jewish diaspora, Jewish life in Moslem and Christian countries; Jewish religious movements; development of Zionism; Jewish communities in modern Israel and the United States.

**Course Outcomes**

- Gain a historical consciousness by demonstrating an understanding of major developments in Jewish and history, and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately and distinguish between questionable and valid historical assertions.
- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using interdisciplinary prinary and secondary sources.
- Skillfully integrate sources into a coherent argument expressed through a clear, well-written style and throrough oral communication.
- Recognize anti-Semitic arguments.
- Gain an understanding of the complexities of modern Jewish identity.
- Appreciate the contribution of Jewish people to the world.

HIST 247 : (Hist-ClCv 304) Greek History. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Political, economic, social, and intellectual history of Greece from Mycenaean times to the Hellenistic period.

**Course Outcomes**

- Successful students will be exposed to selections of Greek literature and be able to evaluate those texts as sources for Greek history; critical skills will be improved by the careful treatment of historiographical texts.
- Successful students will consider available primary sources of information for ancient Greek history and be able to evaluate the reliability of those sources.
- Successful students will discuss critical theories that are relevant to the texts treated in class and be able to evaluate and judge the rhetorical complexities facing the various authors discussed and how those authors resolved those complexities as they composed their historical narratives.
- Successful students will be able to locate the historical texts treated in class in the context of Classical literature generally and of ancient historiography specifically.
- Successful students will demonstrate a basic understanding of Greek History from the Bronze Age to the Hellenistic Age

HIST 248 : (Hist-ClCv 307) Roman History. (3:3:0)

DESCRIPTION: Political, economic, social, and intellectual history of Rome from the foundation of the city to Constantine.

**Course Outcomes**

- Successful students will be exposed to selections of Latin and Greek literature and be able to evaluate those texts as sources for Roman history; students' critical skills will be improved by the careful treatment of historiographical texts.
- Successful students will consider available primary sources of information for ancient Roman history and be able to evaluate the reliability of those sources
- Successful students will discuss critical theories that are relevant to the texts treated in class and be able to evaluate the rhetorical complexities facing the various authors discussed and how those authors resolved those complexities as they composed their historical narratives.
- Successful students will demonstrate a basic knowledge of Roman history from the Regal period to the decline of the Roman Empire.
- Successful students will be able to locate the historical texts treated in class in the context of Classical literature generally and of ancient historiography specifically.

HIST 249 : History of the Byzantine Empire and Civilization. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Origins, development, and importance of the East Roman or Byzantine Empire in the Middle Ages (AD 330-1453). The empire's intellectual and cultural legacy, imperial institutions, practices, technology, art and architecture, literature, and theology.

**Course Outcomes**

- To understand the overall development and decline of the Byzantine Empire, and how the Byzantine Empire became a major source of the European Renaissance, as well as how the Byzantine Empire was a Christian Empire, a bridge between the ancient, medieval and the early modern worlds, and how, on multiple occasions, as with the alarming spread of Islam, its defenses protected the rest of Europe from conquest, and eventually it was itself sacrificed to save the West.
- Understand how ideology and cultural/linguistic orientation profoundly affects historical interpretation
- Gain a firsthand understanding of Byzantium through studying and analyzing primary sources, using a template of (suggested) questions
- Use the historical tools and cultural understanding acquired in the course to discuss a work of art (broadly defined)
- Gain an firsthand appreciation of a living cultural tradition that traces its descent from Byzantium
- Master Byzantine primary source well enough to present, as a group, its gist, meaning, and significance
- Grasp basic theological issues as they relate to questions of faith and reason in an Orthodox Christian (Byzantine)context

HIST 250 : Europe 1500 to the Present. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

RECOMMENDED: WRTG 150.

DESCRIPTION: Overview of key political, cultural, economic and social developments in Europe during the early modern and modern periods, 1500—Present.

**Course Outcomes**

There are no course outcomes available

HIST 251 : Conquest and Colonization of Latin America. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Pre-Columbian civilizations, Iberian exploration and conquest of the New World, and colonial development of Hispanic and Portuguese America from 1492 to 1823.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, religious, and cultural characteristics of Spanish and Portuguese colonialism in the Americas between 1492 and 1825.
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills.
- Students will analyze historical questions and place them in historiographical context.

HIST 252 : Modern Latin America. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: National period (1810 to present): independence, institutional development, culture, and inter-American relations.

**Course Outcomes**

- Students will be exposed to the major economic, political, and cultural shifts that shaped the "modern" Latin American state in the nineteenth and twentieth century, as well as its variants, notably the cult of caudillo rule and its twentieth century offshoots
- Students will become conversant with major theoretical arguments and approaches to Latin American history in the contemporary era.
- Students will gain oral proficiency in discussing historiographical and thematic issues in modern Latin America during weekly discussion.
- Students will either broaden their understanding of literature on one topic in Latin American history by way of an intensive literature survey or deepen their knowledge on a particular topic in Latin American history by way of an original research paper.
- Students will make connections between cultural and polotico-economic issues by way of a wide variety of course readings that expose students to literature, as well as traditional historical themes.

HIST 261 : Modern Africa. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Survey of the history of the African continent from circa 1800, focusing on experiences and perspectives of Africans. Topics may include culture and identity, colonialism, independence movements, religion, gender relations, the environment, and economic development.

**Course Outcomes**

- Students will gain a greater knowledge of major events, developments, and questions in modern African history
- Students will develop a historical understanding of African societies, cultures, and peoples
- Students will improve their ability to weigh evidence, assess conflicting viewpoints, and evaluate arguments
- Students will improve their ability to write clearly and organize evidence to build an argument
- Students will gain a greater understanding of how Africa has related to the rest of the world

HIST 280 : Northern US Family, Local, and Social History Research Since 1790. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of invididual families and development of family history studies in the northern states, including New England, the Midwest, and some Mid-Atlantic states in the 19th and 20th centuries.

**Course Outcomes**

There are no course outcomes available

HIST 281 : Southern US Family, Local, and Social History Research Since 1790. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: HIST 217

DESCRIPTION: 19th and 20th century records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in the southern states.

**Course Outcomes**

There are no course outcomes available

HIST 282 : Colonial US Family, Local and Social History Research. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in colonial American studies.

**Course Outcomes**

There are no course outcomes available

HIST 290 : Nature and History: The Earth's Environmental Past. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Human historical interactions with animals, plants, and landscapes. Global histories of climate, population, whaling, fossil fuels, the car, animal rights, suburban sprawl, eco-theology, environmentalism, ecotourism, etc.

**Course Outcomes**

- Students will become academically conversant with the major historical developments in our global relationship with nature.
- Students will be able to analyze and evaluate the content and meaning of primary sources, and through critical interpretation, draw reasonable conclusions.
- Students will be able to formulate historical questions and answer them by careful and systematic research in primary and secondary sources.
- Students will be able to write history that is coherent and persuasive by following discipline's norms for writing and careful documentation.

HIST 291 : History of Science. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Graeco-Islamic scientific tradition. Ideas, practice, and social impact from Greek, Islamic, and Medieval European civilizations and science to eve of Scientific Revolution. Examines cross-cultural exchange, transformation of ideas.

**Course Outcomes**

- Understand how science developed out of ancient thought disciplines
- Understand the continuity of Greek-style scientific thinking through Arabic/Islamic and Latin/Christian civilizations
- Grasp the overall development of science as an intellectual and social practice, from pre-Greek times, down through the Scientific "Revolution" and to the modern period.
- To question the reality of a Scientific "Revolution"
- To gain a hand-on understanding of the ancient practices of astronomy/astrology, and understand how they drove much other scientific research
- To master one topic or technology from the pre- Scientific "Revolution" period

HIST 292 : Food and History. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: History of tomatoes, potatoes, sugar, and spice. How food and foodways engage broader historical questions and illuminate aspects of human cultures.

**Course Outcomes**

- Students will be able to discuss the theoretical underpinnings of the study of food, and will be able to discuss key aspects of the impact of food on human history.
- Students will refine and improve historical research, writing and analytical skills.
- Students will refine and improve oral presentation skills.

HIST 293 : World War II: A Global Perspective, 1939-1945. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Causes, flow, and consequences of World War II emphasizing the American experience at home and abroad.

**Course Outcomes**

- Students will be able to explain and analyze the history and memory of the global conflict of 1939 to 1945.
- Students will be able to analyze and interpret primary and secondary source documents.
- Students will be able to interpret and discuss the meanings and history and memory.
- Students will be able to formulate historical arguments based on primary sources and place them in a historiographical context.

HIST 294 : Eighteenth-Century Revolutions: America, France, and Haiti. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: The American, French, and Haitian revolutions. Readings include primary and secondary sources on revolutionary politics and culture.

**Course Outcomes**

- Students will be able to explain and assess the major events and processes that shaped the American, French and Haitian revolutions.
- Students will be able to analyze and contextualize primary documents from the late eighteenth and early nineteenth centuries.
- Students will be able to debate historical questions and historiographical issues related to the American, French, and Haitian revolutions.

HIST 295 : Latin America in the Age of Revolution, 1750-1850. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: HIST 200 & HIST 252

DESCRIPTION: Examine the origins of the Latin American revolutions for independence, the course of the wars, and the struggles to form new nations. The course considers the issues new nations confronted and the concepts of cultural continuity, including ramifications today.

**Course Outcomes**

There are no course outcomes available

**300-Level Courses**

HIST 300 : The Early Middle Ages. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Decline of Rome and the early formative stages of early medieval civilization; analysis of political, economic, and social changes from A.D. 285 to 950.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in the Early Middle Ages.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers

HIST 301 : The Late Middle Ages. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Europe from 950 to 1350; maturation of medieval civilization; failure of German, success of French leadership; economic, religious, cultural, intellectual trends.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in the Late Middle Ages.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers

HIST 302 : The Italian Renaissance. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Major political, social, and cultural events in Italy from 1200 to 1530, emphasizing concept of the Renaissance in modern historiography.

**Course Outcomes**

- Students will understand and be able to analyze the major political, economic, social, and religious developments in Italian Renaissance history
- Students will be able to trace the historiographical evolution of the Italian Renaissance and analyze historical questions within this historiographical context
- Students will refine and improve historical research, writing and analytical skills

HIST 303 : The Reformation: Age of Turmoil. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Sixteenth-century religious upheaval; ideological, cultural, political, and socioeconomic struggles to mid-seventeenth century.

**Course Outcomes**

- Students will be able to explain and analyze the major religious developments in Europe during the Reformation

(1500-1700).
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze and interpret secondary source documents
- Students will be able to interpret and debate the meanings and historical value of primary and secondary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 304 : The Expansion of Europe, 1400-1800. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Early voyages of discovery and the actions of Europeans in the wider world from about 1400 to 1800.

**Course Outcomes**

There are no course outcomes available

HIST 305 : The Age of Enlightenment. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Developments in Europe from 1650 to the French Revolution, emphasizing political thought, science, and philosophy in the Enlightenment.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, intellectual, and cultural developments in Europe between 1650 and 1815.
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills
- Students will analyze historical questions and place them in historiographical context
- Students will understand the ideas central to the Enlightenment.

HIST 306 : Nineteenth-Century Europe. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Political, economic, social, and intellectual history of Europe from 1815 to 1914.

**Course Outcomes**

- Students will understand and be able to explain and analyze the international affairs and the political, intellectual, social, and economic history of Europe from 1815-1914
- Students will understand how to use and will be able to analyze and interpret primary source documents.
- Students will be able to review, critique, and evaluate historiographical works from a variety of European nations, as well as analyze historical questions and place them in a historiographical context.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts.

HIST 307 : Europe Since 1914. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: International affairs and political and economic history of major European countries (including Russia) from World War I to the present.

**Course Outcomes**

- Students will understand and be able to explain and analyze the international affairs and the political, cultural, military, social, and economic history of Europe from the two world wars until the present
- Students will understand how to use and will be able to analyze and interpret primary source documents.
- Students will be able to review, critique, and evaluate historiographical works.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to analyze and discuss current events from more than one national viewpoint.

HIST 308 : The Mediterranean. (3:3:0)

DESCRIPTION: Examining the historiography and key political, cultural, economic, and social developments of the Mediterranean in the medieval and/or early modern periods.

**Course Outcomes**

- Students will understand and be able to analyze the major political, economic, social, and religious developments in Mediterranean history
- Students will be able to trace the historiographical evolution of Mediterranean history and analyze historical questions within this historiographical context
- Students will refine and improve historical research, writing and analytical skills.
- Students will refine and improve oral presentation skills.

HIST 309 : European Revolutions Since 1500. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Social and political revolutions in European history since 1500. Successful and unsuccessful cases of state breakdown; the Dutch Revolt, English Revolution, French Revolution, Revolution of 1848, and Russian Revolution.

**Course Outcomes**

- Students will gain a historical consciousness by demonstrating knowledge about crisis and change in European societies.

- Students will acquire the ability to evaluate and analyze historical documents
- Students will understand the way evidence is used to construct historical arguments.
- Students will gain experience collaborating with each other in formulating and carrying out a research project using historical research skills.

HIST 310 : European Economic History. (3:3:0)

WHEN TAUGHT: Spring Odd Yrs.

DESCRIPTION: Economic development of Europe from antiquity to the early twentieth century; impact of the economy on social and political institutions.

**Course Outcomes**

- Students will acquire content knowledge about the economic history of Europe from antiquity to the present
- Students will master the skills necessary to summarize, evaluate, and critique historical arguments.
- Students will understand the way evidence is used to construct historical arguments.
- Students will pose historical questions and support them with appropriate evidence
- Students will gain experience collaborating with each other in formulating and carrying out a research project using historical research skills.

HIST 312 : History of Ideas. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Interrelationship of influential ideas and historical events from the end of the eighteenth century to the present.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Recognize the usefulness, but also the problematic nature of historical periodization.
- Develop interdisciplinary, synthetic, thinking skills, particularly in being able to see history in cultural artifacts and then identify and place these into discursive contexts.
- Relate and trace how ideas continue to influence societies and their institutions
- Awaken in you the realization of how certain modes of modern thought that you might have taken for granted as having existed "forever" can be seen as developments in response to specific historical circumstances.
- Explain how ideas, when extended to their logical conclusions, may challenge your personal world view and consider, as well as articulate, how to resolve such conflicts.
- Write an intellectual history research paper.
- Identify broadly how different approaches to intellectual history operate, e.g. Lovejoy, Cambridge School (Skinner), Berlin, Koselleck, Strauss, etc.

HIST 313 : Strategy in Peace and War. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

RECOMMENDED: Hist 200, 201, 202.

DESCRIPTION: The modern evolution and contemporary development of grand strategies in peace and war, connecting success or failure with unintended consequences. Historical case studies extend from the Thirty Years' War to the Global War on Terrorism.

**Course Outcomes**

There are no course outcomes available

HIST 314 : European Fascisms, 1914 to Present. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Political, cultural, and social bases of fascist movements, especially in Italy, Germany, and Spain. Rise to power, family policies, warfare, propaganda, racism, genocide, neofascisms.

**Course Outcomes**

- Students will understand and be able to explain and analyze the origins, impacts, foreign policy, theories, and legacy of Fascism, Nazism, and other competing political ideologies
- Students will understand how to use and will be able to analyze and interpret primary source documents and secondary historiographical works.
- Students will understand how to research and write.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 315 : European Jews and the Holocaust. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Attempted genocide of European Jews by Hitler's Third Reich; motives, methods, and implications.

**Course Outcomes**

- Study the genocide of European Jews by Hitler's Third Reich and to explore the motives, methods, and implications of this, as well as the fundamental questions thrown into relief by it.
- Analyze key issues that informed the Holocaust, the context and processees related to it, and to engage with the debates ignited by its legacy. Further develop proficiency in using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Foster specific skills of critical thinking, argumentative and narrative writing, as well as careful reading. Analyze historical questions and issues clearly, assess historical information accurately and distinguish between questionable and valid historical assertions.
- Skillfully integrate data into coherent arguments expressed through a clear, well-written style in exams, papers, and class discussion.

HIST 317 : The Family and the Law in American History. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HIST 217

DESCRIPTION: The interaction of families with law and government as illustrated in original American sources; individual family histories reconstructed in the broader perspective of history.

**Course Outcomes**

There are no course outcomes available

HIST 318 : European Women's History. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

RECOMMENDED: Hist 200.

DESCRIPTION: European women and gender from 1400 to the present.

**Course Outcomes**

- Students will be able to understand and explain major trends in European women's experiences and history since 1400
- Students will be able to analyze and synthesize historiographyof women's history, gender history, and feminism
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another
- Students will interpret important shifts or trends in the experience of women and attitudes about gender. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate contemporary attitudes to women and men's history and gender and how these affect interpretations of the past.

HIST 319 : The Family in Europe. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Nature and development of marriage and family life and structure from the ancient to modern era.

NOTE: Independent Study also.

**Course Outcomes**

- Students will be able to understand and explain major trends in European family life, relationships, and law between 1100 and the present
- Students will be able to analyze and synthesize historiography of family history
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another.
- Students will interpret important shifts or trends in the experience of family functions and relationships and their connections with the law. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends.
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate historical experiences and historiographic interpretations

HIST 320 : Society in Europe. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Common life in Europe from 1500 to the present: family problems, social customs, marriage, superstition, death, diet, work, hardships, migration, and childhood.

**Course Outcomes**

- Students will be able to explain and analyze themes and trends in European social history in both the early modern and modern periods.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze and interpret secondary source documents
- Students will be able to interpret and debate the meanings and historical value of primary and secondary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 322 : English History to 1689. (3:3:0)

OFFERED: Independent Study also.

DESCRIPTION: Political, social, and cultural developments from prehistoric times to the Glorious Revolution. Medieval, Tudor, and Stuart periods.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments inengland to 1689.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 323 : English History Since 1689. (3:3:0)

DESCRIPTION: Emergence of Britain as a great colonial and industrial power, as well as more recent decline of Britain's influence. Emphasis also on cultural developments.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in England Since 1689.

- Students will be able to analyze and interpret primary source documents
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 324 : France. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: French history from Roman times to the present, emphasizing the French Revolution, Napoleon, and subsequent developments.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in French history between approximately 700 and 1950.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 325 : Spain. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Political, social, and economic factors in Spanish history from Roman times to present. Emphasis on Reconquest, Golden Age, and Civil War.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, intellectual, and cultural developments in Spain from Roman times to the late twentieth century
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills.
- Students will analyze historical questions and place them in historiographical context.

HIST 326 : The History of Mexico. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: The historical evolution of Mexico including pre-Colombian civilizations, the Spanish conquest, the colonial era, national formation, and the modern Mexican state. The impact of foreign relations on Mexican society.

**Course Outcomes**

- Students will gain an understanding of the challenges Mexico faced during the transitions from pre-Colomiban empires to the colonial period, as well as from the colonial period to the national era.
- Students will gain an understanding of the principle factors that created and transformed modern Mexican society, principally the Porfiriato, the Mexican Revolution, and the modern Mexican state structure (twentieth century).
- By way of supplementary readings and writing assignments, students will gain a stronger understanding of the social andcultural issues in Mexican history that have been shaped by the nation's unique political and economic conditions.
- Students will explore the scholarship and sources for a single issue in Mexican history, producing a research paper based on primary and secondary sources
- Students will develop oral proficiency in debating controversialhistorical and contemporary issues during class discussion, including debates on decisive factors in the Spanish conquest, immigration, and bi-national solutions to drug trafficking.

HIST 327 : Italy in the Modern World Since 1848. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Political, social, economic, and cultural history of Italians and the Italian peninsula in Europe and the world, including nationalism, church and state, migration, Mafia, fascism, and European union.

**Course Outcomes**

- Students will understand and be able to explain and analyze contemporary Italian history, including themes of economic development, state formation, fascism, internationalism, and church/state relations.
- Students will understand and will be able to analyze and interpret primary source documents and secondary historiographical works.
- Students will understand how to research and write.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to present a topic and argument in class with multimedia and discussion

HIST 328 : Modern Germany. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, military, economic and cultural development of Germany during the nineteenth and twentieth centuries.

**Course Outcomes**

- Understand how historians interpret the German past.
- Alert you to how historians construct their narratives.
- Read and dismantle primary and secondary sources.
- Synthesize material from interdisciplinary sources.
- Show essay skills by writing timed essays on a set of primary and secondary sources.

- Demonstrate your ability to use primary sources in a research project.

HIST 330 : Tsarist Russia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Political, economic, social, and cultural trends and events in Russian history to 1917.

**Course Outcomes**

There are no course outcomes available

HIST 331 : Soviet Union and Post-Soviet Russia. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: History of the Soviet Union and post-Soviet developments in Russia and other successor states; governing structures and ideology and the relationship between state and society.

**Course Outcomes**

There are no course outcomes available

HIST 332 : Scandinavian History. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Political, social, religious, cultural, and economic factors in Denmark, Finland, Iceland, Norway, and Sweden from Viking era to present highly developed society.

**Course Outcomes**

- Students will be able to learn about Scandinavian history from prehistoric times through to the Viking Age, Middle Ages/Renaissance to the Era of Swedish Great Power Politics and Great Northern War, in the 1600s and early 1700s.
- Students will be able to learn about the big picture of Scandinavian history from the period of the Napoleonic Wars (esp. Napoleon's erstwhile general, Bernadotte, later King of Sweden-Norway), Industrialization of the North, nationalistic movements and periods of Swedish-Norwegian and russo-Finnish union, through the World Wars and establishment of the Modern Welfare state (since the 1920s)

HIST 334 : History of Ancient Iraq. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Examining the social and economic aspects of the rise of cities, inter-regional trade, political exchange, and imperialism in ancient Mesopotamia using primary and secondary sources. Topics include agriculture in Babylon, cities in Mesopotamia, royal courts, Assyrian trade and markets, family and kin.

**Course Outcomes**

- Gain a historical consciousness of social and economic institutions and developments in ancient Iraq.
- Develop an ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Develop use of the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate evidence into a coherent argument or narrative expressed through a clear, well-written style and through oral communication.

HIST 335 : Crusades. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Age of Holy Wars in the eastern Mediterranean and Near East, 1050-1300. Focus on both Europe and Near East.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, cultural and religious developments during the crusades, c. AD 1050-1300
- Students will be able to analyze and interpret translations of primary source documents from the age of the Crusades.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 336 : South African Liberation Movements. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Reading and discussion on the history of the struggle for human rights in South Africa, particularly during the time of apartheid (1948-1990).

**Course Outcomes**

There are no course outcomes available

HIST 337 : Pre-modern Korea. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, economic, and social history of Korea from antiquity to 1850.

**Course Outcomes**

- An understanding of the major features of Korean history and culture both in breadth and in depth.

- An understanding of Korean history contextualized both within the framework of Korean history and in relationship to other histories and other constructions of history.
- The ability to think and write about issues in Korean history in a critical and compelling manner.

HIST 338 : Modern Korea. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Political, economic, and social history of Korea from 1850 to the present.

**Course Outcomes**

- Students will be able to describe the most significant aspects of the polity, economy, society and ideology of Korea from 1850 to the present.
- Students will be able to recognize and analyze change over time in East Asia
- Students will be able to evaluate and apply primary source texts to broad historical themes
- Students will be able to conduct individual research and situate it in the broader historical context

HIST 340 : Traditional China. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: From a loose federation of Neolithic societies, Chinese civilization emerges as East Asia's dominant political and cultural force; developments to ca. 1500.

**Course Outcomes**

- Students will be able to explain and analyze the major social, political, economic, intellectual and cultural developments in the history of Early China (ca. 5000 BC–220 AD
- Students will demonstrate a basic geographical knowledge of China, including significant geological features and major historical cities Moreover, they will be able to discuss how geographical and environmental realities have impacted historical development.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve.

HIST 341 : China Since 1200. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Economic and political foundations of modernity during high Imperial China; challenge of new order from the West; rise of Chinese nationalism, revolution, and development to the present.

**Course Outcomes**

There are no course outcomes available

HIST 343 : Traditional Japan. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, social, religious, and cultural developments to ca. 1700.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history until around 1600.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 344 : Modern Japan. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Main themes in Japanese history from Tokugawa times to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history from approximately 1600 to the present.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 347 : Chinese Cultural History. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Methods and approaches of the cultural historian; in-depth investigation of a selected topic in Chinese cultural history. Topics may include women, Silk Roads, material culture, etc.

**Course Outcomes**

- Students will be able to explain and understand the methods and approaches of the cultural historian through an investigation of select topics in Chinese cultural history.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve

HIST 348 : Modern South East Asia. (3:3:0)

DESCRIPTION: Complex history of the varied nations of this vast area: religion, colonialism, nationalism, independence.

**Course Outcomes**

- Gain a historical consciousness by demonstrating a knowledge of major developments in South East Asia and world history and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions by using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

HIST 349 : History of Asian Religions and Thought. (3:3:0)

DESCRIPTION: Major themes in religion, philosophy, and ideas in Asia.

**Course Outcomes**

- Students will be able to understand and analyze key concepts in Chinese thought and religion as well as the logic behind core beliefs and practices
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions.

HIST 350 : British Family, Local and Social History Research. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methods for reconstruction of individual families and development of demographic and family history studies in England, Scotland, and Wales.

**Course Outcomes**

- Students will be able to explain and use fundamental genealogical (and some historical) resources and methodologies for English and Welsh research since 1700
- Students will evaluate, analyze, and corroborate genealogical information from both original and compiled sources. Students will know and use established citation standards.
- Students will explain how various pieces of information are combined in order to trace the same individual over various records and across the lifespan
- Students demonstrate how evidence is used to prove the links between generations

HIST 351 : Germanic Family, Local, and Social History Research. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in Germanic areas of Europe.

**Course Outcomes**

There are no course outcomes available

HIST 352 : Scandinavian Family, Local, and Social History Research. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families and development of family history studies in Denmark, Norway, Iceland, Sweden, and/or Finland.

**Course Outcomes**

There are no course outcomes available

HIST 353 : Southern European and Latin American Family, Local, and Social History Research. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: HIST 217

DESCRIPTION: Records, geo-historical background, paleography, and methods for reconstruction of individual families; development of demographic and family history studies which may include Portugal, Spain, France, and Italy and their colonies in the Americas.

**Course Outcomes**

There are no course outcomes available

HIST 354 : Slavic Family, Local, and Social History Research. (3:3:0)

PREREQUISITE: HIST 217

DESCRIPTION: Records, geographical-historical background, paleography, and methodologies for reconstruction of individual families; development of family history studies in Slavic areas of Europe.

**Course Outcomes**

- Students will be able to describe the key content of major family history sources in Slavic research.
- Students will become somewhat proficient at reading old Slavic documents.
- Students will become acquainted with actually using family history primary and secondary sources, on film or otherwise available, at the world's largest genealogical repository, the Family History Library in Salt Lake City

HIST 355 : History of Argentina. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Rise of modern Argentina from colonial times, focusing on the dynamic political, economic, social, and cultural developments since independence.

**Course Outcomes**

- Learn and understand more about the historical processes that have shaped the nation of Argentina from colonial times up to the present.
- To be able to discuss and explain those processes through the written and spoken word with clarity, persuasiveness, and proper use of evidence
- To write a well written, organized, and developed term paper using the critical thinking and writing skills of a historian
- To be able to read primary sources and discuss their utility in constructing historical arguments.

HIST 356 : Brazil. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: From 1500 to present, emphasizing relationship between colonial patterns and twentieth-century reality and dilatory transformation of Brazil's political and economic culture.

**Course Outcomes**

- Students will become academically conversant in the major social, economic, and cultural developments of Brazil's history since 1500.
- Students will be able to analyze and evaluate the content and meaning of primary sources, and through critical interpretation, draw reasonable conclusions.
- Students will be able to formulate original historical questions and answer them by careful and systematic research in primary and secondary sources.
- Students will be able to write history that is coherent and persuasive by following discipline's norms for writing and careful documentation.

HIST 357 : The Indian in Latin American History. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: History of Latin American Indians from preconquest days to the present; achievements, contributions, and problems.

**Course Outcomes**

- Students will be able to explain and analyze the political, economic, social, religious, and cultural structures of the Mayas, Aztecs, and Incas, how they were transformed by the Spanish conquest, and how they developed in reaction to European colonialism.
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills.
- Students will analyze historical questions and place them in historiographical context.

HIST 358 : Gender and History in Latin America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: How gender roles have been defined legally, socially, and culturally in Latin America from the colonial period to the present, emphasizing the nineteenth and twentieth centuries.

**Course Outcomes**

- To understand how gender relations and gender roles developed in Latin America from colonial times to the present.
- To be able to discuss and explain those developments through the written and spoken word with clarity, persuasiveness, and proper use of evidence.
- To write a well written, organized, and developed term paper using the critical thinking and writing skills of a historian.
- To be able to read primary sources and discuss their utility in constructing historical arguments.

HIST 359 : Inter-American Relations. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Decline of Europe's American empires, legacies bequeathed to the new republics by their European heritage, and how those legacies have affected relations among the various American republics.

**Course Outcomes**

- Students will gain an understanding of the major historiographical schools of thought in Inter-American relations
- Students will gain an in-depth understanding of at least one major figure in Inter-American relations each term the class is taught by way of reading primary sources and writing about the legacy of that individual.
- Students will be exposed to a variety of thematic approaches to Inter-American relations, including gender, health and the environment, culture, tourism, film, and literature. It is expected that these alternatives to traditional diplomatic relations will inform their selection of a research topic for the course.
- Students will write a research paper focusing on one of the thematic approaches presented in class and informed by primary sources, as well as secondary literature, in order to arrive at a stronger understanding of Inter-American relations.

- Students will obtain a stronger cross-cultural understanding of Inter-American relations by debating and discussing issues, informed by our class readings, during our weekly discussions. At times students will be asked to embrace perspectives that they may not entirely agree with or understand.
- Students will become conversant with the watershed events of the Haitian Revolution, the Latin American Revolutions, the Spanish American War, the Cuban Revolution, and the Washington Consensus,and why they have been critical to the tenor of Inter-American Relations.

HIST 360 : American West to 1900. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: The American West as a place of great diversity. Topics include Native American societies, European colonization, explorations, the fur trade, overland migrations, Indian relations, mining, settlement, and the environment.

**Course Outcomes**

- Students will be able to explain and interpret major developments and historical terms in the history of the American West before 1900.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.

HIST 361 : The American West Since 1900. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Pivotal developments in the twentieth-century West, including urbanization, Sun Belt migration, political protest, labor history, Native American history, immigration, water policy, tourism, military-industrial complex, Hollywood.

**Course Outcomes**

- Students will be able to explain and interpret major developments and historical terms in the history of the American West since 1900.
- Students will be able to interpret primary documents and use evidence from those documents to support historical assertions and interpretive generalizations.
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.

HIST 362 : France and the Atlantic World to 1804. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: French exploration and colonization; relations with native peoples; colonial societies in the Caribbean, Louisiana, the Mississippi Valley, and Canada; slavery and the Haitian Revolution; persistence of French territories and francophone populations.

**Course Outcomes**

- Students will be able to explain and assess the major events and processes related to the evolution of the French empire from the medieval period through the early nineteenth century
- Students will be able to interpret primary source documents related to the French, African, and Native American actors within French imperial history.
- Students will become familiar with the historiographical debates surrounding the French presence in the New World.

HIST 363 : The Spanish Frontier in North America. (3:3:0)

DESCRIPTION: Spanish exploration, occupation, and institutions of northern Mexico, the American southwest, and Florida, 1521-1821; Mexican period to 1848.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in the history of the Spanish and Mexican northern frontier in North America between approximately 1492 and 2011
- Students will be able to analyze and interpret primary source documents
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.

HIST 364 : Utah. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Contributions of Native Americans, explorers, mountain men, miners, government officials, Mormons, and other groups in the nineteenth century. Impact of national movements, various peoples, politics, economics, and social and cultural change in the twentieth century.

**Course Outcomes**

There are no course outcomes available

HIST 365 : American South. (3:3:0)

DESCRIPTION: Political, economic, and cultural history of the southern states from colonial times to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, cultural, religious, and intellectual developments in the history of the American South from European contact to the present
- Students will able to analyze an important historical question in the history of the South.
- Students will be able to research, analyze, and integrate primary and secondary sources into a coherent and

well-written argument.
- Students will be able to isolate the theses and supporting arguments of secondary sources on the history of the South.
- Students will be able to analyze primary sources on the history of the South.

HIST 366 : Slavery and the Slave Trade in Africa and the Atlantic World. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Major social, political, economic, and cultural developments in the history of slavery in Africa and the Americas between the 15th and 19th centuries, taking the lands and the people of the Atlantic Ocean region as a geographical unit.

**Course Outcomes**

- Students will be able to explain and analyze the major social, political, economic, and cultural developments in the history of slavery in the Atlantic World between the 15th and 19th centuries.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions.
- History teaching majors will start to apply information and ideas from the course to future teaching.

HIST 367 : Slavery in the United States. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Historical themes and developments of slavery in the U.S.

**Course Outcomes**

- Students will be able to explain and analyze the major social, political, economic, and cultural developments in the history of slavery in North America from the 17th century through 1865
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions.
- History teaching majors will start to apply information and ideas from the course to future teaching.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 368 : Sport, Society, and American Culture. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Development of sports in American society, emphasizing ethnic and racial groups, social classes, gender, gambling, politics, and social mobility.

**Course Outcomes**

- Students will be able to explain the major social, cultural, and historical developments in American sport history.
- Students will be able to evaluate the relationship between sports and race, class, and gender issues in American history.
- Students will understand the major historiographical debates in American sport history.

HIST 369 : Travel and Tourism in America. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: The history of travel and tourism in America to the present. Themes include changing technology, consumerism, nationalism, and social identities in contructing the tourist experience.

**Course Outcomes**

- Understand the theoretical approaches in the field, including concepts such as authenticity, tourist gaze, scripted space, leisure and modernity, and social science approaches to the study of tourism.
- Demonstrate knowledge of the major developments in travel and tourism infrastructure and explain the causal forces driving those changes.
- Explain how social identities of race, class, gender, and nationality have shaped the tourist experience.
- Assess primary sources for historical analysis of tourism and understand the limits and possibilities of each, including travel narratives, ephemera, still images, guides, memoirs, etc.
- Demonstrate historical change in tourism by researching and writing about a specific topic or approach to tourism in a paper that follows conventions of historical scholarship, and by presenting findings to the class.
- Appreciate global impact of tourism on the environment, international relations, and commerce.

HIST 370 : Colonial America. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Establishment, growth, and development of the American colonies to 1763.

**Course Outcomes**

- Students will demonstrate an understanding of the major events and issues in colonial American history and historiography.
- Students will be able to identify, evaluate and locate appropriate primary and secondary sources for colonial American history.
- Students will be able to create and support an argument based on a major issue in colonial American historiography, using primary and secondary sources.
- Students will be able to identify and critically respond to the argument of a historical monograph.

HIST 371 : Revolutionary America. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Causes and consequences of the American Revolution, the confederation era, and the framing of the Constitution.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in Revolutionary America.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 373 : Civil War Era, 1848-1877. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Causes of the war, major military events (leaders, campaigns, soldiers), war on the home fronts, why the South lost, Reconstruction, the legacy of the war.

**Course Outcomes**

- Students will be able to explain and analyze the main themes and developments of the Civil War and Reconstruction, as well as their roots and legacy.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions.
- History teaching majors will start to apply information and ideas from the course to future teaching.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 374 : U.S. History from 1890 to 1945. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: HIST 220 & HIST 221

DESCRIPTION: Political, economic, and social movements and ideas that trace rise of U.S. as a world power in first half of twentieth century.

**Course Outcomes**

- Students will be able to explain and interpret major developments and historical terms in the history of the United States between 1890 and 1945.
- Students will be able to interpret primary documents and use evidence from those documents to support historical assertions and interpretive generalizations
- Students will hone their ability to skillfully and honestly evaluate historical arguments in secondary sources.

HIST 375 : Joseph Smith in Mormon History and Historiography. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Exploring the life and thought of Joseph Smith and crucial moments in Mormon history through primary source documents and subsequent historiography.

**Course Outcomes**

- Students will be able to summarize and assess key aspects of the historiography of Joseph Smith.
- Students will be able to contextualize and explain primary source documents relating to Joseph Smith.
- Using their knowledge of both secondary and primary sources, students will be able to critique competing interpretations of Joseph Smith's life.
- Students will enhance their verbal communication skills through participation in class discussion.

HIST 376 : U.S. History from 1945 to 2000. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Movements and ideas that shaped society, politics, economy, and diplomacy of the United States from 1945 to 2000.

**Course Outcomes**

- Students will be able to explain and analyze the major political, social, diplomatic, economic, cultural, and constitutional developments in U.S. history from 1945 to the present.
- Students will be able to analyze, interpret, and debate the meanings and historical significance of primary source documents.
- Students will be able to produce an original, analytical, and primary source based historical essay examining a key issue, theme, or individual from U.S. history since 1945.

HIST 378 : American Family History. (3:3:0)

DESCRIPTION: History of American families from colonial period to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major intellectual, economic, religious, social, cultural, and political developments affecting changes in American families of various races, classes, and regions from 1607 to the present.
- Students will be able to analyze an important historical question in the history of American families
- Students will be able to research, analyze, and integrate primary and secondary sources into a coherent and well-written argument.
- Students will be able to isolate the theses and supporting arguments of secondary sources on the history of American families.

HIST 379 : U.S. Religious History to 1860. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Religious developments from colonial times to 1860.

**Course Outcomes**

There are no course outcomes available

HIST 380 : U.S. Religious History Since 1860. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Examines religious people, institutions, beliefs, and practices in U.S. history since the Civil War.

**Course Outcomes**

There are no course outcomes available

HIST 382 : Mormonism in the American Experience. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Social, economic, political, intellectual, and religious environment in which Mormonism flourished; contributions of Mormon men and women to American culture and history.

**Course Outcomes**

- Students will be able to summarize and assess key aspects of how Mormonism has been situated in the larger cultural and religious geography of America
- Students will learn how particular primary sources provide key building blocks in prominent interpretations of the place of Mormonism in American history
- Students will become acquainted with, and learn to assess the academic conversation concerning Mormonism
- Students will enhance their verbal communication skills through participation in class discussion.

HIST 383 : African-American History, 1865 to Present. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

RECOMMENDED: Hist 200, 220, 221.

DESCRIPTION: Social, economic, intellectual, political factors; struggle for racial equality; race and gender relationships; how changing ideas of race affect American life and politics.

**Course Outcomes**

- Students will be able to identify and analyze major themes in African-American History from emancipation and the rise of Jim Crow to the beginning of the 21st century. They will also be able to recognize the ways that shifting notions of race have shaped (and continue to shape) American life and politics.
- Students will be able to analyze, interpret, and evaluate primary sources
- Students will be able to interpret and debate the meanings and historical value of primary sources with their peers.
- Students will be able to analyze and create historical questions and place them in a historiographical context.
- Students will demonstrate proficiency in using historical methods of research and in integrating data into a coherent argument expressed through a clear, well-written style.
- Students will be able to use their training in African American history to serve their community.

HIST 384 : United States Women's History. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Survey course of women's experience in American culture and society from the Puritans to the present.

**Course Outcomes**

- Students will be able to explain and analyze the experiences of women in America from the colonial period to the present, the ways that ideas about gender have shaped American life, and significant issues and debates in U.S. Women's history.
- Students will be able to analyze, interpret, and evaluate primary sources.
- Students will be able to interpret and debate the meanings and historical value of primary sources with their peers.
- Students will be able to analyze and create historical questions and place them in a historiographical context.
- Students will demonstrate proficiency in using historical methods of research and in integrating data into a coherent argument expressed through a clear, well-written style.
- Students will be able to apply their understanding of American women's history to current issues and events.

HIST 385 : Latinos in the United States. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: The place of Latin Americans within the context of U.S. history. The growth and development of the largest Latino communities from pre-colonial times to present day and how Latinos may influence future policies within the U.S.

**Course Outcomes**

- Students will learn the history of Latinos in this country beginning with the circumstances which brought them to this country, the ways they have integrated or resisted integration, and the efforts they have made to claim their rights as citizens.
- Students will learn to interpret the documents and rhetoric of this community which will help them understand the intellectual, cultural and political thought of Latinos over the last 100 years.
- Students will learn the current state of Latino social and cultural integration in the Utah community.
- Students will learn to write a major essay on the history of Latinos in order to understand the literature as well as the primary sources available on this community.

HIST 386 : Nineteenth-Century American Indian History. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: History of various Indian tribes, their cultures, and their relationships with European nations and the United States, including military campaigns.

**Course Outcomes**

- Students will be understand and appreciate Indian history and cultures, employ historical research skills effectively, and apply appropriate methods and theories to the study of Indian history and contemporary Native American issues.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.
- Recognize important ideas of Indian and non-Indian cultural traditions and how LDS Native Americans have balanced their intellectual pursuits, their faith, and their culture.
- Learn to communicate effectively both orally and in writing about Native American topics
- Have meaningful interactions with Indian communities, individuals, and organizations to provide outreach and to help address contemporary challenges

HIST 387 : Twentieth-Century American Indian History. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Sociocultural factors that affect twentieth-century native Americans in both urban and reservation settings, including current challenges facing Indian communities.

**Course Outcomes**

- Students will be understand and appreciate Indian history and cultures, employ historical research skills effectively, and apply appropriate methods and theories to the study of Indian history and contemporary Native American issues.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations.
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.
- Recognize important ideas of Indian and non-Indian cultural traditions and how LDS Native Americans have balanced their intellectual pursuits, their faith, and their culture
- Learn to communicate effectively both orally and in writing about Native American topics.
- Have meaningful interactions with Indian communities, individuals, and organizations to provide outreach and to help address contemporary challenges.

HIST 388 : Indians in Colonial America. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: North American Indian culture, Indian/European interactions, demographic, social, political factors among Indians prior to contact with Europeans through colonization and the American Revolutionary War.

**Course Outcomes**

- Students will demonstrate an understanding of the major issues and events in colonial Native American historiography and their modern-day consequences.
- Students will be able to identify, evaluate and locate appropriate primary sources for colonial Native American history
- Students will be able to use primary sources to support an argument based on a major issue in colonial Native American historiography.
- Students will be able to identify and critically respond to the arguments of historical monographs.

HIST 389 : Mormonism Among Christian Theologies: A Comparative History. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Comparison of the historical development and varying constructions of key aspects of Mormon and other Christian thought.

**Course Outcomes**

There are no course outcomes available

HIST 390R : Special Topics in History. (.5-3:Arr:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Presented by visiting or regular faculty. Varied topics include oral history, demographics, psychohistory, Christianity in history, family history research, etc.

**Course Outcomes**

There are no course outcomes available

: Family History Research.

**Course Outcomes**

: Family History Research in Ireland. (.5-3:Arr:Arr)

**Course Outcomes**

: Family History Research in the Netherlands.

**Course Outcomes**

: Advanced Southern European Family History Research.

**Course Outcomes**

: Advanced British Family History Research.

**Course Outcomes**

: Native American Family History Research. (.5-3:Arr:Arr)

**Course Outcomes**

HIST 391 : U.S. in Vietnam, 1945-1975. (3:3:0)

DESCRIPTION: U.S. involvement in the wars in Vietnam from both a domestic and international perspective, focusing on the conflict independently and in context of the broader Cold War.

**Course Outcomes**

- Students will be able to explain and analyze political, social, cultural, diplomatic, and military developments; short- and long-term influences; and ramifications or "lessons" deriving from the U.S. experience during the Vietnam War from 1945 to 1975 from both a domestic and international perspective.
- Students will be able to analyze, interpret, and debate the meanings and historical significance of primary source documents.
- Students will be able to produce an original, analytical, and primary source based historical essay examining a key issue, theme, or individual from the U.S. experience in Vietnam.

HIST 392 : U.S. Constitutional History. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Constitutional traditions and constitution making, federalism, and constitutional notions of political equity and social justice, from the colonial period to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments that led to the U.S. Constitution
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 393 : U.S. Foreign Relations. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: U.S. diplomatic history from the American revolution to the present; examines major themes and critical events within both domestic and international contexts.

**Course Outcomes**

- Students will be able to explain and analyze the major themes and problems in the making, implementation, and evolution of U.S. foreign relations from 1776 to the present.
- Students will be able to analyze, interpret, and debate the meanings and historical significance of primary source documents.
- Students will be able to produce an original, analytical, and primary source based historical essay examining a key issue, theme, or individual from the history of U.S. foreign relations.

HIST 394 : Scripture in American History. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Scriptural texts in U.S. history across various religious traditions and across time, with attention to questions of authority, translation, interpretation, and reception.

**Course Outcomes**

There are no course outcomes available

HIST 395 : Technology in America. (3:3:0)

DESCRIPTION: Benefits and liabilities of technological complexity.

**Course Outcomes**

- Students will be able to explain and analyze how machines have shaped American society from the age of exploration to the present.
- Students will be able to analyze and critique secondary sources in a coherent and well-written argument.
- Students will be able to isolate the theses and supporting arguments of secondary sources on the history of technology.

HIST 396 : Historical Narrative: A Writing Workshop. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

RECOMMENDED: Hist 200, 220, 221.

DESCRIPTION: Workshop in writing narrative history, emphasizing the problems of writing historical narrative. Theories and examples of narrative history.

**Course Outcomes**

- Students will demonstrate an understanding of the genres of historical writing and their historiography
- Students will be able to critically evaluate primary and secondary sources
- Students will be able to write historical narratives in several different genres
- Students will be able to identify and critically respond to arguments of historical monographs, articles, and primary sources

HIST 397 : Historical Literacies in United States History. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Historical literacy within the context of U.S. history; preparation of instructional materials and field experiences for elementary and secondary education students.

**Course Outcomes**

- Prospective teachers will identify methods for helping their pupils develop a more sophisticated understanding of the nature of hisotyr as a discipline.
- Prospective teachers will identify instructional strategies that help students approach historical inquiry from a more mature epistemic stance.
- Prospective teachers will consider the heuristics historians use in engaging in historical inquiry and how students can be taught to use these heuristics.
- Prospective teachers will consider the wide variety of textual genres that historians and archeologists use as evidence about the past.
- Prospective teachers will consider second order concepts, or metaconcepts, that pupils must understand in order to become historically literate.
- Prospective teachers will practice instructional methods that biuild students' ability to make inferences, engage in historical empathy, and engage in perspective taking, and other skills associated with historical literacy.
- Prospective teachers will explore instructional strategies that help students use historical evidence to support their independently developed historical interpretations.
- Prospective teachers will engage, as students, in model activities designed to build the participants' ability to read, reason, and write with historical texts.
- Prospective teachers will create a series of text sets, including primary sources, that they will be able to use to build their students' historical literacies.
- Prospective teachers will construct lesson plans and will execute these plans in elementary and/or secondary classrooms.
- Prospective teachers will reflect on methods for improving their instructional activities.
- Prospective teachers will review through documents and artifacts major themes in US history.
- Prospective teachers will explore options for curriculum mapping in developing a scope and sequence for a US history course.

HIST 398 : 20th-Century American Economic Policy. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

RECOMMENDED: Econ 110.

DESCRIPTION: Examines how economic thought has been translated into economic policy in the United States during the twentieth century.

**Course Outcomes**

There are no course outcomes available

**400-Level Courses**

HIST 420 : Latin Language Handwriting and Documents. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Interpretation of handwriting within historical contexts in Latin ecclesiastical and notarial documents useful in family, local, and social history research, including church registers, notarial settlements of estates, probate records, and inventories; medieval to modern periods.

**Course Outcomes**

- Students will learn the most common Latin scripts
- Students will read, transcribe, and where necessary, translate documents
- Students will demonstrate transcription techniques and methodologies
- Students will analyze and explain the cultural, historical, and legal context for documents, the scripts used in them, and the coverage and availability

HIST 421 : English Language Handwriting and Documents. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Interpretation of handwriting within historical contexts in vernacular scripts in the British Isles, sixteenth through eighteenth centuries, in sources useful in family, local, and social history research.

**Course Outcomes**

- Students will learn the most common scripts (hands) and documents in use in Britain and its colonies between 1500 and 1850.
- Students will read, transcribe, and where necessary, translate documents
- Students will demonstrate transcription techniques and methodologies
- Students will analyze and explain the cultural, historical, and legal context for documents, the scripts used in them, and the coverage and availability

HIST 422 : Germanic Language Handwriting and Documents. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Interpretation of handwriting in vernacular scripts in the German kingdoms, sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

- Students will be able to: 1. Use various types of German reference and research tools 2. Recognize different types of German written and printed documents 3. Understand important historical and cultural aspects of Germany 4. Know the procedures for resolving difficult genealogical and historical research problems

HIST 423 : Slavic Language Handwriting and Documents. (3:3:0)

DESCRIPTION: Interpretation of handwriting in vernacular scripts in the Slavic language areas of Eastern Europe, sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

There are no course outcomes available

HIST 424 : Romance Language Handwriting and Documents. (3:3:0)

DESCRIPTION: Interpretation of handwriting in vernacular scripts in the Romance languages of Europe (especially Spanish, French, and Italian), sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

- Students will be able to read with fluency documents in italic style handwriting;
- Students will be able to recognize and use documents and understand the legal, ecclesiastical and civil systems behind them;
- Students will be able to understand basic concepts of paleography and the impacts of language on the historical development of handwriting
- Students will be able to develop familiarity with secretary (cortesana or procesal) handwriting

HIST 425 : Scandinavian Language Handwriting and Documents. (3:3:0)

DESCRIPTION: Interpretation of old Gothic script handwriting in Scandinavian areas of Europe (including Denmark, Norway, Sweden, Finland, and Iceland), sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

- Students will be able to read at a basic level, old gothic-script Norwegian, Danish, Swedish and Finnish documents, from the 1600s on up.
- Students will be able to use Scandinavian conversion calendars, to convert Latin feast dates to regular Julian calendar dates.
- Students will be able to read, at a basic level for content from Scandinavian printed documents. of the 1700s and 1800s.

HIST 430R : (Hist-Clscs) Topics in Greek and Roman History. (3:3:0)

PREREQUISITE: ClCv-Hist 304 and Greek 201 (Greek topics) or ClCv-Hist 307 and Latin 201 (Roman topics).

DESCRIPTION: Topics vary (e.g., rise of the Greek city-state, Greek political thought, classical historiography, Rome and the Etruscans, imperial Rome).

**Course Outcomes**

- By approaching primary historiographical texts and secondary scholarship treating the History of Greece or Rome (depending upon the special topic chosen for the course), successful students will come to understand the history of Greece and Rome. Topics may fall anywhere within the range of events from Bronze Age Greece to the end of the Roman Empire.
- Successful students will consider available primary sources for Greek and Roman history, both prose and verse literature, and learn how to evaluate the reliability of those sources.
- Through oral reports, examinations, and research papers successful students will demonstrate the ability to critically evaluate complex historical issues and to develop original interpretations of those issues.

: (Hist-Clscs) Topics in Greek and Roman History.

**Course Outcomes**

: Archaic Greece.

**Course Outcomes**

: Greek City-State.

**Course Outcomes**

: Classical Historiography.

**Course Outcomes**

: Hellenistic World.

**Course Outcomes**

: Greek Political Thought.

**Course Outcomes**

: Rome and Etruscans.

**Course Outcomes**

: Rise of Rome.

**Course Outcomes**

: Roman Revolution.

**Course Outcomes**

: Imperial Rome.

**Course Outcomes**

: Roman Politics.

**Course Outcomes**

: Roman Religion.

**Course Outcomes**

: Augustan Rome.

**Course Outcomes**

: Archaic Greece.

**Course Outcomes**

: Athens: Rise and Fall.

**Course Outcomes**

: 4th Century Greece.

**Course Outcomes**

: Late Roman Empire.

**Course Outcomes**

: World of New Testament.

**Course Outcomes**

: Early Chrisitanity.

**Course Outcomes**

: Julio-Claudians.

**Course Outcomes**

HIST 431 : Public History. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Preparing for public history careers by discussing opportunities and responsibilities outside the academy. Examining areas such as museums, archives, film, government, business, and historic preservation. Developing a product and working on a client-based project.

**Course Outcomes**

There are no course outcomes available

HIST 433 : Writing Narrative Biographies. (3:3:0)

OFFERED: Independent Study also.

DESCRIPTION: Workshop in writing narrative family, local, and social history, emphasizing the problems of writing biographical narrative.

**Course Outcomes**

There are no course outcomes available

HIST 434 : Computers in Family Historical Research and Publication. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: HIST 217

DESCRIPTION: Use of computer programs and the internet in researching family, local, and social history; including programs and techniques for publishing.

**Course Outcomes**

- Students will be able to stay current on newly published historical materials by using RSS feeds and Google Alerts to notify them of changes in websites, podcasts, weblogs, etc.
- Students will be able to communicate the findings of their historical research and demonstrate a high level of analytical skill through the use of a variety of computerized and online resources.

Students will be able to locate and use primary source material online, as it continues to be made more available.
- Students will be able to design and use basic, custom relational databases for historical research and analysis.

HIST 439 : Seminar on Professional Family History Research. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HIST 217

DESCRIPTION: Practicum in professional client research exploring advanced genealogical methodologies.

**Course Outcomes**

- Students will learn the key methods of family history research in US sources, to solve difficult research problems from the 1700s and 1800s.
- Students will learn, on an advanced level, to analyze sources and read between the lines, to reconstitute complete families from records of the 1700s and 1800s in US sources.
- Students will be able to write and/or compile a variety of research reports for clients, namely, analytical, crossing the pond, bibliographic, and the like, for persons who (in theory) hire them to conduct research on an ancestral family or families.

HIST 477 : History and Social Science Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SC ED 276R; Fingerprinting and FBI clearance.

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

NOTE: Check with Hist 477 instructor for specific prerequisites for the major or minor program.

**Course Outcomes**

There are no course outcomes available

HIST 478 : Practicum in Secondary Education. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SC ED 276R; Concurrent enrollment in Hist 477 or comparable major course.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Prospective teachers will consider the characteristics of learning-centered classrooms that are based on current theories of learning
- Students will study and apply research-supported teaching methods that foster students' content knowledge, content and literacy skills, and learning and democratic dispositions.
- Students will consider various methods of assessing student learning.
- They will be assisted in the preparation of the teacher work sample and a multiple text inquiry activity.
- Students will be assisted in the preparation of the teacher work sample and a multiple text inquiry activity.
- The course will provide a forum to coordinate and reflect on the prospective teachers' clinical experiences.

HIST 481R : Directed Research in Family History. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Student research directed by faculty member on family history topic of mutual interest.

**Course Outcomes**

- Students will identify and clearly articulate a substantive family history research problem.
- Students will produce a written report, project or portfolio demonstrating knowledge of the studied material.

HIST 482 : Capstone Seminar: Writing and Professional Paths in Family History. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: HIST 439

DESCRIPTION: Research seminar; evidentiary analysis and writing skills in preparing a compiled lineage and exploring professional alternatives in family history, including professional accreditation or certification.

**Course Outcomes**

There are no course outcomes available

HIST 485 : Topical Readings Seminar. (3:3:0)

DESCRIPTION: Reading, discussing, and writing about selected historical issues.

**Course Outcomes**

- Students will learn and practice fundamental analytical tools for analyzing secondary sources more deeply than is possible in most upper-level history courses
- Better understand how a work of History is put together, learn how to make a fair and detailed judgment of historical work (the act of criticism), all of which will make you better prepared to create History yourself
- Students will, by learning more deeply how a work of history is put together, be better prepared for writing an original research paper in History 490 and for graduate school in either History or a related discipline
- Students will increase their knowledge of the substantive theme of the course, which will rotate (the theme for Fall 2011, for instance, is Changes in Religious Cultures)

HIST 487 : Philosophies of History. (3:3:0)

DESCRIPTION: Fundamental problems and types of historical analysis and interpretation, philosophies of history, and work of outstanding historians.

**Course Outcomes**

- Demonstrate an understanding of major developments in the history of historical writing
- Learn key historical terms and theories associated with the philosophy of history
- Distinguish between analytical and speculative philosophies of history
- Consider how philosophies of history inform debates in public history and develop oral skills
- Understand debates surrounding reconciling the historians craft and religious belief and develop insights into how universities sponsored by religious institutions can contribute to higher education

HIST 490 : Capstone Research Seminar. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: HIST 200

DESCRIPTION: Research seminar; critical, analytical, and writing skills in preparation of a senior thesis.

NOTE: Required of all history majors.

**Course Outcomes**

- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using primary and secondary sources
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid assertions;
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

HIST 495R : Directed Research. (3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's prior consent.

DESCRIPTION: Student research directed by faculty member on topic of mutual interest.

NOTE: Research assistants must do additional work for credit.

**Course Outcomes**

- Students will identify and clearly articulate a substantive academic research problem.
- Students will produce a bibliography for reading and research using historical standards.
- Students will produce a written report demonstrating knowledge of the studied material.

HIST 496R : Academic Internship: Family, Local, and Social History. (1-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Work-study involving family, local, and/or social history at one or more archives, libraries, publishers, data providers, or research organizations on the international, national, state, or local level, under supervision of a professional genealogist, historian, archivist, or librarian.

**Course Outcomes**

There are no course outcomes available

HIST 497R : Honors Readings. (.5-3:0:ARR)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

- Students will read assigned books and articles critically, thoughtfully, and carefully.
- Students will write a review of each book and article demonstrating knowledge and analysis of the studied material.

HIST 498R : Directed Readings. (.5-3:3:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Students will read assigned books and articles critically, thoughtfully, and carefully.
- Students will write a review of each book and article demonstrating knowledge and analysis of the studied material.

## 500-Level Graduate Courses (available to advanced undergraduates)

HIST 500R : Special Studies in History. (1-3:3:0)

NOTE: Directed by visiting or resident faculty. Check with department secretary for current topics and instructor.

**Course Outcomes**

There are no course outcomes available

HIST 564 : Sources and Problems in Western U.S. History. (3:3:0)

DESCRIPTION: Lecture, discussion, readings, and student writing on historians' sources and points of view regarding the American West.

**Course Outcomes**

There are no course outcomes available

HIST 565 : Sources and Problems in Latter-day Saint History. (3:3:0)

DESCRIPTION: Lecture, discussion, readings, and student writing on historians' sources and points of view regarding Latter-day Saint history.

**Course Outcomes**

There are no course outcomes available

HIST 566 : Sources and Problems in Utah History. (3:3:0)

DESCRIPTION: Lecture, discussion, readings, and student writing on historians' sources and points of view regarding Utah history.

**Course Outcomes**

There are no course outcomes available

HIST 587 : Philosophies of History. (3:3:0)

DESCRIPTION: Fundamental problems and types of historical analysis and interpretation, philosophies of history, and work of outstanding historians.

**Course Outcomes**

There are no course outcomes available

HIST 590R : Special Topics. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Western American, religious, family, Asian, Latin American, and Near Eastern history.

**Course Outcomes**

There are no course outcomes available

HIST 598R : Special Readings in History. (1-3:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

There are no course outcomes available

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Majors**

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- BA in History
- BA in History Teaching
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**Minors**

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- History
- History Teaching

**Certificate**

- Family History—Genealogy

**Course Information**

- History (Hist) Courses

**Native American Studies**

**Minor**

- Native American Studies

**Faculty**

# Native American Studies

Many American Indian and non-Indian students graduating from Brigham Young University in studies such as anthropology, English, education, sociology, history, business, and political science will be brought into contact with Native Americans through their occupations.

The Native American Studies minor is designed to supplement students of various disciplines so that they may become more culturally aware of the heritage of American Indians, thus promoting better understanding and cooperation.

The minor has been designed so that students may select classes from a variety of interdepartmental courses, if desiring a general background, or a combination of classes for an in-depth study in a specific discipline.

At Brigham Young University students can major in American Studies with course work designed to emphasize American Indian history.

Make application to or obtain further information from the History Department.

**College of Family, Home, and Social Sciences Home**

**History Department Home**

**Majors**

- BA in Family History—Genealogy
- BA in History
- BA in History Teaching
- BS in Teaching Social Science

**Minors**

- Family History—Genealogy
- History
- History Teaching

**Certificate**

- Family History—Genealogy

**Course Information**

- History (Hist) Courses

**Native American Studies**

**Minor**

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**Faculty**

# Minor in Native American Studies (21 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete at least two of the following core courses:

HIST 386 : Nineteenth-Century American Indian History. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: History of various Indian tribes, their cultures, and their relationships with European nations and the United States, including military campaigns.

**Course Outcomes**

- Students will be understand and appreciate Indian history and cultures, employ historical research skills effectively, and apply appropriate methods and theories to the study of Indian history and contemporary Native American issues.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.
- Recognize important ideas of Indian and non-Indian cultural traditions and how LDS Native Americans have balanced their intellectual pursuits, their faith, and their culture.
- Learn to communicate effectively both orally and in writing about Native American topics
- Have meaningful interactions with Indian communities, individuals, and organizations to provide outreach and to help address contemporary challenges

HIST 387 : Twentieth-Century American Indian History. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Sociocultural factors that affect twentieth-century native Americans in both urban and reservation settings, including current challenges facing Indian communities.

**Course Outcomes**

- Students will be understand and appreciate Indian history and cultures, employ historical research skills effectively, and apply appropriate methods and theories to the study of Indian history and contemporary Native American issues.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations.
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.
- Recognize important ideas of Indian and non-Indian cultural traditions and how LDS Native Americans have balanced their intellectual pursuits, their faith, and their culture
- Learn to communicate effectively both orally and in writing about Native American topics.
- Have meaningful interactions with Indian communities, individuals, and organizations to provide outreach and to help address contemporary challenges.

HIST 388 : Indians in Colonial America. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: North American Indian culture, Indian/European interactions, demographic, social, political factors among Indians prior to contact with Europeans through colonization and the American Revolutionary War.

**Course Outcomes**

- Students will demonstrate an understanding of the major issues and events in colonial Native American historiography and their modern-day consequences.
- Students will be able to identify, evaluate and locate appropriate primary sources for colonial Native American history
- Students will be able to use primary sources to support an argument based on a major issue in colonial Native American historiography.
- Students will be able to identify and critically respond to the arguments of historical monographs.

2. Complete 15 hours from at least three disciplines:

ANTHR 317 : Native Peoples of North America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Indian groups at the time of the European arrival; social organization, beliefs, values, economy, and adaptation to environment.

**Course Outcomes**

- Through course assignments, students will gain an introductory knowledge of the major Native American cultures at the time of European contact including but not limited to social organization, belief systems, values, economies, and adaptations to environments.
- Through course assignments and hands-on access to the collections of the BYU Museum of Peoples and Cultures, students will gain a greater depth of knowledge concerning the diverse range of material culture represented by the indigenous peoples of North America.
- Through course assignments, students will increase their skill sets in critical thinking, research, analysis, and writing skills in the disciplines of anthropology and archaeology.

ANTHR 350 : Archaeological Cultures of North America. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Cultural developments of North American Indians (Canada, U.S., and northern Mexico) before Columbus.

**Course Outcomes**

- Students will gain an introductory level comprehension of the diverse cultural developments of North American indigenous peoples as well as selected examples from Canada and Northern Mexico through the study of archaeological evidence and material culture.
- Students will gain a more in-depth comprehension of the diversity and complexity of data sets regarding archaeological evidence via material cultural remains by hands-on interactions with the collections of the Museum of Peoples and Cultures at BYU.
- Through course assignments, students will increase their skills in critical thinking, research, analysis, and writing. Emphasis will be placed on writing in the discipline.

ANTHR 530 : Great Basin Archaeology. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Anthr 350 or equivalent.

DESCRIPTION: Overview of ethnography, history of research, and prehistory of the Great Basin culture area. Current issues in archaeological research emphasized.

**Course Outcomes**

- Students will gain archaeological and cultural knowledge of the major native peoples of the Great Basin Region from pre-history through European contact through a study of their archaeologial remains and ethnographic studies.
- Students will have hands-on experiences with the collections of the Museum of Peoples and Cultures that are representative of the cultures of the Great Basin Region.

ANTHR 535 : Southwest Seminar. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Anthr 350 or equivalent.

DESCRIPTION: Overview of ethnography and prehistory of American Southwest. Current issues in archaeological research emphasized.

**Course Outcomes**

There are no course outcomes available

ENGL 358R : Ethnic Literatures. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Study of literary texts representative of a thoughtfully focused dimension of a given ethnic group.

**Course Outcomes**

There are no course outcomes available

: Native American Literature.

**Course Outcomes**

: African American Literature.

**Course Outcomes**

: Asian American Literature.

**Course Outcomes**

: Latino/a American Literature.

**Course Outcomes**

: Jewish American Literature. (0::)

**Course Outcomes**

(Native American topics only)

FLANG 102R : First-Year Language Study. (4:5:1)

WHEN TAUGHT: Contact Department.
PREREQUISITE: FLANG 101R
DESCRIPTION: Second-semester speaking, listening, reading, and writing skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

No outcomes are available at this time.

(Navajo or Shoshone)

HIST 357 : The Indian in Latin American History. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: History of Latin American Indians from preconquest days to the present; achievements, contributions, and problems.

**Course Outcomes**

- Students will be able to explain and analyze the political, economic, social, religious, and cultural structures of the Mayas, Aztecs, and Incas, how they were transformed by the Spanish conquest, and how they developed in reaction to European colonialism.
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills.
- Students will analyze historical questions and place them in historiographical context.

HIST 360 : American West to 1900. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: The American West as a place of great diversity. Topics include Native American societies, European colonization, explorations, the fur trade, overland migrations, Indian relations, mining, settlement, and the environment.

**Course Outcomes**

- Students will be able to explain and interpret major developments and historical terms in the history of the American West before 1900.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.

HIST 361 : The American West Since 1900. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Pivotal developments in the twentieth-century West, including urbanization, Sun Belt migration, political protest, labor history, Native American history, immigration, water policy, tourism, military-industrial complex, Hollywood.

**Course Outcomes**

- Students will be able to explain and interpret major developments and historical terms in the history of the American West since 1900.
- Students will be able to interpret primary documents and use evidence from those documents to support historical assertions and interpretive generalizations.
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.

HIST 363 : The Spanish Frontier in North America. (3:3:0)

DESCRIPTION: Spanish exploration, occupation, and institutions of northern Mexico, the American southwest, and Florida, 1521-1821; Mexican period to 1848.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in the history of the Spanish and Mexican northern frontier in North America between approximately 1492 and 2011
- Students will be able to analyze and interpret primary source documents
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.

**HIST 495R : Directed Research. (3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's prior consent.
DESCRIPTION: Student research directed by faculty member on topic of mutual interest.
NOTE: Research assistants must do additional work for credit.

**Course Outcomes**

- Students will identify and clearly articulate a substantive academic research problem.
- Students will produce a bibliography for reading and research using historical standards.

- Students will produce a written report demonstrating knowledge of the studied material.

**HIST 498R : Directed Readings. (.5-3:3:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**
- Students will read assigned books and articles critically, thoughtfully, and carefully.
- Students will write a review of each book and article demonstrating knowledge and analysis of the studied material.

REL C 293R : Specialized Studies in Family History (Genealogy). (1:1.0:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Using documents from specific regional and organizational sources to identify ancestors and submit their names for temple ordinances.

**Course Outcomes**
No outcomes are available at this time.

: LDS Family History.
**Course Outcomes**

: United States and Canada Family History.
**Course Outcomes**

: British Family History.
**Course Outcomes**

: Scandinavian Family History.
**Course Outcomes**

: Native American Family History.
**Course Outcomes**

: French and Italian Family History.
**Course Outcomes**

: Latin American, Spanish, and Portuguese Family History.
**Course Outcomes**

: Slavic Family History.
**Course Outcomes**

: Germanic Family History.
**Course Outcomes**

(Native American topics only)
SOC 113 : Multicultural America. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Diverse cultural heritages in the United States. Cultures studied scientifically will include African American, Hispanic, Asian American, and Native American.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

SOC 323 : Racial and Minority-Group Relations. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Social psychological and social structural analysis of racial and ethnic relations; prejudice, discrimination, responses, protests, current issues.

**Course Outcomes**
- Demonstrate how the continuing influence and changing meaning of ethnic heritage is bound up in contemporary western culture, both as experienced by others and in their own lives.
- Describe the role of childhood in the construction of moral adulthood, and identify the community consequences of connections and continuity in the life course, as opposed to alienation and boundedness.
- Identify sources of intellectual and personal balance and of communal and personal strength in dealing with problems of cultural identity and social diversity.
- Identify strengths and weaknesses in varying subcultures, including our own, to highlight sources of self

deception, and to propose personal and community actions whereby our â woundsâ may be healed.
- Describe relationships between Americaâ s history of slavery, our own attitudes toward essential work and those who perform it, and existing racist and sexist attitudes.
- Offer proposals whereby the harmonizing of social opposites can be achieved.
- Understand the consequences, positive and negative, of ethnic contact and interaction on social creativity and problem solving, and to identify consequences of such contact in their own lives.
- Identify historical examples of positive and negative ethnic contact, in terms of social innovation and creativity, and apply them to contemporary situations
- Describe the complexities of social change and social engineering, cite historical examples in which efforts at social improvement generated unanticipated and sometimes counterproductive effects, and anticipate such effects in their own efforts at personal and social improvement.
- Clarify the differences between race and ethnicity, and the effects of so categorizing our fellow humans.
- Portray the â crisisâ contemporary civilizations face in terms of the age-old tension between settled and tribal peoples, and propose actions to ameliorate the negative effects of detribalization and the continuing increase in social diversity.
- Have a working understanding of the nature and limitations of prevailing worldviews, especially modernism and postmodernism, and their relation to social morality. Students understand the present-day significance of the Holocaust and other instances of genocide in terms of their lessons for humanity. They can identify the advantages and limits of reason and rationality, and understand that rationality and ethics may point in opposite directions, with potentially disastrous consequences for minorities.
- Demonstrate a basic familiarity with the ethnic structure of American society, how it is changing, and its implications for the future.

**SOC 390R : Special Topics in Contemporary Sociology. (.5-3:3:0)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Course content varies from year to year.

**Course Outcomes**

- Students will be able to recognize the ways in which social structure and issues (government, family, education, health-care institutions, the media, etc.) have affected and affect women's lives.
- Students will begin to gain an appreciation of the contributions of women throughout history and internationally.
- Students will be able to perform and present research related to women's studies in oral, written, and/or multi-media formats.
- Students will be able to make informed choices about their own behavior, health, education, and employment decisions based on their understanding of the role gender plays in relationships and society.
- Students will be able to define and use in speech and writing the critical vocabulary basic to the field of women's studies.

**Requires approval by NAS coordinator.

*Hours include courses that may fulfill university core requirements.

## Show all History (Hist) Courses

**College of Family, Home, and Social Sciences Home**

**History Department Home**

**Majors**

- BA in Family History—Genealogy
- BA in History
- BA in History Teaching
- BS in Teaching Social Science

**Minors**

- Family History—Genealogy
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**Certificate**

- Family History—Genealogy

**Course Information**

- History (Hist) Courses

**Native American Studies**

**Minor**

- Native American Studies

**Faculty**

# History Faculty

Show All
Hide All

## Professors

Brown, Kendall W.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1973
MA, Duke University, 1975
PhD, Duke University, 1979

Cannon, Brian Q.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1984
MA, University of Utah, 1986
PhD, University of Wisconsin, 1992

Garcia, Ignacio Molina

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Texas A&I University, 1976
MA, University of Arizona, 1989
PhD, University of Arizona, 1995

Hamblin, William James

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1978
MA, University of Michigan, Ann Arbor, 1984
PhD, University of Michigan, Ann Arbor, 1985

Harline, Craig E.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1980
MA, Rutgers University, 1984
PhD, Rutgers Unviersity, 1986

Pixton, Paul B.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1965
MA, University of Utah, 1967
PhD, University of Iowa, 1972

Rugh, Susan Sessions

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1974
MA, University of Chicago, 1986

PhD, University of Chicago, 1993

Ryskamp, George Richard
- **COLLEGE:** Family, Home, and Social Sciences
- **DEPARTMENT:** History
- **RANK:** Professor
- **DEGREES:** BA, Brigham Young University, 1974
  JD, Brigham Young University, 1979

Thorp, Malcolm R.
- **COLLEGE:** Family, Home, and Social Sciences
- **DEPARTMENT:** History
- **RANK:** Professor
- **DEGREES:** BS, Brigham Young University, 1964
  MS, Brigham Young University, 1967
  PhD, University of Wisconsin, Madison, 1972

Underwood, Grant Revon
- **COLLEGE:** Family, Home, and Social Sciences
- **DEPARTMENT:** History
- **RANK:** Professor
- **DEGREES:** BA, Brigham Young University, 1977
  MA, Brigham Young University, 1981
  PhD, University of California, Los Angeles, 1988

York, Neil Longley
- **COLLEGE:** Family, Home, and Social Sciences
- **DEPARTMENT:** History
- **RANK:** Professor
- **DEGREES:** BA, Brigham Young University, 1973
  MA, Brigham Young University, 1975
  PhD, University of California, Santa Barbara, 1978

## Associate Professors

Buckley, Jay Harry
- **COLLEGE:** Family, Home, and Social Sciences
- **DEPARTMENT:** History
- **RANK:** Associate Professor
- **DEGREES:** BA, Brigham Young University, 1994
  MA, Brigham Young University, 1996
  PhD, University of Nebraska, 2001

Carter, Karen
- **COLLEGE:** Family, Home, and Social Sciences
- **DEPARTMENT:** History
- **RANK:** Associate Professor
- **DEGREES:** BA, Brigham Young University, 1995
  MA, Brigham Young Univeristy, 2000
  PhD, Georgetown University, 2006

Choate, Mark Irvan
- **COLLEGE:** Family, Home, and Social Sciences
- **DEPARTMENT:** History
- **RANK:** Associate Professor
- **DEGREES:** BA, Yale University, 1995
  MA, Yale University, 1996
  MPhil, Yale University, 1998
  PhD, Yale University, 2002

de Schweinitz, Rebecca L.
- **COLLEGE:** Family, Home, and Social Sciences
- **DEPARTMENT:** History
- **RANK:** Associate Professor
- **DEGREES:** BA, Brigham Young University, 1992
  MA, University of Virginia, 1997
  PhD, University of Virginia, 2004

Dursteler, Eric R.
- **COLLEGE:** Family, Home, and Social Sciences
- **DEPARTMENT:** History

**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1988
MA, Brigham Young University, 1992
MA, Brown University, 1994
PhD, Brown University, 2000

Harreld, Donald James
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, University of Minnesota, Minneapolis, 1983
MA, University of Minnesota, Minneapolis, 1996
PhD, University of Minnesota, Minneapolis, 2000

Harris, Amy
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, American University, 2000
PhD, University of California, Berkeley, 2006

Haslam, Gerald Myron
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1972
MA, University of Utah, 1974
PhD, Brigham Young University, 1981

Hodson, Christopher G.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Utah State University, 1998
MA, Utah State University, 1999
PhD, Northwestern University, 2004

Johns, Andrew L.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, University of California, Santa Barbara, 1995
PhD, University of California, Santa Barbara, 2000

Kerry, Paul
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1989
MA, Bowling Green State University, 1991
MA, University of Chicago, 1995
DPhil, University of Oxford, 1998

Kimball, Richard Ian
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1993
MA, Purdue University, West Lafayette, 1995
PhD, Purdue University, West Lafayette, 1999

Larsen, Kirk W.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, Harvard University, 1994
PhD, Harvard University, 2000

Mason, Matthew E.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History

**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1995
MA, University of Maryland, 1997
PhD, University of Maryland, 2002

Miller, Shawn William
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Columbia University, 1992
PhD, Columbia University, 1997

Pulsipher, Jenny Hale
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, Brigham Young University, 1989
PhD, Brandeis University, 1999

Richards, Mary Stovall
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1973
MA, University of Chicago, 1976
PhD, University of Chicago, 1983

Shumway, Jeffrey Merrill
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University—Hawaii, 1992
MA, Brigham Young University, 1994
PhD, University of Arizona, 1999

Skabelund, Aaron
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1995
MA, Stanford University, 1997
MPhil, Columbia University, 2002
PhD, Columbia University, 2004

Ward, Evan
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1995
MA, University of Georgia, 1997
PhD, University of Georgia, 2000

## Assistant Professors

Anderson, Stewart
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Westminster College, 2004
MA, Binghamton University, 2007
PhD, Binghamton University, 2011

Auman, Karen
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, San Jose State University, 2005
PhD, New York University, 2013

Cooper, Glen M.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1988
MA, Columbia University, 1995
MPhil, Columbia University, 1997
PhD, Columbia University, 1999

Davis, Timothy M.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1996
MA, University of Colorado, Boulder, 1999
MPhil, Columbia University, 2002
PhD, Columbia University, 2008

Fluhman, John Spencer

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, University of Wisconsin—Madison, 2000
PhD, University of Wisconsin—Madison, 2006

Hadfield, Leslie

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Utah State University, 2002
MA, Ohio University, 2005
PhD, Michigan State University, 2010

Hardy, Jeffrey

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2001
MA, Brigham Young University, 2006
PhD, Princeton University, 2011

Madsen, Grant C.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, University of Virginia, 1995
PhD, University of Chicago, 2011

Nokes, Jeffery D.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1991
MEd, Utah State University, 1996
PhD, University of Utah, 2005

Stratford, Edward P.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** History
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2000
MA, University of Chicago, 2002
PhD, University of Chicago, 2010

## Assistant Teaching Professor

Crandell, Jill N.

**COLLEGE:** Family, Home, and Social Sciences

**DEPARTMENT:** History
**RANK:** Assistant Teaching Professor
**DEGREES:** BA, Brigham Young University, 1981
MA, Brigham Young University, 2010

**College of Family, Home, and Social Sciences Home**

**Political Science Department Home**

**Majors**

- BA in Political Science

**Minors**

- International Strategy and Diplomacy
- Legal Studies
- Political Science
- Political Science Teaching
- Political Strategy

**Course Information**

- Political Science (Poli) Courses

**Faculty**

# Political Science

Sven E. Wilson, Chair
745 SWKT, (801) 422-9018

College of Family, Home, and Social Sciences Advisement Center
1041 JFSB, (801) 422-3541

## Admission to Degree Program

All degree programs in the Department of Political Science are open enrollment.

## The Discipline

The political science major is designed to fulfill the admonition of the Doctrine and Covenants (88:79–80) to teach one another "things which are at home, things which are abroad; the wars and the perplexities of the nations, and the judgments which are on the land; and a knowledge also of countries and of kingdoms that ye may be prepared in all things."

Politics extends far beyond the immediate concerns of politicians or pollsters; it is essential to the human condition. Since we are all shaped by the institutions we inhabit, political science helps us to understand not only our world but ourselves. It involves fundamental choices concerning our life in communities whether locally, nationally, or globally. Without politics there could be only chaos and conflict. With politics there is the chance for order and thus the opportunity to seek prosperity and fulfillment. Often conflictual but just as often cooperative, politics reflects our basic needs and interests, our highest aspirations, and the often harsh requirements of power.

Political science involves this full range of inquiry, including questions of "who gets what," questions of the best or most just political order, and questions of the nature, uses, and abuses of power. Political science students will be exposed to a broad range of perspectives or great ideas about politics to better understand questions such as "Why is campaign finance reform so difficult?" "Why did the Soviet Union fall?" "Were the Athenians justified in condemning Socrates to death?" and "Do democracies fight fewer wars?" Students will learn a variety of methods ranging from statistical analysis of quantifiable data to historical comparison of institutions to reflection on influential texts. Before graduating, students will not only better define their own values and ideas about politics but also develop their own significant research project as political scientists. Students will be prepared "in all things" to influence their communities for the better.

## Career Opportunities

The Political Science Department offers an undergraduate degree in Political Science for students who are preparing for public service, graduate study in related fields, or professional degrees in law or business, as well as for liberal arts students who are interested in an undergraduate major that focuses on challenging questions facing modern society. The program is structured around a series of tracks that match these vocational choices.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in Political Science** (Program Outcomes)

**Minor in Political Science**
**Minor in Political Science Teaching**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Internships

All political science students should enrich their undergraduate education and enhance their career prospects with an off-campus internship experience. Several high-quality opportunities are available for which credit may be earned toward the major or minor.

**Washington Seminar.** Students from any academic discipline spend a semester or term in Washington, D.C., working in government, business, communications, or the arts. Complementing course work involving readings and briefings on contemporary national issues is part of the curriculum. From 6 to 12 hours of upper-division credit may be earned.

**Utah State Legislature Internship.** During each winter semester students from any academic discipline may work as interns in the Utah State Legislature. Students interested in legislative and public policy processes will particularly benefit from the experience. Complementing course work can optionally be taken in conjunction with the internship. From 5 to 14 hours of upper-division credit may be earned.

**State and Local Government Internships.** Throughout the year students may intern with city, county, or state governments, as well as the district offices of U.S. senators and representatives or other relevant organizations(availability of positions may vary). From 3 to 6 hours of upper-division credit may be earned.

**International Internships.** The International Internship Program at the David M. Kennedy Center places students in a variety of internships with foreign governments and international institutions. Some of these internships are eligible for credit towards the major.

## Requirements

1. Internships should be completed during the junior or senior year. Prior to the internship students should have completed Pl Sc 110 and 200.
2. Students must have a cumulative grade point average of 2.7 or better (Washington Seminar requires a 3.0) and be in good academic standing. Strong research and writing skills are important qualifications.
3. All internship programs have a strong and complementing academic component to help students gain the most from their experience. Students completing any of the above internships must be enrolled for credit.

College of Family, Home, and Social Sciences Home

Political Science Department Home

Majors

- BA in Political Science

Minors

- International Strategy and Diplomacy
- Legal Studies
- Political Science
- Political Science Teaching
- Political Strategy

Course Information

- Political Science (Poli) Courses

Faculty

# BA in Political Science (41-44 hours*)

Show All Course Descriptions
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## The Discipline

See general description of the discipline.

## Career Opportunities

Career choices open to graduates in political science include law, teaching, business, journalism, the media, interest groups, political consulting, and non-profit associations. In addition, majors are also placed with federal, state, and local governments and are found in elective politics. A number of these options do require additional graduate training.

## Program Requirements | View MAP | View Program Outcomes

1. Introduction to the Major. Complete one course from three of the following four groups. At least one of these courses must be Poli 210, Poli 250, or Poli 270:

   a. Political Philosophy:
   POLI 201 : Western Political Heritage 1. (3:3:0)
   OFFERED: Honors also.
   WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
   DESCRIPTION: Western civilization from Greek antiquity to Renaissance, primarily from perspective of political philosophy and scriptures; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.
   NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

   **Course Outcomes**
   There are no course outcomes available

   : Honors Western Political Heritage 1.
   **Course Outcomes**

   POLI 202 : Western Political Heritage 2. (3:3:0)
   OFFERED: Honors also.
   WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
   DESCRIPTION: Western civilization from Renaissance to present, primarily from perspective of political philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.
   NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

   **Course Outcomes**
   There are no course outcomes available

   b. American Politics:
   POLI 110 : American Government and Politics. (3:3:0)
   OFFERED: Honors also. Independent Study also.
   WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
   DESCRIPTION: Origin and development of federal Constitution; national, state, and local governments and politics.

   **Course Outcomes**
   There are no course outcomes available

POLI 210 : Principles of American Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Poli 200.

DESCRIPTION: An introduction to the subfield of American politics for advanced students and majors. Basic concepts, theories, and methods of American politics and political science.

**Course Outcomes**

There are no course outcomes available

c. Comparative Politics:

POLI 150 : Comparative Government and Politics. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Patterns of European, Asian, Latin American, and other political systems.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 250 : Principles of Comparative Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Poli 200.

DESCRIPTION: An introduction to the subfield of comparative politics for advanced students and majors. Basic concepts, theories, and methods of comparative politics and political science.

**Course Outcomes**

There are no course outcomes available

d. International Relations:

POLI 170 : Introduction to International Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Basic forces, practices, institutions, and foreign policies of major powers; problem areas in international politics.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 270 : Principles of International Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Poli 200.

DESCRIPTION: An introduction to the subfield of international relations for advanced students and majors. Basic concepts, theories, and methods of international relations and political science.

**Course Outcomes**

There are no course outcomes available

2. Philosophy. Complete at least one of the following:

POLI 201 : Western Political Heritage 1. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Western civilization from Greek antiquity to Renaissance, primarily from perspective of political philosophy and scriptures; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Western Political Heritage 1.

**Course Outcomes**

POLI 202 : Western Political Heritage 2. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Western civilization from Renaissance to present, primarily from perspective of political philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

POLI 367 : Contemporary Political Theory. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: Poli 201 or Poli 202 or Phil 201 or Phil 202.
DESCRIPTION: History of political science, including the moral and ethical dimensions of politics.

**Course Outcomes**
There are no course outcomes available

**Note:** Poli 201 or Poli 202 can double-count for Requirement 1a.

3. Introductory Research and Writing. Complete the following:

POLI 200 : Political Inquiry. (4:3:1)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Methodology of political science, including theory and techniques of qualitative and quantitative research design.
NOTE: Prerequisite to all upper-division courses.

**Course Outcomes**
There are no course outcomes available

**Note:** This course is a prerequisite to many other courses and should be taken as soon as possible.

4. Research Project. Complete one of the following:

POLI 400 : Research Project in Political Theory. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 200 & POLI 201; or POLI 200 & POLI 202
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.

**Course Outcomes**
There are no course outcomes available

POLI 410 : Research Project in American Politics. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 110 & POLI 200; or POLI 210 & POLI 200; or instructor's consent.
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.
NOTE: For political science majors only.

**Course Outcomes**
There are no course outcomes available

POLI 430 : Research Project in Public Policy. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 110 & POLI 200; or POLI 210 & POLI 200; or instructor's consent.
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.
NOTE: For political science majors only.

**Course Outcomes**
No outcomes are available at this time.

POLI 450 : Research Project in Comparative Politics. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 150 & POLI 200; or POLI 250 & POLI 200; or instructor's consent.
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.

**Course Outcomes**
There are no course outcomes available

POLI 470 : Research Project in International Relations. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 170 & POLI 200; or POLI 270 & POLI 200; or instructor's consent.
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.

**Course Outcomes**

There are no course outcomes available

**Note:** This course should be taken as soon as possible after Poli 200 because it will provide skills for many other courses. In combination with Poli 200, it fulfills the University Core Advanced Written and Oral Communication requirement.

5. Analytical and Professional Skills:

   a. Complete the following:

   POLI 328 : Statistical Analysis. (4:3:1)

   WHEN TAUGHT: Fall; Winter

   PREREQUISITE: POLI 200

   DESCRIPTION: Quantitative techniques in political research.

   NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

   **Course Outcomes**

   There are no course outcomes available

   b. Complete one course from the following:

   POLI 302 : Experimental Research Methods. (3:3:0)

   WHEN TAUGHT: Contact Department.

   PREREQUISITE: Poli 200 and Poli 328, or concurrent enrollment.

   DESCRIPTION: Students will learn how to conduct experiments in the social sciences. All students will conduct an original experiment, learn how to analyze the data, and present their results in a publishable format.

   **Course Outcomes**

   There are no course outcomes available

   POLI 303 : Qualitative Methods. (3:3:0)

   WHEN TAUGHT: Contact Department.

   PREREQUISITE: POLI 200

   DESCRIPTION: Qualitative methods for gathering data and analyzing theories, including concept formation, textual analysis, interviewing, archival research, case studies, and comparative historical analysis.

   **Course Outcomes**

   There are no course outcomes available

   POLI 304 : Game Theory in Political Science. (3:3:0)

   WHEN TAUGHT: Contact Department.

   DESCRIPTION: Introduction to game theory, concentrating on applications in politics.

   **Course Outcomes**

   There are no course outcomes available

   POLI 305 : Survey Research Methods. (3:3:0)

   WHEN TAUGHT: Contact Department.

   PREREQUISITE: Poli 328 or concurrent enrollment.

   DESCRIPTION: Teaches principles of survey research methods from a Total Survey Error perspective. Topics and assignments include sampling, non-response, coverage, measurement, and analysis. Course project will conduct a survey for a client from start to finish.

   **Course Outcomes**

   There are no course outcomes available

   POLI 306R : Topics in Political Science Methods. (3:3:0)

   WHEN TAUGHT: Contact Department.

   DESCRIPTION: Advanced methods of political science. Topics selected by instructor.

   **Course Outcomes**

   There are no course outcomes available

   POLI 332 : Public Policy Analysis. (3:3:0)

   PREREQUISITE: POLI 200

   DESCRIPTION: Analysis of how societies can and should choose between different public policy options to achieve public ends, with a focus on applied cost-benefit analysis.

**Course Outcomes**

No outcomes are available at this time.

POLI 367 : Contemporary Political Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Poli 201 or Poli 202 or Phil 201 or Phil 202.

DESCRIPTION: History of political science, including the moral and ethical dimensions of politics.

**Course Outcomes**

There are no course outcomes available

POLI 421 : Constitutional Law - Rights and Immunities. (3:3:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

There are no course outcomes available

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

ECON 478 : Game Theory and Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Application of game theory to study strategic interaction between individuals and organizations. Applications include imperfect competition, insurance markets, and bargaining.

**Course Outcomes**

- Demonstrate an understanding of the game theoretic method of analysis.Define a Nash Equilibrium and discuss refinements of the Nash Equilibrium Concept.Think abstractly and rigorously about strategic interaction.

ECON 488 : Applied Econometrics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 388

DESCRIPTION: Application of econometric methods, introduction to research design, and evaluation of empirical research. Special attention given to linking economic theory and econometrics, and causal inference.

**Course Outcomes**

- Demonstrate an understanding of the assumptions underlying commonly used empirical approaches for the identification of causal effects, including:Ordinary least squaresMatchingInterrupted time seriesDifference in differencesFixed effectsInstrumental variablesDemonstrate an understanding of the interplay between economic theory and empirical work.Read and understand contemporary academic literature in economics. Students will provide written evaluations of selected academic papers, including a clear description and critique of the empirical methods used.Apply modern empirical methods using data analysis exercises.Complete a research project in which they identify a question, assemble a dataset, thoughtfully apply appropriate empirical methods, and clearly describe their methodology, assumptions, and findings.

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Acc 200.

DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

GEOG 213 : Earth Observation and Image Interpretation. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Principles of earth observation: primarily air photo/large-scale satellite imagery interpretation, basic field methods, photogrammetry.

**Course Outcomes**

- Students will be able to perform a simple cultural / physical interpretation of simple monoscopic imagery.
- Students will be able to complete simple measurements from historical air photos including height, distance, area, scale, and coordinate-related problems.
- Students wil be able to complete simple problems related to electromagnetic radiation and atmospheric effects.

IS 201 : Introduction to Management Information Systems. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IS 110.

DESCRIPTION: Using technology to solve business problems. Hands-on spreadsheet, database, and Internet software in a business context.

**Course Outcomes**

- Manipulate and analyze data to make appropriate recommendations for managerial decision-making.
- Design, build, and query a database to apply correct principles of data storage and extraction.
- Develop effective personal computer and Internet search skills.

PHIL 205 : Introduction to Formal Logic. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: History and use of syllogistic and propositional logic; evaluating arguments with Venn diagrams, truth tables, and Copi-style proofs and proof strategies; informal reasoning and fallacies.

**Course Outcomes**

- Know the basic vocabulary and concepts of formal and informal logic.
- Learn how to appraise validity by refuting invalid arguments and by constructing formal proofs for valid ones.
- Learn how to translate ordinary language into logical symbolism.

STAT 234 : Methods of Survey Sampling. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Sampling frames; questionnaire design; simple random, systematic, stratified, and cluster sampling methods; comparing domain means; contingency table analysis.

**Course Outcomes**

- Identify and sample using simple random sampling and various forms of stratified sampling, cluster sampling, and systematic sampling
- Accurately identify and perform variance calculations for basic designs
- Participate in a real project involving sampling methodologies and appropriate point estimate and variance calculations
- Create graphical representations of results
- Demonstrate effective written and oral communication skills as they present their findings

6. Professional Tracks. Complete 15 credit hours in political science, or complete 15 credit hours within one of the following tracks. Unless noted, no double-counting of major courses allowed.

   a. International Strategy and Diplomacy

      i. Complete two courses from the following list:

      POLI 342 : Gender and Politics. (3:3:0)

      WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.
DESCRIPTION: Theories of representation; gender and citizenship; gender and political candidacy; gender and leadership; gendered political issues.

**Course Outcomes**
There are no course outcomes available

POLI 343 : Comparative Institutional Design. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 150 or 250.
RECOMMENDED: Poli 328.
DESCRIPTION: Studies the rich variety of political institutions around the world, in both developed and developing countries, democracies, and dictatorships, and their implications for policy decisions and political, social and economic outcomes such as political violence, economic development, and democratization.

**Course Outcomes**
There are no course outcomes available

POLI 344 : Comparative Political Economy. (3:3:0)
PREREQUISITE: Poli 150 or 250; Poli 200.
DESCRIPTION: Overview of political economy from a comparative perspective. Classic theorists (Smith, Marx, Schumpeter, etc.); classic questions (industrialization, national economic policy, property, globalization, law, and economics).

**Course Outcomes**
There are no course outcomes available

POLI 345 : Comparative Parties and Elections. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Analyzes the electoral process and political parties in both the United States and other countries. Special attention is given to gender issues, campaigns, financing, corruption, extremist parties, religion, class, issues, fairness, accountability, electoral rules, and democracy.

**Course Outcomes**
No outcomes are available at this time.

POLI 359R : Topics in Comparative Politics. (3:3:0)
PREREQUISITE: Poli 200 or equivalent.

**Course Outcomes**
There are no course outcomes available

POLI 371 : Foreign Policy Analysis. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200; Poli 170 or 270.
DESCRIPTION: Survey of research regarding multiple levels of foreign policy analysis: individual, group, bureaucratic, societal, economic, systemic.

**Course Outcomes**
No outcomes are available at this time.

POLI 372 : International Political Economy. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Political implications of international trade, investment, and monetary policies within an increasingly interdependent global context; transnationalism.

**Course Outcomes**
There are no course outcomes available

POLI 373 : International Law. (3:3:0)
PREREQUISITE: Poli 200.
DESCRIPTION: Nature and function of international law; recognition, succession, jurisdiction rights, and immunities of states; nationality and jurisdiction over nations.

**Course Outcomes**
There are no course outcomes available

POLI 374 : Ethics and International Affairs. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Ethical considerations in study and practice of international politics. Realism, idealism, and other theories of state behavior subjected to ethical standards.

**Course Outcomes**

There are no course outcomes available

POLI 375 : International Organizations. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: International institutions; transnational relations; rise of newer political organizations: League of Nations, United Nations, European communities, world religions, multinational corporations, terrorist groups, global regimes.

**Course Outcomes**

There are no course outcomes available

POLI 377 : National Security Affairs. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Foreign policy, defense strategy, and intelligence.

**Course Outcomes**

There are no course outcomes available

POLI 378 : International Conflict. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 150, 170, 250, or 270; Poli 200.

DESCRIPTION: Causes of war; alliances and empires; military innovation; civil-military relations; fungibility of forces; terrorism; security studies methods; use and misuse of history.

**Course Outcomes**

There are no course outcomes available

POLI 379R : Topics in International Relations. (.5-3:3:0)

PREREQUISITE: Poli 200 or equivalent.

**Course Outcomes**

There are no course outcomes available

POLI 444 : The Political Economy of Development. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Econ 110, Poli 200.

DESCRIPTION: Political foundations of growth, providing public goods, and political reform in developing countries. Development and how institutions and culture shape it.

**Course Outcomes**

There are no course outcomes available

POLI 472 : International Political Economy of Women. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Effects upon national, international, and developmental policies when women are rendered visible and valued.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 473 : Human Rights. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Causes of human rights violations and societal and state responses; nature, history, and impacts of international human rights norms; ways to define and promote rights.

**Course Outcomes**

There are no course outcomes available

POLI 475 : Civil Wars and Ethnic Violence. (3:3:0)

PREREQUISITE: Poli 200.
RECOMMENDED: Poli 150 or 250; 170 or 270; 328.
DESCRIPTION: Foundations of ethnic and nationalist identities and how they related to civil wars worldwide, emphasizing theoretical explanations of civil wars and their resolution. Key civil war cases examined.

**Course Outcomes**
There are no course outcomes available

POLI 476 : Terrorism. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200.
RECOMMENDED: Poli 150 or 250; 170 or 270; 328.
DESCRIPTION: Defining and conceptualizing terrorism; causes and varieties of terrorism; counterterrorism; the future of terrorism.

**Course Outcomes**
There are no course outcomes available

ii. Complete one course from the following list:

POLI 376 : U.S. Foreign Policy. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Formation, implementation, analysis, and criticism of themes in American foreign policy.

**Course Outcomes**
There are no course outcomes available

POLI 380 : International Relations of Latin America. (3:3:0)
PREREQUISITE: Poli 200 or Lt Am 211.
DESCRIPTION: Factors that affect foreign relations of Latin American countries, including the U.S. role, emphasizing intervention, democracy, development, and trade.

**Course Outcomes**
There are no course outcomes available

POLI 381 : International Relations of the Middle East. (3:3:0)
PREREQUISITE: Poli 200.
DESCRIPTION: Interregional relations and conflicts, political economics, Arab nationalism, processes of political change, alliances, and superpower relations.

**Course Outcomes**
No outcomes are available at this time.

POLI 382 : International Relations of North America. (3:3:0)
DESCRIPTION: Examination and analysis of factors that affect foreign relations of Canada, U.S., and Mexico, emphasizing trade, security, migration, environment.

**Course Outcomes**
There are no course outcomes available

POLI 385 : International Relations of Asia. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Foreign policies and international relations of China, Japan, and Northeast and Southeast Asia; historical and contemporary review and analysis.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

POLI 386 : Japanese Foreign Policy. (3:3:0)
DESCRIPTION: Process and outcomes of Japan's foreign policy; analysis of its relations with other nations in a historical and contemporary setting.

**Course Outcomes**
There are no course outcomes available

POLI 387 : International Relations of Developing Countries. (3:3:0)
WHEN Fall

TAUGHT:
PREREQUISITE: Poli 150, 170, 250, or 270; Poli 328.
DESCRIPTION: Global politics in developing countries, focusing on trade, aid, conflict, women's rights, and the changing global balance of power.

**Course Outcomes**

There are no course outcomes available

POLI 388 : Chinese Foreign Policy. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Structure and process of foreign policy of the People's Republic of China.

**Course Outcomes**

There are no course outcomes available

POLI 393R : Topics in Legal Studies. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Special topics for the Legal Studies track. Topic chosen by instructor.

**Course Outcomes**

There are no course outcomes available

HIST 393 : U.S. Foreign Relations. (3:3:0)
WHEN TAUGHT: Fall Odd Yrs.
DESCRIPTION: U.S. diplomatic history from the American revolution to the present; examines major themes and critical events within both domestic and international contexts.

**Course Outcomes**

- Students will be able to explain and analyze the major themes and problems in the making, implementation, and evolution of U.S. foreign relations from 1776 to the present.
- Students will be able to analyze, interpret, and debate the meanings and historical significance of primary source documents.
- Students will be able to produce an original, analytical, and primary source based historical essay examining a key issue, theme, or individual from the history of U.S. foreign relations.

iii. Complete two courses from the following list:
POLI 341 : Western European Politics. (3:3:0)
RECOMMENDED: Poli 200.
DESCRIPTION: Politics and policy in western Europe. State-building, party systems, nationalism, and cooperation among advanced industrial countries in comparative, historical perspective. Social and Christian democracy; European Union.

**Course Outcomes**

There are no course outcomes available

POLI 347 : Russia/Former Soviet Politics. (3:3:0)
DESCRIPTION: Comparative politics of Russia and Soviet successor states. Development of political systems from common Soviet heritage, emphasizing post-independence politics and institution building.

**Course Outcomes**

There are no course outcomes available

POLI 348 : Government and Politics of Asia. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Comparative analysis of political developments of the major countries of Asia not covered in other country-specific classes.

**Course Outcomes**

There are no course outcomes available

POLI 351 : British Government and Politics. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200.
DESCRIPTION: Examination of the origin and contemporary operation of British political institutions as they relate to British society.

**Course Outcomes**

There are no course outcomes available

POLI 352 : African Politics. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Processes of change and development of nation states; African regionalism and relations with other nations; contemporary political issues.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 353 : China: Government and Politics. (3:3:0)

DESCRIPTION: Structure and behavior of politics; contemporary problems.

**Course Outcomes**

There are no course outcomes available

POLI 354 : Japan: Government and Politics. (3:3:0)

DESCRIPTION: Structure and behavior of politics; contemporary problems.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 355 : Canadian Government and Politics. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Growth and development of Canada and its government; Canada's role in the contemporary world

**Course Outcomes**

No outcomes are available at this time.

POLI 357 : Middle East: Political Systems. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Poli 200.

DESCRIPTION: Social, philosophical, and religious impact on Middle East political institutions in an era of modernization and conflict.

**Course Outcomes**

There are no course outcomes available

POLI 358 : Latin American Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200 or Lt Am 211.

DESCRIPTION: Conceptual and contemporary issues in Latin America's search for political order and economic development.

**Course Outcomes**

There are no course outcomes available

POLI 452 : Islam and Politics. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Tensions and accommodations between religion and politics in Muslim nations.

**Course Outcomes**

There are no course outcomes available

POLI 474 : Arab-Palestinian-Israeli Conflict. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Emphasizes historical background, current situation, and alternatives leading to conflict resolution.

**Course Outcomes**

There are no course outcomes available

iv. Students are strongly encouraged to complete international internships, field studies, and mentored research. Some study abroad programs may also be helpful.

b. Legal Studies

i. Complete three courses from the following list:

POLI 364 : Jurisprudence. (3:3:0)

DESCRIPTION: Problem approach to ancient and modern legal philosophies, emphasizing the nature of justice and the relation of law to morality.

**Course Outcomes**

There are no course outcomes available

POLI 373 : International Law. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Nature and function of international law; recognition, succession, jurisdiction rights, and immunities of states; nationality and jurisdiction over nations.

**Course Outcomes**

There are no course outcomes available

POLI 393R : Topics in Legal Studies. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Special topics for the Legal Studies track. Topic chosen by instructor.

**Course Outcomes**

There are no course outcomes available

POLI 420 : Constitutional Law - American Federal System. (3:3:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

No outcomes are available at this time.

POLI 421 : Constitutional Law - Rights and Immunities. (3:3:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

There are no course outcomes available

POLI 422 : Interests and Ideas in the American Founding. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Poli 202.

DESCRIPTION: A systematic investigation of the American founding, focusing on key interests and ideas represented at the Federal Convention of 1787 (and in other seminal events) emphasizing historical and empirical literature.

**Course Outcomes**

There are no course outcomes available

HIST 392 : U.S. Constitutional History. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Constitutional traditions and constitution making, federalism, and constitutional notions of political equity and social justice, from the colonial period to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments that led to the U.S. Constitution
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

Note: Phil 416 (Philosophy of Law) may be used in place of Poli 364. See your academic advisor for more information.

ii. Complete six additional credit hours from the list in requirement i or from the following list:

POLI 315 : Congress and the Legislative Process. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Poli 110 or 210; Poli 200.

DESCRIPTION: Election process; structure, organization, and procedures of legislative bodies; relations with pressure groups, the president, and executive branch.

**Course Outcomes**

There are no course outcomes available

POLI 331 : Politics and Public Policy. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Introduction to major public policy issue areas and how political processes are used to address social problems.

**Course Outcomes**

There are no course outcomes available

POLI 334 : Public Ethics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Sources of values, areas of conflict with government policy, means of value accommodation.

**Course Outcomes**

There are no course outcomes available

POLI 336 : Government and Religion. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Christian-Hebraic concepts of state. American experience with church-state relations (First Amendment problems). Policy issues of concern to contemporary religions.

**Course Outcomes**

There are no course outcomes available

POLI 342 : Gender and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Theories of representation; gender and citizenship; gender and political candidacy; gender and leadership; gendered political issues.

**Course Outcomes**

There are no course outcomes available

POLI 365 : Early American Political Thought: 1620-1865. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Core principles and seminal texts of American politics from Colonial times through the Lincoln administration.

**Course Outcomes**

No outcomes are available at this time.

POLI 366 : Modern American Political Thought: 1865-Present. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Core principles and seminal texts of American politics from Reconstruction to the present.

**Course Outcomes**

No outcomes are available at this time.

POLI 375 : International Organizations. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: International institutions; transnational relations; rise of newer political organizations: League of Nations, United Nations, European communities, world religions, multinational corporations, terrorist groups, global regimes.

**Course Outcomes**

There are no course outcomes available

POLI 461 : Federalist Papers. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: The primary defense of the Constitution of the United States, which also constitutes the major commentary on that document.

**Course Outcomes**

There are no course outcomes available

POLI 473 : Human Rights. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Causes of human rights violations and societal and state responses; nature, history, and impacts of international human rights norms; ways to define and promote rights.

**Course Outcomes**

There are no course outcomes available

STDEV 168R : Law Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Exploring legal professions. Primary focus on guest lecturers representing various legal professions.

**Course Outcomes**

- 1. Understand what a legal education and career requires and provides.
- 2. Accurately assess whether or not a legal education and career is the correct choice for them.

STDEV 260 : Constitutional Research. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: The United States Constitution; research on original sources used to create the Constitution.

**Course Outcomes**

- Know and develop interpretation and analytic skills regarding the 7 articles and 27 amendments to the Constitution.
- Understand the current issues surrounding Constitutional articles and amendments.
- Improve their editing and research skills.

STDEV 261 : The Law in Literature. (2:2.0:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Examining how the law--including the justice system, attorneys, judges, and clients--has been portrayed in literary works.

**Course Outcomes**

- Have a better understanding of what a legal education and career requires and provides.
- Be able to more accurately assess whether or not a legal education and career is the correct choice for them.
- Be able to critically analyze portrayals of law in literature and other media forms to assess for accuracy.

STDEV 364 : Mediation Techniques and Practices. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Mediation techniques emphasizing practical application and observation of actual mediations.

**Course Outcomes**

- Know and apply the phases of the basic mediation process.
- Know how to prepare for a mediation session and be able to present the essential elements of a mediator's opening statement.
- Be able to identify issues and interests of the parties and set an agenda for the mediation session.
- Be able to skillfully conduct a mediation conference with joint and private meetings, allowing the disputing parties uninterrupted time for expressing viewpoints and interactive time to effectively exchange information, arguments, and offers of settlement.
- Be able to assist the parties in building and writing an agreement and to properly close the mediation session.
- Understand the basic rules of behavior for the parties in a mediation session and the common ethical practices of mediators.

STDEV 365 : Legal Education and Practice. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Successful legal education and practice. Preparation for those planning to attend law school.

**Course Outcomes**

- Students will be able to read, understand, and brief a legal case.
- Students will be able to effectively study and prepare for a law school final examination.

- Students will understand the major secondary sources used in legal research.
- Students will learn how to effectively communicate with others (focusing on legal aspects)
- Students will practice assimilating all legal research into a deliverable final product (memo/brief)

STDEV 368R : Prelaw Review Journal Writing. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Editing and publication for Pre-law Review authors and editors.

**Course Outcomes**

- Understand the procedure for publishing the Prelaw Review.
- Know how to use the Bluebook citation style guide.
- Improve essential legal writing skills.
- Work effectively in writing and editing relationships.

STDEV 496R : Advanced Legal Internship. (1-3:Arr:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Legal internship coordinator's consent.

DESCRIPTION: Legal research; courtroom observation; client and attorney interaction; and reflection exercises.

**Course Outcomes**

- Understand what a legal education and career requires and provides.
- Accurately assess whether or not a legal education and career is the correct choice for them.
- Increase comfort interacting with legal professionals.

c. Political Strategy

i. Complete five courses from the following list:

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

ECON 477 : Political Economics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 378 & ECON 382

DESCRIPTION: Economic models of government structure and function: electoral competition, voter participation and cycles, preference aggregation, information aggregation, externalities and public goods, electoral structure, political agency, influence, and bargaining.

**Course Outcomes**

There are no course outcomes available

POLI 304 : Game Theory in Political Science. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Introduction to game theory, concentrating on applications in politics.

**Course Outcomes**

There are no course outcomes available

POLI 311 : State and Local Government and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Poli 110 or Poli 210.

DESCRIPTION: Relation of state and national governments, forms of state governments and politics, types of municipal governments and their operation.

**Course Outcomes**

There are no course outcomes available

POLI 313 : Interest Groups. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 110 or 210; Poli 200.

DESCRIPTION: Theories on formation and maintenance of interest groups; tactics of groups in legislative, executive, bureaucratic, and court settings; influence of groups on elections and public policy.

**Course Outcomes**

There are no course outcomes available

POLI 314 : The United States Presidency. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 110 or 210; Poli 200.

DESCRIPTION: Presidential power in the United States, focusing on major roles of the American presidency.

**Course Outcomes**

There are no course outcomes available

POLI 315 : Congress and the Legislative Process. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Poli 110 or 210; Poli 200.

DESCRIPTION: Election process; structure, organization, and procedures of legislative bodies; relations with pressure groups, the president, and executive branch.

**Course Outcomes**

There are no course outcomes available

POLI 316 : American Political Parties. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Electoral and policy-making roles of American political parties today and their future in American politics.

**Course Outcomes**

There are no course outcomes available

POLI 317 : Public Opinion and Voting Behavior. (3-4:3:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: POLI 200

RECOMMENDED: Poli 328.

DESCRIPTION: Relationship between attitudes, opinion, and voting behavior in American politics and institutions.

**Course Outcomes**

There are no course outcomes available

POLI 318 : Campaigns and Elections. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Analyzes electoral process in the United States, including history, significance in governance, campaign strategy, finance, media role, etc.

**Course Outcomes**

There are no course outcomes available

POLI 321 : The Media in American Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: News media's role in processes of American politics, including electoral process, legislative process, and public policy-making.

**Course Outcomes**

There are no course outcomes available

POLI 324 : Political Psychology. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

RECOMMENDED: Poli 328.

DESCRIPTION: Survey of classic and contemporary research in political psychology. Special focus on how citizens think and feel about politics and the ways in which those beliefs

shape their interactions with the political world.

**Course Outcomes**

There are no course outcomes available

POLI 342 : Gender and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Theories of representation; gender and citizenship; gender and political candidacy; gender and leadership; gendered political issues.

**Course Outcomes**

There are no course outcomes available

POLI 343 : Comparative Institutional Design. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 150 or 250.

RECOMMENDED: Poli 328.

DESCRIPTION: Studies the rich variety of political institutions around the world, in both developed and developing countries, democracies, and dictatorships, and their implications for policy decisions and political, social and economic outcomes such as political violence, economic development, and democratization.

**Course Outcomes**

There are no course outcomes available

POLI 371 : Foreign Policy Analysis. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200; Poli 170 or 270.

DESCRIPTION: Survey of research regarding multiple levels of foreign policy analysis: individual, group, bureaucratic, societal, economic, systemic.

**Course Outcomes**

No outcomes are available at this time.

POLI 392R : Topics in Political Strategy. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Special topics for the Political Strategy track. Topic chosen by instructor.

**Course Outcomes**

No outcomes are available at this time.

POLI 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Acceptance into program.

DESCRIPTION: Work-study on the international, national, state, and local level.

**Course Outcomes**

There are no course outcomes available

: Washington DC Internship.

**Course Outcomes**

: International Internship.

**Course Outcomes**

: Congressional Internship.

**Course Outcomes**

: State Government Internship.

**Course Outcomes**

: City Government Intership.

**Course Outcomes**

: Pre-Law Internship.

**Course Outcomes**

: Utah Legislature Internship.

**Course Outcomes**

: Campaign Internship.

**Course Outcomes**

POLI 422 : Interests and Ideas in the American Founding. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Poli 202.

DESCRIPTION: A systematic investigation of the American founding, focusing on key interests and ideas represented at the Federal Convention of 1787 (and in other seminal events) emphasizing historical and empirical literature.

**Course Outcomes**

There are no course outcomes available

ii. Students are strongly encouraged to complete internships, work on political campaigns, and gain other practical political experience.

d. Research and Analysis

i. Complete three courses from the following list:

POLI 302 : Experimental Research Methods. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200 and Poli 328, or concurrent enrollment.

DESCRIPTION: Students will learn how to conduct experiments in the social sciences. All students will conduct an original experiment, learn how to analyze the data, and present their results in a publishable format.

**Course Outcomes**

There are no course outcomes available

POLI 303 : Qualitative Methods. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: POLI 200

DESCRIPTION: Qualitative methods for gathering data and analyzing theories, including concept formation, textual analysis, interviewing, archival research, case studies, and comparative historical analysis.

**Course Outcomes**

There are no course outcomes available

POLI 304 : Game Theory in Political Science. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Introduction to game theory, concentrating on applications in politics.

**Course Outcomes**

There are no course outcomes available

POLI 305 : Survey Research Methods. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 328 or concurrent enrollment.

DESCRIPTION: Teaches principles of survey research methods from a Total Survey Error perspective. Topics and assignments include sampling, non-response, coverage, measurement, and analysis. Course project will conduct a survey for a client from start to finish.

**Course Outcomes**

There are no course outcomes available

POLI 306R : Topics in Political Science Methods. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Advanced methods of political science. Topics selected by instructor.

**Course Outcomes**

There are no course outcomes available

POLI 367 : Contemporary Political Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Poli 201 or Poli 202 or Phil 201 or Phil 202.

DESCRIPTION: History of political science, including the moral and ethical dimensions of politics.

**Course Outcomes**
There are no course outcomes available

POLI 400 : Research Project in Political Theory. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 200 & POLI 201; or POLI 200 & POLI 202
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.

**Course Outcomes**
There are no course outcomes available

POLI 421 : Constitutional Law - Rights and Immunities. (3:3:0)
WHEN TAUGHT: Contact Department.

**Course Outcomes**
There are no course outcomes available

POLI 410 : Research Project in American Politics. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 110 & POLI 200; or POLI 210 & POLI 200; or instructor's consent.
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.
NOTE: For political science majors only.

**Course Outcomes**
There are no course outcomes available

POLI 430 : Research Project in Public Policy. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 110 & POLI 200; or POLI 210 & POLI 200; or instructor's consent.
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.
NOTE: For political science majors only.

**Course Outcomes**
No outcomes are available at this time.

POLI 450 : Research Project in Comparative Politics. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 150 & POLI 200; or POLI 250 & POLI 200; or instructor's consent.
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.

**Course Outcomes**
There are no course outcomes available

POLI 465 : Philosophy of the Social Sciences. (3:3:0)
PREREQUISITE: Poli 200.
DESCRIPTION: Comparative analysis of the philosophy of scientific and normative inquiry.

**Course Outcomes**
There are no course outcomes available

POLI 470 : Research Project in International Relations. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 170 & POLI 200; or POLI 270 & POLI 200; or instructor's consent.
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.

**Course Outcomes**
There are no course outcomes available

POLI 497R : Mentored Research. (1-6:0:0)
PREREQUISITE: Poli 200.
DESCRIPTION: Original research under the guidance of a faculty mentor. Proposals must be approved by the department curriculum coordinator.

**Course Outcomes**
There are no course outcomes available

ii. Complete two additional courses from the list in requirement i or from the following list:
C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

ECON 478 : Game Theory and Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Application of game theory to study strategic interaction between individuals and organizations. Applications include imperfect competition, insurance markets, and bargaining.

**Course Outcomes**

- Demonstrate an understanding of the game theoretic method of analysis.Define a Nash Equilibrium and discuss refinements of the Nash Equilibrium Concept.Think abstractly and rigorously about strategic interaction.

ECON 488 : Applied Econometrics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 388

DESCRIPTION: Application of econometric methods, introduction to research design, and evaluation of empirical research. Special attention given to linking economic theory and econometrics, and causal inference.

**Course Outcomes**

- Demonstrate an understanding of the assumptions underlying commonly used empirical approaches for the identification of causal effects, including:Ordinary least squaresMatchingInterrupted time seriesDifference in differencesFixed effectsInstrumental variablesDemonstrate an understanding of the interplay between economic theory and empirical work.Read and understand contemporary academic literature in economics. Students will provide written evaluations of selected academic papers, including a clear description and critique of the empirical methods used.Apply modern empirical methods using data analysis exercises.Complete a research project in which they identify a question, assemble a dataset, thoughtfully apply appropriate empirical methods, and clearly describe their methodology, assumptions, and findings.

ECON 588 : Advanced Econometrics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 388

DESCRIPTION: Theory and practice of formulating, estimating, and analyzing economic models.

**Course Outcomes**

- Demonstrate a familiarity with the properties and applications of several families of statistical distributions to econometric problems.Demonstrate an understanding of variations and generalizations of the basic regression model includingGeneralized least squaresGeneralized autoregressive conditional heteroskedasticity modelsInstrumental variablesSeemingly unrelated regression modelsPanel dataHausman specification tests.Demonstrate an understanding of estimation frameworks in econometric models includingParametric, semiparametric, and non parametric specificationsMaximum likelihood, M-, generalized method of moments, kernel, empirical likelihood, and extremum estimation.Formulate and estimate various nonlinear models.Identify and estimate autoregressive integrated moving average (ARIMA) models and obtain forecasts of economic variables.Demonstrate an understanding of dynamic (and static) structural econometric models including being able to discussReduced form, structural, and transfer function representationsThe identification problemIssues of estimation and statistical inferenceVector autoregression models.Complete a research project in which they formulate a research question, apply appropriate methods to answer the question, and prepare a paper summarizing their results.

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing

landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

GEOG 213 : Earth Observation and Image Interpretation. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Principles of earth observation: primarily air photo/large-scale satellite imagery interpretation, basic field methods, photogrammetry.

**Course Outcomes**

- Students will be able to perform a simple cultural / physical interpretation of simple monoscopic imagery.
- Students will be able to complete simple measurements from historical air photos including height, distance, area, scale, and coordinate-related problems.
- Students wil be able to complete simple problems related to electromagnetic radiation and atmospheric effects.

PHIL 205 : Introduction to Formal Logic. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: History and use of syllogistic and propositional logic; evaluating arguments with Venn diagrams, truth tables, and Copi-style proofs and proof strategies; informal reasoning and fallacies.

**Course Outcomes**

- Know the basic vocabulary and concepts of formal and informal logic.
- Learn how to appraise validity by refuting invalid arguments and by constructing formal proofs for valid ones.
- Learn how to translate ordinary language into logical symbolism.

POLI 317 : Public Opinion and Voting Behavior. (3-4:3:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: POLI 200

RECOMMENDED: Poli 328.

DESCRIPTION: Relationship between attitudes, opinion, and voting behavior in American politics and institutions.

**Course Outcomes**

There are no course outcomes available

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MATH 112

RECOMMENDED: Concurrent enrollment in MATH 113.

DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 230 : Analysis of Variance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

RECOMMENDED: Concurrent enrollment in MATH 112.

DESCRIPTION: Scientific method, statistical thinking, sources of variation, completely randomized design, ANOVA, power and sample size considerations, multiple testing, randomized complete blocks, factorial designs, interactions. Introduction to statistical software.

**Course Outcomes**

- Define the experimental unit, response variable, factor(s), and level(s) of a basic experiment
- Understand the role of randomization and replication in inferring causation
- Perform a completely randomized design and construct the ANOVA table in SAS and R

Compute the minimum number of replicates in a completely randomized design to achieve a given level of power
- Compute pairwise tests of differences in means in SAS and R to understand a significant overall F-test
- Perform a randomized complete block design and construct the ANOVA table in SAS and R
- Perform a factorial design and construct the ANOVA table in SAS and R
- Explain a statistically significant interaction
- Describe the differences between a split plot and a two-way ANOVA

STAT 234 : Methods of Survey Sampling. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Sampling frames; questionnaire design; simple random, systematic, stratified, and cluster sampling methods; comparing domain means; contingency table analysis.

**Course Outcomes**

- Identify and sample using simple random sampling and various forms of stratified sampling, cluster sampling, and systematic sampling
- Accurately identify and perform variance calculations for basic designs
- Participate in a real project involving sampling methodologies and appropriate point estimate and variance calculations
- Create graphical representations of results
- Demonstrate effective written and oral communication skills as they present their findings

STAT 431 : Experimental Design. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 330

DESCRIPTION: Basic designs, power and sample size, Latin squares, incomplete blocks, change-over designs, factorials, fractional factorials, confounding, split-plots, response surface designs.

**Course Outcomes**

- Choose an experimental design plan that is appropriate for the research problem at hand
- Construct the design, including determining the proper number of replicates and the creation of a randomized data collection form
- Execute the plan to collect the data, or advise a colleague to do it
- Determine the model appropriate for the data
- Fit the model to the data, and verify that the assumptions have been satisfied
- Interpret the results and present the data in a meaningful way to answer the research problem at hand

STAT 435 : Nonparametric Statistical Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 511

DESCRIPTION: Permutation tests, rank-based methods, analysis of contingency tables, bootstrap methods, curve fitting.

**Course Outcomes**

- Explain and provide examples of the trade-off between parametric assumptions and efficiency of statistical inference
- Compute the following rank-based methods: Wilcoxon Rank-Sum test, Mann-Whitney test, Signed-Rank test, Kruskal-Wallis test, Spearman Rank Correlation
- Formulate and compute permutation tests for 2-sample, K-sample, and contingency tables
- Compute the following tests for contingency tables: Fisher's exact test, Mantel-Haenszel test, McNemar's test
- Formulate and compute bootstrap (resampling) confidence intervals
- Compute generalized additive models (GAM) with splines or smoothers for possible nonlinear effects in R

e. Global Development

i. Complete the following:

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

ii. Complete four courses from the following list:

ECON 230 : Economic Development and Growth. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: ECON 110

DESCRIPTION: Problems and processes of economic growth and development, emphasizing less-developed nations.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Be familiar with the labor and consumption patterns among the world's poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 110 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property RightsGain a basic understanding of econometric methods used in testing economic theories in growth and development.Analyze the Solow Growth model and its implications for economic growth.Explain the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Discuss the potential role of government in economic development. Especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

ECON 431 : Economic Development. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 380; Econ 388 (or concurrent enrollment) or Pl Sc 328.

DESCRIPTION: Microeconomic analysis of the causes of income differences across countries.

**Course Outcomes**

- Discuss the labor and consumption patterns among the world's poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property Rights.Discuss the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Explain the potential role of government in economic development, especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

ECON 432 : Economic Growth. (3:3:0)

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Econ 388.

DESCRIPTION: Theory and evidence relating to economic growth, including physical and human capital accumulation, population, technological change, institutions, and government.

**Course Outcomes**

- Adjust values in one currency to values in another currency controlling for purchasing power parity (PPP) deviations.Demonstrate an understanding of basic dynamic models of economic growth, including:The Solow modelThe Solow model with population growthThe Harrod-Domar modelAK modelsModels of product varietySchumpeterian models.Discuss growth and development accounting, and decompose observed differences across countries into efficiency and technology components.Discuss Lorenz curves and Gini coefficients.Discuss how growth interacts with:Population & demographyHuman capitalTechnical progressOpennessGovernmentInequalityCultureGeography, Climate & Resources.

POLI 342 : Gender and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Theories of representation; gender and citizenship; gender and political candidacy; gender and leadership; gendered political issues.

**Course Outcomes**

There are no course outcomes available

POLI 343 : Comparative Institutional Design. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 150 or 250.

RECOMMENDED: Poli 328.

DESCRIPTION: Studies the rich variety of political institutions around the world, in both developed and developing countries, democracies, and dictatorships, and their implications for policy decisions and political, social and economic outcomes such as political violence, economic development, and democratization.

**Course Outcomes**

There are no course outcomes available

POLI 344 : Comparative Political Economy. (3:3:0)

PREREQUISITE: Poli 150 or 250; Poli 200.

DESCRIPTION: Overview of political economy from a comparative perspective. Classic theorists (Smith, Marx, Schumpeter, etc.); classic questions (industrialization, national economic policy, property, globalization, law, and economics).

**Course Outcomes**

There are no course outcomes available

POLI 345 : Comparative Parties and Elections. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Analyzes the electoral process and political parties in both the United States and other countries. Special attention is given to gender issues, campaigns, financing, corruption, extremist parties, religion, class, issues, fairness, accountability, electoral rules, and democracy.

**Course Outcomes**

No outcomes are available at this time.

POLI 347 : Russia/Former Soviet Politics. (3:3:0)

DESCRIPTION: Comparative politics of Russia and Soviet successor states. Development of political systems from common Soviet heritage, emphasizing post-independence politics and institution building.

**Course Outcomes**

There are no course outcomes available

POLI 348 : Government and Politics of Asia. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Comparative analysis of political developments of the major countries of Asia not covered in other country-specific classes.

**Course Outcomes**

There are no course outcomes available

POLI 352 : African Politics. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Processes of change and development of nation states; African regionalism and relations with other nations; contemporary political issues.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 353 : China: Government and Politics. (3:3:0)

DESCRIPTION: Structure and behavior of politics; contemporary problems.

**Course Outcomes**

There are no course outcomes available

POLI 354 : Japan: Government and Politics. (3:3:0)

DESCRIPTION: Structure and behavior of politics; contemporary problems.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 357 : Middle East: Political Systems. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Poli 200.

DESCRIPTION: Social, philosophical, and religious impact on Middle East political institutions in an era of modernization and conflict.

**Course Outcomes**

There are no course outcomes available

POLI 358 : Latin American Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200 or Lt Am 211.

DESCRIPTION: Conceptual and contemporary issues in Latin America's search for political order and economic development.

**Course Outcomes**

There are no course outcomes available

POLI 374 : Ethics and International Affairs. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Ethical considerations in study and practice of international politics. Realism, idealism, and other theories of state behavior subjected to ethical standards.

**Course Outcomes**

There are no course outcomes available

POLI 380 : International Relations of Latin America. (3:3:0)

PREREQUISITE: Poli 200 or Lt Am 211.

DESCRIPTION: Factors that affect foreign relations of Latin American countries, including the U.S. role, emphasizing intervention, democracy, development, and trade.

**Course Outcomes**

There are no course outcomes available

POLI 381 : International Relations of the Middle East. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Interregional relations and conflicts, political economics, Arab nationalism, processes of political change, alliances, and superpower relations.

**Course Outcomes**

No outcomes are available at this time.

POLI 385 : International Relations of Asia. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Foreign policies and international relations of China, Japan, and Northeast and Southeast Asia; historical and contemporary review and analysis.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 387 : International Relations of Developing Countries. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Poli 150, 170, 250, or 270; Poli 328.

DESCRIPTION: Global politics in developing countries, focusing on trade, aid, conflict, women's rights, and the changing global balance of power.

**Course Outcomes**

There are no course outcomes available

POLI 388 : Chinese Foreign Policy. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Structure and process of foreign policy of the People's Republic of China.

**Course Outcomes**

There are no course outcomes available

POLI 394R : Topics in Global Development. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Special topics for the Global Development track. Topic chosen by instructor.

**Course Outcomes**

There are no course outcomes available

POLI 444 : The Political Economy of Development. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Econ 110, Poli 200.
DESCRIPTION: Political foundations of growth, providing public goods, and political reform in developing countries. Development and how institutions and culture shape it.

**Course Outcomes**
There are no course outcomes available

POLI 452 : Islam and Politics. (3:3:0)
PREREQUISITE: Poli 200.
DESCRIPTION: Tensions and accommodations between religion and politics in Muslim nations.

**Course Outcomes**
There are no course outcomes available

POLI 472 : International Political Economy of Women. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Effects upon national, international, and developmental policies when women are rendered visible and valued.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

POLI 473 : Human Rights. (3:3:0)
PREREQUISITE: Poli 200.
DESCRIPTION: Causes of human rights violations and societal and state responses; nature, history, and impacts of international human rights norms; ways to define and promote rights.

**Course Outcomes**
There are no course outcomes available

POLI 474 : Arab-Palestinian-Israeli Conflict. (3:3:0)
PREREQUISITE: Poli 200.
DESCRIPTION: Emphasizes historical background, current situation, and alternatives leading to conflict resolution.

**Course Outcomes**
There are no course outcomes available

POLI 475 : Civil Wars and Ethnic Violence. (3:3:0)
PREREQUISITE: Poli 200.
RECOMMENDED: Poli 150 or 250; 170 or 270; 328.
DESCRIPTION: Foundations of ethnic and nationalist identities and how they related to civil wars worldwide, emphasizing theoretical explanations of civil wars and their resolution. Key civil war cases examined.

**Course Outcomes**
There are no course outcomes available

POLI 476 : Terrorism. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200.
RECOMMENDED: Poli 150 or 250; 170 or 270; 328.
DESCRIPTION: Defining and conceptualizing terrorism; causes and varieties of terrorism; counterterrorism; the future of terrorism.

**Course Outcomes**
There are no course outcomes available

SOC 340 : Sociology of International Development. (3:3:0)
WHEN TAUGHT: Fall; Winter
RECOMMENDED: Soc 111 or 112; IAS 220.
DESCRIPTION: Paradigms of development and poverty; international, national, and grass roots approaches to promote development and reduce poverty; and application in developing nations.

**Course Outcomes**
- Become familiar with different theories about development.
- Understand the relationship between development and major social insitutions.
- Learn about what different organizations are doing to promote beneficial development.
- Learn to apply what you have learned to a specific aspect of development.

- Integrate what you have learned to develop your own approach to development.

SOC 345 : World Populations. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Fertility, mortality, and migration patterns of world populations as they relate to current social, economic, political, and religious issues.

**Course Outcomes**

There are no course outcomes available

iii. Students are strongly encouraged to complete international internships and mentored field research. Students may count up to 6 credit hours of Poli 399R or Poli 497R with international development organizations or in developing countries for requirement ii.

7. Additional Requirement. Complete 6 additional credit hours of 200-level and above Political Science courses. A maximum of 3 credits of lower-division Political Science credit may count toward these 6 additional credits.

## Additional Requirements and Guidelines

1. 27 hours of political science courses must be taken in residency at BYU (BYU Independent Study courses do not meet this requirement). These hours may also go toward BYU's 30-hour residency requirement for graduation.
2. Poli 101R and 297R do not count toward the major or any minor offered by the department.
3. Only 6 hours of Poli 399R (internship credit) may count toward the major.
4. No cooperative education (internship) credit from other universities or colleges will be accepted toward the major.
5. All students are strongly encouraged to complete an internship. Established programs are available through Washington Seminar, Utah State Legislature, or the Kennedy Center.
6. Students scoring a 4 or 5 on the American Government and/or Comparative Government AP exams may substitute AP credit for Poli 110 or Poli 150, respectively.
7. We strongly encourage students to take Poli 298R, a career lecture series course.

*Hours include courses that may fulfill university core requirements.

## Show all Political Science (Poli) Courses

**College of Family, Home, and Social Sciences Home**

**Political Science Department Home**

**Majors**

- BA in Political Science

**Minors**

- International Strategy and Diplomacy
- Legal Studies
- Political Science
- Political Science Teaching
- Political Strategy

**Course Information**

- Political Science (Poli) Courses

**Faculty**

# Minor in International Strategy and Diplomacy (18 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete one of the following:

POLI 150 : Comparative Government and Politics. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Patterns of European, Asian, Latin American, and other political systems.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

POLI 170 : Introduction to International Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Basic forces, practices, institutions, and foreign policies of major powers; problem areas in international politics.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

POLI 250 : Principles of Comparative Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: Poli 200.
DESCRIPTION: An introduction to the subfield of comparative politics for advanced students and majors. Basic concepts, theories, and methods of comparative politics and political science.

**Course Outcomes**
There are no course outcomes available

POLI 270 : Principles of International Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: Poli 200.
DESCRIPTION: An introduction to the subfield of international relations for advanced students and majors. Basic concepts, theories, and methods of international relations and political science.

**Course Outcomes**
There are no course outcomes available

2. Complete two courses from the following:

POLI 342 : Gender and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200.
DESCRIPTION: Theories of representation; gender and citizenship; gender and political candidacy; gender and leadership; gendered political issues.

**Course Outcomes**
There are no course outcomes available

POLI 343 : Comparative Institutional Design. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 150 or 250.
RECOMMENDED: Poli 328.
DESCRIPTION: Studies the rich variety of political institutions around the world, in both developed and developing countries, democracies, and dictatorships, and their implications for policy decisions and political, social and economic outcomes such as political violence, economic development, and democratization.

**Course Outcomes**

There are no course outcomes available

POLI 344 : Comparative Political Economy. (3:3:0)

PREREQUISITE: Poli 150 or 250; Poli 200.
DESCRIPTION: Overview of political economy from a comparative perspective. Classic theorists (Smith, Marx, Schumpeter, etc.); classic questions (industrialization, national economic policy, property, globalization, law, and economics).

**Course Outcomes**

There are no course outcomes available

POLI 359R : Topics in Comparative Politics. (3:3:0)

PREREQUISITE: Poli 200 or equivalent.

**Course Outcomes**

There are no course outcomes available

POLI 371 : Foreign Policy Analysis. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200; Poli 170 or 270.
DESCRIPTION: Survey of research regarding multiple levels of foreign policy analysis: individual, group, bureaucratic, societal, economic, systemic.

**Course Outcomes**

No outcomes are available at this time.

POLI 372 : International Political Economy. (3:3:0)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Political implications of international trade, investment, and monetary policies within an increasingly interdependent global context; transnationalism.

**Course Outcomes**

There are no course outcomes available

POLI 373 : International Law. (3:3:0)

PREREQUISITE: Poli 200.
DESCRIPTION: Nature and function of international law; recognition, succession, jurisdiction rights, and immunities of states; nationality and jurisdiction over nations.

**Course Outcomes**

There are no course outcomes available

POLI 374 : Ethics and International Affairs. (3:3:0)

PREREQUISITE: Poli 200.
DESCRIPTION: Ethical considerations in study and practice of international politics. Realism, idealism, and other theories of state behavior subjected to ethical standards.

**Course Outcomes**

There are no course outcomes available

POLI 375 : International Organizations. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200.
DESCRIPTION: International institutions; transnational relations; rise of newer political organizations: League of Nations, United Nations, European communities, world religions, multinational corporations, terrorist groups, global regimes.

**Course Outcomes**

There are no course outcomes available

POLI 377 : National Security Affairs. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Foreign policy, defense strategy, and intelligence.

**Course Outcomes**

There are no course outcomes available

POLI 378 : International Conflict. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 150, 170, 250, or 270; Poli 200.

DESCRIPTION: Causes of war; alliances and empires; military innovation; civil-military relations; fungibility of forces; terrorism; security studies methods; use and misuse of history.

**Course Outcomes**

There are no course outcomes available

POLI 379R : Topics in International Relations. (.5-3:3:0)

PREREQUISITE: Poli 200 or equivalent.

**Course Outcomes**

There are no course outcomes available

POLI 444 : The Political Economy of Development. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Econ 110, Poli 200.

DESCRIPTION: Political foundations of growth, providing public goods, and political reform in developing countries. Development and how institutions and culture shape it.

**Course Outcomes**

There are no course outcomes available

POLI 472 : International Political Economy of Women. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Effects upon national, international, and developmental policies when women are rendered visible and valued.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 473 : Human Rights. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Causes of human rights violations and societal and state responses; nature, history, and impacts of international human rights norms; ways to define and promote rights.

**Course Outcomes**

There are no course outcomes available

POLI 475 : Civil Wars and Ethnic Violence. (3:3:0)

PREREQUISITE: Poli 200.

RECOMMENDED: Poli 150 or 250; 170 or 270; 328.

DESCRIPTION: Foundations of ethnic and nationalist identities and how they related to civil wars worldwide, emphasizing theoretical explanations of civil wars and their resolution. Key civil war cases examined.

**Course Outcomes**

There are no course outcomes available

POLI 476 : Terrorism. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

RECOMMENDED: Poli 150 or 250; 170 or 270; 328.

DESCRIPTION: Defining and conceptualizing terrorism; causes and varieties of terrorism; counterterrorism; the future of terrorism.

**Course Outcomes**

There are no course outcomes available

HIST 393 : U.S. Foreign Relations. (3:3:0)

WHEN Fall Odd Yrs.

TAUGHT:
DESCRIPTION: U.S. diplomatic history from the American revolution to the present; examines major themes and critical events within both domestic and international contexts.

**Course Outcomes**

- Students will be able to explain and analyze the major themes and problems in the making, implementation, and evolution of U.S. foreign relations from 1776 to the present.
- Students will be able to analyze, interpret, and debate the meanings and historical significance of primary source documents.
- Students will be able to produce an original, analytical, and primary source based historical essay examining a key issue, theme, or individual from the history of U.S. foreign relations.

3. Complete one course from the following:

POLI 376 : U.S. Foreign Policy. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Formation, implementation, analysis, and criticism of themes in American foreign policy.

**Course Outcomes**

There are no course outcomes available

POLI 380 : International Relations of Latin America. (3:3:0)
PREREQUISITE: Poli 200 or Lt Am 211.
DESCRIPTION: Factors that affect foreign relations of Latin American countries, including the U.S. role, emphasizing intervention, democracy, development, and trade.

**Course Outcomes**

There are no course outcomes available

POLI 381 : International Relations of the Middle East. (3:3:0)
PREREQUISITE: Poli 200.
DESCRIPTION: Interregional relations and conflicts, political economics, Arab nationalism, processes of political change, alliances, and superpower relations.

**Course Outcomes**

No outcomes are available at this time.

POLI 382 : International Relations of North America. (3:3:0)
DESCRIPTION: Examination and analysis of factors that affect foreign relations of Canada, U.S., and Mexico, emphasizing trade, security, migration, environment.

**Course Outcomes**

There are no course outcomes available

POLI 385 : International Relations of Asia. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Foreign policies and international relations of China, Japan, and Northeast and Southeast Asia; historical and contemporary review and analysis.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 386 : Japanese Foreign Policy. (3:3:0)
DESCRIPTION: Process and outcomes of Japan's foreign policy; analysis of its relations with other nations in a historical and contemporary setting.

**Course Outcomes**

There are no course outcomes available

POLI 387 : International Relations of Developing Countries. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: Poli 150, 170, 250, or 270; Poli 328.
DESCRIPTION: Global politics in developing countries, focusing on trade, aid, conflict, women's rights, and the changing global balance of power.

**Course Outcomes**

There are no course outcomes available

POLI 388 : Chinese Foreign Policy. (3:3:0)
WHEN TAUGHT: Contact Department.

DESCRIPTION: Structure and process of foreign policy of the People's Republic of China.

**Course Outcomes**
There are no course outcomes available

4. Complete two courses from the following:

POLI 341 : Western European Politics. (3:3:0)
RECOMMENDED: Poli 200.
DESCRIPTION: Politics and policy in western Europe. State-building, party systems, nationalism, and cooperation among advanced industrial countries in comparative, historical perspective. Social and Christian democracy; European Union.

**Course Outcomes**
There are no course outcomes available

POLI 347 : Russia/Former Soviet Politics. (3:3:0)
DESCRIPTION: Comparative politics of Russia and Soviet successor states. Development of political systems from common Soviet heritage, emphasizing post-independence politics and institution building.

**Course Outcomes**
There are no course outcomes available

POLI 348 : Government and Politics of Asia. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Comparative analysis of political developments of the major countries of Asia not covered in other country-specific classes.

**Course Outcomes**
There are no course outcomes available

POLI 351 : British Government and Politics. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200.
DESCRIPTION: Examination of the origin and contemporary operation of British political institutions as they relate to British society.

**Course Outcomes**
There are no course outcomes available

POLI 352 : African Politics. (3:3:0)
PREREQUISITE: Poli 200.
DESCRIPTION: Processes of change and development of nation states; African regionalism and relations with other nations; contemporary political issues.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

POLI 353 : China: Government and Politics. (3:3:0)
DESCRIPTION: Structure and behavior of politics; contemporary problems.

**Course Outcomes**
There are no course outcomes available

POLI 354 : Japan: Government and Politics. (3:3:0)
DESCRIPTION: Structure and behavior of politics; contemporary problems.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

POLI 355 : Canadian Government and Politics. (3:3:0)
PREREQUISITE: Poli 200.
DESCRIPTION: Growth and development of Canada and its government; Canada's role in the contemporary world

**Course Outcomes**
No outcomes are available at this time.

POLI 357 : Middle East: Political Systems. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Poli 200.

DESCRIPTION: Social, philosophical, and religious impact on Middle East political institutions in an era of modernization and conflict.

**Course Outcomes**

There are no course outcomes available

POLI 358 : Latin American Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200 or Lt Am 211.

DESCRIPTION: Conceptual and contemporary issues in Latin America's search for political order and economic development.

**Course Outcomes**

There are no course outcomes available

POLI 452 : Islam and Politics. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Tensions and accommodations between religion and politics in Muslim nations.

**Course Outcomes**

There are no course outcomes available

POLI 474 : Arab-Palestinian-Israeli Conflict. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Emphasizes historical background, current situation, and alternatives leading to conflict resolution.

**Course Outcomes**

There are no course outcomes available

5. International Relations majors and Political Science majors may only count 6 credit hours from their major toward this minor.

*Hours include courses that may fulfill university core requirements.

## Show all Political Science (Poli) Courses

**College of Family, Home, and Social Sciences Home**

**Political Science Department Home**

**Majors**

- BA in Political Science

**Minors**

- International Strategy and Diplomacy
- Legal Studies
- Political Science
- Political Science Teaching
- Political Strategy

**Course Information**

- Political Science (Poli) Courses

**Faculty**

# Minor in Legal Studies (15 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete three courses from the following:

POLI 364 : Jurisprudence. (3:3:0)
DESCRIPTION: Problem approach to ancient and modern legal philosophies, emphasizing the nature of justice and the relation of law to morality.

**Course Outcomes**
There are no course outcomes available

POLI 373 : International Law. (3:3:0)
PREREQUISITE: Poli 200.
DESCRIPTION: Nature and function of international law; recognition, succession, jurisdiction rights, and immunities of states; nationality and jurisdiction over nations.

**Course Outcomes**
There are no course outcomes available

POLI 393R : Topics in Legal Studies. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Special topics for the Legal Studies track. Topic chosen by instructor.

**Course Outcomes**
There are no course outcomes available

POLI 420 : Constitutional Law - American Federal System. (3:3:0)
WHEN TAUGHT: Contact Department.

**Course Outcomes**
No outcomes are available at this time.

POLI 421 : Constitutional Law - Rights and Immunities. (3:3:0)
WHEN TAUGHT: Contact Department.

**Course Outcomes**
There are no course outcomes available

POLI 422 : Interests and Ideas in the American Founding. (3:3:0)
WHEN TAUGHT: Contact Department.
RECOMMENDED: Poli 202.
DESCRIPTION: A systematic investigation of the American founding, focusing on key interests and ideas represented at the Federal Convention of 1787 (and in other seminal events) emphasizing historical and empirical literature.

**Course Outcomes**
There are no course outcomes available

HIST 392 : U.S. Constitutional History. (3:3:0)
WHEN TAUGHT: Fall Odd Yrs.
DESCRIPTION: Constitutional traditions and constitution making, federalism, and constitutional notions of political equity and social justice, from the colonial period to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments that led to the U.S. Constitution
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

Note: Phil 416 (Philosophy of Law) may be used in place of Poli 364. See your academic advisor for more information.

2. Complete two additional courses from the list in requirement 1 or from the following:

POLI 315 : Congress and the Legislative Process. (3:3:0)

WHEN TAUGHT: Contact Department.
RECOMMENDED: Poli 110 or 210; Poli 200.
DESCRIPTION: Election process; structure, organization, and procedures of legislative bodies; relations with pressure groups, the president, and executive branch.

**Course Outcomes**

There are no course outcomes available

POLI 331 : Politics and Public Policy. (3:3:0)

PREREQUISITE: Poli 200.
DESCRIPTION: Introduction to major public policy issue areas and how political processes are used to address social problems.

**Course Outcomes**

There are no course outcomes available

POLI 334 : Public Ethics. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200.
DESCRIPTION: Sources of values, areas of conflict with government policy, means of value accommodation.

**Course Outcomes**

There are no course outcomes available

POLI 336 : Government and Religion. (3:3:0)

PREREQUISITE: Poli 200.
DESCRIPTION: Christian-Hebraic concepts of state. American experience with church-state relations (First Amendment problems). Policy issues of concern to contemporary religions.

**Course Outcomes**

There are no course outcomes available

POLI 342 : Gender and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200.
DESCRIPTION: Theories of representation; gender and citizenship; gender and political candidacy; gender and leadership; gendered political issues.

**Course Outcomes**

There are no course outcomes available

POLI 375 : International Organizations. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200.
DESCRIPTION: International institutions; transnational relations; rise of newer political organizations: League of Nations, United Nations, European communities, world religions, multinational corporations, terrorist groups, global regimes.

**Course Outcomes**

There are no course outcomes available

POLI 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Acceptance into program.
DESCRIPTION: Work-study on the international, national, state, and local level.

**Course Outcomes**

There are no course outcomes available

: Washington DC Internship.

**Course Outcomes**

: International Internship.

**Course Outcomes**

: Congressional Internship.

**Course Outcomes**

: State Government Internship.

**Course Outcomes**

: City Government Intership.

**Course Outcomes**

: Pre-Law Internship.

**Course Outcomes**

: Utah Legislature Internship.

**Course Outcomes**

: Campaign Internship.

**Course Outcomes**

POLI 473 : Human Rights. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Causes of human rights violations and societal and state responses; nature, history, and impacts of international human rights norms; ways to define and promote rights.

**Course Outcomes**

There are no course outcomes available

STDEV 168R : Law Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Exploring legal professions. Primary focus on guest lecturers representing various legal professions.

**Course Outcomes**

- 1. Understand what a legal education and career requires and provides.
- 2. Accurately assess whether or not a legal education and career is the correct choice for them.

STDEV 260 : Constitutional Research. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: The United States Constitution; research on original sources used to create the Constitution.

**Course Outcomes**

- Know and develop interpretation and analytic skills regarding the 7 articles and 27 amendments to the Constitution.
- Understand the current issues surrounding Constitutional articles and amendments.
- Improve their editing and research skills.

STDEV 261 : The Law in Literature. (2:2.0:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Examining how the law--including the justice system, attorneys, judges, and clients--has been portrayed in literary works.

**Course Outcomes**

- Have a better understanding of what a legal education and career requires and provides.
- Be able to more accurately assess whether or not a legal education and career is the correct choice for them.
- Be able to critically analyze portrayals of law in literature and other media forms to assess for accuracy.

STDEV 364 : Mediation Techniques and Practices. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Mediation techniques emphasizing practical application and observation of actual mediations.

**Course Outcomes**

- Know and apply the phases of the basic mediation process.
- Know how to prepare for a mediation session and be able to present the essential elements of a mediator's opening statement.

- Be able to identify issues and interests of the parties and set an agenda for the mediation session.
- Be able to skillfully conduct a mediation conference with joint and private meetings, allowing the disputing parties uninterrupted time for expressing viewpoints and interactive time to effectively exchange information, arguments, and offers of settlement.
- Be able to assist the parties in building and writing an agreement and to properly close the mediation session.
- Understand the basic rules of behavior for the parties in a mediation session and the common ethical practices of mediators.

STDEV 365 : Legal Education and Practice. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Successful legal education and practice. Preparation for those planning to attend law school.

**Course Outcomes**

- Students will be able to read, understand, and brief a legal case.
- Students will be able to effectively study and prepare for a law school final examination.
- Students will understand the major secondary sources used in legal research.
- Students will learn how to effectively communicate with others (focusing on legal aspects)
- Students will practice assimilating all legal research into a deliverable final product (memo/brief)

STDEV 368R : Prelaw Review Journal Writing. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Editing and publication for Pre-law Review authors and editors.

**Course Outcomes**

- Understand the procedure for publishing the Prelaw Review.
- Know how to use the Bluebook citation style guide.
- Improve essential legal writing skills.
- Work effectively in writing and editing relationships.

STDEV 496R : Advanced Legal Internship. (1-3:Arr:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Legal internship coordinator's consent.

DESCRIPTION: Legal research; courtroom observation; client and attorney interaction; and reflection exercises.

**Course Outcomes**

- Understand what a legal education and career requires and provides.
- Accurately assess whether or not a legal education and career is the correct choice for them.
- Increase comfort interacting with legal professionals.

3. Political Science majors may only count 6 credit hours from their major toward this minor.

*Hours include courses that may fulfill university core requirements.

## Show all Political Science (Poli) Courses

**College of Family, Home, and Social Sciences Home**

**Political Science Department Home**

**Majors**

- BA in Political Science

**Minors**

- International Strategy and Diplomacy
- Legal Studies
- Political Science
- Political Science Teaching
- Political Strategy

**Course Information**

- Political Science (Poli) Courses

**Faculty**

# Minor in Political Science (21 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete one of the following:

POLI 110 : American Government and Politics. (3:3:0)

OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Origin and development of federal Constitution; national, state, and local governments and politics.

**Course Outcomes**
There are no course outcomes available

POLI 210 : Principles of American Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: Poli 200.
DESCRIPTION: An introduction to the subfield of American politics for advanced students and majors. Basic concepts, theories, and methods of American politics and political science.

**Course Outcomes**
There are no course outcomes available

2. Complete one of the following:

POLI 150 : Comparative Government and Politics. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Patterns of European, Asian, Latin American, and other political systems.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

POLI 250 : Principles of Comparative Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: Poli 200.
DESCRIPTION: An introduction to the subfield of comparative politics for advanced students and majors. Basic concepts, theories, and methods of comparative politics and political science.

**Course Outcomes**
There are no course outcomes available

3. Complete one of the following:

POLI 170 : Introduction to International Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Basic forces, practices, institutions, and foreign policies of major powers; problem areas in international politics.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

POLI 270 : Principles of International Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Poli 200.

DESCRIPTION: An introduction to the subfield of international relations for advanced students and majors. Basic concepts, theories, and methods of international relations and political science.

**Course Outcomes**

There are no course outcomes available

4. Complete one course from the following:

POLI 202 : Western Political Heritage 2. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Western civilization from Renaissance to present, primarily from perspective of political philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

PHIL 202 : History of Philosophy 2. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Western civilization from Renaissance to present, primarily from perspective of philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

**Course Outcomes**

- Know milestones of Western history and culture from the Renaissance and Reformation through the present.
- Acquire a basic understanding of the most important philosophical figures, texts, and issues in late modern and contemporary philosophy.
- Write a clear and cogent philosophical essay.

5. Complete three additional upper-division courses.
6. Poli 101 and 297 cannot be counted toward the minor.
7. Students scoring a 4 or 5 on the American Government and/or Comparative Government AP exams may substitute AP credit for Poli 110 or Poli 150, respectively. However, they are required to take at least one upper-division elective in each subfield in which they substitute AP credit for American Government and Politics or Comparative Government and Politics.

*Hours include courses that may fulfill university core requirements.

## Show all Political Science (Poli) Courses

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**Majors**

- BA in Political Science

**Minors**

- International Strategy and Diplomacy
- Legal Studies
- Political Science
- Political Science Teaching
- Political Strategy

**Course Information**

- Political Science (Poli) Courses

**Faculty**

# Minor in Political Strategy (18 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete six courses from the following list:

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

POLI 200 : Political Inquiry. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Methodology of political science, including theory and techniques of qualitative and quantitative research design.
NOTE: Prerequisite to all upper-division courses.

**Course Outcomes**
There are no course outcomes available

POLI 304 : Game Theory in Political Science. (3:3:0)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Introduction to game theory, concentrating on applications in politics.

**Course Outcomes**
There are no course outcomes available

POLI 311 : State and Local Government and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.
RECOMMENDED: Poli 110 or Poli 210.
DESCRIPTION: Relation of state and national governments, forms of state governments and politics, types of municipal governments and their operation.

**Course Outcomes**
There are no course outcomes available

POLI 313 : Interest Groups. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 110 or 210; Poli 200.
DESCRIPTION: Theories on formation and maintenance of interest groups; tactics of groups in legislative, executive, bureaucratic, and court settings; influence of groups on elections and public policy.

**Course Outcomes**
There are no course outcomes available

POLI 314 : The United States Presidency. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 110 or 210; Poli 200.
DESCRIPTION: Presidential power in the United States, focusing on major roles of the American presidency.

**Course Outcomes**

There are no course outcomes available

POLI 315 : Congress and the Legislative Process. (3:3:0)

WHEN TAUGHT: Contact Department.
RECOMMENDED: Poli 110 or 210; Poli 200.
DESCRIPTION: Election process; structure, organization, and procedures of legislative bodies; relations with pressure groups, the president, and executive branch.

**Course Outcomes**

There are no course outcomes available

POLI 316 : American Political Parties. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200.
DESCRIPTION: Electoral and policy-making roles of American political parties today and their future in American politics.

**Course Outcomes**

There are no course outcomes available

POLI 317 : Public Opinion and Voting Behavior. (3-4:3:Arr.)

WHEN TAUGHT: Contact Department.
PREREQUISITE: POLI 200
RECOMMENDED: Poli 328.
DESCRIPTION: Relationship between attitudes, opinion, and voting behavior in American politics and institutions.

**Course Outcomes**

There are no course outcomes available

POLI 318 : Campaigns and Elections. (3:3:0)

PREREQUISITE: Poli 200.
DESCRIPTION: Analyzes electoral process in the United States, including history, significance in governance, campaign strategy, finance, media role, etc.

**Course Outcomes**

There are no course outcomes available

POLI 321 : The Media in American Politics. (3:3:0)

WHEN TAUGHT: Contact Department.
DESCRIPTION: News media's role in processes of American politics, including electoral process, legislative process, and public policy-making.

**Course Outcomes**

There are no course outcomes available

POLI 324 : Political Psychology. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200.
RECOMMENDED: Poli 328.
DESCRIPTION: Survey of classic and contemporary research in political psychology. Special focus on how citizens think and feel about politics and the ways in which those beliefs shape their interactions with the political world.

**Course Outcomes**

There are no course outcomes available

POLI 328 : Statistical Analysis. (4:3:1)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: POLI 200
DESCRIPTION: Quantitative techniques in political research.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 331 : Politics and Public Policy. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Introduction to major public policy issue areas and how political processes are used to address social problems.

**Course Outcomes**

There are no course outcomes available

POLI 332 : Public Policy Analysis. (3:3:0)

PREREQUISITE: POLI 200

DESCRIPTION: Analysis of how societies can and should choose between different public policy options to achieve public ends, with a focus on applied cost-benefit analysis.

**Course Outcomes**

No outcomes are available at this time.

POLI 342 : Gender and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Theories of representation; gender and citizenship; gender and political candidacy; gender and leadership; gendered political issues.

**Course Outcomes**

There are no course outcomes available

POLI 343 : Comparative Institutional Design. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 150 or 250.

RECOMMENDED: Poli 328.

DESCRIPTION: Studies the rich variety of political institutions around the world, in both developed and developing countries, democracies, and dictatorships, and their implications for policy decisions and political, social and economic outcomes such as political violence, economic development, and democratization.

**Course Outcomes**

There are no course outcomes available

POLI 371 : Foreign Policy Analysis. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200; Poli 170 or 270.

DESCRIPTION: Survey of research regarding multiple levels of foreign policy analysis: individual, group, bureaucratic, societal, economic, systemic.

**Course Outcomes**

No outcomes are available at this time.

POLI 392R : Topics in Political Strategy. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Special topics for the Political Strategy track. Topic chosen by instructor.

**Course Outcomes**

No outcomes are available at this time.

POLI 422 : Interests and Ideas in the American Founding. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Poli 202.

DESCRIPTION: A systematic investigation of the American founding, focusing on key interests and ideas represented at the Federal Convention of 1787 (and in other seminal events) emphasizing historical and empirical literature.

**Course Outcomes**

There are no course outcomes available

2. Students may count up to 6 credit hours of Poli 399R (internship credit) for requirement 1.
3. Students are strongly encouraged to complete internships, work on political campaigns, and gain other practical political experience.
4. Political Science majors may count only 6 credit hours from their major toward this minor.

*Hours include courses that may fulfill university core requirements.

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- BA in Political Science

**Minors**

- International Strategy and Diplomacy
- Legal Studies
- Political Science
- Political Science Teaching
- Political Strategy

**Course Information**

- Political Science (Poli) Courses

**Faculty**

# Minor in Political Science Teaching (21 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following:

POLI 110 : American Government and Politics. (3:3:0)

OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Origin and development of federal Constitution; national, state, and local governments and politics.

**Course Outcomes**
There are no course outcomes available

3. Complete one course from the following:

POLI 150 : Comparative Government and Politics. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Patterns of European, Asian, Latin American, and other political systems.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

POLI 170 : Introduction to International Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Basic forces, practices, institutions, and foreign policies of major powers; problem areas in international politics.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

4. Complete one course from the following:

POLI 202 : Western Political Heritage 2. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Western civilization from Renaissance to present, primarily from perspective of political philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

PHIL 202 : History of Philosophy 2. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Western civilization from Renaissance to present, primarily from perspective of philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

**Course Outcomes**

- Know milestones of Western history and culture from the Renaissance and Reformation through the present.
- Acquire a basic understanding of the most important philosophical figures, texts, and issues in late modern and contemporary philosophy.
- Write a clear and cogent philosophical essay.

5. Complete one course from the following:

POLI 311 : State and Local Government and Politics. (3:3:0)
WHEN TAUGHT: Contact Department.
RECOMMENDED: Poli 110 or Poli 210.
DESCRIPTION: Relation of state and national governments, forms of state governments and politics, types of municipal governments and their operation.

**Course Outcomes**

There are no course outcomes available

POLI 397 : Utah Legislative Politics. (2:2:0)
DESCRIPTION: Preparatory seminar for students in the Utah State Legislature internship. Utah history and political structure. Relations between legislature and other branches of government. Challenges of legislative service.

**Course Outcomes**

There are no course outcomes available

6. Complete one course from the following:

POLI 420 : Constitutional Law - American Federal System. (3:3:0)
WHEN TAUGHT: Contact Department.

**Course Outcomes**

No outcomes are available at this time.

POLI 421 : Constitutional Law - Rights and Immunities. (3:3:0)
WHEN TAUGHT: Contact Department.

**Course Outcomes**

There are no course outcomes available

7. Complete one additional political science elective (300-level or above).

8. Complete the following:

HIST 477 : History and Social Science Teaching Methods and Instruction. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: SC ED 276R; Fingerprinting and FBI clearance.
DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.
NOTE: Check with Hist 477 instructor for specific prerequisites for the major or minor program.

**Course Outcomes**

There are no course outcomes available

HIST 478 : Practicum in Secondary Education. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: SC ED 276R; Concurrent enrollment in Hist 477 or comparable major course.
DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Prospective teachers will consider the characteristics of learning-centered classrooms that are based on current theories of learning
- Students will study and apply research-supported teaching methods that foster students' content knowledge, content and literacy skills, and learning and democratic dispositions.
- Students will consider various methods of assessing student learning.
- They will be assisted in the preparation of the teacher work sample and a multiple text inquiry activity.
- Students will be assisted in the preparation of the teacher work sample and a multiple text inquiry

activity.
- The course will provide a forum to coordinate and reflect on the prospective teachers' clinical experiences.

9. Poli 101 and 297 cannot be counted toward the minor.
10. Students scoring a 4 or 5 on the American Government and/or Comparative Government AP exams may substitute AP credit for Poli 110 or Poli 150, respectively. However, they are required to take at least one upper-division elective in each subfield in which they substitute AP credit for American Government and Politics or Comparative Government and Politics.

*Hours include courses that may fulfill university core requirements.

## Show all Political Science (Poli) Courses

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**Minors**

- International Strategy and Diplomacy
- Legal Studies
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**Course Information**

- Political Science (Poli) Courses

**Faculty**

# Political Science (Poli)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

POLI 101R : Current Events and Political Science. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: An introduction to political science using both national and international current events. Introduces faculty and academic expectations. Appropriate for non-majors.

**Course Outcomes**

No outcomes are available at this time.

POLI 110 : American Government and Politics. (3:3:0)

OFFERED: Honors also. Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Origin and development of federal Constitution; national, state, and local governments and politics.

**Course Outcomes**

There are no course outcomes available

POLI 150 : Comparative Government and Politics. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Patterns of European, Asian, Latin American, and other political systems.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 170 : Introduction to International Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Basic forces, practices, institutions, and foreign policies of major powers; problem areas in international politics.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

POLI 200 : Political Inquiry. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Methodology of political science, including theory and techniques of qualitative and quantitative research design.

NOTE: Prerequisite to all upper-division courses.

**Course Outcomes**

There are no course outcomes available

POLI 201 : Western Political Heritage 1. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Western civilization from Greek antiquity to Renaissance, primarily from perspective of political philosophy and scriptures; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Western Political Heritage 1.

**Course Outcomes**

POLI 202 : Western Political Heritage 2. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Western civilization from Renaissance to present, primarily from perspective of political philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 210 : Principles of American Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Poli 200.

DESCRIPTION: An introduction to the subfield of American politics for advanced students and majors. Basic concepts, theories, and methods of American politics and political science.

**Course Outcomes**

There are no course outcomes available

POLI 249R : Introductory Topics in Politics. (1-3:Arr:0)

DESCRIPTION: Special topics course; unique topic for each section is chosen by the professor.

**Course Outcomes**

No outcomes are available at this time.

POLI 250 : Principles of Comparative Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Poli 200.

DESCRIPTION: An introduction to the subfield of comparative politics for advanced students and majors. Basic concepts, theories, and methods of comparative politics and political science.

**Course Outcomes**

There are no course outcomes available

POLI 270 : Principles of International Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Poli 200.

DESCRIPTION: An introduction to the subfield of international relations for advanced students and majors. Basic concepts, theories, and methods of international relations and political science.

**Course Outcomes**

There are no course outcomes available

POLI 297R : Internship Program Preparation. (1-2:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Preparatory seminar for students who will be participating in departmental internship programs.

**Course Outcomes**

There are no course outcomes available

POLI 298 : Speaker Series on Political Careers. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Networking and career guidance through a series of lectures by career professionals.

**Course Outcomes**

There are no course outcomes available

**300-Level Courses**

POLI 302 : Experimental Research Methods. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200 and Poli 328, or concurrent enrollment.

DESCRIPTION: Students will learn how to conduct experiments in the social sciences. All students will conduct an original experiment, learn how to analyze the data, and present their results in a publishable format.

**Course Outcomes**

There are no course outcomes available

POLI 303 : Qualitative Methods. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: POLI 200

DESCRIPTION: Qualitative methods for gathering data and analyzing theories, including concept formation, textual analysis, interviewing, archival research, case studies, and comparative historical analysis.

**Course Outcomes**

There are no course outcomes available

POLI 304 : Game Theory in Political Science. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Introduction to game theory, concentrating on applications in politics.

**Course Outcomes**

There are no course outcomes available

POLI 305 : Survey Research Methods. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 328 or concurrent enrollment.

DESCRIPTION: Teaches principles of survey research methods from a Total Survey Error perspective. Topics and assignments include sampling, non-response, coverage, measurement, and analysis. Course project will conduct a survey for a client from start to finish.

**Course Outcomes**

There are no course outcomes available

POLI 306R : Topics in Political Science Methods. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Advanced methods of political science. Topics selected by instructor.

**Course Outcomes**

There are no course outcomes available

POLI 311 : State and Local Government and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Poli 110 or Poli 210.

DESCRIPTION: Relation of state and national governments, forms of state governments and politics, types of municipal governments and their operation.

**Course Outcomes**

There are no course outcomes available

POLI 313 : Interest Groups. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 110 or 210; Poli 200.

DESCRIPTION: Theories on formation and maintenance of interest groups; tactics of groups in legislative, executive, bureaucratic, and court settings; influence of groups on elections and public policy.

**Course Outcomes**

There are no course outcomes available

POLI 314 : The United States Presidency. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 110 or 210; Poli 200.

DESCRIPTION: Presidential power in the United States, focusing on major roles of the American presidency.

**Course Outcomes**

There are no course outcomes available

POLI 315 : Congress and the Legislative Process. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Poli 110 or 210; Poli 200.

DESCRIPTION: Election process; structure, organization, and procedures of legislative bodies; relations with pressure groups, the president, and executive branch.

**Course Outcomes**

There are no course outcomes available

POLI 316 : American Political Parties. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Electoral and policy-making roles of American political parties today and their future in American politics.

**Course Outcomes**

There are no course outcomes available

POLI 317 : Public Opinion and Voting Behavior. (3-4:3:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: POLI 200

RECOMMENDED: Poli 328.

DESCRIPTION: Relationship between attitudes, opinion, and voting behavior in American politics and institutions.

**Course Outcomes**

There are no course outcomes available

POLI 318 : Campaigns and Elections. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Analyzes electoral process in the United States, including history, significance in governance, campaign strategy, finance, media role, etc.

**Course Outcomes**

There are no course outcomes available

POLI 319R : Topics in American Government and Politics. (.5-3:3:0)

**Course Outcomes**

There are no course outcomes available

POLI 320 : American Politics Through Literature. (3:3:0)

DESCRIPTION: American politics through the novel and other literary works. Developing political concepts and themes that come from significant political novels.

**Course Outcomes**

No outcomes are available at this time.

POLI 321 : The Media in American Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: News media's role in processes of American politics, including electoral process, legislative process, and public policy-making.

**Course Outcomes**

There are no course outcomes available

POLI 324 : Political Psychology. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

RECOMMENDED: Poli 328.

DESCRIPTION: Survey of classic and contemporary research in political psychology. Special focus on how citizens think and feel about politics and the ways in which those beliefs shape their interactions with the political world.

**Course Outcomes**

There are no course outcomes available

POLI 328 : Statistical Analysis. (4:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: POLI 200

DESCRIPTION: Quantitative techniques in political research.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 331 : Politics and Public Policy. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Introduction to major public policy issue areas and how political processes are used to address social problems.

**Course Outcomes**

There are no course outcomes available

POLI 332 : Public Policy Analysis. (3:3:0)

PREREQUISITE: POLI 200

DESCRIPTION: Analysis of how societies can and should choose between different public policy options to achieve public ends, with a focus on applied cost-benefit analysis.

**Course Outcomes**

No outcomes are available at this time.

POLI 333 : Politics of Bureaucracy. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Theory and nature of bureaucracy; sources of power; political executives; staffs and agency personnel; conflicts with elected officials; public interest and bureaucratic control.

**Course Outcomes**

No outcomes are available at this time.

POLI 334 : Public Ethics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Sources of values, areas of conflict with government policy, means of value accommodation.

**Course Outcomes**

There are no course outcomes available

POLI 335 : Social Policy. (3:3:0)

DESCRIPTION: Justifications for government intervention in families and individual lives, effectiveness of social policies.

**Course Outcomes**

No outcomes are available at this time.

POLI 336 : Government and Religion. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Christian-Hebraic concepts of state. American experience with church-state relations (First Amendment problems). Policy issues of concern to contemporary religions.

**Course Outcomes**

There are no course outcomes available

POLI 339R : Topics in Public Policy. (3:3:0)

PREREQUISITE: Poli 200 or equivalent.

**Course Outcomes**

There are no course outcomes available

POLI 341 : Western European Politics. (3:3:0)

RECOMMENDED: Poli 200.

DESCRIPTION: Politics and policy in western Europe. State-building, party systems, nationalism, and cooperation among advanced industrial countries in comparative, historical perspective. Social and Christian democracy; European Union.

**Course Outcomes**

There are no course outcomes available

POLI 342 : Gender and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Theories of representation; gender and citizenship; gender and political candidacy; gender and leadership; gendered political issues.

**Course Outcomes**

There are no course outcomes available

POLI 343 : Comparative Institutional Design. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 150 or 250.

RECOMMENDED: Poli 328.

DESCRIPTION: Studies the rich variety of political institutions around the world, in both developed and developing countries, democracies, and dictatorships, and their implications for policy decisions and political, social and economic outcomes such as political violence, economic development, and democratization.

**Course Outcomes**

There are no course outcomes available

POLI 344 : Comparative Political Economy. (3:3:0)

PREREQUISITE: Poli 150 or 250; Poli 200.

DESCRIPTION: Overview of political economy from a comparative perspective. Classic theorists (Smith, Marx, Schumpeter, etc.); classic questions (industrialization, national economic policy, property, globalization, law, and economics).

**Course Outcomes**

There are no course outcomes available

POLI 345 : Comparative Parties and Elections. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Analyzes the electoral process and political parties in both the United States and other countries. Special attention is given to gender issues, campaigns, financing, corruption, extremist parties, religion, class, issues, fairness, accountability, electoral rules, and democracy.

**Course Outcomes**

No outcomes are available at this time.

POLI 347 : Russia/Former Soviet Politics. (3:3:0)

DESCRIPTION: Comparative politics of Russia and Soviet successor states. Development of political systems from common Soviet heritage, emphasizing post-independence politics and institution building.

**Course Outcomes**

There are no course outcomes available

POLI 348 : Government and Politics of Asia. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Comparative analysis of political developments of the major countries of Asia not covered in other country-specific classes.

**Course Outcomes**

There are no course outcomes available

POLI 349R : Topics in Politics. (.5-3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200 or equivalent.

**Course Outcomes**

There are no course outcomes available

POLI 351 : British Government and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Examination of the origin and contemporary operation of British political institutions as they relate to British society.

**Course Outcomes**

There are no course outcomes available

POLI 352 : African Politics. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Processes of change and development of nation states; African regionalism and relations with other nations; contemporary political issues.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 353 : China: Government and Politics. (3:3:0)

DESCRIPTION: Structure and behavior of politics; contemporary problems.

**Course Outcomes**

There are no course outcomes available

POLI 354 : Japan: Government and Politics. (3:3:0)

DESCRIPTION: Structure and behavior of politics; contemporary problems.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 355 : Canadian Government and Politics. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Growth and development of Canada and its government; Canada's role in the contemporary world

**Course Outcomes**

No outcomes are available at this time.

POLI 357 : Middle East: Political Systems. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Poli 200.

DESCRIPTION: Social, philosophical, and religious impact on Middle East political institutions in an era of modernization and conflict.

**Course Outcomes**

There are no course outcomes available

POLI 358 : Latin American Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200 or Lt Am 211.

DESCRIPTION: Conceptual and contemporary issues in Latin America's search for political order and economic development.

**Course Outcomes**

There are no course outcomes available

POLI 359R : Topics in Comparative Politics. (3:3:0)

PREREQUISITE: Poli 200 or equivalent.

**Course Outcomes**

There are no course outcomes available

POLI 362 : Reason, Revelation, and Politics. (3:3:0)

RECOMMENDED: Poli 201 or 202 or class in philosophy.

DESCRIPTION: The fruitful tension between the authority of reason and that of revelation in the Western tradition and in contemporary politics.

**Course Outcomes**

No outcomes are available at this time.

POLI 363 : Theories of Human Freedom. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Scope of human freedom at the metaphysical, individual, social, and political levels.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

No outcomes are available at this time.

POLI 364 : Jurisprudence. (3:3:0)

DESCRIPTION: Problem approach to ancient and modern legal philosophies, emphasizing the nature of justice and the relation of law to morality.

**Course Outcomes**

There are no course outcomes available

POLI 365 : Early American Political Thought: 1620-1865. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Core principles and seminal texts of American politics from Colonial times through the Lincoln administration.

**Course Outcomes**

No outcomes are available at this time.

POLI 366 : Modern American Political Thought: 1865-Present. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Core principles and seminal texts of American politics from Reconstruction to the present.

**Course Outcomes**

No outcomes are available at this time.

POLI 367 : Contemporary Political Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Poli 201 or Poli 202 or Phil 201 or Phil 202.

DESCRIPTION: History of political science, including the moral and ethical dimensions of politics.

**Course Outcomes**

There are no course outcomes available

POLI 368R : Topics in Political Philosophy. (3:3:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

There are no course outcomes available

POLI 371 : Foreign Policy Analysis. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200; Poli 170 or 270.

DESCRIPTION: Survey of research regarding multiple levels of foreign policy analysis: individual, group, bureaucratic, societal, economic, systemic.

**Course Outcomes**

No outcomes are available at this time.

POLI 372 : International Political Economy. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Political implications of international trade, investment, and monetary policies within an increasingly interdependent global context; transnationalism.

**Course Outcomes**

There are no course outcomes available

POLI 373 : International Law. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Nature and function of international law; recognition, succession, jurisdiction rights, and immunities of states; nationality and jurisdiction over nations.

**Course Outcomes**

There are no course outcomes available

POLI 374 : Ethics and International Affairs. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Ethical considerations in study and practice of international politics. Realism, idealism, and other theories of state behavior subjected to ethical standards.

**Course Outcomes**

There are no course outcomes available

POLI 375 : International Organizations. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: International institutions; transnational relations; rise of newer political organizations: League of Nations, United Nations, European communities, world religions, multinational corporations, terrorist groups, global regimes.

**Course Outcomes**

There are no course outcomes available

POLI 376 : U.S. Foreign Policy. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Formation, implementation, analysis, and criticism of themes in American foreign policy.

**Course Outcomes**

There are no course outcomes available

POLI 377 : National Security Affairs. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Foreign policy, defense strategy, and intelligence.

**Course Outcomes**

There are no course outcomes available

POLI 378 : International Conflict. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 150, 170, 250, or 270; Poli 200.

DESCRIPTION: Causes of war; alliances and empires; military innovation; civil-military relations; fungibility of forces; terrorism; security studies methods; use and misuse of history.

**Course Outcomes**

There are no course outcomes available

POLI 379R : Topics in International Relations. (.5-3:3:0)

PREREQUISITE: Poli 200 or equivalent.

**Course Outcomes**

There are no course outcomes available

POLI 380 : International Relations of Latin America. (3:3:0)

PREREQUISITE: Poli 200 or Lt Am 211.

DESCRIPTION: Factors that affect foreign relations of Latin American countries, including the U.S. role, emphasizing intervention, democracy, development, and trade.

**Course Outcomes**

There are no course outcomes available

POLI 381 : International Relations of the Middle East. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Interregional relations and conflicts, political economics, Arab nationalism, processes of political change, alliances, and superpower relations.

**Course Outcomes**

No outcomes are available at this time.

POLI 382 : International Relations of North America. (3:3:0)

DESCRIPTION: Examination and analysis of factors that affect foreign relations of Canada, U.S., and Mexico, emphasizing trade, security, migration, environment.

**Course Outcomes**

There are no course outcomes available

POLI 385 : International Relations of Asia. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Foreign policies and international relations of China, Japan, and Northeast and Southeast Asia; historical and contemporary review and analysis.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 386 : Japanese Foreign Policy. (3:3:0)

DESCRIPTION: Process and outcomes of Japan's foreign policy; analysis of its relations with other nations in a historical and contemporary setting.

**Course Outcomes**

There are no course outcomes available

POLI 387 : International Relations of Developing Countries. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Poli 150, 170, 250, or 270; Poli 328.

DESCRIPTION: Global politics in developing countries, focusing on trade, aid, conflict, women's rights, and the changing global balance of power.

**Course Outcomes**

There are no course outcomes available

POLI 388 : Chinese Foreign Policy. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Structure and process of foreign policy of the People's Republic of China.

**Course Outcomes**

There are no course outcomes available

POLI 391 : Advanced Seminar on Current Issues. (3:3:0)

PREREQUISITE: Acceptance to Washington Seminar.

DESCRIPTION: Briefings and lectures from government officials and agencies, as well as directed readings on current issues.

NOTE: For students interning in Washington, D.C.

**Course Outcomes**

There are no course outcomes available

POLI 392R : Topics in Political Strategy. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Special topics for the Political Strategy track. Topic chosen by instructor.

**Course Outcomes**

No outcomes are available at this time.

POLI 393R : Topics in Legal Studies. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Special topics for the Legal Studies track. Topic chosen by instructor.

**Course Outcomes**

There are no course outcomes available

POLI 394R : Topics in Global Development. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Special topics for the Global Development track. Topic chosen by instructor.

**Course Outcomes**

There are no course outcomes available

POLI 397 : Utah Legislative Politics. (2:2:0)

DESCRIPTION: Preparatory seminar for students in the Utah State Legislature internship. Utah history and political structure. Relations between legislature and other branches of government. Challenges of legislative service.

**Course Outcomes**

There are no course outcomes available

POLI 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Acceptance into program.

DESCRIPTION: Work-study on the international, national, state, and local level.

**Course Outcomes**

There are no course outcomes available

: Washington DC Internship.

**Course Outcomes**

: International Internship.

**Course Outcomes**

: Congressional Internship.

**Course Outcomes**

: State Government Internship.

**Course Outcomes**

: City Government Intership.

**Course Outcomes**

: Pre-Law Internship.

**Course Outcomes**

: Utah Legislature Internship.

**Course Outcomes**

: Campaign Internship.

**Course Outcomes**

**400-Level Courses**

POLI 400 : Research Project in Political Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 200 & POLI 201; or POLI 200 & POLI 202
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.

**Course Outcomes**

There are no course outcomes available

POLI 410 : Research Project in American Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 110 & POLI 200; or POLI 210 & POLI 200; or instructor's consent.
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.
NOTE: For political science majors only.

**Course Outcomes**

There are no course outcomes available

POLI 420 : Constitutional Law - American Federal System. (3:3:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

No outcomes are available at this time.

POLI 421 : Constitutional Law - Rights and Immunities. (3:3:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

There are no course outcomes available

POLI 422 : Interests and Ideas in the American Founding. (3:3:0)

WHEN TAUGHT: Contact Department.
RECOMMENDED: Poli 202.
DESCRIPTION: A systematic investigation of the American founding, focusing on key interests and ideas represented at the Federal Convention of 1787 (and in other seminal events) emphasizing historical and empirical literature.

**Course Outcomes**

There are no course outcomes available

POLI 430 : Research Project in Public Policy. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 110 & POLI 200; or POLI 210 & POLI 200; or instructor's consent.
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.
NOTE: For political science majors only.

**Course Outcomes**

No outcomes are available at this time.

POLI 444 : The Political Economy of Development. (3:3:0)

WHEN TAUGHT: Contact Department.
RECOMMENDED: Econ 110, Poli 200.
DESCRIPTION: Political foundations of growth, providing public goods, and political reform in developing countries. Development and how institutions and culture shape it.

**Course Outcomes**

There are no course outcomes available

POLI 450 : Research Project in Comparative Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 150 & POLI 200; or POLI 250 & POLI 200; or instructor's consent.
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.

**Course Outcomes**

There are no course outcomes available

POLI 452 : Islam and Politics. (3:3:0)

PREREQUISITE: Poli 200.
DESCRIPTION: Tensions and accommodations between religion and politics in Muslim nations.

**Course Outcomes**

There are no course outcomes available

POLI 461 : Federalist Papers. (3:3:0)

PREREQUISITE: Poli 200.
DESCRIPTION: The primary defense of the Constitution of the United States, which also constitutes the major commentary on that document.

**Course Outcomes**

There are no course outcomes available

POLI 462 : Tocqueville on America. (3:3:0)

DESCRIPTION: Alexis de Tocqueville's *Democracy in America*.

**Course Outcomes**

No outcomes are available at this time.

POLI 465 : Philosophy of the Social Sciences. (3:3:0)

PREREQUISITE: Poli 200.
DESCRIPTION: Comparative analysis of the philosophy of scientific and normative inquiry.

**Course Outcomes**

There are no course outcomes available

POLI 466 : Plato's Political Thought. (3:3:0)

PREREQUISITE: Poli 200.
DESCRIPTION: Plato's dialogues that contain political teachings or implications.

**Course Outcomes**

No outcomes are available at this time.

POLI 470 : Research Project in International Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 170 & POLI 200; or POLI 270 & POLI 200; or instructor's consent.
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.

**Course Outcomes**

There are no course outcomes available

POLI 472 : International Political Economy of Women. (3:3:0)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Effects upon national, international, and developmental policies when women are rendered visible and valued.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 473 : Human Rights. (3:3:0)

PREREQUISITE: Poli 200.
DESCRIPTION: Causes of human rights violations and societal and state responses; nature, history, and impacts of international human rights norms; ways to define and promote rights.

**Course Outcomes**

There are no course outcomes available

POLI 474 : Arab-Palestinian-Israeli Conflict. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Emphasizes historical background, current situation, and alternatives leading to conflict resolution.

**Course Outcomes**

There are no course outcomes available

POLI 475 : Civil Wars and Ethnic Violence. (3:3:0)

PREREQUISITE: Poli 200.

RECOMMENDED: Poli 150 or 250; 170 or 270; 328.

DESCRIPTION: Foundations of ethnic and nationalist identities and how they related to civil wars worldwide, emphasizing theoretical explanations of civil wars and their resolution. Key civil war cases examined.

**Course Outcomes**

There are no course outcomes available

POLI 476 : Terrorism. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

RECOMMENDED: Poli 150 or 250; 170 or 270; 328.

DESCRIPTION: Defining and conceptualizing terrorism; causes and varieties of terrorism; counterterrorism; the future of terrorism.

**Course Outcomes**

There are no course outcomes available

POLI 497R : Mentored Research. (1-6:0:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Original research under the guidance of a faculty mentor. Proposals must be approved by the department curriculum coordinator.

**Course Outcomes**

There are no course outcomes available

POLI 498R : Directed Readings. (.5-3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Political science major status; senior status; department chair's and instructor's consent.

**Course Outcomes**

There are no course outcomes available

POLI 499 : Honors Thesis. (.5-3:ARR:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Completion of lower-division political science major requirements.

**Course Outcomes**

No outcomes are available at this time.

## 500-Level Graduate Courses (available to advanced undergraduates)

POLI 539R : Advanced Topics in Public Policy. (3:3:0)

**Course Outcomes**

No outcomes are available at this time.

POLI 579R : Topics on World Politics. (3:3:0)

**Course Outcomes**

No outcomes are available at this time.

POLI 599R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Acceptance into program.

DESCRIPTION: Internships for master's candidates.

**Course Outcomes**

No outcomes are available at this time.

: Graduate Internship.

Back to Political Science Department Home

**College of Family, Home, and Social Sciences Home**

**Political Science Department Home**

**Majors**

- BA in Political Science

**Minors**

- International Strategy and Diplomacy
- Legal Studies
- Political Science
- Political Science Teaching
- Political Strategy

**Course Information**

- Political Science (Poli) Courses

**Faculty**

# Political Science Faculty

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## Professors

Bowen, Donna Lee
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1968
MA, University of Chicago, 1972
PhD, University of Chicago, 1981

Davis, Richard
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1975
MA, Brigham Young University, 1979
MA, Syracuse University, 1983
PhD, Syracuse University, 1986

Fry, Earl Howard
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1971
MA, Brigham Young University, 1972
PhD, University of California, Los Angeles, 1976

Hancock, Ralph C.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MA, Harvard University, 1980
PhD, Harvard University, 1983

Hawkins, Darren Greg
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA/BS, University of Utah, 1990
MA, University of Wisconsin, Madison, 1991
PhD, University of Wisconsin, Madison, 1996

Jacoby, Wade
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1987
PhD, Massachusetts Institute of Technology, 1995

Magleby, David B.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1973
MA, University of California, Berkeley, 1974

PhD, University of California, Berkeley, 1980

Patterson, Kelly D.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1982
MA, Brigham Young University, 1984
PhD, Columbia University, 1989

Stiles, Kendall Wayne

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1982
MA, Brigham Young University, 1983
PhD, Johns Hopkins University, 1987

Wilson, Sven Eric

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1989
MA, University of Chicago, 1992
PhD, University of Chicago, 1997

## Associate Professors

Christensen, Ray

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1984
JD, Harvard University, 1987
MA, Harvard University, 1990
PhD, Harvard University, 1992

Cooper, Scott

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, Duke University, 1996
PhD, Duke University, 1999

Goodliffe, Jay

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** SB, Massachuesetts Institute of Technology, 1992
MA, University of Rochester, 1996
PhD, University of Rochester, 1998

Hawkins, Kirk A.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1993
MA, Brigham Young University, 1995
MA, Duke University, 1998
PhD, Duke University, 2003

Hyer, Eric A.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1979
MA, Columbia University, 1981
MPhil, Columbia University, 1983
PhD, Columbia University, 1990

Karpowitz, Christopher

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994
MA, Brigham Young University, 1996
CERT, Duke University, 1998
MA, Princeton University, 2000
PhD, Princeton University, 2006

Monson, Joseph Quin

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1996
MA, Brigham Young University, 1996
MA, Ohio State University, 1999
PhD, Ohio State University, 2004

Nielson, Daniel L.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1988
PhD, University of California, San Diego, 1997

Pope, Jeremy

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1997
MA, Stanford University, 2002
PhD, Stanford University, 2004

## Assistant Professors

Barber, Michael J.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2008
MA, Princeton University, 2011
PhD, Princeton University, 2014

Beesley, Celeste E.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** AB, Princeton University, 2002
MA, University of California, San Diego, 2007
PhD, University of California, San Diego, 2013

Brown, Adam R.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2004
MA, University of California, San Diego, 2006
PhD, University of California, San Diego, 2008

Davis, Ryan W.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** BA, Arizona State University, 2005
MA, Princeton University, 2007
MA, Harvard University, 2012
PhD, Princeton University, 2011

Gubler, Joshua R.

**COLLEGE:** Family, Home, and Social Sciences

**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, University of Utah, 2005
PhD, University of Michigan, 2011

Mecham, R. Quinn

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1997
MA, Stanford University, 1999
PhD, Stanford University, 2006

Preece, Jessica R.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2003
MA, University of California, Los Angeles, 2006
PhD, University of California, Los Angeles, 2010

Selway, Joel Sawat

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Political Science
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, University of Michigan, 2006
PhD, University of Michigan, 2009

**College of Family, Home, and Social Sciences Home**

**Psychology Department Home**

**Majors**

- BS in Psychology

**Minors**

- Psychology
- Psychology Teaching

**Course Information**

- Psychology (Psych) Courses

**Faculty**

# Psychology

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## Admission to Degree Program

All undergraduate degree programs in the Department of Psychology are open enrollment.

## The Discipline

Psychology is a traditional discipline in the liberal arts and sciences and is rooted in the Western intellectual tradition. Since its founding in the late nineteenth century, psychology has distinguished itself primarily as a science with a wide scope of interests. Many psychologists also provide treatment for a broad range of disorders, and others work to solve pressing social issues. The diverse world community of academic and professional psychologists is devoted to expanding our understanding of individual and collective behavior and applying that understanding toward improving the human condition.

The department joins students and faculty together to make a scientific and applied contribution to the discipline of psychology. Its faculty members and administrators are committed to an educational experience that excites learning and understanding in personal and collaborative settings. At the same time the department honors the restored gospel as vital for psychological theory, as a guide for professional conduct, and as a source of unique insight. Aware of the history of psychology and as active participants therein, faculty members hold students to high standards of individual and collective performance and understanding. Students are expected to respond to multiple styles of teaching and broad opportunities for engagement in research and application with serious and sustained interest and effort. In this way the department distinguishes itself as a community of scholarship, moral principle, and devotion to the elevation of humankind.

## Career Opportunities

The psychology major is a gateway to professional employment and to advanced study in psychology. Psychologists engage in a variety of academic roles as teachers, researchers, and administrators and also provide counseling, clinical, and consulting services to individuals and organizations. Psychologists are employed by colleges and universities, public and private schools, clinics, and hospitals. They work in private practice and for corporations and government entities. The study of psychology has particular value for family life and for civic and cultural roles generally. The psychology major provides a well-informed perspective on human and organizational behavior in preparation for occupations in law enforcement, law, or business.

Most professional positions require a master's or doctoral degree, although a bachelor's degree may be sufficient to gain employment in mental health care, detention and probation services, auxiliary social work, personnel, or human resources. Further, the psychology major gives students a particularly strong background leading to graduate study in business, law, or medicine.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Psychology** (Program Outcomes)

**Minor in Psychology**
**Minor in Psychology Teaching**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Psychology
PhD in Psychology
PhD in Clinical Psychology

For more information see the BYU 2014–2015 Graduate Catalog.

**College of Family, Home, and Social Sciences Home**

**Psychology Department Home**

**Majors**

- BS in Psychology

**Minors**

- Psychology
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**Course Information**

- Psychology (Psych) Courses

**Faculty**

# BS in Psychology (52–53 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. At least 36 of the total major credits must be 300-level or above. (Students can enroll in 500-level courses on a space-available basis.)
2. The Psychology Department requires a minimum of 23 hours of psychology major credit to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
3. A maximum of 13 hours may be taken as Independent Study (only 8 of which may count as departmental residence hours).
4. Complete one course from the following:

PHIL 150 : Reasoning and Writing. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Recommended for philosophy majors and minors.
DESCRIPTION: Informal grammar, logic, and rhetoric as tools for reading and writing. Library research.
NOTE: Fulfills GE First-Year Writing requirement. No course challenges accepted.

**Course Outcomes**

There are no course outcomes available

WRTG 150 : Writing and Rhetoric. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Processes of writing, reading, and research with an emphasis on argumentation and rhetorical analysis.
NOTE: Fulfills General Education First-Year Writing requirement.

**Course Outcomes**

- Use rhetoric responsibly to compose arguments in a variety of genres for specific audiences and purposes.
- Critically read texts. This includesanalyzing how a text functions in a specific situation, community, or public;analyzing the nuances of language (diction, figures of speech, tone, etc.);identifying and evaluating the elements of an argument—claims, reasons, assumptions, and ethical, emotional, and logical appeals.
- Write coherent and unified texts (effective introductions, clear theses, supporting details, transitions, and strong conclusions) using a flexible and effective writing process, including prewriting, drafting, revising, and editing.
- Use style—diction, figurative language, tone, grammar, punctuation, spelling, mechanics—genre, conventions, and document design correctly and for rhetorical effect.
- Navigate the library to locate primary and secondary sources, evaluate the appropriateness and credibility of those sources, and effectively incorporate and accurately document outside sources in a research paper.

**Note:** Waivers based on AP or other test scores do not apply to this requirement.

5. Complete the following prerequisite courses:

PSYCH 101 : Orientation to the Psychology Major. (1:1:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Overview of curriculum and major requirements, faculty research programs and specialties, campus resources, and career possibilities.
NOTE: Required seminar for all students entering major.

**Course Outcomes**

- Students will demonstrate familiarity with the undergraduate psychology curriculum and requirements of the psychology major in terms of the American Psychological Association standards and their implementation at BYU.Measurement: In-class quizzes from assigned textbook reading; individual exams that apply the reading personally.
- Students will classify the major post-baccalaureate occupational and academic opportunities available to

psychology majors.Measurement: In-class quizzes from assigned textbook reading; individual exams that apply the reading personally. Design, production, and presentation of a poster that describes an opportunity of interest.
- Students will develop a personal plan for transitioning from student to career professional.Measurement: Produce a personal plan in multiple drafts.

PSYCH 111 : Introduction to Psychological Science. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic course in modern scientific psychology.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Objective: Apply psychological principles to personal and social issues and problems.Measurement:Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper.
- Objective: Demonstrate a broad knowledge of the basic theoretical perspectives that guide psychological inquiry.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Pyychology 111 sections.
- Objective: Understand the basic research methods used in psychology, including classical and current experiments.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper, participation as a subject in actual psychological research.

PSYCH 210 : A History of Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 111
RECOMMENDED: May be taken concurrently with Psych 301.
DESCRIPTION: Overview of psychological thinking from Ancient Greece to the present. Emphasizes a critical stance toward the assumptions and implications of major psychological theories.
NOTE: This course contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

There are no course outcomes available

**Note:** These courses must be completed prior to enrollment in the courses listed in item 7 below.

6. Complete one multicultural issues course from the following:

ANTHR 101 : Social/Cultural Anthropology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Aspects of society and culture: kinship, beliefs, economy, and political order among peoples worldwide. Methods and perspectives used in social/cultural anthropology.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Come to understand culture as a way of interpreting experience, and realize that culture informs both social life and individual psychology, shaping and coloring how people perceive and act in the world.Grasp the social scientific principles and reasoning involved in ethnography, and recognize the value, limitations, and ethical implications of this way of making sense of social conduct.Acquire an informed awareness of other cultural worlds—an appreciation of other ways of being human—of believing, behaving, and belonging, including their kinship organization and ritual, economic, and political practices.— Learn to see personal beliefs, values, attitudes, and conduct—including kinship organization and ritual, economic and political practices—from the perspective of people with different ideas about the way the world works.Develop an increased ability to write effectively.

SFL 354 : Cross-Cultural Family and Human Development. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: SFL 101 & SFL 290; SFL 160 or SFL 210 or concurrent enrollment.
DESCRIPTION: Comparative study of familial, social, and other factors in development.

**Course Outcomes**

- Critically evaluate the importance of considering gender as an important contextual factor for understanding human development and relationships.Develop awareness of one's own cultural and gender-based values and beliefs.Recognize and explicate biases inherent in the perspective of the dominant U.S. culture.Engage in class (and out-of-class) discussions about class topicsBe better positioned as a citizen of the world, in terms of valuing diversity and being able to analyze world cultures for how they might benefit (or cost) individual and family development.

SOC 113 : Multicultural America. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Diverse cultural heritages in the United States. Cultures studied scientifically will include African American, Hispanic, Asian American, and Native American.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

7. Complete the following prerequisite courses:

PSYCH 307 : Writing Within Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 101 & PSYCH 111 & WRTG 150; or equivalents.

DESCRIPTION: Processes of research-oriented writing and presentation for psychology majors.

NOTE: Must be taken prior to or concurrently with Psych 308. Fulfills GE Advanced Written and Oral Communication requirement. Engl 315 will substitute for this course.

**Course Outcomes**

- Students will demonstrate that they can write clearly, focus on a well-defined purpose in writing, use conventions of format and structure appropriate to their discipline, and adopt a voice, tone, and level of formality suited to multiple purposes and audiences, including audiences both within and outside the discipline in which the course is offered.Measurement: Informal in-class writing assignments will be given and formal writing assignments will be assigned in multiple drafts with peer- and instructor-review. Genres could include a personal writing journal, letter of intent, letter to the editor, literature review, research proposal, book review, and poster presentation. Explicit focus on the Publication Manual of the American Psychological Association.
- Students will demonstrate an understanding of the roles that writing plays in their particular discipline, major, or career as a way of learning, as a way of demonstrating and evaluating what one has learned, and as a way of communicating with others.Measurement: See (1).
- Students will develop productive and flexible individual and collaborative writing processes, including prewriting, drafting, revising, editing, and proofreading. These processes could include the following: collecting data, finding supporting evidence, and creating good arguments; organizing the materials for a paper, writing successive drafts of the same paper; group writing, seeking and using peer responses; revising; editing grammar, usage, and punctuation; and using conventional formats. These processes will reflect processes of inquiry within the student's discipline.Measurement: See (1).
- Students will demonstrate the ability to use appropriate research tools and processes of research within their particular discipline, including library research. Students will demonstrate their ability to identify and evaluate sources, retrieve and evaluate data, take notes, and follow conventions of quoting, paraphrasing, and summarizing. They will cite sources properly and demonstrate an understanding of ethical issues related to research, including how to avoid plagiarism.Measurement: Complete the library-usage module provided by the Lee Library.
- Students will understand the genres, forms, styles, and documentation conventions of writing for their discipline. They will also demonstrate knowledge of edited syntax, grammar, punctuation, and spelling.Measurement: See (1).

PSYCH 308 : Psychological Statistics. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 210 & MATH 110

DESCRIPTION: Descriptive and inferential statistical analysis and hypothesis testing applied to psychological research data.

NOTE: Psych 307 must be taken prior to or concurrently with Psych 308. Stat 121 will not substitute for this course. Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will be able to recognize and understand basic statistical notation, formulae, and concepts.Measurement: Multiple choice and short answer exams
- Students will be able to accurately speak and write about statistical formulae, concepts, analyses, and results.Measurement: Short essays.
- Students will be able to correctly select and use basic statistical formulae and appropriately interpret the results.Measurement: Multiple choice tests, short essays.

PSYCH 309 : Psychological Testing. (3:2.5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 210 & PSYCH 307 & PSYCH 308

DESCRIPTION: Construction and validation of standardized psychological tests.

NOTE: Must be taken prior to or concurrently with Psych 310. Contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

- Students will effectively evaluate the psychometric strengths and weaknesses of individual psychological tests and measurements, using both conceptual and applied metrics.Measurement: This will be measured by instructors and teaching assistants based on a) multiple choice exams; b) case study evaluations of existing psychological measures; c) application of conceptual and statistical measures to students own course projects.
- Students will create their own psychological measurements suited to specific theories and hypotheses.Measurement: This will be measured by instructor evaluation of semester-long course projects that require integration of all course material including a) study design; b) creation of a measure; c) data collection and analysis; and d) written and oral presentation of study findings.

PSYCH 310 : Psychological Research Design and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 210 & PSYCH 307 & PSYCH 308

DESCRIPTION: Basic principles of designing, conducting, and reporting psychological investigations.

NOTE: Psych 309 must be taken prior to or concurrently with Psych 310. Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will be able to critically review the literature to generate a testable hypothesis based on a summation of current research findings and scientific thought.Measurement: Writing assignment.
- Students will be able to distinguish between methodological designs and implement and execute an appropriate design to test the hypothesis, demonstrating an understanding of and sensitivity to relevant ethical considerations, including how to identify and measure dependent variables and measure or control for independent and other variables critical to the design of the study.Measurement: Multiple choice tests, short essays.
- Students will be able to prepare a written report of the research project adhering to APA style in all aspects of presentation (e.g., format, figures/tables, referencing) in a format that would be suitable to submit to an APA journal.Measurement: Writing assignment.
- Students will be able to present the research orally to an audience of peers in either a paper or poster format.Measurement: Presentation assignment.
- Students will be able to critically evaluate the quality of published research.Measurement: Writing assignment.

**Note 1:** Psych 307 may be taken concurrently with Psych 308.

**Note 2:** Psych 308 is prerequisite to both Psych 309 and 310 and may be taken concurrently with 210.

**Note 3:** Psych 309 and 310 may be taken concurrently.

**Note 4:** Students considering application to graduate study are strongly encouraged to take Psych 300.

**Note 5:** English 315 can substitute for Psych 307.

8. Complete one gender issues course from the following:

POLI 472 : International Political Economy of Women. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Effects upon national, international, and developmental policies when women are rendered visible and valued.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

PSYCH 306 : Psychology of Gender. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Biological and social contributions to sex role development, sexual self-concept, and complementarity of sex roles.

NOTE: Contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

There are no course outcomes available

SOC 367 : Sociology of Gender. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Gender in social institutions: family, social hierarchies, economics, education, organizations, religion, and science.

**Course Outcomes**

There are no course outcomes available

WS 222 : (WS-Soc) Introduction to Women's Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Survey of scholarship about women's lives; new historical, sociological, psychological, and literary approaches that inform our understanding of women's experience.

**Course Outcomes**

- 1. Students will be able to define and use the critical vocabulary basic to the field of women's studies.
- 2. Students will be able to recognize the ways in which social structures and issues (government, family, education, health-care institutions, the media, etc.) have affected and affect women's lives.
- 3. Students will begin to gain an appreciation of the contributions of women throughout history and internationally.
- 4. Students will be able to perform and present research related to women's studies in oral and written formats.
- 5. Students will begin to make informed choices about their own behavior, health, education, and employment decisions based on their understanding of the role gender plays in relationships and society.

**Note:** If Psych 306 is selected to fill this requirement, it cannot also be used to fill the requirement listed in item 11 (Cluster B).

9. Complete one course from the following:

PSYCH 320 : Developmental Psychology: Childhood. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.
DESCRIPTION: Physical, mental, emotional, and social development of the child.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will describe current theories and research in human development from pre-natal development through late childhood, demonstrating an understanding of developmental processes that lead to normative development, including perceptual, cognitive, biological, genetic, and social domains, as well as factors that lead to psychopathology and mental illness.Measurement:Multiple choice tests, quizzes.
- Students will assess and critique a key issue in a group format presented to the class.Measurement:Assessment of presentation.
- Students will assess critical issues in early childhood development, integrating current research studies on topics in developmental psychology.Measurement:APA style paper.

PSYCH 342 : Abnormal Psychology. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Dynamics of maladjustment; major psychological disorders and therapeutic procedures. Fieldwork required.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and describe the major forms of psychological disorders and the major theories regarding the classification, etiology, and treatment of psychological disorders,and current data relevant to such theories.Measurement: Multiple choice, short answer and essay exams; short writing assignments.
- Students will engage in service learning by serving persons diagnosed with psychological disorders.Measurement: Participation assessment/field work report
- Students will critically examine key concepts and theories in abnormal psychology.Measurement: Essay exams, short writing assignments, in-class debates
- Students will examine and critique a topic in abnormal psychology using the current research literature.Measurement: APA style paper

**Note:** Psych 320 or 342 cannot be double-counted here and in Cluster A.

10. Complete the following:

PSYCH 350 : (Psych-Soc) Introduction to Social Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Conformity and obedience; socialization, norms, roles; attitudes, leadership, group processes.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will be able toidentify the unique contribution of social psychology to social science, situating the discipline within the larger domain of psychology and contrasting it with related disciplines, such as sociology.Measurement: Multiple choice tests, short essays.
- Students will be able to understand the use of surveys, laboratory and field experiments in conducting social psychological research, and understand the ethical principles of informed consent, deception and debriefing when conducting research with human participants.Measurement: Multiple choice tests, short essays.
- Students will be able to identify substantive areas of social psychological inquiry, including the self, person perception, attitudes and persuasion, group processes, stereotyping and prejudice, interpersonal attraction, helping behavior and aggression.Measurement: Multiple choice tests, short essays.
- Students will be able to identify and explain the contributions of major thinkers and contributors of classic and contemporary theory and research in social psychology, such as Leon Festinger and Stanley Milgram.Measurement: Multiple choice tests, short essays.
- Students will be able to identify how social psychological theory and research have been applied to domains outside the discipline, such as in health settings and the law.Measurement: Multiple choice tests, short essays.

PSYCH 381 : Behavioral Neurobiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or NEURO 205; or instructor's consent. (Neuro 205 will substitute for Psych 310.)
DESCRIPTION: Basic physiological, anatomical, and chemical foundations of psychology.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will develop their understanding of how the brain influences one's experience of the world and one's behavior in it.Measurement: In-class quizzes and/or exams on assigned textbook reading, lectures, and class discussions and written reports and/or in-class presentations of self-selected articles from the scientific literature.
- Students will identify scientific methods, especially those of cognitive neuroscience, that are valuable in behavioral neurobiology.Measurement: In-class quizzes and/or exams on assigned textbook reading, lectures, and class discussions and written reports and/or in-class presentations of self-selected articles from the scientific literature.
- Students will extend concepts and research findings to diseases, trauma, drug usage, hormones, and genes.Measurement: In-class quizzes and/or exams on assigned textbook reading, lectures, and class discussions and written reports and/or in-class presentations of self-selected articles from the scientific

literature.

11. Complete three courses in one of the following clusters. In addition, complete one additional course listed in the other clusters (Psych 307, 308, 309, and 310 are required prerequisites):
    Cluster A — Developmental and Clinical Psychology:
    Complete three courses from the following:

PSYCH 311 : Critical Issues in Psychology. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.
DESCRIPTION: Critical and comparative examination of underlying theoretical and philosophical issues relavant to contemporary social, personality, and cognitive psychology, neuroscience, and psychotherapy.

**Course Outcomes**

- Students will identify and describe basic assumptions (and the implications of those assumptions) that underlie the major theories, methods, practices, and schools of contemporary psychology.Measurement:Multiple choice quizzes or short essay assignments.
- Students will identify and critically evaluate these basic assumptions in the published writings of psychologists.Measurement:Multiple choice reading quizzes and short paper essay assignments.
- Students will compare and contrast alternative assumptions (and the implications of those assumptions) to those associated with the major theories, methods, practices, and schools of contemporary psychology, especially as they may be relevant to a Christian perspective.Measurement:Short paper essay assignments.

PSYCH 320 : Developmental Psychology: Childhood. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.
DESCRIPTION: Physical, mental, emotional, and social development of the child.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will describe current theories and research in human development from pre-natal development through late childhood, demonstrating an understanding of developmental processes that lead to normative development, including perceptual, cognitive, biological, genetic, and social domains, as well as factors that lead to psychopathology and mental illness.Measurement:Multiple choice tests, quizzes.
- Students will assess and critique a key issue in a group format presented to the class.Measurement:Assessment of presentation.
- Students will assess critical issues in early childhood development, integrating current research studies on topics in developmental psychology.Measurement:APA style paper.

(will not double-count with item 9 above)
PSYCH 321 : Developmental Psychology: Adolescence. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.
DESCRIPTION: Development and maturation during adolescence; research methodology.
NOTE: Contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

- Students will understand and remember the basic developments that occur during adolescence, the basic patterns of thought, emotion, and behavior characteristic of adolescents, and the important individual and contextual influences on adolescent psychology and development.Measurement: Multiple choice and short essay questions.
- Students will understand the key concepts and theories that are predominant in the literature on adolescent psychology and development.Measurement: Multiple choice and short essay questions.
- 3. Students will be able to more effectively communicate verbally and in writing about adolescence.Measurement: Research papers.
- Students will be able to analyze and critically evaluate ideas, arguments, and points of view about adolescence.Measurement: Research papers.
- Students will be able to apply knowledge of adolescence to address real-world issues.Measurement: Short writing assignments and in-class activities.

PSYCH 322 : Developmental Psychology: Adulthood. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.
DESCRIPTION: Stability and change in psychological, physiological, and interpersonal processes through early, middle, and late adulthood.
NOTE: Contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

- Students will understand and remember the basic developments that occur during adulthood, the basic patterns of thought, emotion, and behavior characteristic of adults, and the important individual and contextual influences on adult psychology and development.Measurement: Multiple choice and short essay questions.
- Students will understand the key concepts and theories that are predominant in the literature on adult psychology and development.Measurement: Multiple choice and short

essay questions.
- Students will be able to more effectively communicate verbally and in writing about adulthood.Measurement: Research papers.
- Students will be able to analyze and critically evaluate ideas, arguments, and points of view about adulthood.Measurement: Research papers.
- Students will be able to apply knowledge of adulthood to address real-world issues.Measurement: Short writing assignments and in-class activities.

PSYCH 341 : Personality. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Individual patterns of behavior, thought, and emotion; personality theories and their associated strategies of research, assessments, and personality change.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and distinguish the major personality theories of psychology.Measurement:Multiple choice/Short essay.
- Students will identify and give examples of contemporary research or applications of these theories.Measurement:Multiple choice/Short essay.
- Students will identify the theoretical assumptions that underlie these personality theories.Measurement:Multiple choice.
- Students will articulate some of the practical and religious implications of these theories.Measurement:Essay assignments.

PSYCH 342 : Abnormal Psychology. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Dynamics of maladjustment; major psychological disorders and therapeutic procedures. Fieldwork required.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and describe the major forms of psychological disorders and the major theories regarding the classification, etiology, and treatment of psychological disorders,and current data relevant to such theories.Measurement: Multiple choice, short answer and essay exams; short writing assignments.
- Students will engage in service learning by serving persons diagnosed with psychological disorders.Measurement: Participation assessment/field work report
- Students will critically examine key concepts and theories in abnormal psychology.Measurement: Essay exams, short writing assignments, in-class debates
- Students will examine and critique a topic in abnormal psychology using the current research literature.Measurement: APA style paper

(will not double-count with item 9 above)

PSYCH 343 : Child Psychopathology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Mental disorders of childhood.

**Course Outcomes**

- Students will identify and describe the etiology, assessment, diagnosis, and treatment of common psychological and developmental disorders in children and adolescents.Measurement:Multiple choice exams, quizzes.
- Students will demonstrate familiarity with current issues in child psychopathology.Measurement:Presentations, short writing assignments.
- Students will examine and critique a topic using the current research literature.Measurement:APA style paper.

PSYCH 348 : Clinical Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Personality theories, psychopathology, diagnostic interviewing and testing, psychotherapy techniques; research methods.

NOTE: Not a practicum.

**Course Outcomes**

- Students will identify and describe the theories, practices, and critical issues in clinical psychology.Measurement:Multiple choice exams, quizzes.
- Students will summarize and explain a current topic in clinical psychology to the class and/or engage in role play and interview activities.Measurement:Class presentations, role plays.
- Students will assess and evaluate personal career/educational opportunities in the field of clinical psychology.Measurement:Short writing assignments.
- Students will examine and critique current psychotherapies and describe their personal views about therapy.Measurement:APA style paper.

Cluster B — Social Psychology:

Complete three courses from the following:

PSYCH 306 : Psychology of Gender. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Biological and social contributions to sex role development, sexual self-concept, and complementarity of sex roles.

NOTE: Contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

There are no course outcomes available

PSYCH 311 : Critical Issues in Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Critical and comparative examination of underlying theoretical and philosophical issues relavant to contemporary social, personality, and cognitive psychology, neuroscience, and psychotherapy.

**Course Outcomes**

- Students will identify and describe basic assumptions (and the implications of those assumptions) that underlie the major theories, methods, practices, and schools of contemporary psychology.Measurement:Multiple choice quizzes or short essay assignments.
- Students will identify and critically evaluate these basic assumptions in the published writings of psychologists.Measurement:Multiple choice reading quizzes and short paper essay assignments.
- Students will compare and contrast alternative assumptions (and the implications of those assumptions) to those associated with the major theories, methods, practices, and schools of contemporary psychology, especially as they may be relevant to a Christian perspective.Measurement:Short paper essay assignments.

PSYCH 330 : Organizational Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Personal, interactional, and structural aspects of organizations; motivation, decision making, problem-solving communication, leadership, organizational structure, change.

NOTE: Org B 321 will not substitute for this course.

**Course Outcomes**

- Students will demonstrate a basic understanding of the major areas of organizational and industrial psychology, including human resources; leadership development; employee training, motivation, and satisfaction; group dynamics, organizational climate; and team-building.Measurement:Multiple choice tests, short essays.
- Students will learn to apply organizational theory to specific organizational situations.Measurement:Writing assignment.
- Students will acquire skill in collaborative teamwork, time management, self-motivation, and project planning.Measurement:Evaluation of cooperative class assignments.

PSYCH 338 : Sport Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Application of psychological principles to sporting activities.

**Course Outcomes**

- Students will demonstrate a basic understanding of the current status of the discipline of sport psychology and of the psychological theories that inform it, including behavioral principles and applications, social psychology, personality psychology, assessment, special athletic populations, coaching, and exercise psychology.Measurement: In-class exams on assigned textbook reading.
- Students will demonstrate familiarity with selected sport- psychology journals.Measurement: Author a paper that combines a literature review with application to a sport-performance environment.
- Students will identify and discuss current events related to sport psychology.Measurement: In-class reports and discussion of video clips or other media reports relevant to sport psychology.

PSYCH 341 : Personality. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Individual patterns of behavior, thought, and emotion; personality theories and their associated strategies of research, assessments, and personality change.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and distinguish the major personality theories of

psychology.Measurement:Multiple choice/Short essay.
- Students will identify and give examples of contemporary research or applications of these theories.Measurement:Multiple choice/Short essay.
- Students will identify the theoretical assumptions that underlie these personality theories.Measurement:Multiple choice.
- Students will articulate some of the practical and religious implications of these theories.Measurement:Essay assignments.

PSYCH 352 : Applied Social Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 310; or instructor's consent.

DESCRIPTION: Applying social psychological theory, research, and methods to such domains as law, business, education, the media, mental health, and physical health.

**Course Outcomes**

- Students will be able tounderstand how one defines something as a "social problem".Measurement: Multiple choice tests, short essays.
- Students will be able to compare and contrast basic and applied social psychology.Measurement: Multiple choice tests, short essays.
- Students will be able to identify substantive areas of social psychological application, such as education, physical health, mental health, the environment, and business.Measurement: Multiple choice tests, short essays.
- Students will be able to apply social psychological methods to an intervention designed to understand or ameliorate a social problem.Measurement: Evaluation of project

PSYCH 353 : LDS Perspectives and Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Relationships between theories of psychology and LDS thought.

**Course Outcomes**

There are no course outcomes available

PSYCH 354 : Psychology of Religion. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Classification of religious behavior and experience; source of religious motivation; religion and the growth process.

**Course Outcomes**

- Students will define psychology, religion, and spirituality and compare and contrast their key assumptions.Measurement:Multiple choice/Analytic essays.
- Students will critically examine the implications of psychological perspectives on religion and spirituality, as well as the implications of religious and spiritual perspectives on psychology.Measurement:Analytic essays.
- Students will identify alternative psychological, religious, and spiritual perspectives, examine their assumptions, and consider the value of their alternative implications to the relationship between these three worldviews.Measurement:Multiple choice/Analytical essays.
- Students will critically examine their own assumptions about the relationship between psychology, religion, and spirituality.Measurement:Analytical essays.

PSYCH 356 : Introduction to Health Psychology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Psychology focusing on the Biopsychological Model, i.e., health issues from standpoint of biological, psychological, and social factors.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and describe key concepts and theories in health psychology.Measurement: Multiple choice and brief response exams; quizzes.
- Students will examine the contributions of health psychology to the understanding of acute and chronic illness.Measurement: Multiple choice and brief response exams; group assignments and presentation.
- Students will critique current news articles about health using principles and concepts from class.Measurement: Writing assignments.
- Students will explain how principles of health psychology operate in everyday life.Measurement: Writing assignments.

PSYCH 358 : Leadership Development. (3:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Principles and practices of successful leadership: decision making, communications, planning, team building, motivation, and interpersonal skills.

**Course Outcomes**

There are no course outcomes available

PSYCH 376 : Language Development. (3:3:0)

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Principles of language acquisition including communicative development in infancy, sematic and syntactic development, language and literacy in the school years, and effects of brain damage.

**Course Outcomes**

- Students will demonstrate knowledge of early communicative behaviors and the emergence of language.Measurement:Multiple choice tests, short essays.
- Students will demonstrate knowledge of the components of language – specifically phonology, semantics, grammar, and pragmatics.Measurement:Multiple choice tests, short essays.
- Students will show knowledge of how language continues to develop in school age children as well as adulthood.Measurement:Multiple choice tests, short essays.
- Students will have a basic knowledge of various language disorders.Measurement:Multiple choice tests, short essays.
- Students will be able to describe the basic neurological components of language – including the effects of strokes and dementia on language and speech.Measurement:Short essays.

Cluster C — Behavior, Brain, and Cognition:

Complete three courses from the following:

PSYCH 311 : Critical Issues in Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Critical and comparative examination of underlying theoretical and philosophical issues relavant to contemporary social, personality, and cognitive psychology, neuroscience, and psychotherapy.

**Course Outcomes**

- Students will identify and describe basic assumptions (and the implications of those assumptions) that underlie the major theories, methods, practices, and schools of contemporary psychology.Measurement:Multiple choice quizzes or short essay assignments.
- Students will identify and critically evaluate these basic assumptions in the published writings of psychologists.Measurement:Multiple choice reading quizzes and short paper essay assignments.
- Students will compare and contrast alternative assumptions (and the implications of those assumptions) to those associated with the major theories, methods, practices, and schools of contemporary psychology, especially as they may be relevant to a Christian perspective.Measurement:Short paper essay assignments.

PSYCH 361 : Principles of Learning. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Principles of learning; representative experiments.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will develop their understanding of and facility with the concepts by which behavior analysis makes sense of selected learning phenomena.Measurement: In-class quizzes, both individual- and team-based, on assigned textbook and other reading.
- Students will connect the concepts to the behavior of a virtual laboratory rat.Measurement: Individual- and team-based written reports and in-class presentations of the results of virtual experiments. Team-based manuscripts in multiple drafts both peer- and instructor- reviewed.
- Students will apply the concepts to human behavior, including one's own.Measurement: Out-of-class team-based application activities summarized in written reports. Essay exams that emphasize applications to real-life phenomena.

PSYCH 365 : Motivation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Determinants of motivation, relationship of motives to emotion, cognition, personality, and action. Implications for understanding self and others.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will compare and contrast a wide range of theories and research findings within the subdiscipline of the psychology of motivation.Measurement: In-class quizzes, both individual- and team-based, on assigned textbook and other reading.
- Students will categorize and apply theories and concepts to specific fictional characters and settings in film.Measurement: Out-of-class application activities that focus on four films shown in class and that require application of specific concepts to the characters, plots, and themes of the films.
- Students will analyze connections between the subject matter and one's own experience

of motivation.Measurement: Individual essays and essay exams that focus on the personal application of concepts to one's experience.

PSYCH 370 : Sensation and Perception. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or NEURO 205; or instructor's consent.

DESCRIPTION: Sensory basis of perception and principles of perceptual organization.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will gain an understanding of how our brains interact with our external environment and give rise to our perceptions.Measurement: Students will demonstrate this understanding on quizzes and on exams.
- Students will develop an understanding of how we know what we know about sensation and perception, i.e., research methods in cognitive neuroscience and the scientific method.Measurement: Students will demonstrate this understanding through in-class discussion, on quizzes/exams, and through coming to class ready to learn. Being ready to learn includes completing the assigned readings and assessments, participating in lecture and discussion, and completing outside assignments (e.g., labs).
- Students will be able to apply the principles discussed in class to the world around them.Measurement: Students will demonstrate this through lab assignments.
- Students will be able to critically reflect on the content of psychology as well as on disciplinary values in light of their knowledge of and commitment to the restored gospel of Jesus Christ and to sustain personal values that are true to the gospel while maintaining their serious study of psychology and neuroscience.Measurement:Multiple choice exams, quizzes.

PSYCH 375 : Cognition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or NEURO 205; or instructor's consent.

DESCRIPTION: Perceptual organization; information processing; cognitive development; relationships between sensory analysis, perception, memory, learning, language, and problem solving.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will recognize and understand the cognitive processes of perception, memory, language, reasoning, and problem solving.Measurement: This will be assessed on multiple choice and essay quizzes and exams.
- Students will assess and develop ways to apply the principles of cognitive psychology.Measurement: This will be assessed with a design proposal that implements the principles of cognitive psychology.

PSYCH 382 : Stress Psychobiology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or NEURO 205; or instructor's consent. (Neuro 205 will substitute for Psych 310.)

DESCRIPTION: Behavioral neurobiology of stress.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will describe how stress affects physiology and physical health outcomes.Measurement:Multiple choice exams, quizzes.
- Students will integrate their knowledge of stress and health by analyzing a health condition in the context of stress.Measurement:APA style paper.
- Students will experiment with stress management techniques and assess their effectiveness using a stress management journal.Measurement:Journal entries, critique of experience.

PSYCH 387 : Introduction to Primate Behavior. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or NEURO 205; or instructor's consent.

DESCRIPTION: Overview of primate behavior; the role of parental care on developmental outcome, functional neurobiology, and psychopathology.

**Course Outcomes**

- Students will recognize the diversity of primate species and environments, and examine representative species in detail.Measurement: In-class quizzes and exams on the assigned reading.
- Students will examine specific aspects of behavior, including emotion, cognition, language, parental care, sociality, functional neurobiology, and psychopathology.Measurement: In-class quizzes and exams on the assigned reading.
- Students will compare and contrast nonhuman-primate and human behavior and environments, and consider the implications for personal beliefs about human behavior.Measurement: Literature review on a self-selected topic in multiple drafts with peer-, Writing Center-, and instructor-review.

PSYCH 388 : Drugs, Reward and Addiction. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PSYCH 111; or NEURO 205

DESCRIPTION: Examines the biopsychosocial nature of drug and behavioral addiction. This course presents the most current research in the field and bridges psychology and neuroscience.

**Course Outcomes**

There are no course outcomes available

12. Complete 3 hours from the following capstone seminars:

PSYCH 410R : Senior Practicum: Teaching of Psychology. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Capstone experience as an undergraduate teaching assistant or Psych Central tutor or in other teaching-related activities, including research.

**Course Outcomes**

- Students will demonstrate skill in grading, mentoring, and /or teaching one or more areas of psychology. In addition to their applied work under a faculty mentor, they will be instructed in a “teaching of psychology” class.Measurement: Student academic performance in this capstone will be assessed using multiple choice and short essay exams on the material from the class. Student application of teaching and grading practices and principles will be assessed through mentor evaluation of performance.

PSYCH 420R : Senior Practicum: Community Projects. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Capstone experience in community-based service learning related to practice of psychology. Structured record of student's experience required.

**Course Outcomes**

- Students will demonstrate knowledge of the application of the principles of psychology within a community setting.Measurement: Application of psychological principles in a community setting will be assessed through a mentor evaluation.

PSYCH 430R : Senior Practicum: Research in Psychology. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Capstone experience in psychological research -- laboratory-based, field-based, or otherwise. Student typically works with a research team.

**Course Outcomes**

- Students will demonstrate skill in several aspects of the research process: literature review and evaluation, data gathering, data analysis, writing, and publishing.Measurement: Student mastery of the research process will be assessed from a paper prepared by the end of the semester in proper format for publication.

**Note 1:** To enroll in a capstone seminar students must have completed Psych 101, 111, 210, 308, 309, and 310 (or be concurrently enrolled in 309 or 310); one core course from Cluster A, B, or C; and three other 300-level psychology courses (or be concurrently enrolled in the third course).

**Note 2:** Enrollment in Psych 399R will also meet the capstone seminar requirement.

*Hours include courses that may fulfill university core requirements.

## Show all Psychology (Psych) Courses

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# Minor in Psychology (19 hours*)

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## Program Requirements

1. Complete the following:

PSYCH 111 : Introduction to Psychological Science. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic course in modern scientific psychology.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Objective: Apply psychological principles to personal and social issues and problems.Measurement:Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper.
- Objective: Demonstrate a broad knowledge of the basic theoretical perspectives that guide psychological inquiry.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Pyychology 111 sections.
- Objective: Understand the basic research methods used in psychology, including classical and current experiments.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper, participation as a subject in actual psychological research.

PSYCH 308 : Psychological Statistics. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 210 & MATH 110
DESCRIPTION: Descriptive and inferential statistical analysis and hypothesis testing applied to psychological research data.
NOTE: Psych 307 must be taken prior to or concurrently with Psych 308. Stat 121 will not substitute for this course. Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will be able to recognize and understand basic statistical notation, formulae, and concepts.Measurement: Multiple choice and short answer exams
- Students will be able to accurately speak and write about statistical formulae, concepts, analyses, and results.Measurement: Short essays.
- Students will be able to correctly select and use basic statistical formulae and appropriately interpret the results.Measurement: Multiple choice tests, short essays.

2. Complete 12 elective hours from remaining undergraduate and 500-level courses; 9 hours must be 300-level or above. No more than 6 hours of Independent Study credit may count toward the minor. Students may enroll in 500-level courses with instructor's consent.

*Hours include courses that may fulfill university core requirements.

## Show all Psychology (Psych) Courses

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# Minor in Psychology Teaching (20 hours*)

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*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following:

PSYCH 111 : Introduction to Psychological Science. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic course in modern scientific psychology.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Objective: Apply psychological principles to personal and social issues and problems.Measurement:Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper.
- Objective: Demonstrate a broad knowledge of the basic theoretical perspectives that guide psychological inquiry.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Pyychology 111 sections.
- Objective: Understand the basic research methods used in psychology, including classical and current experiments.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper, participation as a subject in actual psychological research.

PSYCH 308 : Psychological Statistics. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 210 & MATH 110
DESCRIPTION: Descriptive and inferential statistical analysis and hypothesis testing applied to psychological research data.
NOTE: Psych 307 must be taken prior to or concurrently with Psych 308. Stat 121 will not substitute for this course. Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will be able to recognize and understand basic statistical notation, formulae, and concepts.Measurement: Multiple choice and short answer exams
- Students will be able to accurately speak and write about statistical formulae, concepts, analyses, and results.Measurement: Short essays.
- Students will be able to correctly select and use basic statistical formulae and appropriately interpret the results.Measurement: Multiple choice tests, short essays.

PSYCH 350 : (Psych-Soc) Introduction to Social Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Conformity and obedience; socialization, norms, roles; attitudes, leadership, group processes.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will be able toidentify the unique contribution of social psychology to social science, situating the discipline within the larger domain of psychology and contrasting it with related disciplines, such as sociology.Measurement: Multiple choice tests, short essays.
- Students will be able to understand the use of surveys, laboratory and field experiments in conducting social psychological research, and understand the ethical principles of informed consent, deception and debriefing when conducting research with human participants.Measurement: Multiple choice tests, short essays.
- Students will be able to identify substantive areas of social psychological inquiry, including the self,

person perception, attitudes and persuasion, group processes, stereotyping and prejudice, interpersonal attraction, helping behavior and aggression.Measurement: Multiple choice tests, short essays.
- Students will be able to identify and explain the contributions of major thinkers and contributors of classic and contemporary theory and research in social psychology, such as Leon Festinger and Stanley Milgram.Measurement: Multiple choice tests, short essays.
- Students will be able to identify how social psychological theory and research have been applied to domains outside the discipline, such as in health settings and the law.Measurement: Multiple choice tests, short essays.

3. Complete 6 elective hours from remaining undergraduate and 500-level courses (Psych 307 and 310 are recommended). Students may enroll in 500-level courses with instructor's consent.

4. Complete the following:

HIST 477 : History and Social Science Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SC ED 276R; Fingerprinting and FBI clearance.

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

NOTE: Check with Hist 477 instructor for specific prerequisites for the major or minor program.

**Course Outcomes**

There are no course outcomes available

HIST 478 : Practicum in Secondary Education. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SC ED 276R; Concurrent enrollment in Hist 477 or comparable major course.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Prospective teachers will consider the characteristics of learning-centered classrooms that are based on current theories of learning
- Students will study and apply research-supported teaching methods that foster students' content knowledge, content and literacy skills, and learning and democratic dispositions.
- Students will consider various methods of assessing student learning.
- They will be assisted in the preparation of the teacher work sample and a multiple text inquiry activity.
- Students will be assisted in the preparation of the teacher work sample and a multiple text inquiry activity.
- The course will provide a forum to coordinate and reflect on the prospective teachers' clinical experiences.

*Hours include courses that may fulfill university core requirements.

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# Psychology (Psych)

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## Undergraduate Courses

### 100-Level Courses

PSYCH 101 : Orientation to the Psychology Major. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of curriculum and major requirements, faculty research programs and specialties, campus resources, and career possibilities.

NOTE: Required seminar for all students entering major.

**Course Outcomes**

- Students will demonstrate familiarity with the undergraduate psychology curriculum and requirements of the psychology major in terms of the American Psychological Association standards and their implementation at BYU.Measurement: In-class quizzes from assigned textbook reading; individual exams that apply the reading personally.
- Students will classify the major post-baccalaureate occupational and academic opportunities available to psychology majors.Measurement: In-class quizzes from assigned textbook reading; individual exams that apply the reading personally. Design, production, and presentation of a poster that describes an opportunity of interest.
- Students will develop a personal plan for transitioning from student to career professional.Measurement: Produce a personal plan in multiple drafts.

PSYCH 111 : Introduction to Psychological Science. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic course in modern scientific psychology.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Objective: Apply psychological principles to personal and social issues and problems.Measurement:Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper.
- Objective: Demonstrate a broad knowledge of the basic theoretical perspectives that guide psychological inquiry.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Pyychology 111 sections.
- Objective: Understand the basic research methods used in psychology, including classical and current experiments.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper, participation as a subject in actual psychological research.

PSYCH 170 : Understanding and Improving Your Memory. (1:0:0)

OFFERED: Independent Study only.

DESCRIPTION: Principles of human learning and memory; study skills and methods for improving memory.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

PSYCH 210 : A History of Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 111

RECOMMENDED: May be taken concurrently with Psych 301.

DESCRIPTION: Overview of psychological thinking from Ancient Greece to the present. Emphasizes a critical stance toward the assumptions and implications of major psychological theories.

NOTE: This course contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

There are no course outcomes available

PSYCH 212R : Special Topics in Psychology. (.5-3:ARR:ARR)

DESCRIPTION: Small-group seminar focusing on a classical text or on readings related to a contemporary issue in theory and research.

**Course Outcomes**

There are no course outcomes available

PSYCH 220 : Human Development: Life Span. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Interaction of psychological, biological, and social influences on behavior and psychological development through the life span.

**Course Outcomes**

- Students will understand and remember the basic developments that occur across the lifespan, the basic patterns of thought, emotion, and behavior characteristic of individuals at each stage of the lifespan, and the important individual and contextual influences on human development.Measurement: Multiple choice and short essay questions.
- Students will understand the key concepts and theories that are predominant in the literature on human development.Measurement: Multiple choice and short essay questions.
- Students will be able to more effectively communicate verbally and in writing about human development.Measurement: Research papers.
- Students will be able to analyze and critically evaluate ideas, arguments, and points of view about human development.Measurement: Research papers.
- Students will be able to apply knowledge of human development to addressing real-world issues.Measurement: Short writing assignments and in-class activities.

PSYCH 240 : Personal and Social Adjustment. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Concepts of adjustment and application of psychological principles for coping with stress and interpersonal, emotional, and psychosexual difficulties.

**Course Outcomes**

There are no course outcomes available

PSYCH 270 : Improving Mental Skills. (3:3:0)

DESCRIPTION: Improving one or more of the following skills: remembering, studying, problem solving, or rapid reading.

**Course Outcomes**

There are no course outcomes available

**300-Level Courses**

PSYCH 300 : Applying to Graduate School. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Overview of graduate programs in psychology; preparing application materials, including the Graduate Record Examination. (GRE).

**Course Outcomes**

- Students will demonstrate an awareness of the steps and timetable associated with applying to graduate school.Measurement: Multiple choice tests, short essays.
- Students will be able to identify appropriate graduate programs based on their academic record and relevant experiences.Measurement: Multiple choice tests, short essays.
- Students will be able to solicit and obtain letters of recommendation.Measurement: Writing assignment.
- Students will be able to write a statement of intent/interest.Measurement: Writing assignment.
- Students will demonstrate knowledge of what occurs during graduate school interviews.Measurement:Writing assignment.

PSYCH 306 : Psychology of Gender. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Biological and social contributions to sex role development, sexual self-concept, and complementarity of sex roles.

NOTE: Contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

There are no course outcomes available

PSYCH 307 : Writing Within Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 101 & PSYCH 111 & WRTG 150; or equivalents.

DESCRIPTION: Processes of research-oriented writing and presentation for psychology majors.

NOTE: Must be taken prior to or concurrently with Psych 308. Fulfills GE Advanced Written and Oral Communication requirement. Engl 315 will substitute for this course.

**Course Outcomes**

- Students will demonstrate that they can write clearly, focus on a well-defined purpose in writing, use conventions of format and structure appropriate to their discipline, and adopt a voice, tone, and level of formality suited to multiple purposes and audiences, including audiences both within and outside the discipline in which the course is offered.Measurement: Informal in-class writing assignments will be given and formal writing assignments will be assigned in multiple drafts with peer- and instructor-review. Genres could include a personal writing journal, letter of intent, letter to the editor, literature review, research proposal, book review, and poster presentation. Explicit focus on the Publication Manual of the American Psychological Association.
- Students will demonstrate an understanding of the roles that writing plays in their particular discipline, major, or career as a way of learning, as a way of demonstrating and evaluating what one has learned, and as a way of communicating with others.Measurement: See (1).
- Students will develop productive and flexible individual and collaborative writing processes, including prewriting, drafting, revising, editing, and proofreading. These processes could include the following: collecting data, finding supporting evidence, and creating good arguments; organizing the materials for a paper, writing successive drafts of the same paper; group writing, seeking and using peer responses; revising; editing grammar, usage, and punctuation; and using conventional formats. These processes will reflect processes of inquiry within the student's discipline.Measurement: See (1).
- Students will demonstrate the ability to use appropriate research tools and processes of research within their particular discipline, including library research. Students will demonstrate their ability to identify and evaluate sources, retrieve and evaluate data, take notes, and follow conventions of quoting, paraphrasing, and summarizing. They will cite sources properly and demonstrate an understanding of ethical issues related to research, including how to avoid plagiarism.Measurement: Complete the library-usage module provided by the Lee Library.
- Students will understand the genres, forms, styles, and documentation conventions of writing for their discipline. They will also demonstrate knowledge of edited syntax, grammar, punctuation, and spelling.Measurement: See (1).

PSYCH 308 : Psychological Statistics. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 210 & MATH 110

DESCRIPTION: Descriptive and inferential statistical analysis and hypothesis testing applied to psychological research data.

NOTE: Psych 307 must be taken prior to or concurrently with Psych 308. Stat 121 will not substitute for this course. Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will be able to recognize and understand basic statistical notation, formulae, and concepts.Measurement: Multiple choice and short answer exams
- Students will be able to accurately speak and write about statistical formulae, concepts, analyses, and results.Measurement: Short essays.
- Students will be able to correctly select and use basic statistical formulae and appropriately interpret the results.Measurement: Multiple choice tests, short essays.

PSYCH 309 : Psychological Testing. (3:2.5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 210 & PSYCH 307 & PSYCH 308

DESCRIPTION: Construction and validation of standardized psychological tests.

NOTE: Must be taken prior to or concurrently with Psych 310. Contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

- Students will effectively evaluate the psychometric strengths and weaknesses of individual psychological tests and measurements, using both conceptual and applied metrics.Measurement: This will be measured by instructors and teaching assistants based on a) multiple choice exams; b) case study evaluations of existing psychological measures; c) application of conceptual and statistical measures to students own course projects.
- Students will create their own psychological measurements suited to specific theories and hypotheses.Measurement: This will be measured by instructor evaluation of semester-long course projects that require integration of all course material including a) study design; b) creation of a measure; c) data collection and analysis; and d) written and oral presentation of study findings.

PSYCH 310 : Psychological Research Design and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 210 & PSYCH 307 & PSYCH 308

DESCRIPTION: Basic principles of designing, conducting, and reporting psychological investigations.

NOTE: Psych 309 must be taken prior to or concurrently with Psych 310. Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will be able to critically review the literature to generate a testable hypothesis based on a summation of current research findings and scientific thought.Measurement: Writing assignment.
- Students will be able to distinguish between methodological designs and implement and execute an appropriate design to test the hypothesis, demonstrating an understanding of and sensitivity to relevant ethical considerations, including how to identify and measure dependent variables and measure or control for independent and other variables critical to the design of the study.Measurement: Multiple choice tests, short essays.
- Students will be able to prepare a written report of the research project adhering to APA style in all aspects of

presentation (e.g., format, figures/tables, referencing) in a format that would be suitable to submit to an APA journal.Measurement: Writing assignment.
- Students will be able to present the research orally to an audience of peers in either a paper or poster format.Measurement: Presentation assignment.
- Students will be able to critically evaluate the quality of published research.Measurement: Writing assignment.

PSYCH 311 : Critical Issues in Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Critical and comparative examination of underlying theoretical and philosophical issues relavant to contemporary social, personality, and cognitive psychology, neuroscience, and psychotherapy.

**Course Outcomes**

- Students will identify and describe basic assumptions (and the implications of those assumptions) that underlie the major theories, methods, practices, and schools of contemporary psychology.Measurement:Multiple choice quizzes or short essay assignments.
- Students will identify and critically evaluate these basic assumptions in the published writings of psychologists.Measurement:Multiple choice reading quizzes and short paper essay assignments.
- Students will compare and contrast alternative assumptions (and the implications of those assumptions) to those associated with the major theories, methods, practices, and schools of contemporary psychology, especially as they may be relevant to a Christian perspective.Measurement:Short paper essay assignments.

PSYCH 320 : Developmental Psychology: Childhood. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Physical, mental, emotional, and social development of the child.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will describe current theories and research in human development from pre-natal development through late childhood, demonstrating an understanding of developmental processes that lead to normative development, including perceptual, cognitive, biological, genetic, and social domains, as well as factors that lead to psychopathology and mental illness.Measurement:Multiple choice tests, quizzes.
- Students will assess and critique a key issue in a group format presented to the class.Measurement:Assessment of presentation.
- Students will assess critical issues in early childhood development, integrating current research studies on topics in developmental psychology.Measurement:APA style paper.

PSYCH 321 : Developmental Psychology: Adolescence. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Development and maturation during adolescence; research methodology.

NOTE: Contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

- Students will understand and remember the basic developments that occur during adolescence, the basic patterns of thought, emotion, and behavior characteristic of adolescents, and the important individual and contextual influences on adolescent psychology and development.Measurement: Multiple choice and short essay questions.
- Students will understand the key concepts and theories that are predominant in the literature on adolescent psychology and development.Measurement: Multiple choice and short essay questions.
- 3. Students will be able to more effectively communicate verbally and in writing about adolescence.Measurement: Research papers.
- Students will be able to analyze and critically evaluate ideas, arguments, and points of view about adolescence.Measurement: Research papers.
- Students will be able to apply knowledge of adolescence to address real-world issues.Measurement: Short writing assignments and in-class activities.

PSYCH 322 : Developmental Psychology: Adulthood. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Stability and change in psychological, physiological, and interpersonal processes through early, middle, and late adulthood.

NOTE: Contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

- Students will understand and remember the basic developments that occur during adulthood, the basic patterns of thought, emotion, and behavior characteristic of adults, and the important individual and contextual influences on adult psychology and development.Measurement: Multiple choice and short essay questions.
- Students will understand the key concepts and theories that are predominant in the literature on adult psychology and development.Measurement: Multiple choice and short essay questions.
- Students will be able to more effectively communicate verbally and in writing about adulthood.Measurement: Research papers.
- Students will be able to analyze and critically evaluate ideas, arguments, and points of view about adulthood.Measurement: Research papers.
- Students will be able to apply knowledge of adulthood to address real-world issues.Measurement: Short writing assignments and in-class activities.

PSYCH 330 : Organizational Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Personal, interactional, and structural aspects of organizations; motivation, decision making, problem-solving communication, leadership, organizational structure, change.

NOTE: Org B 321 will not substitute for this course.

**Course Outcomes**

- Students will demonstrate a basic understanding of the major areas of organizational and industrial psychology, including human resources; leadership development; employee training, motivation, and satisfaction; group dynamics, organizational climate; and team-building.Measurement:Multiple choice tests, short essays.
- Students will learn to apply organizational theory to specific organizational situations.Measurement:Writing assignment.
- Students will acquire skill in collaborative teamwork, time management, self-motivation, and project planning.Measurement:Evaluation of cooperative class assignments.

PSYCH 338 : Sport Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Application of psychological principles to sporting activities.

**Course Outcomes**

- Students will demonstrate a basic understanding of the current status of the discipline of sport psychology and of the psychological theories that inform it, including behavioral principles and applications, social psychology, personality psychology, assessment, special athletic populations, coaching, and exercise psychology.Measurement: In-class exams on assigned textbook reading.
- Students will demonstrate familiarity with selected sport- psychology journals.Measurement: Author a paper that combines a literature review with application to a sport-performance environment.
- Students will identify and discuss current events related to sport psychology.Measurement: In-class reports and discussion of video clips or other media reports relevant to sport psychology.

PSYCH 341 : Personality. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Individual patterns of behavior, thought, and emotion; personality theories and their associated strategies of research, assessments, and personality change.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and distinguish the major personality theories of psychology.Measurement:Multiple choice/Short essay.
- Students will identify and give examples of contemporary research or applications of these theories.Measurement:Multiple choice/Short essay.
- Students will identify the theoretical assumptions that underlie these personality theories.Measurement:Multiple choice.
- Students will articulate some of the practical and religious implications of these theories.Measurement:Essay assignments.

PSYCH 342 : Abnormal Psychology. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Dynamics of maladjustment; major psychological disorders and therapeutic procedures. Fieldwork required.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and describe the major forms of psychological disorders and the major theories regarding the classification, etiology, and treatment of psychological disorders,and current data relevant to such theories.Measurement: Multiple choice, short answer and essay exams; short writing assignments.
- Students will engage in service learning by serving persons diagnosed with psychological disorders.Measurement: Participation assessment/field work report
- Students will critically examine key concepts and theories in abnormal psychology.Measurement: Essay exams, short writing assignments, in-class debates
- Students will examine and critique a topic in abnormal psychology using the current research literature.Measurement: APA style paper

PSYCH 343 : Child Psychopathology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Mental disorders of childhood.

**Course Outcomes**

- Students will identify and describe the etiology, assessment, diagnosis, and treatment of common psychological and developmental disorders in children and adolescents.Measurement:Multiple choice exams, quizzes.
- Students will demonstrate familiarity with current issues in child psychopathology.Measurement:Presentations, short writing assignments.
- Students will examine and critique a topic using the current research literature.Measurement:APA style paper.

PSYCH 348 : Clinical Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Personality theories, psychopathology, diagnostic interviewing and testing, psychotherapy techniques; research methods.

NOTE: Not a practicum.

**Course Outcomes**

- Students will identify and describe the theories, practices, and critical issues in clinical psychology.Measurement:Multiple choice exams, quizzes.
- Students will summarize and explain a current topic in clinical psychology to the class and/or engage in role play and interview activities.Measurement:Class presentations, role plays.
- Students will assess and evaluate personal career/educational opportunities in the field of clinical psychology.Measurement:Short writing assignments.
- Students will examine and critique current psychotherapies and describe their personal views about therapy.Measurement:APA style paper.

PSYCH 350 : (Psych-Soc) Introduction to Social Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Conformity and obedience; socialization, norms, roles; attitudes, leadership, group processes.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will be able toidentify the unique contribution of social psychology to social science, situating the discipline within the larger domain of psychology and contrasting it with related disciplines, such as sociology.Measurement: Multiple choice tests, short essays.
- Students will be able to understand the use of surveys, laboratory and field experiments in conducting social psychological research, and understand the ethical principles of informed consent, deception and debriefing when conducting research with human participants.Measurement: Multiple choice tests, short essays.
- Students will be able to identify substantive areas of social psychological inquiry, including the self, person perception, attitudes and persuasion, group processes, stereotyping and prejudice, interpersonal attraction, helping behavior and aggression.Measurement: Multiple choice tests, short essays.
- Students will be able to identify and explain the contributions of major thinkers and contributors of classic and contemporary theory and research in social psychology, such as Leon Festinger and Stanley Milgram.Measurement: Multiple choice tests, short essays.
- Students will be able to identify how social psychological theory and research have been applied to domains outside the discipline, such as in health settings and the law.Measurement: Multiple choice tests, short essays.

PSYCH 352 : Applied Social Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 310; or instructor's consent.

DESCRIPTION: Applying social psychological theory, research, and methods to such domains as law, business, education, the media, mental health, and physical health.

**Course Outcomes**

- Students will be able tounderstand how one defines something as a "social problem".Measurement: Multiple choice tests, short essays.
- Students will be able to compare and contrast basic and applied social psychology.Measurement: Multiple choice tests, short essays.
- Students will be able to identify substantive areas of social psychological application, such as education, physical health, mental health, the environment, and business.Measurement: Multiple choice tests, short essays.
- Students will be able to apply social psychological methods to an intervention designed to understand or ameliorate a social problem.Measurement: Evaluation of project

PSYCH 353 : LDS Perspectives and Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Relationships between theories of psychology and LDS thought.

**Course Outcomes**

There are no course outcomes available

PSYCH 354 : Psychology of Religion. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Classification of religious behavior and experience; source of religious motivation; religion and the growth process.

**Course Outcomes**

- Students will define psychology, religion, and spirituality and compare and contrast their key assumptions.Measurement:Multiple choice/Analytic essays.
- Students will critically examine the implications of psychological perspectives on religion and spirituality, as well as the implications of religious and spiritual perspectives on psychology.Measurement:Analytic essays.
- Students will identify alternative psychological, religious, and spiritual perspectives, examine their assumptions, and consider the value of their alternative implications to the relationship between these three worldviews.Measurement:Multiple choice/Analytical essays.
- Students will critically examine their own assumptions about the relationship between psychology, religion, and spirituality.Measurement:Analytical essays.

PSYCH 356 : Introduction to Health Psychology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Psychology focusing on the Biopsychological Model, i.e., health issues from standpoint of biological, psychological, and social factors.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and describe key concepts and theories in health psychology.Measurement: Multiple choice and brief response exams; quizzes.
- Students will examine the contributions of health psychology to the understanding of acute and chronic illness.Measurement: Multiple choice and brief response exams; group assignments and presentation.
- Students will critique current news articles about health using principles and concepts from class.Measurement: Writing assignments.
- Students will explain how principles of health psychology operate in everyday life.Measurement: Writing assignments.

PSYCH 358 : Leadership Development. (3:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Principles and practices of successful leadership: decision making, communications, planning, team building, motivation, and interpersonal skills.

**Course Outcomes**

There are no course outcomes available

PSYCH 359 : Environmental Psychology. (3:3:0)

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Interaction between people and their physical context.

**Course Outcomes**

- Enter ONE outcome here.

PSYCH 361 : Principles of Learning. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Principles of learning; representative experiments.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will develop their understanding of and facility with the concepts by which behavior analysis makes sense of selected learning phenomena.Measurement: In-class quizzes, both individual- and team-based, on assigned textbook and other reading.
- Students will connect the concepts to the behavior of a virtual laboratory rat.Measurement: Individual- and team-based written reports and in-class presentations of the results of virtual experiments. Team-based manuscripts in multiple drafts both peer- and instructor- reviewed.
- Students will apply the concepts to human behavior, including one's own.Measurement: Out-of-class team-based application activities summarized in written reports. Essay exams that emphasize applications to real-life phenomena.

PSYCH 365 : Motivation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Determinants of motivation, relationship of motives to emotion, cognition, personality, and action. Implications for understanding self and others.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will compare and contrast a wide range of theories and research findings within the subdiscipline of the psychology of motivation.Measurement: In-class quizzes, both individual- and team-based, on assigned textbook and other reading.
- Students will categorize and apply theories and concepts to specific fictional characters and settings in film.Measurement: Out-of-class application activities that focus on four films shown in class and that require application of specific concepts to the characters, plots, and themes of the films.
- Students will analyze connections between the subject matter and one's own experience of motivation.Measurement: Individual essays and essay exams that focus on the personal application of concepts to one's experience.

PSYCH 370 : Sensation and Perception. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or NEURO 205; or instructor's consent.

DESCRIPTION: Sensory basis of perception and principles of perceptual organization.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will gain an understanding of how our brains interact with our external environment and give rise to our perceptions.Measurement: Students will demonstrate this understanding on quizzes and on exams.
- Students will develop an understanding of how we know what we know about sensation and perception, i.e., research methods in cognitive neuroscience and the scientific method.Measurement: Students will demonstrate this understanding through in-class discussion, on quizzes/exams, and through coming to class ready to learn. Being ready to learn includes completing the assigned readings and assessments, participating in lecture and discussion, and completing outside assignments (e.g., labs).
- Students will be able to apply the principles discussed in class to the world around them.Measurement: Students will demonstrate this through lab assignments.
- Students will be able to critically reflect on the content of psychology as well as on disciplinary values in light of their knowledge of and commitment to the restored gospel of Jesus Christ and to sustain personal values that are true to the gospel while maintaining their serious study of psychology and neuroscience.Measurement:Multiple choice exams, quizzes.

PSYCH 375 : Cognition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or NEURO 205; or instructor's consent.

DESCRIPTION: Perceptual organization; information processing; cognitive development; relationships between sensory analysis, perception, memory, learning, language, and problem solving.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will recognize and understand the cognitive processes of perception, memory, language, reasoning, and problem solving.Measurement: This will be assessed on multiple choice and essay quizzes and exams.
- Students will assess and develop ways to apply the principles of cognitive psychology.Measurement: This will be assessed with a design proposal that implements the principles of cognitive psychology.

PSYCH 376 : Language Development. (3:3:0)

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Principles of language acquisition including communicative development in infancy, sematic and syntactic development, language and literacy in the school years, and effects of brain damage.

**Course Outcomes**

- Students will demonstrate knowledge of early communicative behaviors and the emergence of language.Measurement:Multiple choice tests, short essays.
- Students will demonstrate knowledge of the components of language – specifically phonology, semantics, grammar, and pragmatics.Measurement:Multiple choice tests, short essays.
- Students will show knowledge of how language continues to develop in school age children as well as adulthood.Measurement:Multiple choice tests, short essays.
- Students will have a basic knowledge of various language disorders.Measurement:Multiple choice tests, short essays.
- Students will be able to describe the basic neurological components of language – including the effects of strokes and dementia on language and speech.Measurement:Short essays.

PSYCH 381 : Behavioral Neurobiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or NEURO 205; or instructor's consent. (Neuro 205 will substitute for Psych 310.)

DESCRIPTION: Basic physiological, anatomical, and chemical foundations of psychology.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will develop their understanding of how the brain influences one's experience of the world and one's behavior in it.Measurement: In-class quizzes and/or exams on assigned textbook reading, lectures, and class discussions and written reports and/or in-class presentations of self-selected articles from the scientific literature.
- Students will identify scientific methods, especially those of cognitive neuroscience, that are valuable in behavioral neurobiology.Measurement: In-class quizzes and/or exams on assigned textbook reading, lectures, and class discussions and written reports and/or in-class presentations of self-selected articles from the scientific literature.
- Students will extend concepts and research findings to diseases, trauma, drug usage, hormones, and genes.Measurement: In-class quizzes and/or exams on assigned textbook reading, lectures, and class discussions and written reports and/or in-class presentations of self-selected articles from the scientific literature.

PSYCH 382 : Stress Psychobiology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or NEURO 205; or instructor's consent. (Neuro 205 will substitute for Psych 310.)

DESCRIPTION: Behavioral neurobiology of stress.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will describe how stress affects physiology and physical health outcomes.Measurement:Multiple choice exams, quizzes.
- Students will integrate their knowledge of stress and health by analyzing a health condition in the context of stress.Measurement:APA style paper.
- Students will experiment with stress management techniques and assess their effectiveness using a stress management journal.Measurement:Journal entries, critique of experience.

PSYCH 387 : Introduction to Primate Behavior. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or NEURO 205; or instructor's consent.

DESCRIPTION: Overview of primate behavior; the role of parental care on developmental outcome, functional neurobiology, and psychopathology.

**Course Outcomes**

- Students will recognize the diversity of primate species and environments, and examine representative species in detail.Measurement: In-class quizzes and exams on the assigned reading.
- Students will examine specific aspects of behavior, including emotion, cognition, language, parental care, sociality, functional neurobiology, and psychopathology.Measurement: In-class quizzes and exams on the assigned reading.
- Students will compare and contrast nonhuman-primate and human behavior and environments, and consider the implications for personal beliefs about human behavior.Measurement: Literature review on a self-selected topic in multiple drafts with peer-, Writing Center-, and instructor-review.

PSYCH 388 : Drugs, Reward and Addiction. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PSYCH 111; or NEURO 205

DESCRIPTION: Examines the biopsychosocial nature of drug and behavioral addiction. This course presents the most current research in the field and bridges psychology and neuroscience.

**Course Outcomes**

There are no course outcomes available

PSYCH 390R : Special Topics in Psychology. (.5-3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- Students will develop their understanding of a psychological topic that is not focal in the undergraduate curriculum otherwise. Recent examples include evolutionary psychology and the psychology of humor.Measurement:In-class quizzes and exams on the assigned reading.
- Students will identify related subdisciplines in psychology and their primary contributions to the topic.Measurement:In-class quizzes and exams on the assigned reading.
- Students will identify primary means of scientific research in the topic, and formulate a proposal for additional research.Measurement: Author a proposal for original research in multiple drafts that includes a literature review, description of method and data analysis, statement of significance, references, and timeline and estimated budget.

: Advanced Personality Studies.

**Course Outcomes**

: Ethology and Sociobiology.

**Course Outcomes**

: Comp. Animal Behavior.

**Course Outcomes**

: Forum Lecture.

**Course Outcomes**

PSYCH 399R : Academic Internship. (.5-9:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310

NOTE: A maximum of 9 credit hours may be taken.

**Course Outcomes**

- The first and primary objective is the placement of each student in a professionally enhancing work setting. We intend to continuously improve the quality of internship experiences being offered through a process of continuous assessment of all internships, negotiations with agencies, and internship advisement and counseling of students at the beginning of the contractual process.Measurement: The Internship Profiling Questionnaire (IPQ) has been developed specifically to be used in the on-going process of comparative assessment and improvement of all internship offerings. They are evaluated both by the student participants and also by the internship class instructors.
- Students will critically reflect on the connections between their work experience and the content of psychology and articulate these work-related insights.Measurement:Short essays essay examinations, and applications book review.
- Students will develop professional skills and attitudes through readings on professional etiquette, in-class presentations to classmates, and poster presentation at open house.Measurement:Graded writing assignments, powerpoint presentation, and poster creation and presentation.

**400-Level Courses**

PSYCH 410R : Senior Practicum: Teaching of Psychology. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Capstone experience as an undergraduate teaching assistant or Psych Central tutor or in other teaching-related activities, including research.

**Course Outcomes**

- Students will demonstrate skill in grading, mentoring, and /or teaching one or more areas of psychology. In addition to their applied work under a faculty mentor, they will be instructed in a “teaching of psychology” class.Measurement: Student academic performance in this capstone will be assessed using multiple choice and short essay exams on the material from the class. Student application of teaching and grading practices and principles will be assessed through mentor evaluation of performance.

PSYCH 420R : Senior Practicum: Community Projects. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Capstone experience in community-based service learning related to practice of psychology. Structured record of student's experience required.

**Course Outcomes**

- Students will demonstrate knowledge of the application of the principles of psychology within a community setting.Measurement: Application of psychological principles in a community setting will be assessed through a mentor evaluation.

PSYCH 430R : Senior Practicum: Research in Psychology. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Capstone experience in psychological research -- laboratory-based, field-based, or otherwise. Student typically works with a research team.

**Course Outcomes**

- Students will demonstrate skill in several aspects of the research process: literature review and evaluation, data gathering, data analysis, writing, and publishing.Measurement: Student mastery of the research process will be assessed from a paper prepared by the end of the semester in proper format for publication.

PSYCH 492R : Supervised Instructional or Research Experience. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Course-related instructional activities or laboratory/field research.

**Course Outcomes**

- Student(s) will demonstrate skill in developing an instructional plan and lectures in an area of psychology, or skill in an area of psychological research.Measurement: Student mastery of the instructional process or the research process will be assessed from a paper or other method of documentation prepared by the end of the semester.

PSYCH 495R : Independent Readings. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- Psychology495R, Independent ReadingsStudent(s) will demonstrate mastery of a topic area of psychological research, obtained by their own independent scholarly work.Measurement:Student mastery of the research area will be assessed from a paper prepared by the end of the semester.

PSYCH 499R : Independent Research. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- Student(s) will demonstrate skill in several aspects of the research process: literature review and evaluation, data gathering, data analysis, writing, and publishing.Measurement: Student mastery of the research area will be assessed from a paper prepared by the end of the semester.

## 500-Level Graduate Courses (available to advanced undergraduates)

PSYCH 501 : Data Analysis in Psychological Research 1. (4:3:1)

WHEN TAUGHT: Fall

PREREQUISITE: PSYCH 308; or instructor's consent.

DESCRIPTION: Using and interpreting major quantitative methods in psychology; some commonly used computer methods.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will recognize basic statistical notation, formulae, and concepts.Measurement: This will be measured by quizzes and exams.
- Students will not only learn how to calculate the statistics we discuss, but also learn when such analyses would be appropriate and how to evaluate the results from statistical analyses.Measurement: This will be measured by students' performance on homework assignments, quizzes, exams, and the end of semester project.
- Students will become skilled in using statistical formulae and statistical software–including interpreting the output from the formulae and software.Measurement: This will be measured by students' performance on homework assignments and the end of the semester project.
- Students will become skilled in applying statistical ideas and formulae to novel situations.Measurement: This will be measured by students' performance on the end of semester project.

PSYCH 502 : Data Analysis in Psychological Research 2. (4:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: PSYCH 501; or instructor's consent.

DESCRIPTION: Introduction to multivariate data analysis methods, including multivariate analysis of variance, factor analysis, discriminant analysis, multivariate multiple regression, canonical correlation, structural equations modeling, cluster analysis, etc.

**Course Outcomes**

- Students will be able to read and understand the statistical methods in virtually any empirical article.Measurement: This will be measured by quizzes and exams.
- Students will know what statistical tests to use to answer specific research questions.Measurement: This will be measured by quizzes and exams.
- Students will be able to perform—using statistical software—interpret, and write up for publication the results of the multivariate statistical tests most commonly used in psychological science.Measurement: This will be measured by performance on a group course project, and also on exams.

PSYCH 503 : Research Measurement. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PSYCH 501; or instructor's consent.

DESCRIPTION: Classical true score and item response theories; estimation procedures for instrument reliability and validity.

**Course Outcomes**

- Students will become full-fledged psychometric ninjas. That is, students will develop a thorough understanding of test and measurement theory and their importance to science and practice in clinical psychology.Measurement: This objective will be assessed through students' contributions to class discussions and students' performance on homework assignments and exams.
- Students will gain experience using the statistical analysis software (for example SPSS and AMOS) needed to develop and assess tests and measures used in psychology.Measurement: This objective will be achieved through homework assignments.
- Students will develop a critical perspective of psychological testing by learning its strengths and limitations. "Critical" is used here to denote a thoughtful analysis rather than simply a negative perspective that focuses on limitations.Measurement: This objective will be achieved through class discussion, homework assignments, and exams.
- Students will learn to speak and write about statistics in a way that is clear, concise, and precise.Measurement: This objective will be achieved through class discussion, homework assignments, and exams.

PSYCH 504 : Research Design. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Psych 501.

DESCRIPTION: Overview of designs used in psychotherapeutic literature, emphasizing critical analysis of empirical research.

**Course Outcomes**

- Students will acquire a fundamental understanding of research design and methodology, and the thinking skills to develop and critique a research design.Measurement: This will be measured by exams and writing assignments.
- Students will learn to use research design principles in conducting their own research.Measurement: This will be measured by exams and writing assignments.
- Students will acquire a working knowledge of APA ethical standards for research with humans and animals.Measurement: This will be measured by in class conversations about the required reading, exams and assignments.
- Students will acquire skill in developing and critiquing a study from the standpoint of design and methodology.Measurement:This will be measured by exams and assignments.

PSYCH 505 : Clinical Research. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PSYCH 503 & PSYCH 504; or instructor's consent.

DESCRIPTION: Overview of research examining processes and outcomes of psychological treatments for psychological disorders.

**Course Outcomes**

- Students will describe and summarize the effectiveness of psychological interventions as well as the effective ingredients of therapy.Measurement: Class presentations, brief writing assignments.
- Students will assess the history and evolution of important themes and controversies that have influenced the current state of psychotherapy, such as the impact of managed care, shortened therapy time limits, and the push towards evidence-based practices.Measurement: Class presentations, essay exam.
- Students will discuss the implications of current research findings for the practice of psychotherapy and for their own professional practice.Measurement: Essays questions.

PSYCH 510 : History and Systems of Psychology. (3:3:0)

PREREQUISITE: PSYCH 210; or equivalent; or instructor's consent.

DESCRIPTION: Survey of origins and development of modern psychology, including consideration of the schools and theoretical systems.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will employ advanced critical thinking skills by analyzing via comparison and contrast various assumptions regarding human nature that have traditionally guided and shaped contemporary psychological thought.Measurement: Short essay format group quizzes and short analytic paper assignments.
- Students will identify and evaluate the various implications that these assumptions about human nature have for both the theory and the practice of contemporary psychology.Measurement: Multiple choice quizzes, short essay format group quizzes, and short analytic paper assignments.
- Students will identify the major figures and schools of thought that have made significant historical and conceptual contributions to the contemporary disciplinary landscape of psychology.Measurement: Multiple choice individual and group quizzes.
- Students will express a reasoned position on some of the enduring questions, issues, and concerns of the discipline of psychology that is faithful to the Restored Gospel of Jesus Christ.Measurement: Short analytic paper assignments.

PSYCH 511 : Philosophy of Science for the Social Sciences. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Instructor's consent or admission to PhD program.

DESCRIPTION: Issues in philosophy of science as they apply to social sciences, including methods, epistemology, and construction of knowledge.

**Course Outcomes**

- Students will identify major issues, trends, and schools of thought in contemporary philosophy of social science.Measurement: Analytic essays.
- Students will critically evaluate via comparison and contrast these issues, trends, and schools of thought.Measurement: Analytic essays.
- Students will articulate their own position on major issues in contemporary philosophy of social science, with particular attention toward the theory and practice of psychology.Measurement: Term paper assignment.

PSYCH 512 : Qualitative Research Methods. (3:3:0)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Theories and methods of qualitative research emphasizing philosophical assumptions, question formulation, data gathering, interpretation, and presentation of findings.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and critically evaluate a broad range of qualitative methods of research in contemporary psychology.Measurement: Multiple choice quizzes/Analytic essays.
- Students will propose, design, and conduct a novel research project employing qualitative methods.Measurement: Course length research project.
- Students will critically evaluate contemporary examples of qualitative research from a variety of traditions, as well as submit their own work in the course to such evaluation.Measurement: Analytic essays and critical review papers.

PSYCH 520 : Advanced Developmental Psychology. (3:3:0)

PREREQUISITE: PSYCH 320 & PSYCH 321 & PSYCH 322; or equivalent; or instructor's consent.

DESCRIPTION: Major research in developmental psychology, emphasizing theory, content, and methodology.

**Course Outcomes**

- Students will extend their understanding of and appreciation for the developmental perspective.Measurement: Take-home essay examinations and reaction papers based on the assigned textbook reading. Lead class discussions.
- Students will explain how similar experiences can lead to different outcomes (multifinality) and how similar outcomes can arise from different starting points (equifinality).Measurement: Take-home essay examinations and reaction papers based on the assigned textbook reading. Lead class discussions.
- Students will justify the claim that all phenotypic outcomes, including behaviors, have a developmental history.Measurement:Take-home essay exams and reaction papers based on the assigned textbook reading. Lead class discussions.

PSYCH 531 : Organizational Psychology. (3:3:0)

PREREQUISITE: PSYCH 330; or equivalent; or instructor's consent.

DESCRIPTION: Personal and interpersonal aspects of organizational life: goal setting, decision making, problem solving, communication, control, leadership, motivation, and change.

**Course Outcomes**

There are no course outcomes available

PSYCH 535 : Behavior Modification Techniques. (3:2:2)

PREREQUISITE: PSYCH 361; or equivalent; or instructor's consent.

DESCRIPTION: Practical application of behavior modification to academic discipline; emotional target behaviors of individuals and groups.

**Course Outcomes**

No outcomes are available at this time.

PSYCH 540 : Personality Theory. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PSYCH 341; or equivalent; or instructor's consent.

DESCRIPTION: Contemporary theories of personality developed within the framework of major psychological systems.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and distinguish the major personality theories of psychology and their specific features and content.Measurement: Multiple choice/critical analytic essays.
- Students will identify, compare and contrast, and critically evaluate the philosophical and theoretical assumptions that underlie these personality theories.Measurement: Multiple choice/critical analytic essays.
- Students will develop and demonstrate understanding of the conceptual tools of theory construction, analysis and evaluation.Measurement: Critical analytic essays.
- Students will articulate their own position on some of the major issues of personality theory, theory construction, and application of theory.Measurement: Essay assignment.

PSYCH 550 : Theory and Research in Social Psychology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PSYCH 350; or equivalent; or instructor's consent.

DESCRIPTION: Current theories and research on interaction with others.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will acquire a deep familiarity with social psychological theory and social psychological research, and will demonstrate advanced competency in the field.Measurement: Midterm and final essay exams.
- Students will be able to identify and find empirical research related to major topics in social psychology and write knowledgeable summaries of such research.Measurement: Evaluation of class reports and written research summaries.

PSYCH 552 : Applied Social Psychology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PSYCH 352; or equivalent; or instructor's consent.

DESCRIPTION: Overview of domains in which social psychological theory and research have been applied in field settings.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will understand the distinctions between basic and applied social psychology and will acquire an advanced understanding of and familiarity with the field of applied social psychology.Measurement: Midterm and final essay exams.
- Students will meet with a client and develop, execute, and report the results of an applied research project.Measurement: Evaluation of written and oral report.

PSYCH 555 : Group Dynamics. (3:3:0)

PREREQUISITE: PSYCH 365; or equivalent; or instructor's consent.

DESCRIPTION: Theories and research on small-group processes and mass behavior.

**Course Outcomes**

There are no course outcomes available

PSYCH 560 : Learning Theory. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PSYCH 361; or equivalent; or instructor's consent.

DESCRIPTION: Critical review of current theories and persistent issues.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will extend their understanding of the behavioristic tradition of learning theory as science and philosophy.Measurement: Take-home essay exams on assigned reading. Regular in-class conversation focused on student-submitted questions about the assigned reading.
- Students will describe the behavioristic account of phenomena typically accounted for in cognitive, intuitive, and humanistic terms, such as mind, will, agency, privacy, and self.Measurement: Take-home essay exams on assigned reading. Regular in-class conversation focused on student-submitted questions about the assigned reading.
- Students will apply the behavioristic account in an analysis of a phenomenon of personal interest.Measurement: Author an argumentative essay in multiple drafts with peer- and instructor-review.

PSYCH 565 : Motivational Psychology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PSYCH 365; or equivalent; or instructor's consent.

DESCRIPTION: Theoretical, historical, and empirical overview; recent trends and issues; role of animal studies; methodological issues.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will synthesize a multi-perspectival psychology of motivation from a series of texts.Measurement: Take-home essay exams on assigned reading. Regular in-class conversation focused on student-submitted questions about the assigned reading.
- Students will compare and contrast the perspectives represented by the texts.Measurement: Take-home essay exams on assigned reading. Regular in-class conversation focused on student-submitted questions about the assigned reading.
- Students will identify and expound on a self-selected issue that runs across the texts, and thus illustrate the multi-perspectival view.Measurement: Author a comparative essay in multiple drafts with peer- and instructor-review. In-class presentation summarizing the essay's argument.

PSYCH 575 : Cognitive Processes. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: PSYCH 370 & PSYCH 375; or equivalents; or instructor's consent.
DESCRIPTION: Theory and research in perception, attention, language, problem solving, and other thinking processes.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

There are no course outcomes available

PSYCH 578R : Seminar in Mathematical Psychology. (3:3:0)

PREREQUISITE: PSYCH 308; or equivalent.
DESCRIPTION: Variable topics concerning the application of mathematical and statistical methods to psychology, with emphasis on jointly publishing a methods paper.

**Course Outcomes**

There are no course outcomes available

PSYCH 583 : Biological and Health Psychology. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: PSYCH 381 & PSYCH 382; or equivalents; or instructor's consent.
DESCRIPTION: In-depth examination of biological bases of behavior from perspective of health and disease.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and describe the biological, psychological, social, and spiritual factors that influence health.Measurement: Multiple choice exams, quizzes.
- Students will integrate understanding of biological, psychological, social, and spiritual factors that influence health by analyzing a health condition in light of the biopsychosocial model.Measurement: APA style paper.
- Students will examine how the biopsychosocial model applies in their own lives using a stress management journal and assessing how the different factors contribute to their own health and well-being.Measurement: Journal entries, critique of experience.

PSYCH 584 : Cognition, Affect, and Brain Function. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PSYCH 381; or NEURO 380; or equivalent; or instructor's consent.
DESCRIPTION: Basic principles of cognition and affect as they relate to normal brain function and following neural disease or injury.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will extend their understanding of specific brain systems and the cognitive and emotional functions correlated with those systems.Measurement: Participation in class conversation about the required reading; in-class presentations on brain function or disorders; final examination.
- Students will compare and contrast scientific approaches to the study of brain, cognition, and emotion; and describe specific structural and functional research methods.Measurement:Participation in class conversation about the required reading; in-class presentations and writing assignments.
- Students will describe how brain injury can produce cognitive or emotional disorders or both and how the study of brain injury illustrates issues in the evaluation of research findings.Measurement:Author journal article critiques, final exam, and in-class presentations.

PSYCH 585 : Human Neuropsychology/Biological Bases of Behavior. (3:3:0)

WHEN TAUGHT: Winter Contact Department
PREREQUISITE: PSYCH 381 & PSYCH 382; or equivalents; or instructor's consent.
DESCRIPTION: Critical study of brain-behavior relationships.

**Course Outcomes**

There are no course outcomes available

PSYCH 586 : Hormones and Behavior. (3:3:0)

PREREQUISITE: PSYCH 381 & PSYCH 382; or equivalents; or instructor's consent.
DESCRIPTION: Neural and endocrine mechanisms underlying behavior.

**Course Outcomes**

No outcomes are available at this time.

PSYCH 587 : Sensory and Perceptual Processes. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
PREREQUISITE: PSYCH 370 & PSYCH 381; or equivalents; or instructor's consent.
DESCRIPTION: Critical examination of sensory mechanisms and perceptual organization.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

No outcomes are available at this time.

**Note:** 500-level courses may be used by undergraduate students with instructor's consent only.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Course Information**

- Psychology (Psych) Courses

**Faculty**

# Psychology Faculty

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## Professors

Bigler, Erin David
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
PhD, Brigham Young University, 1975

Brown, Bruce Leonard
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1965
MS, Brigham Young University, 1968
PhD, McGill University, Canada, 1969

Burlingame, Gary Michael
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, Andrews University, 1978
MS, University of Utah, 1981
PhD, University of Utah, 1983

Hedges, Dawson W.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, Weber State College, 1984
MD, University of Utah, 1988

Higley, James Dee
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, University of Wisconsin, Madison, 1983
PhD, University of Wisconsin, Madison, 1985

Hopkins, Ramona O.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** AS, Brigham Young University, 1975
BS, Westminster College, 1988
MS, University of Utah, 1992
PhD, University of Utah, 1996

Lambert, Michael J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1967
MS, University of Utah, 1968
PhD, University of Utah, 1971

Miller, Jr., Harold L.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, Arizona State University, 1970
PhD, Harvard University, 1975

Slife, Brent D.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BA, William Jewell College, 1976
MS, Purdue University, 1977
PhD, Purdue University, 1981

Williams, Richard Nephi

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, Purdue University, 1978
PhD, Purdue University, 1981

## Associate Professors

Baldwin, Scott

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 2001
MS, University of Memphis, 2003
PhD, University of Memphis, 2006

Carpenter, Bruce N.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, University of Wisconsin, Madison, 1977
PhD, University of Wisconsin, Madison, 1980

Flom, Ross

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, University of Minnesota, Minneapolis, 1992
MEd, Idaho State University, 1993
PhD, University of Minnesota, Minneapolis, 1999

Gantt, Edwin Elray

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992
MA, Duquesne University, 1994
PhD, Duquesne University, 1998

Holt-Lunstad, Julianne

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1998
PhD, University of Utah, 2001

Reber, Jeffrey S.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994

MS, Brigham Young University, 1999
PhD, Brigham Young University, 2000

Ridge, Bob
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1987
PhD, University of Minnesota, 1993

Spangler, Diane Louise
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BA, Pomona College, 1989
MS, University of Oregon, 1991
PhD, University of Oregon, 1994

Steffen, Patrick R.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, University of Miami, 1996
PhD, University of Miami, 1998

Steffensen, Scott C.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, University of Utah, 1980
PhD, University of Utah, 1987

Warren, Jared S.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1996
MA, University of Kansas, 1999
PhD, University of Kansas, 2003

Yamawaki, Niwako
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Professor
**DEGREES:** BS, University of Utah, 1995
MS, University of Utah, 1998
PhD, University of Utah, 2002

## Associate Clinical Professor

Maughan, Michael L.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Associate Clinical Professor
**DEGREES:** BS, Utah State University, 1966
MS, Utah State University, 1968
EdD, Utah State University, 1970

## Assistant Professors

Birmingham, Wendy Ann
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2006
MS, University of Utah, 2009
PhD, University of Utah, 2011

Hardy, Sam A.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
MA, University of Nebraska, Lincoln, 2002
PhD, University of Nebraska, Lincoln, 2005

Kirwan, C. Brock

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 2001
MA, Johns Hopkins University, 2004
PhD, Johns Hopkins University, 2006

Larson, Michael J.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2002
MS, University of Florida, 2004
PhD, University of Florida, 2008

Luke, Steven

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MS, University of Illinois, Urbana-Champaign, 2008
PhD, University of Illinois, Urbana-Champaign, 2011

Lundwall, Rebecca A.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1987
MEd, Brigham Young University, 1990
MS, Rice University, 2011
PhD, Rice University, 2013

South, Mikle

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Professor
**DEGREES:** BA, Yale University, 1994
MS, University of Utah, 2001
PhD, University of Utah, 2005

## Assistant Clinical Professor

Nielsen, Stevan L.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Psychology
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 1976
PhD, University of Washington, 1984

# School of Social Work

Gordon E. Limb, Director
2190A JFSB, (801) 422-6649

Wendy Sheffield, Director of Field Education
2171 JFSB, (801) 422-8749

College of Family, Home, and Social Sciences Advisement Center
151 SWKT, (801) 422-3541

School of Social Work Office
2190 JFSB, (801) 422-3282
Fax: (801) 422-0624
E-mail: socialwork@byu.edu
Web site: socialwork.byu.edu

## Graduate Programs and Degrees

MSW in Social Work

For more information see the BYU 2014–2015 Graduate Catalog.

Please see the school or visit the Web site for additional information.

College of Family, Home, and Social Sciences Home

School of Social Work Home

Course Information

- Social Work (Soc W) Courses

Faculty

# Social Work (Soc W)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 200-Level Courses

SOC W 200 : Introduction to Social Work. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Social welfare as a social institution; social work as a profession.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

SOC W 331 : Social Welfare Policy. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: SOC W 200

DESCRIPTION: Social legislation processes; analysis of social policy and the knowledge available to social workers for involvement in social planning and policy change.

**Course Outcomes**

There are no course outcomes available

SOC W 360 : Social Work Practice with Individuals. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: SOC W 200

DESCRIPTION: Methods of social work practice within a generalist framework; interventions at the individual, family, group, organization, and community levels.

**Course Outcomes**

There are no course outcomes available

## 500-Level Graduate Courses (available to advanced undergraduates)

SOC W 570 : Crisis Intervention. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Assessment and intervention in crisis situations with clients.

**Course Outcomes**

There are no course outcomes available

SOC W 580 : Social Work in the School Setting. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Overview of knowledge and skills essential to the practice of social work in educational settings; emphasizes practical interventions when working with student/family/teacher/community resources.

**Course Outcomes**

There are no course outcomes available

SOC W 581 : Social Services for the Aging. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
DESCRIPTION: Process and impact of social service delivery systems on the aged.
NOTE: Utah state certificate available.

**Course Outcomes**

There are no course outcomes available

SOC W 585 : Global Issues of Children at Risk. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Analyzing major challenges facing children and their families globally, including poverty, malnutrition, poor health care, gender-based discrimination, child labor and sexual exploitation, AIDS orphans, child soldiers, and refugees.

**Course Outcomes**

There are no course outcomes available

SOC W 595R : Directed Readings. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.

**Course Outcomes**

- Under the direction of a mentored professor, students will critically examine, investigate, and integrate the literature for a topic of interest in social work

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Social Work Department Home**

# School of Social Work Faculty

Show All
Hide All

## Professors

Cox, Shirley E. Nissen

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Social Work
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1962
MSW, Howard University, 1967
DSW, University of Utah, 1986

Roby, Jini L.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Social Work
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
MSW, Brigham Young University, 1984
MS, Brigham Young University, 1984
JD, Brigham Young University, 1990

Seipel, Michael M. O.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Social Work
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1974
MSW, University of Utah, 1976
PhD, Cornell University, 1982

## Associate Professors

Limb, Gordon Earl

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Social Work
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MSW, University of Utah, 1997
PhD, University of Califonia, Berkeley, 2000

Norman, Judith L.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Social Work
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1970
BS, Portland State University, 1972
MSW, University of Utah, 1978
DSW, University of Utah, 1990

## Teaching Professor

Marett, Kevin M.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Social Work
**RANK:** Teaching Professor
**DEGREES:** BS, Brigham Young University, 1982
MSW, University of Utah, 1985
PhD, Purdue University, 1989

## Clinical Professor

Matheson, Kenneth W.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** School of Social Work
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1967
MSW, University of Utah, 1970
DSW, University of Utah, 1976

**College of Family, Home, and Social Sciences Home**

**Sociology Department Home**

**Major**

- BS in Sociology

**Minor**

- Sociology

**Course Information**

- Sociology (Soc) Courses

**Faculty**

# Sociology

Cardell K. Jacobson, Chair
2008C JFSB, (801) 422-2105

College of Family, Home, and Social Sciences Advisement Center
151 SWKT, (801) 422-3541

## Admission to Degree Program

All degree programs in the Department of Sociology are open enrollment.

## The Discipline

Sociology is the study of social relations. For example, sociologists study social interactions, the relations of power, modern society, family and community life, organizations, and institutions. Among other things, sociologists study social change and social movements, diversity, the origins of inequality, and social conflict. The study of sociology includes learning about the theoretical perspectives and the diverse research methodologies that inform sociological analysis.

## Career Opportunities

Students major in sociology in preparation for a number of different careers. Individuals are trained to analyze available information, summarize findings, draw conclusions, and solve problems. The study of sociology prepares a student for professional training in law, social work, public policy, and public or business administration. Sociology also provides training for occupations that do not require graduate training: commercial and retail sales, real estate, financial planning, information management and analysis, and market research. Students interested in working for nonprofit organizations and for government agencies should consider majoring in sociology. Students interested in studying criminology or a career in law enforcement may also consider sociology as a major. Sociology is also good preparation for improving the quality of life in our families and communities.

Becoming a sociologist requires further graduate study, either a PhD or a master's degree.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Sociology** (Program Outcomes)

**Minor in Sociology (General)**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Sociology

For more information see the BYU 2014–2015 Graduate Catalog.

**College of Family, Home, and Social Sciences Home**

**Sociology Department Home**

**Major**

- BS in Sociology

**Minor**

- Sociology

**Course Information**

- Sociology (Soc) Courses

**Faculty**

# BS in Sociology (45-48 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. The Sociology Department requires a minimum of 24 hours of sociology major courses to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.

2. Complete one of the following introductory courses (preferably in sophomore year or earlier):

SOC 111 : Introductory Sociology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Social group influence; social interaction, processes, organization, and change; family, religion, government, population, culture, race relations.

**Course Outcomes**
There are no course outcomes available

SOC 112 : Current Social Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Individual deviance (violence, insanity, drugs, sex, crime, etc.) and social disorganization (poverty, race and sex discrimination, divorce, overpopulation, etc.). Conditions, causes, solutions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

: Honors Current Social Problems.

**Course Outcomes**

SOC 113 : Multicultural America. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Diverse cultural heritages in the United States. Cultures studied scientifically will include African American, Hispanic, Asian American, and Native American.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

3. Complete the following core courses:

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread

- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

SOC 300 : Methods of Research in Sociology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Soc 111 or 112 or 113.

DESCRIPTION: Tools of social research; survey, experimentation, content analysis, secondary analysis, qualitative research, evaluation research, data processing and analysis, and report writing.

**Course Outcomes**

There are no course outcomes available

SOC 307 : Data Analysis, Presentation, and Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SOC 300 & STAT 121; Major status.

DESCRIPTION: Framing research questions, locating available data, using programs and statistical packages for univariate and bivariate analysis, presenting and summarizing findings.

**Course Outcomes**

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SOC 310 : Social Inquiry. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 111; or SOC 112; or SOC 113

DESCRIPTION: Basic ideas and arguments forming sociological inquiry, including philosophical foundations, philosophy of social science, and development of classical theory and contemporary theory.

**Course Outcomes**

There are no course outcomes available

**Note:** Students must declare a sociology major before registering for Soc 307; students must complete these four courses with a C- or better grade.

4. Complete one of the following diversity courses:

SOC 322 : Class Inequality. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Causes and consequences of class, status, and power differences.

**Course Outcomes**

- Become more aware of the social inequality around us,
- Participate in and evaluate organizations that are attempting to create greater social justice and form your own ideas about what can be done about inequality
- Understand how social structure contributes to inequality
- Understand how sociologists do research on inequality
- Learn to see the connection between sociological concepts and the inquality you observe in everyday life

SOC 323 : Racial and Minority-Group Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Social psychological and social structural analysis of racial and ethnic relations; prejudice, discrimination, responses, protests, current issues.

**Course Outcomes**

- Demonstrate how the continuing influence and changing meaning of ethnic heritage is bound up in contemporary western culture, both as experienced by others and in their own lives.
- Describe the role of childhood in the construction of moral adulthood, and identify the community consequences of connections and continuity in the life course, as opposed to alienation and boundedness.
- Identify sources of intellectual and personal balance and of communal and personal strength in dealing with problems of cultural identity and social diversity.
- Identify strengths and weaknesses in varying subcultures, including our own, to highlight sources of self deception, and to propose personal and community actions whereby our â woundsâ may be healed.
- Describe relationships between Americaâ s history of slavery, our own attitudes toward essential work

and those who perform it, and existing racist and sexist attitudes.
- Offer proposals whereby the harmonizing of social opposites can be achieved.
- Understand the consequences, positive and negative, of ethnic contact and interaction on social creativity and problem solving, and to identify consequences of such contact in their own lives.
- Identify historical examples of positive and negative ethnic contact, in terms of social innovation and creativity, and apply them to contemporary situations
- Describe the complexities of social change and social engineering, cite historical examples in which efforts at social improvement generated unanticipated and sometimes counterproductive effects, and anticipate such effects in their own efforts at personal and social improvement.
- Clarify the differences between race and ethnicity, and the effects of so categorizing our fellow humans.
- Portray the â crisisâ contemporary civilizations face in terms of the age-old tension between settled and tribal peoples, and propose actions to ameliorate the negative effects of detribalization and the continuing increase in social diversity.
- Have a working understanding of the nature and limitations of prevailing worldviews, especially modernism and postmodernism, and their relation to social morality. Students understand the present-day significance of the Holocaust and other instances of genocide in terms of their lessons for humanity. They can identify the advantages and limits of reason and rationality, and understand that rationality and ethics may point in opposite directions, with potentially disastrous consequences for minorities.
- Demonstrate a basic familiarity with the ethnic structure of American society, how it is changing, and its implications for the future.

SOC 367 : Sociology of Gender. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Gender in social institutions: family, social hierarchies, economics, education, organizations, religion, and science.

**Course Outcomes**

There are no course outcomes available

WS 222 : (WS-Soc) Introduction to Women's Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Survey of scholarship about women's lives; new historical, sociological, psychological, and literary approaches that inform our understanding of women's experience.

**Course Outcomes**

- 1. Students will be able to define and use the critical vocabulary basic to the field of women's studies.
- 2. Students will be able to recognize the ways in which social structures and issues (government, family, education, health-care institutions, the media, etc.) have affected and affect women's lives.
- 3. Students will begin to gain an appreciation of the contributions of women throughout history and internationally.
- 4. Students will be able to perform and present research related to women's studies in oral and written formats.
- 5. Students will begin to make informed choices about their own behavior, health, education, and employment decisions based on their understanding of the role gender plays in relationships and society.

5. Complete one of the following advanced methods courses:

SOC 404 : Qualitative Research Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 307 & SOC 310

DESCRIPTION: Purposes, methods, and limitations of qualitative research. Includes participant observation and hermeneutics skills.

**Course Outcomes**

- Students will be able to explain the epistemological assumptions of qualitative research methods, how to select the appropriate qualitative research method to address a research question, and the criteria for evaluating qualitative research methods.
- Students will be able to design and conduct an in-depth interview study, an oral history interview study, a focus group study, an ethnography, a qualitative content analysis study, a qualitative case study, and a mixed-method study.
- Students will be able to code and interpret qualitative data. (This may include the use of qualitative data analysis software.)
- Students will be able to write a qualitative methods and findings section, as for a qualitative research article.
- Students will be able to connect what they are learning in the sociology program and/or classes with educational and career options.

SOC 405 : Multiple Regression Analysis and Social Science Computing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 307

DESCRIPTION: Data analysis and computer use in sociology; least squares and logistic regression techniques; SPSS and its use in conducting data analysis. Research report required.

**Course Outcomes**

- Students will be able to read and understand social scientific journal articlesStudents will be able to inspect and transform data in preparation for testing a regression model.Students will know the assumptions of regression analysis. Students will be able to test regression models. Students will know how to present their findings both written an orally.

6. Complete one of the following options in order to fulfill the GE Advanced Written and Oral Communication requirement:

**Either**

SOC 455R : Senior Capstone Part 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: SOC 307 & SOC 310

DESCRIPTION: This is the first semester of a two-semester capstone with advanced substantive material and the integration and application of concepts and skills from earlier courses to produce a professional research paper.

NOTE: Fulfills GE Advanced Writing and Oral Communication credit if both Soc 455R and Soc 456R are completed.

**Course Outcomes**

There are no course outcomes available

SOC 456R : Senior Capstone Part 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: SOC 455R

DESCRIPTION: This is the second semester of a two-semester capstone with advanced substantive material and the integration and application of concepts and skills from earlier courses to produce a professional research paper.

NOTE: Fulfills GE Advanced Writing and Oral Communication credit if both Soc 455R and Soc 456R are completed.

**Course Outcomes**

There are no course outcomes available

**Or**

ENGL 312 : Persuasive Writing. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Expository and persuasive writing focusing on practical reasons for evaluating audiences, generating and structuring an argument, and making stylistic decisions. Library research paper.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Create an appropriate ethos in both writing and speaking.
- Analyze the parts of an argument; evaluate them in terms of the intended audience; and generate a reasonable argument for a specific audience.Anticipate and effectively respond to audience objections and counterarguments.

7. Complete one of the following capstone options:
   a. Complete the following:

SOC 455R : Senior Capstone Part 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: SOC 307 & SOC 310

DESCRIPTION: This is the first semester of a two-semester capstone with advanced substantive material and the integration and application of concepts and skills from earlier courses to produce a professional research paper.

NOTE: Fulfills GE Advanced Writing and Oral Communication credit if both Soc 455R and Soc 456R are completed.

**Course Outcomes**

There are no course outcomes available

SOC 456R : Senior Capstone Part 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: SOC 455R

DESCRIPTION: This is the second semester of a two-semester capstone with advanced substantive

material and the integration and application of concepts and skills from earlier courses to produce a professional research paper.

NOTE: Fulfills GE Advanced Writing and Oral Communication credit if both Soc 455R and Soc 456R are completed.

**Course Outcomes**

There are no course outcomes available

b. Complete two of the following:

SOC 420 : Understanding Modern Societies. (3:3:0)

PREREQUISITE: SOC 307 & SOC 310

RECOMMENDED: Soc 404 or 405 or concurrent enrollment.

DESCRIPTION: Comparative-historical theory and research on the political, economic, social, and cultural processes in the formation, social organization, and future prospects of modern societies.

**Course Outcomes**

There are no course outcomes available

SOC 421 : Sociology of Organizations. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 307 & SOC 310

RECOMMENDED: Soc 404 or 405 or concurrent enrollment.

DESCRIPTION: Examines organizational arrangements that maximize performance, innovation, and well-being; effective ways to develop social networks; diverse organizational forms like strategic alliances, multinational corporations, and NGOs.

**Course Outcomes**

There are no course outcomes available

SOC 422 : Inequality and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 307 & SOC 310

RECOMMENDED: Soc 404 or 405 or concurrent enrollment.

DESCRIPTION: Distribution of economic and social resources (financial, status, prestige, power, and authority) as they relate to life changes, lifestyle, and social justice.

**Course Outcomes**

There are no course outcomes available

SOC 424 : Political Sociology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 307 & SOC 310

RECOMMENDED: Soc 404 or 405 or concurrent enrollment.

DESCRIPTION: Analysis of power and decision-making, political institutions, grass root politics, stratification, and political activity, social movements and revolutions, science/religion and politics. Writing intensive.

**Course Outcomes**

There are no course outcomes available

SOC 425 : Markets and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 307 & SOC 310

RECOMMENDED: Soc 404 or 405 or concurrent enrollment.

DESCRIPTION: Economic sociology exploring social dynamics of market behavior from an interdisciplinary perspective; topics include social factors related to value, price, and price volatility.

**Course Outcomes**

There are no course outcomes available

SOC 426 : Sociology of Work and Occupations. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 307 & SOC 310

RECOMMENDED: Soc 404 or 405 or concurrent enrollment.

DESCRIPTION: Distinction between work and occupation, changes in the nature of work and labor force, impacts of work, mobility in work life, and occupational attainment.

**Course Outcomes**

There are no course outcomes available

SOC 450 : The Family and Social Change. (3:3:0)

PREREQUISITE: SOC 307 & SOC 310

RECOMMENDED: Soc 404 or 405 or concurrent enrollment.

DESCRIPTION: Changing patterns of family-related behaviors, functions, and forms. Demographic, economic, and ideological forces shaping the family.

**Course Outcomes**

There are no course outcomes available

SOC 460 : Issues in Family Sociology. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: SOC 307 & SOC 310
RECOMMENDED: Soc 404 or 405 or concurrent enrollment.
DESCRIPTION: Advanced sociological analysis of current issues relating to the family (e.g., theory, methodology, parenting, marriage, divorce, family crises, race, gender, etc.).

**Course Outcomes**

There are no course outcomes available

SOC 481 : Crime, Justice, and Corrections. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: SOC 307 & SOC 310
RECOMMENDED: Soc 404 or 405 or concurrent enrollment.
DESCRIPTION: Nature and extent of criminal behavior; current theory and research related to causes of crime and treatment of criminals.

**Course Outcomes**

There are no course outcomes available

SOC 490R : Special Topics in Sociology. (1-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: SOC 307 & SOC 310
RECOMMENDED: Soc 404 or 405 or concurrent enrollment.
DESCRIPTION: Course content varies from year to year.

**Course Outcomes**

There are no course outcomes available

8. Complete 18 credit hours of 300-level or above Sociology courses. (No double counting within the major is allowed.)

Students are strongly encouraged to participate in one or two semesters (up to 9 credit hours) of professional experience including academic internships (on-campus, domestic, or international) and research with a faculty member (Soc 497R). Students may apply up to a total of 9 professional experience credit hours toward the sociology elective requirement. Suggested courses include the following:

BUS M 494R : On-Campus Experiential Projects. (3:1:Arr)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Direct, practical on-campus (not in the field) professional experience consulting with established and startup companies and organizations. Students are accepted to work on specific projects based on their skills, interests, and major emphasis. Students apply to be involved in specific projects.

**Course Outcomes**

There are no course outcomes available

IAS 397R : Topics in International and Area Studies. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.
DESCRIPTION: Study relating to current world problems.

**Course Outcomes**

- Students will gain knowledge through advanced study in focused area of IAS
- The student will develop these skills by producing a well-reasoned and well-written research paper
- Develop techniques of advanced research appropriate to the study

:

**Course Outcomes**

IAS 399R : Academic Internship: International. (.5-9:ARR:ARR)

PREREQUISITE: Acceptance into program.
DESCRIPTION: Individualized work or volunteer experience in an international setting.
NOTE: Class must be coordinated through International Study Programs.

**Course Outcomes**

- · Apply skills and material learned in traditional courses to a real-world workplace environment.· Demonstrate proficiency in the skills required by the internship

supervisor.· Demonstrate an ability to link insights gained from traditional classes and from real-world workplace experiences.

POLI 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Acceptance into program.

DESCRIPTION: Work-study on the international, national, state, and local level.

**Course Outcomes**

There are no course outcomes available

: Washington DC Internship.

**Course Outcomes**

: International Internship.

**Course Outcomes**

: Congressional Internship.

**Course Outcomes**

: State Government Internship.

**Course Outcomes**

: City Government Intership.

**Course Outcomes**

: Pre-Law Internship.

**Course Outcomes**

: Utah Legislature Internship.

**Course Outcomes**

: Campaign Internship.

**Course Outcomes**

SOC 399R : Academic Internship. (1-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Consent of instructor required.

RECOMMENDED: Soc 307 and related 300-level courses.

DESCRIPTION: Individualized work or volunteer experience in either a research setting or some kind of field placement with an organization.

**Course Outcomes**

- Establish a lifelong practice of making connections and creating a network of people that will help the student develop professionally
- Develop a professional sense of the work that will help the students identify personal learning outcomes for the semester
- Learn about what sociologists call "interactive service work" or jobs that require working with individuals
- Produce a professional analysis of the organization where the student works
- Complete a research project that addresses some need in the organization for which the student is working

SOC 497R : Directed Research in Sociology. (1-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Consent of instructor required.

DESCRIPTION: Individualized research program supervised by faculty member. Student selects topic and completes a research project.

**Course Outcomes**

- Students will develop research project under direction of faculty mentor.
- Students will engage in a mentored research project that may involve reviewing the literature, data collection, data analysis, and/or preparing manuscripts, etc.

*Hours include courses that may fulfill university core requirements.

## Show all Sociology (Soc) Courses

College of Family, Home, and Social Sciences Home

Sociology Department Home

Major

- BS in Sociology

Minor

- Sociology

Course Information

- Sociology (Soc) Courses

Faculty

# Minor in Sociology (15 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete one course from the following:

SOC 111 : Introductory Sociology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Social group influence; social interaction, processes, organization, and change; family, religion, government, population, culture, race relations.

**Course Outcomes**

There are no course outcomes available

SOC 112 : Current Social Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Individual deviance (violence, insanity, drugs, sex, crime, etc.) and social disorganization (poverty, race and sex discrimination, divorce, overpopulation, etc.). Conditions, causes, solutions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Current Social Problems.

**Course Outcomes**

SOC 113 : Multicultural America. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Diverse cultural heritages in the United States. Cultures studied scientifically will include African American, Hispanic, Asian American, and Native American.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

2. Complete at least one course from the following social diversity and inequality courses:

SOC 322 : Class Inequality. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Causes and consequences of class, status, and power differences.

**Course Outcomes**

- Become more aware of the social inequality around us,
- Participate in and evaluate organizations that are attempting to create greater social justice and form your own ideas about what can be done about inequality
- Understand how social structure contributes to inequality
- Understand how sociologists do research on inequality
- Learn to see the connection between sociological concepts and the inquality you observe in everyday life

SOC 323 : Racial and Minority-Group Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Social psychological and social structural analysis of racial and ethnic relations; prejudice,

discrimination, responses, protests, current issues.

**Course Outcomes**

- Demonstrate how the continuing influence and changing meaning of ethnic heritage is bound up in contemporary western culture, both as experienced by others and in their own lives.
- Describe the role of childhood in the construction of moral adulthood, and identify the community consequences of connections and continuity in the life course, as opposed to alienation and boundedness.
- Identify sources of intellectual and personal balance and of communal and personal strength in dealing with problems of cultural identity and social diversity.
- Identify strengths and weaknesses in varying subcultures, including our own, to highlight sources of self deception, and to propose personal and community actions whereby our â woundsâ may be healed.
- Describe relationships between Americaâ s history of slavery, our own attitudes toward essential work and those who perform it, and existing racist and sexist attitudes.
- Offer proposals whereby the harmonizing of social opposites can be achieved.
- Understand the consequences, positive and negative, of ethnic contact and interaction on social creativity and problem solving, and to identify consequences of such contact in their own lives.
- Identify historical examples of positive and negative ethnic contact, in terms of social innovation and creativity, and apply them to contemporary situations
- Describe the complexities of social change and social engineering, cite historical examples in which efforts at social improvement generated unanticipated and sometimes counterproductive effects, and anticipate such effects in their own efforts at personal and social improvement.
- Clarify the differences between race and ethnicity, and the effects of so categorizing our fellow humans.
- Portray the â crisisâ contemporary civilizations face in terms of the age-old tension between settled and tribal peoples, and propose actions to ameliorate the negative effects of detribalization and the continuing increase in social diversity.
- Have a working understanding of the nature and limitations of prevailing worldviews, especially modernism and postmodernism, and their relation to social morality. Students understand the present-day significance of the Holocaust and other instances of genocide in terms of their lessons for humanity. They can identify the advantages and limits of reason and rationality, and understand that rationality and ethics may point in opposite directions, with potentially disastrous consequences for minorities.
- Demonstrate a basic familiarity with the ethnic structure of American society, how it is changing, and its implications for the future.

SOC 367 : Sociology of Gender. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Gender in social institutions: family, social hierarchies, economics, education, organizations, religion, and science.

**Course Outcomes**

There are no course outcomes available

3. Complete an additional 9 credit hours from sociology 300-level and above coursework not previously taken.

**Note:** Students interested in a sociology minor that emphasizes the research and analysis component of the major may select among the following courses as electives: Soc 300, 307, 404, or 405. Students are cautioned that Soc 404 and 405 have several prerequisites, which will require additional courses beyond the 15 hour minimum for a minor. Soc 307 is currently open only to majors; students interested in the sociology minor may add the course with the instructor's consent.

*Hours include courses that may fulfill university core requirements.

## Show all Sociology (Soc) Courses

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# Sociology (Soc) Courses

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## Undergraduate Courses

### 100-Level Courses

SOC 111 : Introductory Sociology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Social group influence; social interaction, processes, organization, and change; family, religion, government, population, culture, race relations.

**Course Outcomes**
There are no course outcomes available

SOC 112 : Current Social Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Individual deviance (violence, insanity, drugs, sex, crime, etc.) and social disorganization (poverty, race and sex discrimination, divorce, overpopulation, etc.). Conditions, causes, solutions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

: Honors Current Social Problems.

**Course Outcomes**

SOC 113 : Multicultural America. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Diverse cultural heritages in the United States. Cultures studied scientifically will include African American, Hispanic, Asian American, and Native American.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

SOC 222 : (Soc-WS) Introduction to Women's Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Survey of scholarship about women's lives; new historical, sociological, psychological, and literary approaches that inform our understanding of women's experience.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

SOC 300 : Methods of Research in Sociology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Soc 111 or 112 or 113.

DESCRIPTION: Tools of social research; survey, experimentation, content analysis, secondary analysis, qualitative research, evaluation research, data processing and analysis, and report writing.

**Course Outcomes**

There are no course outcomes available

SOC 301 : Applied Social Research Methods. (3:3:0)

PREREQUISITE: STAT 121 & SOC 300

DESCRIPTION: Research methods training for conducting research in applied settings using social research methods such as needs assessments, social impact analysis, and program evaluations.

**Course Outcomes**

- Graduates know the full range of methodologies, the basic epistemological assumptions associated with each, the criteria for evaluating quality research, and how to select and implement the appropriate method to test a hypothesis or address a research question.
- Graduates are able to estimate and interpret univariate and bivariate statistics and generalize their meaning to the appropriate population.
- Graduates know how to code and interpret qualitative data or how to code and prepare quantitative data for statistical analysis.
- Graduates have the necessary skills to analyze data and summarize findings including a. basic familiarity with spreadsheet programs and statistical packages, b. the analytic process of comparing across categories, c. how to chart historical trends, and d. how to summarize findings for written or oral presentation.

SOC 302 : Research Proposal for Evaluation Research. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: SOC 301 & IAS 220; or SOC 301 & SOC 340; Consent of instructor required.

DESCRIPTION: Students will prepare a proposal, including literature review, research questions and research design. The proposal must then be approved by the organization, the professor, and IRB. Students must receive instructor approval to enroll.

**Course Outcomes**

There are no course outcomes available

SOC 307 : Data Analysis, Presentation, and Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SOC 300 & STAT 121; Major status.

DESCRIPTION: Framing research questions, locating available data, using programs and statistical packages for univariate and bivariate analysis, presenting and summarizing findings.

**Course Outcomes**

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SOC 310 : Social Inquiry. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 111; or SOC 112; or SOC 113

DESCRIPTION: Basic ideas and arguments forming sociological inquiry, including philosophical foundations, philosophy of social science, and development of classical theory and contemporary theory.

**Course Outcomes**

There are no course outcomes available

SOC 311 : Contemporary Sociological Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: SOC 310

DESCRIPTION: Ideas, critiques, and arguments that form contemporary sociological inquiry.

**Course Outcomes**

There are no course outcomes available

SOC 318 : (Soc-SFL 333) Adolescent Development in the Family and Other Social Contexts. (3:3:0)

DESCRIPTION: Examining developmental and social contexts of adolescents, emphasizing the importance of the family. Other contexts include peers, religion, community, schools, and cross-cultural issues.

**Course Outcomes**

There are no course outcomes available

SOC 321 : Sociology of Innovation. (3:3:0)

WHEN Fall; Winter

TAUGHT:

DESCRIPTION: Investigates group, network, organizational, and institutional arrangements that foster creativity and innovation, and examines classical and contemporary theories of social change and collective behavior.

**Course Outcomes**

There are no course outcomes available

SOC 322 : Class Inequality. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Causes and consequences of class, status, and power differences.

**Course Outcomes**

- Become more aware of the social inequality around us,
- Participate in and evaluate organizations that are attempting to create greater social justice and form your own ideas about what can be done about inequality
- Understand how social structure contributes to inequality
- Understand how sociologists do research on inequality
- Learn to see the connection between sociological concepts and the inquality you observe in everyday life

SOC 323 : Racial and Minority-Group Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Social psychological and social structural analysis of racial and ethnic relations; prejudice, discrimination, responses, protests, current issues.

**Course Outcomes**

- Demonstrate how the continuing influence and changing meaning of ethnic heritage is bound up in contemporary western culture, both as experienced by others and in their own lives.
- Describe the role of childhood in the construction of moral adulthood, and identify the community consequences of connections and continuity in the life course, as opposed to alienation and boundedness.
- Identify sources of intellectual and personal balance and of communal and personal strength in dealing with problems of cultural identity and social diversity.
- Identify strengths and weaknesses in varying subcultures, including our own, to highlight sources of self deception, and to propose personal and community actions whereby our â woundsâ may be healed.
- Describe relationships between Americaâ s history of slavery, our own attitudes toward essential work and those who perform it, and existing racist and sexist attitudes.
- Offer proposals whereby the harmonizing of social opposites can be achieved.
- Understand the consequences, positive and negative, of ethnic contact and interaction on social creativity and problem solving, and to identify consequences of such contact in their own lives.
- Identify historical examples of positive and negative ethnic contact, in terms of social innovation and creativity, and apply them to contemporary situations
- Describe the complexities of social change and social engineering, cite historical examples in which efforts at social improvement generated unanticipated and sometimes counterproductive effects, and anticipate such effects in their own efforts at personal and social improvement.
- Clarify the differences between race and ethnicity, and the effects of so categorizing our fellow humans.
- Portray the â crisisâ contemporary civilizations face in terms of the age-old tension between settled and tribal peoples, and propose actions to ameliorate the negative effects of detribalization and the continuing increase in social diversity.
- Have a working understanding of the nature and limitations of prevailing worldviews, especially modernism and postmodernism, and their relation to social morality. Students understand the present-day significance of the Holocaust and other instances of genocide in terms of their lessons for humanity. They can identify the advantages and limits of reason and rationality, and understand that rationality and ethics may point in opposite directions, with potentially disastrous consequences for minorities.
- Demonstrate a basic familiarity with the ethnic structure of American society, how it is changing, and its implications for the future.

SOC 325 : Introduction to the Sociology of Religion. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Origin, growth, and organizational development of religious groups; church activity, conversion, secularization, religious change.

**Course Outcomes**

- Acquire a basic understanding of the major theories, concepts, and perspectives used by sociologists to study religion in the modern world.
- Acquire a basic understanding of the issues and debates concerning the scientific study of religion and the use of sociological theories and methods for the study of religion.
- Develop the ability to think critically about the study of religion and the place of religion in modern life and society.
- Develop the ability to analyze issues related to the study of religion and communicate the analysis in writing (i.e., forming and presenting an argument, using appropriate scholarly language, writing respectfully, etc.).

SOC 326 : Sociology of Education. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Social origins of goals and curricula; theories of change and control; the nature of achievement in education.

**Course Outcomes**

There are no course outcomes available

SOC 327 : Sociology of the LDS Church and Its People. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: The LDS Church from a social science perspective, including the Church as a new religious movement; LDS culture; the institutionalization process.

**Course Outcomes**

- Students become "conversant with the substantive areas of sociology and the variety of theories and research methods associated with these substantive areas," as they apply to the sociology of religion in general and the sociology of Latter-day Saint life in particular. They learn several of the "major controversies and debates, new developments, emerging issues, and current trends" as they impact the study and interpretation of Latter-day Saint life in the contemporary academic and intellectual world. Students also are helped "to critically assess the strengths and weaknesses of current sociological theories and research relating to substantive areas," in this case Latter-day Saint life both historically and in the 20th and 21st centuries.
- Students have direct experience in comparative analysis both at the individual and group level, in interpersonal contexts as well as in vicarious and analytical experience, whereby they learn "the limitations of extrapolating from their own experience" and confront "how the life experience of others may differ from their own," both within social categories (e.g., comparisons with the life experience of other Latter-day Saints) and across social boundaries (e.g., comparisons with members of other faiths or national populations). Students experience "how race, class, and/or gender intersect with other social categories," in this instance, religious membership or national identities, "to create a variety of life experiences." They also learn to "articulate the sources of social conflict and describe the relations of power in modern society" as they consider both the history of the often-hated minority that was the Latter-day Saints and the contemporary setting and participation of Latter-day Saint people in modern and postmodern society.
- Students consider the underlying assumptions and "basic ideas and arguments forming sociological inquiry" as they apply to the sociology of religious life, especially the experience of Mormon people and Mormondom generally. Conflict theory, functionalism, social psychological perspectives, demographic perspectives are all brought into play as they affect the study of Latter-day Saint culture. Special attention is paid to the differences between postmodern and modern theoretical perspectives as they impact definitions of "truth" and "reality" and as they apply to theorizing about and doing research on people's ideas of religion and transcendence.
- Diversity of research methodologies are illustrated; the "fit" of various approaches to the study of religious life are evaluated. This is not a methods course, but as issues of research methodology affect the confidence one can have in the findings of researchers who study Mormonism, issues of methodology are discussed and we learn to distinguish good from poor research.
- Because our focus is social science literature on Mormonism across more than a century, the emphasis on "current" is limited, but because many of our readings and several of the "classics" students review are current, we contribute in part to awareness of the current state of social science analysis of religion, and Mormonism in particular. Students demonstrate their knowledge of substantive areas as applicable to research on LDS populations in their critiques of "classic" sociological studies of Mormonism, ideally demonstrating both the strong points and weaknesses of high quality and/or high profile studies of Mormon thought, life, and people.
- Both the advantages and the disadvantages of sociological perspectives (the plural here is important; there are many social science perspectives, and to speak of the sociological perspective is a distortion) with respect to interpreting daily life and religious life are emphasized throughout the course. Dilemmas and challenges of trying to live an integrated spiritual and successful temporal existence within contemporary societies are stressed throughout the course. Throughout, we stress the importance to the religious life of systematic, honest, and sophisticated awareness of intellectual fads and foibles, changing trends and worldviews, varying standards and assumptions, patterns of globalization and secularization. More than many sociological courses, this one is devoted to the overall aim of BYU education to integrate spiritual and secular life goals and interest, to combine professional and career interests with a more specialized awareness of how religious organizations, beliefs, and institutions fit within and change along with the wider society, and the challenges associated with the sometime conflict of individual, family, organizational and societal interests.

SOC 328 : Sociology of Sport. (3:3:0)

DESCRIPTION: Analysis of the sociological aspects of sport and their relationship to politics, economics, stratification, education, and family. Focus on concepts, theory, and related research.

**Course Outcomes**

There are no course outcomes available

SOC 329 : Medical Sociology. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Social epidemiology, the sick role, sociocultural definitions of and responses to illness, and the organization of medical-health delivery systems.

**Course Outcomes**

- Students will gain awareness of the social and structural factors which influence health, healing, and illness. Particular emphasis is given to: (1) influenc eof the social environment on health and illness; (2) health and illness behavior; (3) health care prasctitioners and their relationships with patients; and (4) the health care system. Students will be introduced to the literature and be conversant regarding the primary social and structural factors influencing health and illness.
- Students will gain understanding and awareness of the gender and race and ethnic differences related to health and illness.
- Students will debate a current topic related to the sociology of medicine which will require them to be conversant with the debate and develop oral presentation skills. In addition, students will research and present in written form a medical phenomenon in sociological terms.

SOC 330 : Cultural Sociology. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Recent theories and research in sociological approaches to meaning, including cultural systems and institutions, everyday life, symbolism, agency, power, texts, and globalization.

**Course Outcomes**

- Students will learn concepts, theories, and research methods associated with cultural sociology, with an emphasis on current issues in the subfield.
- Students will be introduced to doing a bibliographic search and a literature review.
- Students will be introduced to analytic and syntopical reading skills.
- Students will learn about educational and career options related to sociology, with an emphasis on those related to cultural sociology.

SOC 333 : (Soc-Nurs) End-of-Life Care. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: End-of-life (EOL) care from spiritual, physical, and psychosocial perspectives. Comparisons from various cultural/ethnic backgrounds. Complexities of EOL care including impact on families, health care system, and society. Personal perspectives about death, dying, and bereavement.

**Course Outcomes**

There are no course outcomes available

SOC 339 : Social Organization and Change. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Soc 111 and 310.

DESCRIPTION: Understanding processes of social organization, change, and development in contemporary society.

**Course Outcomes**

There are no course outcomes available

SOC 340 : Sociology of International Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Soc 111 or 112; IAS 220.

DESCRIPTION: Paradigms of development and poverty; international, national, and grass roots approaches to promote development and reduce poverty; and application in developing nations.

**Course Outcomes**

- Become familiar with different theories about development.
- Understand the relationship between development and major social insitutions.
- Learn about what different organizations are doing to promote beneficial development.
- Learn to apply what you have learned to a specific aspect of development.
- Integrate what you have learned to develop your own approach to development.

SOC 345 : World Populations. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Fertility, mortality, and migration patterns of world populations as they relate to current social, economic, political, and religious issues.

**Course Outcomes**

There are no course outcomes available

SOC 350 : (Soc-Psych) Introduction to Social Psychology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Conformity and obedience; socialization, norms, roles; attitudes, leadership, group processes.

**Course Outcomes**

There are no course outcomes available

SOC 360 : Introduction to Family Sociology. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Definitions of "family"; surveying the family as a context for sex, marriage, work, social reproduction, and violence in Western societies.

**Course Outcomes**

- Be able to critically assess the strengths and weaknesses of current sociological and demographic theories and research related to family sociology.
- Recognize how race, class, and gender intersect with family life and be familiar with the current literature on families and inequality.
- Be able to read current literature, synthesize main points across articles and develop an original thesis or argument in writing that is supported by the literature.
- Know the major controversies and debates, as well as demographic trends related to the family in the United States.
- Integrate current literature on family and determine family patterns for your personal future family.

SOC 361 : Theoretical Foundations of Marriage and Family. (3:3:0)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Comparative analysis of basic ideas and arguments for understanding marriage and family found in social science,

social and political theory, law, and other forms of cultural discourse.

**Course Outcomes**

There are no course outcomes available

SOC 365 : Sociology of Aging. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Demographic and social factors related to aging: agencies, serving older citizens, and role of community in solving problems of aged.

NOTE: Required for students in gerontology minor and/or certificate programs.

**Course Outcomes**

There are no course outcomes available

SOC 367 : Sociology of Gender. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Gender in social institutions: family, social hierarchies, economics, education, organizations, religion, and science.

**Course Outcomes**

There are no course outcomes available

SOC 370 : The Sociology of Urban Life. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Norms, social controls, and social processes in urban areas in both historical and contemporary perspectives.

**Course Outcomes**

There are no course outcomes available

SOC 380 : Deviant Behavior and Social Control. (3:3:0)

DESCRIPTION: Theory and research related to deviance. Specific topics include psychosis, addiction, homosexuality, violence, and rape, among others.

**Course Outcomes**

There are no course outcomes available

SOC 383 : Juvenile Delinquency. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lawlessness of children and adolescents: causation, treatment, prevention, and outlook.

**Course Outcomes**

There are no course outcomes available

SOC 390R : Special Topics in Contemporary Sociology. (.5-3:3:0)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Course content varies from year to year.

**Course Outcomes**

- Students will be able to recognize the ways in which social structure and issues (government, family, education, health-care institutions, the media, etc.) have affected and affect women's lives.
- Students will begin to gain an appreciation of the contributions of women throughout history and internationally.
- Students will be able to perform and present research related to women's studies in oral, written, and/or multi-media formats.
- Students will be able to make informed choices about their own behavior, health, education, and employment decisions based on their understanding of the role gender plays in relationships and society.
- Students will be able to define and use in speech and writing the critical vocabulary basic to the field of women's studies.

SOC 399R : Academic Internship. (1-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Consent of instructor required.

RECOMMENDED: Soc 307 and related 300-level courses.

DESCRIPTION: Individualized work or volunteer experience in either a research setting or some kind of field placement with an organization.

**Course Outcomes**

- Establish a lifelong practice of making connections and creating a network of people that will help the student develop professionally
- Develop a professional sense of the work that will help the students identify personal learning outcomes for the semester
- Learn about what sociologists call "interactive service work" or jobs that require working with individuals
- Produce a professional analysis of the organization where the student works
- Complete a research project that addresses some need in the organization for which the student is working

**400-Level Courses**

SOC 404 : Qualitative Research Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 307 & SOC 310

DESCRIPTION: Purposes, methods, and limitations of qualitative research. Includes participant observation and hermeneutics skills.

**Course Outcomes**

- Students will be able to explain the epistemological assumptions of qualitative research methods, how to select the appropriate qualitative research method to address a research question, and the criteria for evaluating qualitative research methods.
- Students will be able to design and conduct an in-depth interview study, an oral history interview study, a focus group study, an ethnography, a qualitative content analysis study, a qualitative case study, and a mixed-method study.
- Students will be able to code and interpret qualitative data. (This may include the use of qualitative data analysis software.)
- Students will be able to write a qualitative methods and findings section, as for a qualitative research article.
- Students will be able to connect what they are learning in the sociology program and/or classes with educational and career options.

SOC 405 : Multiple Regression Analysis and Social Science Computing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 307

DESCRIPTION: Data analysis and computer use in sociology; least squares and logistic regression techniques; SPSS and its use in conducting data analysis. Research report required.

**Course Outcomes**

- Students will be able to read and understand social scientific journal articlesStudents will be able to inspect and transform data in preparation for testing a regression model.Students will know the assumptions of regression analysis. Students will be able to test regression models. Students will know how to present their findings both written an orally.

SOC 420 : Understanding Modern Societies. (3:3:0)

PREREQUISITE: SOC 307 & SOC 310

RECOMMENDED: Soc 404 or 405 or concurrent enrollment.

DESCRIPTION: Comparative-historical theory and research on the political, economic, social, and cultural processes in the formation, social organization, and future prospects of modern societies.

**Course Outcomes**

There are no course outcomes available

SOC 421 : Sociology of Organizations. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 307 & SOC 310

RECOMMENDED: Soc 404 or 405 or concurrent enrollment.

DESCRIPTION: Examines organizational arrangements that maximize performance, innovation, and well-being; effective ways to develop social networks; diverse organizational forms like strategic alliances, multinational corporations, and NGOs.

**Course Outcomes**

There are no course outcomes available

SOC 422 : Inequality and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 307 & SOC 310

RECOMMENDED: Soc 404 or 405 or concurrent enrollment.

DESCRIPTION: Distribution of economic and social resources (financial, status, prestige, power, and authority) as they relate to life changes, lifestyle, and social justice.

**Course Outcomes**

There are no course outcomes available

SOC 424 : Political Sociology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 307 & SOC 310

RECOMMENDED: Soc 404 or 405 or concurrent enrollment.

DESCRIPTION: Analysis of power and decision-making, political institutions, grass root politics, stratification, and political activity, social movements and revolutions, science/religion and politics. Writing intensive.

**Course Outcomes**

There are no course outcomes available

SOC 425 : Markets and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: SOC 307 & SOC 310
RECOMMENDED: Soc 404 or 405 or concurrent enrollment.
DESCRIPTION: Economic sociology exploring social dynamics of market behavior from an interdisciplinary perspective; topics include social factors related to value, price, and price volatility.

**Course Outcomes**

There are no course outcomes available

SOC 426 : Sociology of Work and Occupations. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: SOC 307 & SOC 310
RECOMMENDED: Soc 404 or 405 or concurrent enrollment.
DESCRIPTION: Distinction between work and occupation, changes in the nature of work and labor force, impacts of work, mobility in work life, and occupational attainment.

**Course Outcomes**

There are no course outcomes available

SOC 450 : The Family and Social Change. (3:3:0)

PREREQUISITE: SOC 307 & SOC 310
RECOMMENDED: Soc 404 or 405 or concurrent enrollment.
DESCRIPTION: Changing patterns of family-related behaviors, functions, and forms. Demographic, economic, and ideological forces shaping the family.

**Course Outcomes**

There are no course outcomes available

SOC 455R : Senior Capstone Part 1. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: SOC 307 & SOC 310
DESCRIPTION: This is the first semester of a two-semester capstone with advanced substantive material and the integration and application of concepts and skills from earlier courses to produce a professional research paper.
NOTE: Fulfills GE Advanced Writing and Oral Communication credit if both Soc 455R and Soc 456R are completed.

**Course Outcomes**

There are no course outcomes available

SOC 456R : Senior Capstone Part 2. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: SOC 455R
DESCRIPTION: This is the second semester of a two-semester capstone with advanced substantive material and the integration and application of concepts and skills from earlier courses to produce a professional research paper.
NOTE: Fulfills GE Advanced Writing and Oral Communication credit if both Soc 455R and Soc 456R are completed.

**Course Outcomes**

There are no course outcomes available

SOC 460 : Issues in Family Sociology. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: SOC 307 & SOC 310
RECOMMENDED: Soc 404 or 405 or concurrent enrollment.
DESCRIPTION: Advanced sociological analysis of current issues relating to the family (e.g., theory, methodology, parenting, marriage, divorce, family crises, race, gender, etc.).

**Course Outcomes**

There are no course outcomes available

SOC 481 : Crime, Justice, and Corrections. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: SOC 307 & SOC 310
RECOMMENDED: Soc 404 or 405 or concurrent enrollment.
DESCRIPTION: Nature and extent of criminal behavior; current theory and research related to causes of crime and treatment of criminals.

**Course Outcomes**

There are no course outcomes available

SOC 490R : Special Topics in Sociology. (1-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: SOC 307 & SOC 310

RECOMMENDED: Soc 404 or 405 or concurrent enrollment.
DESCRIPTION: Course content varies from year to year.

**Course Outcomes**

There are no course outcomes available

SOC 495R : Directed Reading in Sociology. (1-6:0:0)

PREREQUISITE: Consent of instructor required.
DESCRIPTION: Individualized reading program supervised by faculty member. Student selects reading topic and completes systematic in-depth reading of related literature.

**Course Outcomes**

- Students will develop and read literature from specific sub-field within sociology.
- Students will evaluate, synthesize, and summarize literature in a specific sub-field of sociology.

SOC 497R : Directed Research in Sociology. (1-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Consent of instructor required.
DESCRIPTION: Individualized research program supervised by faculty member. Student selects topic and completes a research project.

**Course Outcomes**

- Students will develop research project under direction of faculty mentor.
- Students will engage in a mentored research project that may involve reviewing the literature, data collection, data analysis, and/or preparing manuscripts, etc.

## 500-Level Graduate Courses (available to advanced undergraduates)

SOC 524 : Advanced Political Sociology. (3:3:0)

DESCRIPTION: Social basis of political behavior. Modern theories and research concerning use of power and decision making.

**Course Outcomes**

No outcomes are available at this time.

SOC 525 : Sociology of Religion. (3:3:0)

PREREQUISITE: Soc 111, 325, or instructor's consent.
DESCRIPTION: Influences of social factors in the development of various religious systems.

**Course Outcomes**

- Students will be able to explain selected theoretical frameworks in the sociology of religion.
- Students will be able to assess critically both published and unpublished texts relevant to religion, including datasets and other materials, in establishing meaningful frameworks and problems for study.
- Students will be able to participate in all stages of preparing an original, publishable contribution to the sociology of religion.
- Students will be able to organize and conduct team research on joint projects.

SOC 527 : Sociology of the LDS Church and Its People. (3:3:0)

DESCRIPTION: An advanced analysis of the LDS Church from a social science perspective, including the Church as a new religious movement; LDS culture; the institutionalization process.

**Course Outcomes**

There are no course outcomes available

SOC 528 : Sociology of Rural Communities. (3:3:0)

PREREQUISITE: Soc 311, 370, or instructor's consent.
DESCRIPTION: Review and critique of major theoretical and methodological approaches to the study of community, with a focus on rural communities.

**Course Outcomes**

There are no course outcomes available

SOC 565 : The Individual and Family in Later Years. (3:3:0)

DESCRIPTION: Developmental aspects of aging, focusing on the biophysical, cognitive, social, affective, and pathological dimensions in people aged 50 and over.

**Course Outcomes**

No outcomes are available at this time.

SOC 590R : Special Topics in Sociology. (.5-3:3:0)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Course content varies from year to year.

**Course Outcomes**

There are no course outcomes available

SOC 595R : Directed Readings. (.5-3:0:6)

DESCRIPTION: Individualized reading program supervised by faculty member.
NOTE: Pass/Fail only.

**Course Outcomes**

- Students will develop and read literature from specific sub-field of sociology.
- Students will evaluate, synthesize, and summarize literature in specific sub-field of sociology.

SOC 598R : Pro-Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Current developments in sociology including research, proposals, professional meetings, teaching, and finding a job.

**Course Outcomes**

There are no course outcomes available

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Sociology Department Home**

**Major**

- BS in Sociology

**Minor**

- Sociology

**Course Information**

- Sociology (Soc) Courses

**Faculty**

# Sociology Faculty

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## Professors

Bahr, Howard M.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1962
MS, University of Texas, Austin, 1964
PhD, University of Texas, Austin, 1965

Bahr, Stephen J.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1968
MS, Brigham Young University, 1969
PhD, Washington State University, 1972

Brown, Ralph B.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BA, Utah State University, 1986
MS, Utah State University, 1988
PhD, University of Missouri, Columbia, 1992

Call, Vaughn R. A.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1970
MS, Brigham Young University, 1974
PhD, Washington State University, 1977

Forste, Renata
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1984
MS, Brigham Young University, 1986
PhD, University of Chicago, 1992

Heaton, Tim Braley
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, Brigham Young University, 1975
PhD, University of Wisconsin, Madison, 1979

Hoffmann, John P.
**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BS, James Madison University, 1984
MS, American University, 1985

PhD, State University of New York, Albany, 1991
MPH, Emory University, 1994

Jacobson, Cardell K.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1966
MA, University of North Carolina, Chapel Hill, 1969
PhD, University of North Carolina, Chapel Hill, 1971

## Associate Professors

Dufur, Mikaela J.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994
MA, Ohio State University, Columbus, 1996
PhD, Ohio State University, Columbus, 2000

Erickson, Lance D.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2001
PhD, University of North Carolina, Chapel Hill, 2005

Knapp, Stan J.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
MS, Brigham Young University, 1989
PhD, Florida State University, 1996

Ward, Carol J.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Associate Professor
**DEGREES:** BA, North Texas State University, 1973
MA, North Texas State University, 1976
PhD, University of Chicago, 1992

## Assistant Professors

Child, Curtis

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2002
MPA, Indiana University at Bloomington, 2004
PhD, Indiana University at Bloomington, 2011

Dahlin, Eric

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2003
PhD, University of Minnesota, 2010

Gibbs, Benjamin G.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003

MS, Brigham Young University, 2005
PhD, Ohio State University, 2009

Phillips, Kristie J. R.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
MS, Brigham Young University, 2002
PhD, Vanderbilt University, 2005

Rugh, Jacob S.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
MPA, Princeton University, 2008
URP, Princeton University, 2008
PhD, Princeton University, 2012

Sanders, Scott R.

**COLLEGE:** Family, Home, and Social Sciences
**DEPARTMENT:** Sociology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2002
MPA, Cornell University, 2006
MS, Cornell University, 2007
PhD, Cornell University, 2013

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Women's Studies Program Home

Minors

- Women's Studies

Course Information

- Women's Studies (WS) Courses

# Women's Studies Program

Valerie Hegstrom, Coordinator
1065 JFSB, (801) 422-2276

College of Humanities Advisement Center
1175 JFSB, (801) 422-4789

## Discipline

The women's studies minor educates students in the findings, theories, and methodologies fundamental to the women's studies field, while fostering critical thinking and superior scholarship. Considering traditional academic discourse from the female perspective allows new insights into our historical and cultural traditions.

## Career Opportunities

A women's studies minor enhances and broadens educational and employment opportunities in any discipline. The women's studies minor trains students to look at issues and questions from unique historical and contemporary perspectives both domestically and internationally. This training prepares students to be more successful in graduate and professional schools, business and industry, and government or community service.

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Women's Studies Program Home

Minors

- Women's Studies

Course Information

- Women's Studies (WS) Courses

# Minor in Women's Studies (16 hours)

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## Program Requirements

1. Complete the following:

WS 222 : (WS-Soc) Introduction to Women's Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Survey of scholarship about women's lives; new historical, sociological, psychological, and literary approaches that inform our understanding of women's experience.

**Course Outcomes**

- 1. Students will be able to define and use the critical vocabulary basic to the field of women's studies.
- 2. Students will be able to recognize the ways in which social structures and issues (government, family, education, health-care institutions, the media, etc.) have affected and affect women's lives.
- 3. Students will begin to gain an appreciation of the contributions of women throughout history and internationally.
- 4. Students will be able to perform and present research related to women's studies in oral and written formats.
- 5. Students will begin to make informed choices about their own behavior, health, education, and employment decisions based on their understanding of the role gender plays in relationships and society.

2. Complete two enrollments of the following:

WS 392R : Women's Studies Colloquium. (1:ARR:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: WS 222.

DESCRIPTION: Scholarly findings presented by researchers on topics relating to women's lives and experiences throughout history, across the world, and within ethnic, educational, and economic segments of society.

**Course Outcomes**

- 1. Students will become aware of some of the latest research in the field of women's studies carried out here at BYU and at other national and international institutions.
- 2. Students will engage with the lectures and lecturers by developing questions about the research and responding to each lecture.
- 3. Students will be able to formally introduce a speaker at a public event, respond to presentation in that setting, and/or lead a question & answer session.
- 4. Students will be able to evaluate and write clearly about the ideas presented in lectures.

3. Complete nine hours from the following (Note: only two courses from any one department can be taken towards the minor requirements):

ANTHR 431 : Kinship and Gender. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Kinship theory and analysis, 1920-present. Recent issues in anthropological treatment of gender, marriage, and family structure.

**Course Outcomes**

- Students will learn the nature of kinship and the geneological basis of society. Students will also learn the importance of kinship when conducting fieldwork.

ARTHC 301 : Women in Art. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: History of women artists, critics, and patrons, along with women in representation in Western art. Consideration of theories and methodologies of feminist art history.

**Course Outcomes**

There are no course outcomes available

COMMS 481 : Gender, Race, and Class in the Media. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Applying critical theory to the interaction between media and underrepresented groups in society. Approaches may include stereotypes and portrayals, access to media, participation, and media ownership.

**Course Outcomes**

There are no course outcomes available

ENGL 396 : Studies in Women's Literature. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Female-authored literary texts and literary theory concerning women.

NOTE: A core class for the women's studies minor.

**Course Outcomes**

- Read critically and analyze selected literary texts representative of the general history or of a thoughtfully focused dimension of women's literature.
- Demonstrate a knowledge of the history, nature, aesthetics, and broadly defined thematic concerns of the literature at the center of the course.
- Compare and contrast women's literature in question with larger or "mainstream" British or American literature.
- Form an appropriate research strategy, independently locate relevant digital and print sources, and draw upon these to develop a focused and effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

HIST 318 : European Women's History. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

RECOMMENDED: Hist 200.

DESCRIPTION: European women and gender from 1400 to the present.

**Course Outcomes**

- Students will be able to understand and explain major trends in European women's experiences and history since 1400
- Students will be able to analyze and synthesize historiographyof women's history, gender history, and feminism
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another
- Students will interpret important shifts or trends in the experience of women and attitudes about gender. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate contemporary attitudes to women and men's history and gender and how these affect interpretations of the past.

HIST 319 : The Family in Europe. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Nature and development of marriage and family life and structure from the ancient to modern era.

NOTE: Independent Study also.

**Course Outcomes**

- Students will be able to understand and explain major trends in European family life, relationships, and law between 1100 and the present
- Students will be able to analyze and synthesize historiography of family history
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another.
- Students will interpret important shifts or trends in the experience of family functions and relationships and their connections with the law. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends.
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate historical experiences and historiographic interpretations

HIST 358 : Gender and History in Latin America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: How gender roles have been defined legally, socially, and culturally in Latin America from the colonial period to the present, emphasizing the nineteenth and twentieth centuries.

**Course Outcomes**

- To understand how gender relations and gender roles developed in Latin America from colonial times to the present.
- To be able to discuss and explain those developments through the written and spoken word with clarity, persuasiveness, and proper use of evidence.
- To write a well written, organized, and developed term paper using the critical thinking and writing skills of a historian.
- To be able to read primary sources and discuss their utility in constructing historical arguments.

HIST 378 : American Family History. (3:3:0)

DESCRIPTION: History of American families from colonial period to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major intellectual, economic, religious, social, cultural, and political developments affecting changes in American families of various races, classes, and regions from 1607 to the present.
- Students will be able to analyze an important historical question in the history of American families
- Students will be able to research, analyze, and integrate primary and secondary sources into a coherent and well-written argument.
- Students will be able to isolate the theses and supporting arguments of secondary sources on the history of American families.

HIST 384 : United States Women's History. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Survey course of women's experience in American culture and society from the Puritans to the present.

**Course Outcomes**

- Students will be able to explain and analyze the experiences of women in America from the colonial period to the present, the ways that ideas about gender have shaped American life, and significant issues and debates in U.S. Women's history.
- Students will be able to analyze, interpret, and evaluate primary sources.
- Students will be able to interpret and debate the meanings and historical value of primary sources with their peers.
- Students will be able to analyze and create historical questions and place them in a historiographical context.
- Students will demonstrate proficiency in using historical methods of research and in integrating data into a coherent argument expressed through a clear, well-written style.
- Students will be able to apply their understanding of American women's history to current issues and events.

HLTH 450 : Women's Health Issues. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Overview of selected health topics affecting women's health status. Primary emphasis on steps to enhance personal health and fulfill divine roles from childhood through adulthood.

**Course Outcomes**

- Identify and understand the determinants of women's health issues.(Learning activities: lecture, class discussion, videos, out of class activites, guest lecturers)
- Identify and report on specific chronic and infectious diseases that affect women.(Learning activities: lecture, class discussion, book review, guest lecture)
- Identify ways to improve women's health using a variety of assessment sources.(Learning activities: lecture, class discussion, review of CDC and other health statistics, interviews, guest lecture)

POLI 472 : International Political Economy of Women. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Effects upon national, international, and developmental policies when women are rendered visible and valued.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

PSYCH 306 : Psychology of Gender. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or instructor's consent.

DESCRIPTION: Biological and social contributions to sex role development, sexual self-concept, and complementarity of sex roles.

NOTE: Contains content featured in the Graduate Record Examination (GRE) Subject Test.

**Course Outcomes**

There are no course outcomes available

SFL 461 : The Family and the Law. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Legal environment of the family system, with emphasis on husband-wife and parent-child relationships, rights, and responsibilities.

**Course Outcomes**

- Critically analyze the historical and practical application of the law to your family.Critically analyze the profound implications that family law has on your relationships.Critically analyze the legitimacy of laws

governing unnerving and sometimes painful issues.Be able to discuss sensitive issues different than your own in order to broaden your understanding as well as hone your ability to judge.Understand and synthesize issues addressed in class such as marriage, adoption, infertility, divorce, addiction, etc.

SFL 471 : Philosophies of Family Work and Relationships. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SFL 101 & STAT 121 & SFL 290; SFL 160 or concurrent enrollment.

DESCRIPTION: Changes in household labor across time, current issues around gender and household labor, and philosophical perspectives of family work and family relationships.

**Course Outcomes**

- Understand and synthesize the historical evolution of family work and the roots of home management.Demonstrate knowledge of the core assumptions of current theoretical and research perspectives on family work.Analyze gendered perspectives on men's and women's "unique" contributions to family life.Communicate ideas clearly and engage in critical thinking as you write essays, take quizzes, and take exams.Critique and think more clearly about your own family work paradigms.

SOC 323 : Racial and Minority-Group Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Social psychological and social structural analysis of racial and ethnic relations; prejudice, discrimination, responses, protests, current issues.

**Course Outcomes**

- Demonstrate how the continuing influence and changing meaning of ethnic heritage is bound up in contemporary western culture, both as experienced by others and in their own lives.
- Describe the role of childhood in the construction of moral adulthood, and identify the community consequences of connections and continuity in the life course, as opposed to alienation and boundedness.
- Identify sources of intellectual and personal balance and of communal and personal strength in dealing with problems of cultural identity and social diversity.
- Identify strengths and weaknesses in varying subcultures, including our own, to highlight sources of self deception, and to propose personal and community actions whereby our â woundsâ may be healed.
- Describe relationships between Americaâ s history of slavery, our own attitudes toward essential work and those who perform it, and existing racist and sexist attitudes.
- Offer proposals whereby the harmonizing of social opposites can be achieved.
- Understand the consequences, positive and negative, of ethnic contact and interaction on social creativity and problem solving, and to identify consequences of such contact in their own lives.
- Identify historical examples of positive and negative ethnic contact, in terms of social innovation and creativity, and apply them to contemporary situations
- Describe the complexities of social change and social engineering, cite historical examples in which efforts at social improvement generated unanticipated and sometimes counterproductive effects, and anticipate such effects in their own efforts at personal and social improvement.
- Clarify the differences between race and ethnicity, and the effects of so categorizing our fellow humans.
- Portray the â crisisâ contemporary civilizations face in terms of the age-old tension between settled and tribal peoples, and propose actions to ameliorate the negative effects of detribalization and the continuing increase in social diversity.
- Have a working understanding of the nature and limitations of prevailing worldviews, especially modernism and postmodernism, and their relation to social morality. Students understand the present-day significance of the Holocaust and other instances of genocide in terms of their lessons for humanity. They can identify the advantages and limits of reason and rationality, and understand that rationality and ethics may point in opposite directions, with potentially disastrous consequences for minorities.
- Demonstrate a basic familiarity with the ethnic structure of American society, how it is changing, and its implications for the future.

SOC 360 : Introduction to Family Sociology. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Definitions of "family"; surveying the family as a context for sex, marriage, work, social reproduction, and violence in Western societies.

**Course Outcomes**

- Be able to critically assess the strengths and weaknesses of current sociological and demographic theories and research related to family sociology.
- Recognize how race, class, and gender intersect with family life and be familiar with the current literature on families and inequality.
- Be able to read current literature, synthesize main points across articles and develop an original thesis or argument in writing that is supported by the literature.
- Know the major controversies and debates, as well as demographic trends related to the family in the United States.
- Integrate current literature on family and determine family patterns for your personal future family.

SOC 367 : Sociology of Gender. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Gender in social institutions: family, social hierarchies, economics, education, organizations, religion, and science.

**Course Outcomes**

There are no course outcomes available

WS 332 : Mormon Women's History. (3:Arr:Arr)

WHEN TAUGHT: Winter

RECOMMENDED: WS 222.

DESCRIPTION: The religious, domestic, economic, political, social and familial lives of Latter-day Saint women within the broader contexts of American women's history and Latter-day Saint history. Mormon women's relationship to national trends and their association with national women's organizations.

**Course Outcomes**

There are no course outcomes available

WS 351 : Early Modern European Women Writers. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: WS 222.

DESCRIPTION: Readings in European literature by women prior to 1700.

**Course Outcomes**

- 1. Students will be able to read critically women-authored texts and analyze them within their cultural and literary contexts in Early Modern Europe.
- 2. Students will be able to recognize key female authors from this era, discern between literary genres and produce competent essays based on their critical engagement with course texts.
- 3. Students will be able to evaluate, recognize the diversity of and develop an appreciation for "the other voice" in Early Modern Europe.

WS 352 : Modern European Women Writers. (3:3.0:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: WS 222.

DESCRIPTION: Readings in European literature by women after 1700.

**Course Outcomes**

There are no course outcomes available

WS 390R : Women's Studies Special Topics. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Subjects related to women's studies, including anthropology of gender, women in the scriptures, British colonial writers, women's health care concepts, European women's history, Mormon women's history, women entrepreneurs, etc.

**Course Outcomes**

There are no course outcomes available

WS 395R : Mentored Study Experience. (1-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: WS 222

DESCRIPTION: Readings and on-site research mentored by a faculty advisor and leading to a written product. Intended for students enrolled in a study abroad program or a course that takes place during a travel experience off campus.

**Course Outcomes**

There are no course outcomes available

WS 399R : Women's Studies Internship. (1-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: WS 222

DESCRIPTION: Credit for work on an international, national, or local internship relating to issues affecting women's lives. Students will submit a written report of their internship experience.

**Course Outcomes**

There are no course outcomes available

WS 422 : Theories of Women's Studies. (3:3.0:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: WS 222 or instructor permission.

DESCRIPTION: Introduction to theoretical approaches to women's studies.

**Course Outcomes**

- 1. Students will be able to analyze and demonstrate a sound knowledge of a selection of primary documents related to historical and contemporary theories of women's studies.
- 2. Students will be able to produce substantive and competent term papers and projects focused on issues raised by women's studies theories.

4. Complete the following:

WS 492 : Women's Studies Capstone. (2:2.0:0)

WHEN TAUGHT: Winter

PREREQUISITE: WS 222 & WS 392R

DESCRIPTION: Synthesis of interdisciplinary studies of women; knowledge and skills necessary for advanced study or work in the field; mentored research and senior capstone project required.

**Course Outcomes**

- 1. Students will demonstrate their ability to read, write, and think analytically, and to carry out original research through their capstone projects.
- 2. Students will prepare materials to support their post-academic pursuits.
- 3. Students will be able to apply their knowledge and experience from interdisciplinary women's studies courses to their mentored research projects.
- 4. Students will be able to edit, refine, expand, and develop their research and communication skills with guidance from their faculty mentor.

## Show all Women's Studies (WS) Courses

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## Undergraduate Courses

### 200-Level Courses

WS 222 : (WS-Soc) Introduction to Women's Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Survey of scholarship about women's lives; new historical, sociological, psychological, and literary approaches that inform our understanding of women's experience.

**Course Outcomes**

- 1. Students will be able to define and use the critical vocabulary basic to the field of women's studies.
- 2. Students will be able to recognize the ways in which social structures and issues (government, family, education, health-care institutions, the media, etc.) have affected and affect women's lives.
- 3. Students will begin to gain an appreciation of the contributions of women throughout history and internationally.
- 4. Students will be able to perform and present research related to women's studies in oral and written formats.
- 5. Students will begin to make informed choices about their own behavior, health, education, and employment decisions based on their understanding of the role gender plays in relationships and society.

### 300-Level Courses

WS 332 : Mormon Women's History. (3:Arr:Arr)

WHEN TAUGHT: Winter

RECOMMENDED: WS 222.

DESCRIPTION: The religious, domestic, economic, political, social and familial lives of Latter-day Saint women within the broader contexts of American women's history and Latter-day Saint history. Mormon women's relationship to national trends and their association with national women's organizations.

**Course Outcomes**

There are no course outcomes available

WS 351 : Early Modern European Women Writers. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: WS 222.

DESCRIPTION: Readings in European literature by women prior to 1700.

**Course Outcomes**

- 1. Students will be able to read critically women-authored texts and analyze them within their cultural and literary contexts in Early Modern Europe.
- 2. Students will be able to recognize key female authors from this era, discern between literary genres and produce competent essays based on their critical engagement with course texts.
- 3. Students will be able to evaluate, recognize the diversity of and develop an appreciation for "the other voice" in Early Modern Europe.

WS 352 : Modern European Women Writers. (3:3.0:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: WS 222.

DESCRIPTION: Readings in European literature by women after 1700.

**Course Outcomes**

There are no course outcomes available

WS 390R : Women's Studies Special Topics. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Subjects related to women's studies, including anthropology of gender, women in the scriptures, British colonial writers, women's health care concepts, European women's history, Mormon women's history, women entrepreneurs,

etc.

**Course Outcomes**

There are no course outcomes available

WS 392R : Women's Studies Colloquium. (1:ARR:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: WS 222.

DESCRIPTION: Scholarly findings presented by researchers on topics relating to women's lives and experiences throughout history, across the world, and within ethnic, educational, and economic segments of society.

**Course Outcomes**

- 1. Students will become aware of some of the latest research in the field of women's studies carried out here at BYU and at other national and international institutions.
- 2. Students will engage with the lectures and lecturers by developing questions about the research and responding to each lecture.
- 3. Students will be able to formally introduce a speaker at a public event, respond to presentation in that setting, and/or lead a question & answer session.
- 4. Students will be able to evaluate and write clearly about the ideas presented in lectures.

WS 395R : Mentored Study Experience. (1-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: WS 222

DESCRIPTION: Readings and on-site research mentored by a faculty advisor and leading to a written product. Intended for students enrolled in a study abroad program or a course that takes place during a travel experience off campus.

**Course Outcomes**

There are no course outcomes available

WS 399R : Women's Studies Internship. (1-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: WS 222

DESCRIPTION: Credit for work on an international, national, or local internship relating to issues affecting women's lives. Students will submit a written report of their internship experience.

**Course Outcomes**

There are no course outcomes available

**400-Level Courses**

WS 422 : Theories of Women's Studies. (3:3.0:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: WS 222 or instructor permission.

DESCRIPTION: Introduction to theoretical approaches to women's studies.

**Course Outcomes**

- 1. Students will be able to analyze and demonstrate a sound knowledge of a selection of primary documents related to historical and contemporary theories of women's studies.
- 2. Students will be able to produce substantive and competent term papers and projects focused on issues raised by women's studies theories.

WS 492 : Women's Studies Capstone. (2:2.0:0)

WHEN TAUGHT: Winter

PREREQUISITE: WS 222 & WS 392R

DESCRIPTION: Synthesis of interdisciplinary studies of women; knowledge and skills necessary for advanced study or work in the field; mentored research and senior capstone project required.

**Course Outcomes**

- 1. Students will demonstrate their ability to read, write, and think analytically, and to carry out original research through their capstone projects.
- 2. Students will prepare materials to support their post-academic pursuits.
- 3. Students will be able to apply their knowledge and experience from interdisciplinary women's studies courses to their mentored research projects.
- 4. Students will be able to edit, refine, expand, and develop their research and communication skills with guidance from their faculty mentor.

**Back to Women's Studies Program Home**

- Education
- Engineering and Technology
- Family, Home, and Social Sciences
- Fine Arts and Communications
- Humanities
- Law School
- Life Sciences
- Management
- Nursing
- Physical and Mathematical Sciences
- Religious Education
- Undergraduate Education

**Departments/Schools/Programs**

- Communications
- Dance
- Fine Arts Courses
- School of Music
- Music Dance Theatre Program
- Theatre and Media Arts
- Visual Arts

# College of Fine Arts and Communications

A-501 HFAC
(801) 422-2819

**Dean**: Stephen M. Jones, Professor, School of Music
**Associate Dean**: Edward L. Carter, Associate Professor, Communications
**Associate Dean**: Randall W. Boothe, Associate Professor, School of Music
**Associate Dean**: Rodger Sorensen, Professor, Theatre and Media Arts
**Assistant Dean**: Scott M. Boyter

## Academic Departments, Schools, and Programs

Communications
Dance
Music
Music Dance Theatre
Theatre and Media Arts
Visual Arts

## Purposes

The College of Fine Arts and Communications provides students with a strong liberal arts foundation, fully anchored in the gospel of Jesus Christ. With five distinct academic areas, the college offers a broad range of exceptional education opportunities within the arts and communications.

Each of the programs within the college seeks to produce graduates whose work contributes to society by benefiting the organizations for which they work and the audiences they reach. By encouraging exceptional performance, presentation, and communication, as well as discernment of artistic values, graduates emerge as scholars and professionals within their disciplines.

## Interdisciplinary Degrees

Animation is an interdisciplinary degree offered by the College of Fine Arts and Communications through the cooperative involvement of the Department of Theatre and Media Arts, the Department of Visual Arts, and the Department of Computer Science.

Music Dance Theatre is an interdisciplinary degree offered by the College of Fine Arts and Communications through the cooperative involvement of the School of Music, the Department of Theatre and Media Arts, and the Department of Dance.

## Enrollment in a Major Program

Enrollment in most degree programs in the College of Fine Arts and Communications is limited by the availability of resources such as facilities, equipment, and faculty. Students are asked to carefully study the requirements of the major program they desire to enter to determine if the program really fits his or her personal goals and educational objectives.

The application process for each major has been structured to be as fair and impartial as possible. Enrollment limitations require those evaluating applications to make difficult decisions. Those who are not admitted into his or her desired program are encouraged to move quickly and decisively toward an alternative major program.

Applications for degree programs in the college are available online through each department's website. Prior to applying, students must complete all of the prerequisite courses and/or specific requirements stipulated in the application process. For further information, please contact the appropriate department or school directly. For contact information go to http://cfac.byu.edu.

## Scholarships and Awards

Performance awards are offered by each of the academic units within the college. Applications and information about auditions for performance awards can be obtained by contacting the appropriate department or school.

Applications for academic scholarships can be obtained online here or at the Scholarship Office (A-41 ASB, 801-422-4104). For information about graduate scholarships, fellowships, and grants-in-aid, see the current BYU Graduate Catalog.

## College Advisement Center

Julee Braithwaite, Supervisor
D-444 HFAC
(801) 422-3777
advisement_secretary@byu.edu
cfac.byu.edu/advise/

The College of Fine Arts and Communications Advisement Center recognizes the opportunity and responsibility to be actively involved in our students' educational journey. The advisement center is committed to not only establish an important, service-oriented connection with each student in a caring, friendly environment, but to also provide accurate and timely information to better prepare them for greater academic success.

Professional academic advisors are available to provide information regarding university policies and procedures, dates and deadlines, registration, faculty advisor referrals, major/minor application preparation, major/minor planning and progression, graduation qualification, as well as many other academic concerns.

**College of Fine Arts and Communications Home**

**Communications Department Home**

**Majors**

BA in Communications

Emphases:

- Advertising
- Journalism
- Public Relations

**Minors**

- Minor in Communications

**Course Information**

- Communications Courses

**Faculty**

# Communications

Edward E. Adams, Chair
360 BRMB, (801) 422-2997

College of Fine Arts and Communications Advisement Center
D-444 HFAC, (801) 422-3777

## The Discipline

The BYU Department of Communications prepares students for careers in fields related to mass communication, such as advertising, journalism, and public relations. The department is nationally accredited by the Accrediting Council on Education in Journalism and Mass Communication. Grounded in a strong liberal arts foundation, this program provides a balance between scholarship and professional skills. This goal is accomplished by requiring core courses and electives that enhance critical thinking about the discipline, while providing courses in emphasis areas that afford additional skills for each profession. See emphasis descriptions for additional information about their discipline and career opportunities.

## Educational Outcomes

The Department of Communications exists to help students become professional and scholarly communicators whose messages contribute to a better society by benefiting the organizations for which they work and the audiences they reach.

1. Students will be able to communicate effectively with their audiences. In particular, students will be able to:
   - Prepare mass communication messages in the appropriate style.
   - Apply appropriate technology to the creation and dissemination of messages.
   - Plan communication that serves audience needs.
   - Use appropriate research methods to answer relevant questions.
2. Students will act professionally in their practice. In particular, students will be able to:
   - Practice communication within legal boundaries.
   - Exhibit standards of professional behavior.
   - Demonstrate sensitivity to the ethical issues of their practice.
   - Be literate in the language of the media industries.
3. Students will be scholars of the mass communication process. In particular, students will be able to:
   - Apply relevant theory to communication practice.
   - Understand the factors that shape(d) their profession.
   - Value freedom of speech in the marketplace of ideas.
   - Think critically about the relationship between mass media and society.
4. Students will be able to apply Gospel-centered values as they contribute to society. In particular, students will be able to:
   - Demonstrate respect for diversity and agency in a global society.
   - Exercise moral reasoning when faced with ethical dilemmas.
   - Show a commitment to making a positive difference within their sphere of influence.
   - Critically evaluate media-related issues in light of the gospel of Jesus Christ.

## Admission to Degree Program

The degree programs in the Department of Communications have a departmental application process with specific enrollment limitations. Please see the college advisement center for details, telephone 1-801-422-3777, or online at http://comms.byu.edu/.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in Communications**

**Advertising Emphasis** (Program Outcomes)
**Journalism Emphasis** (Program Outcomes)
**Public Relations Emphasis** (Program Outcomes)

**Minor in Communications**

Students should see their college advisement center for information concerning admittance to the undergraduate programs.

## Graduate Programs and Degrees

MA in Mass Communications

For more information see the BYU 2014–2015 Graduate Catalog.

## General Information

Working under faculty direction, students in the department edit and publish the *Universe* as a laboratory newspaper for the campus, produce daily television broadcasts on KBYU-TV, produce universe.byu.edu for the Internet, plan advertising and public relations campaigns, and study processes and effects of mass communication.

The Department of Communications sponsors the International Media Studies Program, which seeks to broaden students' awareness of worldwide communications issues and practices. Not only do students have opportunity to study the media systems of other nations through classes and on-site experiences, but media practitioners of other nations are also brought to campus as lecturers and visiting experts.

The department encourages early admission. Students who enroll in Comms 101, 211, and an introductory course and complete the English requirement can apply to the major as early as the second semester of their freshman year.

### Departmental Requirements

1. Each student must be formally accepted into a degree program. Contact the college advisement center for admission requirements or online at http://comms.byu.edu.
2. All students must take a campus writing course before applying for admission to the major. The following writing courses fulfill this requirement and satisfy the GE First-Year Writing requirement: Wrtg 150 or Phil 150.
3. Complete a minimum of 72 hours in courses outside of the department, while meeting BYU's University Core requirements.
4. Every student is required to complete an internship. Although the department operates an internship office (280 BRMB) that serves as a clearinghouse for internship information, the responsibility for securing an internship rests with the student. However, students may not embark on any required internship without prior approval from a faculty advisor, completing prerequisite courses with a C– or better, processing appropriate documents with the Internship Office, and being enrolled in Comms 496R.
5. Communications students are required to own or rent a computer. Before obtaining a computer, students should first consult the department website for specifications.
6. Communications students must learn the design software used in several of the upper-level courses prior to attending the course.

   The following software will be used in these courses:

   Adobe Publishing — Comms 330, 331, 388, 421.
   Web Publishing — Comms 485, 487.

**College of Fine Arts and Communications Home**

**Communications Department Home**

**Majors**

BA in Communications
Emphases:
- Advertising
- Journalism
- Public Relations

**Minors**

- Minor in Communications

**Course Information**

- Communications Courses

**Faculty**

# BA in Communications: Advertising Emphasis (46–61 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

*All students admitted to the Department of Communications are required to own a notebook computer. Before purchasing a computer, students should first consult the department website for specifications.*

## The Discipline

Communications majors who choose the advertising emphasis will participate in a program that will give a strong grounding in the liberal arts and sciences, provide a firm grasp of communications theory and principles, and teach practical workplace skills.

In advertising communications courses students will learn how to use research in studying diverse audiences, to analyze communications problems, and to evaluate communications programs. They will write problem-solving strategies and create advertising and promotion messages to specific target audiences. Creative track students will learn how to concept consumer advertising ads in print, broadcast, and digital formats and will develop a quality portfolio required for careers in the creative field. Management students will learn how to evaluate and select the most effective media for reaching those target audiences and will gain an understanding of how broadcast, print, digital, and other media are used in the advertising process.

Studies will culminate in the student's participation, as a team member, in creating and presenting a comprehensive and competitive integrated communications campaign that includes research, advertising, technology, and sales promotion.

## Career Opportunities

This field provides career opportunities in advertising and media planning and buying as well as in its creative, research, strategic planning, media planning, and account management functions.

## Program Requirements | View MAP | View Program Outcomes

1. Complete one course from the following:

WRTG 150 : Writing and Rhetoric. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Processes of writing, reading, and research with an emphasis on argumentation and rhetorical analysis.
NOTE: Fulfills General Education First-Year Writing requirement.

**Course Outcomes**

- Use rhetoric responsibly to compose arguments in a variety of genres for specific audiences and purposes.
- Critically read texts. This includesanalyzing how a text functions in a specific situation, community, or public;analyzing the nuances of language (diction, figures of speech, tone, etc.);identifying and evaluating the elements of an argument—claims, reasons, assumptions, and ethical, emotional, and logical appeals.
- Write coherent and unified texts (effective introductions, clear theses, supporting details, transitions, and strong conclusions) using a flexible and effective writing process, including prewriting, drafting, revising, and editing.
- Use style—diction, figurative language, tone, grammar, punctuation, spelling, mechanics—genre, conventions, and document design correctly and for rhetorical effect.
- Navigate the library to locate primary and secondary sources, evaluate the appropriateness and credibility of those sources, and effectively incorporate and accurately document outside sources in a research paper.

PHIL 150 : Reasoning and Writing. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Recommended for philosophy majors and minors.
DESCRIPTION: Informal grammar, logic, and rhetoric as tools for reading and writing. Library research.
NOTE: Fulfills GE First-Year Writing requirement. No course challenges accepted.

**Course Outcomes**

There are no course outcomes available

**Note:** Students must receive a B grade or better to be eligible to apply for admission to the program.

2. Complete the following:

COMMS 101 : Mass Communication and Society. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Historical and modern roles of mass media in society, emphasizing media effects on individuals and institutions.

**Course Outcomes**

There are no course outcomes available

COMMS 211 : Media Writing. (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: WRTG 150; or PHIL 150; Pre-communications status; a B grade or better in Wrtg 150 or Phil 150.

DESCRIPTION: Principles and practices of researching and writing mass communication messages in journalism, public relations, and advertising.

NOTE: Lab required.

**Course Outcomes**

There are no course outcomes available

COMMS 230 : Introduction to Advertising. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

DESCRIPTION: Principles of advertising; critical evaluation of its role and value in American society. Experience in writing and creating ads for all media.

**Course Outcomes**

There are no course outcomes available

**Note:** Students must receive a B grade or better in each course to be eligible to apply for admission to the program.

3. Apply to the major.

4. Complete the following: (These courses may be taken during the semester in which students apply for admission to the major.)

COMMS 300 : Media Ethics, Law and Responsibility. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: Major status.

DESCRIPTION: Introduction to First Amendment history and press freedom, law, and theory; media regulation and policy; relationship between law and ethics; key ethical issues in professional communications.

**Course Outcomes**

There are no course outcomes available

COMMS 303 : Visual Literacy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: COMMS 101 & COMMS 211 & COMMS 230; or COMMS 101 & COMMS 211 & COMMS 235; or COMMS 101 & COMMS 211 & COMMS 239

DESCRIPTION: Foundational principles and theories of visual communications.

NOTE: Students should take this course during the semester in which they have applied for admission to the major.

**Course Outcomes**

There are no course outcomes available

5. After admission to the major, complete the following:

COMMS 317 : Advertising Research Methods. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: Major status.

DESCRIPTION: Quantitative research methods used in marketing and advertising; the research process; planning, designing, and conducting studies; analyzing results using appropriate methodologies.

**Course Outcomes**

There are no course outcomes available

6. Complete two courses from the following:

COMMS 301 : Mass Media History and Philosophy. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Historical and philosophical development of today's media. Approaches may include theories of media change, social responsibility, economic factors, and influential pioneers.

**Course Outcomes**

There are no course outcomes available

COMMS 302 : Popular Culture and Media. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Impact of new and traditional media on popular culture. Approaches may include media criticism and cultural theories on the artifacts and drivers of cultural values.

**Course Outcomes**

There are no course outcomes available

COMMS 351 : Media and Their Audiences. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Understanding media content and channels empowering and improving media consumption and interpretation. Approaches may include new technology, social media, consumer behavior, media criticism, and media literacy.

**Course Outcomes**

There are no course outcomes available

COMMS 360 : Communication Management Principles and Theory. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Management principles and theory, emphasizing responsible management benefiting organizations and their stakeholders. Approaches may include crisis communication, media or agency management, and programming.

**Course Outcomes**

There are no course outcomes available

COMMS 381 : International Media Systems. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Communications or international relations major or minor status.

DESCRIPTION: Comparison of media systems in countries and regions outside the United States. Approaches may include media systems analysis, normative theories of the media, and cultural values and norms.

**Course Outcomes**

No outcomes are available at this time.

COMMS 382 : Issues in Global Communication. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Communications or international relations major or minor status.

DESCRIPTION: Issues relating to communicating in a global village. Approaches may include global information and policy, cultural imperialism, intercultural interaction, and multinational communication strategies.

**Course Outcomes**

There are no course outcomes available

COMMS 406 : Media and the First Amendment. (3:3.0:0.0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: COMMS 300; Major status.

DESCRIPTION: Advanced understanding of media law, policy, and regulation of free speech and press. Approaches may include Freedom of Information, rights of press, government control, and legal precedents regarding the First Amendment.

**Course Outcomes**

There are no course outcomes available

COMMS 411 : Media Effects. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Effects resulting from the interaction between media and members of society. Approaches may include self-image, sterotypes, violence, and other social constructs and behaviors involving media consumption.

**Course Outcomes**

There are no course outcomes available

COMMS 416 : Media Advocacy and Social Change. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Communication principles, theories, and approaches applied to effect social change. Approaches may include public policy, grass roots advocacy, social marketing, and social movements.

**Course Outcomes**

There are no course outcomes available

COMMS 480 : Media Ethics and Moral Reasoning. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Comms 300 or instructor's consent.

DESCRIPTION: Advanced application of moral reasoning and understanding of ethical issues in mass communication. Approaches may include current cases and issues, professional practices, and philosophical foundations of ethics.

**Course Outcomes**

There are no course outcomes available

COMMS 481 : Gender, Race, and Class in the Media. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Applying critical theory to the interaction between media and underrepresented groups in society. Approaches may include stereotypes and portrayals, access to media, participation, and media ownership.

**Course Outcomes**

There are no course outcomes available

COMMS 482 : Media and World Religions. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: The interaction of media, world religions, and beliefs. Approaches may include media coverage and portrayal of religion, religions' use of media, conflict between the two, and communicating across religious cultures.

**Course Outcomes**

There are no course outcomes available

7. Complete one of the following tracks:
   - Management Track:
     1. Complete one course from the following:

COMMS 330 : Creating Advertising Concepts - Portfolio 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Major status; software proficiency in InDesign, Adobe Photoshop, and Adobe Illustrator demonstrated by portfolio review.

DESCRIPTION: Basic consumer advertising; copywriting, design, and layout developed from creative strategies. Solving creative problems.

**Course Outcomes**

There are no course outcomes available

COMMS 337 : Advertising Account Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Major status.

DESCRIPTION: Managing advertising agency accounts, including budgets, writing, new business pitches, and relationships with clients.

**Course Outcomes**

There are no course outcomes available

2. Complete the following:

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

COMMS 332 : Marketing Media Planning and Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Major status.

DESCRIPTION: Media planning, theory, and practice in context of the marketing mix. Application of computer-based models as aids to media decisions. Writing of marketing- based media plans. Case study approach to both print and broadcast media.

**Course Outcomes**

There are no course outcomes available

COMMS 432 : Account Planning Management (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 317; major status.

DESCRIPTION: Development and execution of a comprehensive strategic advertising research program, including data collecting, interpretation, field investigating, audience analysis, and strategy development.

**Course Outcomes**

There are no course outcomes available

COMMS 489 : Strategic Advertising Campaigns. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 332 & COMMS 337 & COMMS 432; or COMMS 317 & COMMS 331; or COMMS 332 & COMMS 330 & COMMS 432; Comms 433 or concurrent enrollment.

DESCRIPTION: Researching, planning, budgeting, creating, and writing national advertising campaigns; writing and producing a complete advertising plan, accompanied by a formal client presentation.

**Course Outcomes**

There are no course outcomes available

- Creative Track:
  1. Complete the following and then submit portfolio:

COMMS 330 : Creating Advertising Concepts - Portfolio 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Major status; software proficiency in InDesign, Adobe Photoshop, and Adobe Illustrator demonstrated by portfolio review.

DESCRIPTION: Basic consumer advertising; copywriting, design, and layout developed from creative strategies. Solving creative problems.

**Course Outcomes**

There are no course outcomes available

2. Complete the following:

COMMS 331 : Creating Advertising Concepts - Portfolio 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 330; Software proficiency in InDesign, Adobe Photoshop, and Adobe Illustrator demonstrated by portfolio review.

DESCRIPTION: Advanced consumer advertising: copywriting, design, and layout.

**Course Outcomes**

There are no course outcomes available

COMMS 433 : Advanced Advertising Concepting - Portfolio 3. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: COMMS 331

DESCRIPTION: Capstone course in creating consumer advertising concepts, copywriting, design, and layout. Emphasizes finished portfolios.

**Course Outcomes**

There are no course outcomes available

COMMS 489 : Strategic Advertising Campaigns. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 332 & COMMS 337 & COMMS 432; or COMMS 317 & COMMS 331; or COMMS 332 & COMMS 330 & COMMS 432; Comms 433 or concurrent enrollment.

DESCRIPTION: Researching, planning, budgeting, creating, and writing national advertising campaigns; writing and producing a complete advertising plan, accompanied by a formal client presentation.

**Course Outcomes**

There are no course outcomes available

3. Students admitted as art directors will pursue an Advertising Design minor, while students admitted as copywriters will pursue an English minor or at least 15 hours in allied fields such as English, film, humanities, anthropology, or psychology.

**Note:** Students will be admitted to the creative track each fall and winter semester based on an application process that includes submitting a portfolio to the department's main office in 360 BRMB by the end of the first week in April and December. Late portfolios will not be considered. It will take three semesters to complete the design minor. Students interested in this track should take Comms 330 as soon as possible as a prerequisite to applying to the creative track.

8. After consulting with an advisor, complete an internship in conjunction with 4 credit hours of the following:

COMMS 496R : Academic Internship. (1-6:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Major status; prerequisites satisfied; clearance by the Communications Department.

DESCRIPTION: Professional field experience.

**Course Outcomes**

There are no course outcomes available

**Note:** A C– grade or better in the following prerequisite courses must be achieved before the internship experience:

Management track: Comms 317; 330 or 337; 332.
Creative track: Comms 317; 330 or 337; 331.

*Hours include courses that may fulfill university core requirements.

## Show all Communications Courses

**College of Fine Arts and Communications Home**

**Communications Department Home**

**Majors**

BA in Communications

Emphases:

- Advertising
- Journalism
- Public Relations

**Minors**

- Minor in Communications

**Course Information**

- Communications Courses

**Faculty**

# BA in Communications: Journalism Emphasis (43 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

*All students admitted to the Department of Communications are required to own a notebook computer. Before purchasing a computer, students should first consult the department website for specifications.*

## The Discipline

Journalism is a discipline that provides factual and relevant information for democratic decision making, community building, and public deliberation. The study of journalism entails the mastery of working with people to present news and features in a way that accurately and fully reflects the world in which we live. Students will acquire skills in analytical thinking, lucid writing, and effective interviewing to be able to present clear and compelling news products in words, sounds, and images. Students will study media law and ethics, journalism research methods, and will chose the degree to which they will specialize in either new media, traditional print, or traditional broadcasting. To develop a wide understanding of the world and the processes that make society work, students are encouraged to earn more than 60 percent of their credits in other departments.

## Career Opportunities

The exciting and dynamic field of journalism offers the allure of working in a profession that has its finger on the changing pulse of society. Whether serving as reporters, producers, or editors for newspaper, television, radio, or online, journalists find themselves rubbing shoulders with important people and recording important events.

A career in journalism implies not only skills with words, but the ability to make sound judgments and to ferret out facts. In addition to the obvious careers as reporters, editors, anchors, and producers, students often find their journalism skills in demand in a variety of other areas.

Many find the challenge of recording the drama of real life both satisfying and enlightening. Recent changes in technologies and business models continue to change the way news is produced and distributed. These changes call for greater skill in writing and multi-media storytelling to be able to visualize the world in an interesting way. Overall, one of journalism's great satisfactions has been the sense that one can make a difference in the world and bring about changes for the better.

## Program Requirements | View MAP | View Program Outcomes

1. Complete one course from the following:

PHIL 150 : Reasoning and Writing. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Recommended for philosophy majors and minors.
DESCRIPTION: Informal grammar, logic, and rhetoric as tools for reading and writing. Library research.
NOTE: Fulfills GE First-Year Writing requirement. No course challenges accepted.

**Course Outcomes**

There are no course outcomes available

WRTG 150 : Writing and Rhetoric. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Processes of writing, reading, and research with an emphasis on argumentation and rhetorical analysis.
NOTE: Fulfills General Education First-Year Writing requirement.

**Course Outcomes**

- Use rhetoric responsibly to compose arguments in a variety of genres for specific audiences and purposes.
- Critically read texts. This includesanalyzing how a text functions in a specific situation, community, or public;analyzing the nuances of language (diction, figures of speech, tone, etc.);identifying and evaluating the elements of an argument—claims, reasons, assumptions, and ethical, emotional, and logical appeals.
- Write coherent and unified texts (effective introductions, clear theses, supporting details, transitions, and strong conclusions) using a flexible and effective writing process, including prewriting, drafting, revising, and editing.

- Use style—diction, figurative language, tone, grammar, punctuation, spelling, mechanics—genre, conventions, and document design correctly and for rhetorical effect.
- Navigate the library to locate primary and secondary sources, evaluate the appropriateness and credibility of those sources, and effectively incorporate and accurately document outside sources in a research paper.

**Note:** Students must receive a B grade or better to be eligible to apply for admission to the program.

2. Complete the following:

COMMS 101 : Mass Communication and Society. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Historical and modern roles of mass media in society, emphasizing media effects on individuals and institutions.

**Course Outcomes**

There are no course outcomes available

COMMS 211 : Media Writing. (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: WRTG 150; or PHIL 150; Pre-communications status; a B grade or better in Wrtg 150 or Phil 150.
DESCRIPTION: Principles and practices of researching and writing mass communication messages in journalism, public relations, and advertising.
NOTE: Lab required.

**Course Outcomes**

There are no course outcomes available

COMMS 239 : Principles of Journalism. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
DESCRIPTION: Theories and principles of journalism; critical evaluation of journalists' and news organizations' role and value in societies they serve.

**Course Outcomes**

There are no course outcomes available

**Note:** Students must receive a B grade or better in each course to be eligible to apply for admission to the program.

3. Apply to the major.

4. Complete the following: (These courses may be taken during the semester in which students apply for admission to the major.)

COMMS 300 : Media Ethics, Law and Responsibility. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: Major status.
DESCRIPTION: Introduction to First Amendment history and press freedom, law, and theory; media regulation and policy; relationship between law and ethics; key ethical issues in professional communications.

**Course Outcomes**

There are no course outcomes available

COMMS 303 : Visual Literacy. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: COMMS 101 & COMMS 211 & COMMS 230; or COMMS 101 & COMMS 211 & COMMS 235; or COMMS 101 & COMMS 211 & COMMS 239
DESCRIPTION: Foundational principles and theories of visual communications.
NOTE: Students should take this course during the semester in which they have applied for admission to the major.

**Course Outcomes**

There are no course outcomes available

5. After admission to the major, complete the following:

COMMS 308 : Research Methods for Journalism. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: Major status.
DESCRIPTION: Qualitative and quantitative information-gathering strategies and techniques: interviewing, use of

surveys and public records; online information gathering and data base analysis.

**Course Outcomes**

There are no course outcomes available

6. Complete one course from the following:

COMMS 321 : News Reporting. (3:2:5)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: Comms 300 or concurrent enrollment; major status.

DESCRIPTION: Research and reporting skills. Database retrieval and interviewing. Beat reporting for newspapers, radio, and online media. Lab required.

**Course Outcomes**

There are no course outcomes available

COMMS 322 : Video and Audio News Production and Writing. (3:2:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: Comms 300 or concurrent enrollment; major status.

DESCRIPTION: Fundamental principles and theories of broadcasting and the practical application of visual and aural multimedia storytelling; audio and video field production; audio and video editing for radio, television, and online media.

**Course Outcomes**

There are no course outcomes available

7. Complete one course from the following:

COMMS 324 : Feature Writing. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: COMMS 321; Comms 308 or concurrent enrollment.

DESCRIPTION: Creating, writing, and pitching articles for nonfiction magazine markets; effective writing methods; analysis and criticism of articles.

**Course Outcomes**

There are no course outcomes available

COMMS 325 : Broadcast Reporting. (3:2:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: COMMS 322; Comms 308 or concurrent enrollment; video portfolio; departmental consent.

DESCRIPTION: Principles and techniques of broadcast and online news reporting. Includes recording and editing reports of government, courts, and other institutions. Lab includes reporting for daily television and radio newscasts.

**Course Outcomes**

There are no course outcomes available

COMMS 328 : Backpack Journalism. (3:3:Arr)

WHEN TAUGHT: Fall; Winter Contact Department; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 321; or COMMS 322; Comms 308 or concurrent enrollment.

DESCRIPTION: Mobile media production, including field reporting, editing, and distributing news for multiple platforms.

**Course Outcomes**

There are no course outcomes available

COMMS 365 : Photojournalism. (3:2:Arr)

WHEN TAUGHT: Fall Contact Department; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Instructor's consent.

DESCRIPTION: Shooting, processing, selecting, and preparing images for use in various news platforms.

**Course Outcomes**

There are no course outcomes available

8. Complete one course from the following:

COMMS 383 : Online News Editing. (3:2:6)

WHEN TAUGHT: Fall Contact Department; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Comms 324 or 325 or 328 or 365.

DESCRIPTION: Writing, editing, and content production for online and social media platforms; content management systems and search engine optimization for news.

**Course Outcomes**

There are no course outcomes available

COMMS 384 : News Editing and News Judgment. (3:2:6)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 324; or COMMS 328; or COMMS 365

DESCRIPTION: Management and editing of news flow, ranging from editorial conceptualization and news judgment to copy editing, headline writing, and basic page design.

**Course Outcomes**

No outcomes are available at this time.

COMMS 385 : Television News Producing. (3:2:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: COMMS 325; or COMMS 328

DESCRIPTION: Theory and practice of producing and presenting information for television. Role of television news in society, nature of audiences, production techniques, and TV news management. Lab includes producing daily television newscast.

**Course Outcomes**

There are no course outcomes available

COMMS 388 : Publication Graphics and Production. (3:3:Arr)

WHEN TAUGHT: Fall; Winter Contact Department; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 324; or COMMS 328; or COMMS 365; instructor's consent.

DESCRIPTION: Layout and graphics for publications. Contemporary practices in production.

**Course Outcomes**

There are no course outcomes available

9. Complete one course from the following:

COMMS 420 : Advanced Print Reporting. (3:2:1)

WHEN TAUGHT: Fall; Winter Contact Department; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 383; or COMMS 384

DESCRIPTION: News coverage of government, courts, education, business, international, or legal issues.

**Course Outcomes**

There are no course outcomes available

COMMS 486 : Advanced Broadcast Reporting. (3:3:5)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 385

DESCRIPTION: In-depth broadcast news coverage of major public issues and trends. Formats may include daily news reports, series, and documentaries.

**Course Outcomes**

There are no course outcomes available

COMMS 487 : Advanced Multiplatform Journalism. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 383; or COMMS 384; or COMMS 388

DESCRIPTION: Editing, design, and delivery of multiplatform and interactive news content. Theories of new media use and practical application of those theories to create professional-level content.

NOTE: Comms 385 is also a prerequisite option; contact the advisement office.

**Course Outcomes**

There are no course outcomes available

COMMS 488 : Advanced Broadcast Producing. (3:2:3)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 385; instructor's consent.

DESCRIPTION: Advanced concepts in television news producing, news judgment, audiences and newsroom leadership.

**Course Outcomes**

There are no course outcomes available

10. Complete two courses from the following:

COMMS 301 : Mass Media History and Philosophy. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Historical and philosophical development of today's media. Approaches may include theories of media change, social responsibility, economic factors, and influential pioneers.

**Course Outcomes**

There are no course outcomes available

COMMS 302 : Popular Culture and Media. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Impact of new and traditional media on popular culture. Approaches may include media criticism and cultural theories on the artifacts and drivers of cultural values.

**Course Outcomes**

There are no course outcomes available

COMMS 351 : Media and Their Audiences. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Understanding media content and channels empowering and improving media consumption and interpretation. Approaches may include new technology, social media, consumer behavior, media criticism, and media literacy.

**Course Outcomes**

There are no course outcomes available

COMMS 360 : Communication Management Principles and Theory. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Management principles and theory, emphasizing responsible management benefiting organizations and their stakeholders. Approaches may include crisis communication, media or agency management, and programming.

**Course Outcomes**

There are no course outcomes available

COMMS 381 : International Media Systems. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Communications or international relations major or minor status.

DESCRIPTION: Comparison of media systems in countries and regions outside the United States. Approaches may include media systems analysis, normative theories of the media, and cultural values and norms.

**Course Outcomes**

No outcomes are available at this time.

COMMS 382 : Issues in Global Communication. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Communications or international relations major or minor status.

DESCRIPTION: Issues relating to communicating in a global village. Approaches may include global information and policy, cultural imperialism, intercultural interaction, and multinational communication strategies.

**Course Outcomes**

There are no course outcomes available

COMMS 406 : Media and the First Amendment. (3:3.0:0.0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: COMMS 300; Major status.

DESCRIPTION: Advanced understanding of media law, policy, and regulation of free speech and press. Approaches may include Freedom of Information, rights of press, government control, and legal precedents regarding the First Amendment.

**Course Outcomes**

There are no course outcomes available

COMMS 411 : Media Effects. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Effects resulting from the interaction between media and members of society. Approaches may include self-image, sterotypes, violence, and other social constructs and behaviors involving media consumption.

**Course Outcomes**

There are no course outcomes available

COMMS 416 : Media Advocacy and Social Change. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Communication principles, theories, and approaches applied to effect social change. Approaches may include public policy, grass roots advocacy, social marketing, and social movements.

**Course Outcomes**

There are no course outcomes available

COMMS 480 : Media Ethics and Moral Reasoning. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Comms 300 or instructor's consent.

DESCRIPTION: Advanced application of moral reasoning and understanding of ethical issues in mass communication. Approaches may include current cases and issues, professional practices, and philosophical foundations of ethics.

**Course Outcomes**

There are no course outcomes available

COMMS 481 : Gender, Race, and Class in the Media. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Applying critical theory to the interaction between media and underrepresented groups in society. Approaches may include stereotypes and portrayals, access to media, participation, and media ownership.

**Course Outcomes**

There are no course outcomes available

COMMS 482 : Media and World Religions. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: The interaction of media, world religions, and beliefs. Approaches may include media coverage and portrayal of religion, religions' use of media, conflict between the two, and communicating across religious cultures.

**Course Outcomes**

There are no course outcomes available

11. After consulting with an advisor, complete an internship in conjunction with 4 hours of the following:

COMMS 496R : Academic Internship. (1-6:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Major status; prerequisites satisfied; clearance by the Communications Department.

DESCRIPTION: Professional field experience.

**Course Outcomes**

There are no course outcomes available

**Note:** A C– grade or better in the following prerequisite courses must be achieved before the internship experience: Comms 308; 324 or 325 or 328 or 365.

*Hours include courses that may fulfill university core requirements.

Show all Communications Courses

College of Fine Arts and Communications Home

Communications Department Home

Majors

BA in Communications

Emphases:

- Advertising
- Journalism
- Public Relations

Minors

- Minor in Communications

Course Information

- Communications Courses

Faculty

# BA in Communications: Public Relations Emphasis (49 hours*)

Show All Course Descriptions
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*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

*All students admitted to the Department of Communications are required to own a notebook computer. Before purchasing a computer, students should first consult the department website for specifications.*

## The Discipline

Public relations manages communication to build mutually beneficial relationships between the organization and its vital publics. The public relations program at BYU emphasizes research and measurement; strategic planning; professionally designed, written, and targeted tactics; and ethical practice. We prepare students with critical skills in thinking, writing, research, program planning and management, creative problem solving, and relationship building with publics typical to the public relations challenges of diverse organizations. Those publics include but are not limited to media, consumers, employees, government and other regulatory bodies, and communities. In keeping with the aims of a BYU education, our students and graduates should engage in lifelong learning and professional practice.

## Career Opportunities

Virtually all segments of the public and private sectors throughout the world draw employees from public relations. Graduates may work as technical or creative experts or in management communication specialties. They may specialize in media, strategic, crisis, community or employee relations, public affairs, social media, or sever other specialties within the professional arena.

## Program Requirements | View MAP | View Program Outcomes

1. Complete one course from the following:

WRTG 150 : Writing and Rhetoric. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Processes of writing, reading, and research with an emphasis on argumentation and rhetorical analysis.
NOTE: Fulfills General Education First-Year Writing requirement.

**Course Outcomes**

- Use rhetoric responsibly to compose arguments in a variety of genres for specific audiences and purposes.
- Critically read texts. This includesanalyzing how a text functions in a specific situation, community, or public;analyzing the nuances of language (diction, figures of speech, tone, etc.);identifying and evaluating the elements of an argument—claims, reasons, assumptions, and ethical, emotional, and logical appeals.
- Write coherent and unified texts (effective introductions, clear theses, supporting details, transitions, and strong conclusions) using a flexible and effective writing process, including prewriting, drafting, revising, and editing.
- Use style—diction, figurative language, tone, grammar, punctuation, spelling, mechanics—genre, conventions, and document design correctly and for rhetorical effect.
- Navigate the library to locate primary and secondary sources, evaluate the appropriateness and credibility of those sources, and effectively incorporate and accurately document outside sources in a research paper.

PHIL 150 : Reasoning and Writing. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Recommended for philosophy majors and minors.
DESCRIPTION: Informal grammar, logic, and rhetoric as tools for reading and writing. Library research.
NOTE: Fulfills GE First-Year Writing requirement. No course challenges accepted.

**Course Outcomes**

There are no course outcomes available

**Note:** Students must receive a B grade or better to be eligible to apply for admission to the program.

2. Complete the following core courses:

COMMS 101 : Mass Communication and Society. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Historical and modern roles of mass media in society, emphasizing media effects on individuals and institutions.

**Course Outcomes**

There are no course outcomes available

COMMS 211 : Media Writing. (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: WRTG 150; or PHIL 150; Pre-communications status; a B grade or better in Wrtg 150 or Phil 150.
DESCRIPTION: Principles and practices of researching and writing mass communication messages in journalism, public relations, and advertising.
NOTE: Lab required.

**Course Outcomes**

There are no course outcomes available

COMMS 235 : Introduction to Public Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Philosophy and practice of public relations in business, government, education, and other institutions. Study of publics, media, methods, press relations, and publicity.

**Course Outcomes**

There are no course outcomes available

**Note:** Students must receive a B grade or better from each course to be eligible to apply for admission to the program.

3. Apply to the major.

4. Complete the following: (These courses may be taken during the semester in which students apply for admission to the major.)

COMMS 300 : Media Ethics, Law and Responsibility. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: Major status.
DESCRIPTION: Introduction to First Amendment history and press freedom, law, and theory; media regulation and policy; relationship between law and ethics; key ethical issues in professional communications.

**Course Outcomes**

There are no course outcomes available

COMMS 303 : Visual Literacy. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: COMMS 101 & COMMS 211 & COMMS 230; or COMMS 101 & COMMS 211 & COMMS 235; or COMMS 101 & COMMS 211 & COMMS 239
DESCRIPTION: Foundational principles and theories of visual communications.
NOTE: Students should take this course during the semester in which they have applied for admission to the major.

**Course Outcomes**

There are no course outcomes available

5. Complete two courses from the following:

COMMS 301 : Mass Media History and Philosophy. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Major or minor status.
DESCRIPTION: Historical and philosophical development of today's media. Approaches may include theories of media change, social responsibility, economic factors, and influential pioneers.

**Course Outcomes**

There are no course outcomes available

COMMS 302 : Popular Culture and Media. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Impact of new and traditional media on popular culture. Approaches may include media criticism and cultural theories on the artifacts and drivers of cultural values.

**Course Outcomes**

There are no course outcomes available

COMMS 351 : Media and Their Audiences. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Understanding media content and channels empowering and improving media consumption and interpretation. Approaches may include new technology, social media, consumer behavior, media criticism, and media literacy.

**Course Outcomes**

There are no course outcomes available

COMMS 360 : Communication Management Principles and Theory. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Management principles and theory, emphasizing responsible management benefiting organizations and their stakeholders. Approaches may include crisis communication, media or agency management, and programming.

**Course Outcomes**

There are no course outcomes available

COMMS 381 : International Media Systems. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Communications or international relations major or minor status.

DESCRIPTION: Comparison of media systems in countries and regions outside the United States. Approaches may include media systems analysis, normative theories of the media, and cultural values and norms.

**Course Outcomes**

No outcomes are available at this time.

COMMS 382 : Issues in Global Communication. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Communications or international relations major or minor status.

DESCRIPTION: Issues relating to communicating in a global village. Approaches may include global information and policy, cultural imperialism, intercultural interaction, and multinational communication strategies.

**Course Outcomes**

There are no course outcomes available

COMMS 406 : Media and the First Amendment. (3:3.0:0.0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: COMMS 300; Major status.

DESCRIPTION: Advanced understanding of media law, policy, and regulation of free speech and press. Approaches may include Freedom of Information, rights of press, government control, and legal precedents regarding the First Amendment.

**Course Outcomes**

There are no course outcomes available

COMMS 411 : Media Effects. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Effects resulting from the interaction between media and members of society. Approaches may include self-image, sterotypes, violence, and other social constructs and behaviors involving media consumption.

**Course Outcomes**

There are no course outcomes available

COMMS 416 : Media Advocacy and Social Change. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Communication principles, theories, and approaches applied to effect social change. Approaches may include public policy, grass roots advocacy, social marketing, and social movements.

**Course Outcomes**

There are no course outcomes available

COMMS 480 : Media Ethics and Moral Reasoning. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Comms 300 or instructor's consent.

DESCRIPTION: Advanced application of moral reasoning and understanding of ethical issues in mass communication. Approaches may include current cases and issues, professional practices, and philosophical foundations of ethics.

**Course Outcomes**

There are no course outcomes available

COMMS 481 : Gender, Race, and Class in the Media. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Applying critical theory to the interaction between media and underrepresented groups in society. Approaches may include stereotypes and portrayals, access to media, participation, and media ownership.

**Course Outcomes**

There are no course outcomes available

COMMS 482 : Media and World Religions. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: The interaction of media, world religions, and beliefs. Approaches may include media coverage and portrayal of religion, religions' use of media, conflict between the two, and communicating across religious cultures.

**Course Outcomes**

There are no course outcomes available

6. Complete the following:

COMMS 318 : Public Relations Research and Measurement. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Major status.

DESCRIPTION: Research methods and analysis critical to developing strategic public relations and measuring its effectiveness, emphasizing focus group and survey approaches with qualitative and quantitative statistical analysis.

**Course Outcomes**

There are no course outcomes available

COMMS 321 : News Reporting. (3:2:5)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: Comms 300 or concurrent enrollment; major status.

DESCRIPTION: Research and reporting skills. Database retrieval and interviewing. Beat reporting for newspapers, radio, and online media. Lab required.

**Course Outcomes**

There are no course outcomes available

COMMS 336 : Strategic Planning and Problem Solving. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Major status.

DESCRIPTION: Cases selected from wide range of actual public relations problems confronting business, government, education, and other institutions. Focus on strategic planning matrix.

**Course Outcomes**

There are no course outcomes available

COMMS 421 : Public Relations Writing and Production. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 321 & COMMS 336; Software proficiency in InDesign, Adobe Photoshop, Flash, and Dreamweaver demonstrated by portfolio review.

DESCRIPTION: Professional public relations writing and editing in a variety of formats as used in public relations applications.

**Course Outcomes**

There are no course outcomes available

COMMS 485 : Strategic Public Relations Campaigns. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 318 & COMMS 336 & COMMS 421; Software proficiency in Flash, Dreamweaver, and Image Ready as demonstrated by portfolio review.

DESCRIPTION: Capstone course applying communication principles to internal and external publics; fact finding, planning, and evaluating social interrelationships; major campaigns for selected clients.

**Course Outcomes**

There are no course outcomes available

7. Complete the following:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

8. After consulting with an advisor, complete an internship in conjunction with 4 credit hours of the following:

COMMS 496R : Academic Internship. (1-6:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Major status; prerequisites satisfied; clearance by the Communications Department.

DESCRIPTION: Professional field experience.

**Course Outcomes**

There are no course outcomes available

**Note:** A C– grade or better in the following prerequisite courses must be achieved before the internship experience: Comms 321, 336, 421.

## Show all Communications Courses

College of Fine Arts and Communications Home

Communications Department Home

Majors

BA in Communications

Emphases:

- Advertising
- Journalism
- Public Relations

Minors

- Minor in Communications

Course Information

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Faculty

# Minor in Communications (15 hours)

Show All Course Descriptions
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## Program Requirements | View MAP

1. Complete the following:

COMMS 101 : Mass Communication and Society. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Historical and modern roles of mass media in society, emphasizing media effects on individuals and institutions.

**Course Outcomes**
There are no course outcomes available

2. Complete 12 additional hours from the following:

COMMS 230 : Introduction to Advertising. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
DESCRIPTION: Principles of advertising; critical evaluation of its role and value in American society. Experience in writing and creating ads for all media.

**Course Outcomes**
There are no course outcomes available

COMMS 235 : Introduction to Public Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Philosophy and practice of public relations in business, government, education, and other institutions. Study of publics, media, methods, press relations, and publicity.

**Course Outcomes**
There are no course outcomes available

COMMS 239 : Principles of Journalism. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
DESCRIPTION: Theories and principles of journalism; critical evaluation of journalists' and news organizations' role and value in societies they serve.

**Course Outcomes**
There are no course outcomes available

COMMS 300 : Media Ethics, Law and Responsibility. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: Major status.
DESCRIPTION: Introduction to First Amendment history and press freedom, law, and theory; media regulation and policy; relationship between law and ethics; key ethical issues in professional communications.

**Course Outcomes**
There are no course outcomes available

COMMS 301 : Mass Media History and Philosophy. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Major or minor status.

DESCRIPTION: Historical and philosophical development of today's media. Approaches may include theories of media change, social responsibility, economic factors, and influential pioneers.

**Course Outcomes**

There are no course outcomes available

COMMS 302 : Popular Culture and Media. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Impact of new and traditional media on popular culture. Approaches may include media criticism and cultural theories on the artifacts and drivers of cultural values.

**Course Outcomes**

There are no course outcomes available

COMMS 303 : Visual Literacy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: COMMS 101 & COMMS 211 & COMMS 230; or COMMS 101 & COMMS 211 & COMMS 235; or COMMS 101 & COMMS 211 & COMMS 239

DESCRIPTION: Foundational principles and theories of visual communications.

NOTE: Students should take this course during the semester in which they have applied for admission to the major.

**Course Outcomes**

There are no course outcomes available

COMMS 351 : Media and Their Audiences. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Understanding media content and channels empowering and improving media consumption and interpretation. Approaches may include new technology, social media, consumer behavior, media criticism, and media literacy.

**Course Outcomes**

There are no course outcomes available

COMMS 360 : Communication Management Principles and Theory. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Management principles and theory, emphasizing responsible management benefiting organizations and their stakeholders. Approaches may include crisis communication, media or agency management, and programming.

**Course Outcomes**

There are no course outcomes available

COMMS 381 : International Media Systems. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Communications or international relations major or minor status.

DESCRIPTION: Comparison of media systems in countries and regions outside the United States. Approaches may include media systems analysis, normative theories of the media, and cultural values and norms.

**Course Outcomes**

No outcomes are available at this time.

COMMS 382 : Issues in Global Communication. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Communications or international relations major or minor status.

DESCRIPTION: Issues relating to communicating in a global village. Approaches may include global information and policy, cultural imperialism, intercultural interaction, and multinational communication strategies.

**Course Outcomes**

There are no course outcomes available

COMMS 411 : Media Effects. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.
DESCRIPTION: Effects resulting from the interaction between media and members of society. Approaches may include self-image, sterotypes, violence, and other social constructs and behaviors involving media consumption.

**Course Outcomes**

There are no course outcomes available

COMMS 416 : Media Advocacy and Social Change. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Major or minor status.
DESCRIPTION: Communication principles, theories, and approaches applied to effect social change. Approaches may include public policy, grass roots advocacy, social marketing, and social movements.

**Course Outcomes**

There are no course outcomes available

COMMS 481 : Gender, Race, and Class in the Media. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Major or minor status.
DESCRIPTION: Applying critical theory to the interaction between media and underrepresented groups in society. Approaches may include stereotypes and portrayals, access to media, participation, and media ownership.

**Course Outcomes**

There are no course outcomes available

COMMS 482 : Media and World Religions. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Major or minor status.
DESCRIPTION: The interaction of media, world religions, and beliefs. Approaches may include media coverage and portrayal of religion, religions' use of media, conflict between the two, and communicating across religious cultures.

**Course Outcomes**

There are no course outcomes available

Note: Comms 211 is not intended to be an option for a minor. However, pre-Communications students who are not admitted to the major may count Comms 211 toward a minor. Advisors can provide clarification.

## Show all Communications Courses

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Faculty

# Communications (Comms)

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## Undergraduate Courses

### 100-Level Courses

COMMS 101 : Mass Communication and Society. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Historical and modern roles of mass media in society, emphasizing media effects on individuals and institutions.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

COMMS 211 : Media Writing. (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: WRTG 150; or PHIL 150; Pre-communications status; a B grade or better in Wrtg 150 or Phil 150.
DESCRIPTION: Principles and practices of researching and writing mass communication messages in journalism, public relations, and advertising.
NOTE: Lab required.

**Course Outcomes**

There are no course outcomes available

COMMS 230 : Introduction to Advertising. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
DESCRIPTION: Principles of advertising; critical evaluation of its role and value in American society. Experience in writing and creating ads for all media.

**Course Outcomes**

There are no course outcomes available

COMMS 235 : Introduction to Public Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Philosophy and practice of public relations in business, government, education, and other institutions. Study of publics, media, methods, press relations, and publicity.

**Course Outcomes**

There are no course outcomes available

COMMS 238 : Introduction to Communications Studies. (3:3:0)

PREREQUISITE: Pre-communications status.
DESCRIPTION: Survey of mass communication theory and research; historical and philosophical development of communication theory.

**Course Outcomes**

No outcomes are available at this time.

COMMS 239 : Principles of Journalism. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
DESCRIPTION: Theories and principles of journalism; critical evaluation of journalists' and news organizations' role and value in

societies they serve.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

COMMS 300 : Media Ethics, Law and Responsibility. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: Major status.

DESCRIPTION: Introduction to First Amendment history and press freedom, law, and theory; media regulation and policy; relationship between law and ethics; key ethical issues in professional communications.

**Course Outcomes**

There are no course outcomes available

COMMS 301 : Mass Media History and Philosophy. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Historical and philosophical development of today's media. Approaches may include theories of media change, social responsibility, economic factors, and influential pioneers.

**Course Outcomes**

There are no course outcomes available

COMMS 302 : Popular Culture and Media. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Impact of new and traditional media on popular culture. Approaches may include media criticism and cultural theories on the artifacts and drivers of cultural values.

**Course Outcomes**

There are no course outcomes available

COMMS 303 : Visual Literacy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: COMMS 101 & COMMS 211 & COMMS 230; or COMMS 101 & COMMS 211 & COMMS 235; or COMMS 101 & COMMS 211 & COMMS 239

DESCRIPTION: Foundational principles and theories of visual communications.

NOTE: Students should take this course during the semester in which they have applied for admission to the major.

**Course Outcomes**

There are no course outcomes available

COMMS 308 : Research Methods for Journalism. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Major status.

DESCRIPTION: Qualitative and quantitative information-gathering strategies and techniques: interviewing, use of surveys and public records; online information gathering and data base analysis.

**Course Outcomes**

There are no course outcomes available

COMMS 317 : Advertising Research Methods. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: Major status.

DESCRIPTION: Quantitative research methods used in marketing and advertising; the research process; planning, designing, and conducting studies; analyzing results using appropriate methodologies.

**Course Outcomes**

There are no course outcomes available

COMMS 318 : Public Relations Research and Measurement. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Major status.

DESCRIPTION: Research methods and analysis critical to developing strategic public relations and measuring its effectiveness,

emphasizing focus group and survey approaches with qualitative and quantitative statistical analysis.

**Course Outcomes**

There are no course outcomes available

COMMS 319 : Research in Communication. (3:2:1)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major status.

DESCRIPTION: Procedures and design considerations for studying media messages, audiences, and effects. Emphasizes survey and focus group approaches to data collection and analysis.

**Course Outcomes**

No outcomes are available at this time.

COMMS 321 : News Reporting. (3:2:5)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: Comms 300 or concurrent enrollment; major status.

DESCRIPTION: Research and reporting skills. Database retrieval and interviewing. Beat reporting for newspapers, radio, and online media. Lab required.

**Course Outcomes**

There are no course outcomes available

COMMS 322 : Video and Audio News Production and Writing. (3:2:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: Comms 300 or concurrent enrollment; major status.

DESCRIPTION: Fundamental principles and theories of broadcasting and the practical application of visual and aural multimedia storytelling; audio and video field production; audio and video editing for radio, television, and online media.

**Course Outcomes**

There are no course outcomes available

COMMS 324 : Feature Writing. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: COMMS 321; Comms 308 or concurrent enrollment.

DESCRIPTION: Creating, writing, and pitching articles for nonfiction magazine markets; effective writing methods; analysis and criticism of articles.

**Course Outcomes**

There are no course outcomes available

COMMS 325 : Broadcast Reporting. (3:2:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: COMMS 322; Comms 308 or concurrent enrollment; video portfolio; departmental consent.

DESCRIPTION: Principles and techniques of broadcast and online news reporting. Includes recording and editing reports of government, courts, and other institutions. Lab includes reporting for daily television and radio newscasts.

**Course Outcomes**

There are no course outcomes available

COMMS 326 : Performance for Broadcast. (3:2:2)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Theory and practice of presenting news and information for radio, television, and new media.

NOTE: This course will not count as a departmental requirement.

**Course Outcomes**

There are no course outcomes available

COMMS 327R : Special Topics in Broadcasting. (3:2:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Includes radio arts, specialty reporting, documentary production, and sports broadcasting.

**Course Outcomes**

No outcomes are available at this time.

COMMS 328 : Backpack Journalism. (3:3:Arr)

WHEN TAUGHT: Fall; Winter Contact Department; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 321; or COMMS 322; Comms 308 or concurrent enrollment.

DESCRIPTION: Mobile media production, including field reporting, editing, and distributing news for multiple platforms.

**Course Outcomes**

There are no course outcomes available

COMMS 329 : Opinion Writing. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Function of editorials, columns, commentaries, and reviews in the mass media.

NOTE: Open enrollment.

**Course Outcomes**

No outcomes are available at this time.

COMMS 330 : Creating Advertising Concepts - Portfolio 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Major status; software proficiency in InDesign, Adobe Photoshop, and Adobe Illustrator demonstrated by portfolio review.

DESCRIPTION: Basic consumer advertising; copywriting, design, and layout developed from creative strategies. Solving creative problems.

**Course Outcomes**

There are no course outcomes available

COMMS 331 : Creating Advertising Concepts - Portfolio 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 330; Software proficiency in InDesign, Adobe Photoshop, and Adobe Illustrator demonstrated by portfolio review.

DESCRIPTION: Advanced consumer advertising: copywriting, design, and layout.

**Course Outcomes**

There are no course outcomes available

COMMS 332 : Marketing Media Planning and Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Major status.

DESCRIPTION: Media planning, theory, and practice in context of the marketing mix. Application of computer-based models as aids to media decisions. Writing of marketing- based media plans. Case study approach to both print and broadcast media.

**Course Outcomes**

There are no course outcomes available

COMMS 335 : TV Commercial Production. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Major status or instructor's consent.

RECOMMENDED: Comms 330.

DESCRIPTION: Discussing and applying television commercial production principles; creating and executing TV commercial concepts.

**Course Outcomes**

There are no course outcomes available

COMMS 336 : Strategic Planning and Problem Solving. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Major status.

DESCRIPTION: Cases selected from wide range of actual public relations problems confronting business, government, education, and other institutions. Focus on strategic planning matrix.

**Course Outcomes**

There are no course outcomes available

COMMS 337 : Advertising Account Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Major status.

DESCRIPTION: Managing advertising agency accounts, including budgets, writing, new business pitches, and relationships with

clients.

**Course Outcomes**

There are no course outcomes available

COMMS 345 : Media Sales and Promotion. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major status.

DESCRIPTION: Fundamentals of media sales process. Theory and application of persuasion relating to media sales.

**Course Outcomes**

No outcomes are available at this time.

COMMS 351 : Media and Their Audiences. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Understanding media content and channels empowering and improving media consumption and interpretation. Approaches may include new technology, social media, consumer behavior, media criticism, and media literacy.

**Course Outcomes**

There are no course outcomes available

COMMS 360 : Communication Management Principles and Theory. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Management principles and theory, emphasizing responsible management benefiting organizations and their stakeholders. Approaches may include crisis communication, media or agency management, and programming.

**Course Outcomes**

There are no course outcomes available

COMMS 365 : Photojournalism. (3:2:Arr)

WHEN TAUGHT: Fall Contact Department; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Instructor's consent.

DESCRIPTION: Shooting, processing, selecting, and preparing images for use in various news platforms.

**Course Outcomes**

There are no course outcomes available

COMMS 370R : Special Topics in Communications. (1-3:Arr.:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Subject matter may vary. Specific topics emphasizing general issues related to all mass communication.

**Course Outcomes**

There are no course outcomes available

COMMS 381 : International Media Systems. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Communications or international relations major or minor status.

DESCRIPTION: Comparison of media systems in countries and regions outside the United States. Approaches may include media systems analysis, normative theories of the media, and cultural values and norms.

**Course Outcomes**

No outcomes are available at this time.

COMMS 382 : Issues in Global Communication. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Communications or international relations major or minor status.

DESCRIPTION: Issues relating to communicating in a global village. Approaches may include global information and policy, cultural imperialism, intercultural interaction, and multinational communication strategies.

**Course Outcomes**

There are no course outcomes available

COMMS 383 : Online News Editing. (3:2:6)

WHEN TAUGHT: Fall Contact Department; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Comms 324 or 325 or 328 or 365.
DESCRIPTION: Writing, editing, and content production for online and social media platforms; content management systems and search engine optimization for news.

**Course Outcomes**

There are no course outcomes available

COMMS 384 : News Editing and News Judgment. (3:2:6)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department
PREREQUISITE: COMMS 324; or COMMS 328; or COMMS 365
DESCRIPTION: Management and editing of news flow, ranging from editorial conceptualization and news judgment to copy editing, headline writing, and basic page design.

**Course Outcomes**

No outcomes are available at this time.

COMMS 385 : Television News Producing. (3:2:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: COMMS 325; or COMMS 328
DESCRIPTION: Theory and practice of producing and presenting information for television. Role of television news in society, nature of audiences, production techniques, and TV news management. Lab includes producing daily television newscast.

**Course Outcomes**

There are no course outcomes available

COMMS 388 : Publication Graphics and Production. (3:3:Arr)

WHEN TAUGHT: Fall; Winter Contact Department; Spring Contact Department; Summer Contact Department
PREREQUISITE: COMMS 324; or COMMS 328; or COMMS 365; instructor's consent.
DESCRIPTION: Layout and graphics for publications. Contemporary practices in production.

**Course Outcomes**

There are no course outcomes available

COMMS 390R : Student Media Labs. (1:1:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Appropriate introductory course (Comms 211, 230, 235, or 239); lab advisor's consent.
DESCRIPTION: Student-run media labs such as the Advanced Advertising Lab, Bradley Agency, Eleven News, and Daily Universe.
NOTE: Cannot be combined with paid position in the same lab.

**Course Outcomes**

There are no course outcomes available

COMMS 395R : International Media Studies Abroad. (1-3:Arr:0)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Study Abroad course emphasizing media and culture of region selected.

**Course Outcomes**

No outcomes are available at this time.

COMMS 396R : Communications Practicum. (1:0:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent and approval of task or projects.
DESCRIPTION: Practice and projects in communication.

**Course Outcomes**

There are no course outcomes available

COMMS 398R : Projects in Communications. (.5-4:Arr:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Junior standing and sequence coordinator's consent. Project approval required before registration.
DESCRIPTION: Projects in communication studies.

**Course Outcomes**

There are no course outcomes available

COMMS 399R : Academic Internship. (1:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Major status; departmental consent.
DESCRIPTION: Professional field experience.

**Course Outcomes**

There are no course outcomes available

### 400-Level Courses

COMMS 406 : Media and the First Amendment. (3:3.0:0.0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: COMMS 300; Major status.

DESCRIPTION: Advanced understanding of media law, policy, and regulation of free speech and press. Approaches may include Freedom of Information, rights of press, government control, and legal precedents regarding the First Amendment.

**Course Outcomes**

There are no course outcomes available

COMMS 411 : Media Effects. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Effects resulting from the interaction between media and members of society. Approaches may include self-image, sterotypes, violence, and other social constructs and behaviors involving media consumption.

**Course Outcomes**

There are no course outcomes available

COMMS 416 : Media Advocacy and Social Change. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Communication principles, theories, and approaches applied to effect social change. Approaches may include public policy, grass roots advocacy, social marketing, and social movements.

**Course Outcomes**

There are no course outcomes available

COMMS 420 : Advanced Print Reporting. (3:2:1)

WHEN TAUGHT: Fall; Winter Contact Department; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 383; or COMMS 384

DESCRIPTION: News coverage of government, courts, education, business, international, or legal issues.

**Course Outcomes**

There are no course outcomes available

COMMS 421 : Public Relations Writing and Production. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 321 & COMMS 336; Software proficiency in InDesign, Adobe Photoshop, Flash, and Dreamweaver demonstrated by portfolio review.

DESCRIPTION: Professional public relations writing and editing in a variety of formats as used in public relations applications.

**Course Outcomes**

There are no course outcomes available

COMMS 432 : Account Planning Management (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 317; major status.

DESCRIPTION: Development and execution of a comprehensive strategic advertising research program, including data collecting, interpretation, field investigating, audience analysis, and strategy development.

**Course Outcomes**

There are no course outcomes available

COMMS 433 : Advanced Advertising Concepting - Portfolio 3. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: COMMS 331

DESCRIPTION: Capstone course in creating consumer advertising concepts, copywriting, design, and layout. Emphasizes finished portfolios.

**Course Outcomes**

There are no course outcomes available

COMMS 480 : Media Ethics and Moral Reasoning. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Comms 300 or instructor's consent.

DESCRIPTION: Advanced application of moral reasoning and understanding of ethical issues in mass communication. Approaches may include current cases and issues, professional practices, and philosophical foundations of ethics.

**Course Outcomes**

There are no course outcomes available

COMMS 481 : Gender, Race, and Class in the Media. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Applying critical theory to the interaction between media and underrepresented groups in society. Approaches may include stereotypes and portrayals, access to media, participation, and media ownership.

**Course Outcomes**

There are no course outcomes available

COMMS 482 : Media and World Religions. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: The interaction of media, world religions, and beliefs. Approaches may include media coverage and portrayal of religion, religions' use of media, conflict between the two, and communicating across religious cultures.

**Course Outcomes**

There are no course outcomes available

COMMS 483 : Advanced Communications Studies (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: COMMS 319; or SOC 300; Comms 411 or concurrent enrollment.

DESCRIPTION: Contemporary developments in communication theory, research, and practice.

**Course Outcomes**

There are no course outcomes available

COMMS 485 : Strategic Public Relations Campaigns. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 318 & COMMS 336 & COMMS 421; Software proficiency in Flash, Dreamweaver, and Image Ready as demonstrated by portfolio review.

DESCRIPTION: Capstone course applying communication principles to internal and external publics; fact finding, planning, and evaluating social interrelationships; major campaigns for selected clients.

**Course Outcomes**

There are no course outcomes available

COMMS 486 : Advanced Broadcast Reporting. (3:3:5)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 385

DESCRIPTION: In-depth broadcast news coverage of major public issues and trends. Formats may include daily news reports, series, and documentaries.

**Course Outcomes**

There are no course outcomes available

COMMS 487 : Advanced Multiplatform Journalism. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department; Spring Contact Department; Summer Contact Department

PREREQUISITE: COMMS 383; or COMMS 384; or COMMS 388

DESCRIPTION: Editing, design, and delivery of multiplatform and interactive news content. Theories of new media use and practical application of those theories to create professional-level content.

NOTE: Comms 385 is also a prerequisite option; contact the advisement office.

**Course Outcomes**

There are no course outcomes available

COMMS 488 : Advanced Broadcast Producing. (3:2:3)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: COMMS 385; instructor's consent.
DESCRIPTION: Advanced concepts in television news producing, news judgment, audiences and newsroom leadership.

**Course Outcomes**
There are no course outcomes available

COMMS 489 : Strategic Advertising Campaigns. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: COMMS 332 & COMMS 337 & COMMS 432; or COMMS 317 & COMMS 331; or COMMS 332 & COMMS 330 & COMMS 432; Comms 433 or concurrent enrollment.
DESCRIPTION: Researching, planning, budgeting, creating, and writing national advertising campaigns; writing and producing a complete advertising plan, accompanied by a formal client presentation.

**Course Outcomes**
There are no course outcomes available

COMMS 495R : Research and Readings in Communication Practice. (.5-4:0:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Senior standing and instructor's approval of projects.
DESCRIPTION: Independent research projects and readings for communications majors.
NOTE: Projects must be approved in advance of registration.

**Course Outcomes**
There are no course outcomes available

COMMS 496R : Academic Internship. (1-6:Arr:Arr)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Major status; prerequisites satisfied; clearance by the Communications Department.
DESCRIPTION: Professional field experience.

**Course Outcomes**
There are no course outcomes available

COMMS 497R : Mentored Research Practicum. (1:0:Arr.)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Conducting research in a mentored environment with a faculty-sponsored research project.

**Course Outcomes**
There are no course outcomes available

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Faculty**

# Communications Faculty

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## Professors

Adams, Edward Eugene
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Professor
**DEGREES:** AAS, Ricks College, 1982
BS, University of Phoenix, 1986
MA, Brigham Young University, 1991
PhD, Ohio University, Athens, 1993

Baker, Sherry Pack
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1984
MS, University of Utah, 1988
PhD, University of Utah, 1994

Hughes, John R.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Professor
**DEGREES:** Nieman Fellow, Harvard University
Honorary Doctor of Laws, Colby College, Maine
Honorary Doctor of Humanities, Southern Utah University
Honorary Doctor of Humane Letters, Salt Lake Community College

Robinson, Thomas Eugene
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Professor
**DEGREES:** BS, Northern Arizona University, 1988
MA, University of Nevada, Las Vegas, 1992
PhD, University of Southern Mississippi, 1996

Thomsen, Steven Riley
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1982
MA, Ball State University, 1984
PhD, University of Georgia, 1994

## Associate Professors

Callister, Mark Alden
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1988
BA, Brigham Young University, 1988
MBA, Brigham Young University, 1991

PhD, University of Arizona-Tucson, 1997

Carter, Edward L.
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** Communications
- **RANK:** Associate Professor
- **DEGREES:** BA, Brigham Young University, 1996
  MS, Northwestern University, 1999
  JD, Brigham Young University J. Reuben Clark Law School, 2003
  LLM, University of Edinburgh School of Law, 2009

Cressman, Dale L.
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** Communications
- **RANK:** Associate Professor
- **DEGREES:** BA, Brigham Young University, 1985
  MA, Brigham Young University, 1989
  PhD, University of Utah, 2003

Cutri, Christopher
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** Communications
- **RANK:** Associate Professor
- **DEGREES:** BA, Brigham Young University, 1995
  MFA, Art Center College of Design, 1997

Plowman, Kenneth Dean
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** Communications
- **RANK:** Associate Professor
- **DEGREES:** BA, Brigham Young University, 1977
  MPA, George Washington University, 1981
  PhD, University of Maryland, 1995

Randle, Quint Bryce
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** Communications
- **RANK:** Associate Professor
- **DEGREES:** BA, Brigham Young University, 1984
  MA, Pepperdine University, 1995
  PhD, Michigan State University, 2001

Wakefield, Robert I.
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** Communications
- **RANK:** Associate Professor
- **DEGREES:** BA, Brigham Young University, 1980
  MA, Brigham Young University, 1990
  PhD, University of Maryland, 1997

## Assistant Professors

Boyle, Kristoffer D.
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** Communications
- **RANK:** Assistant Professor
- **DEGREES:** BA, Brigham Young University, 2001
  MA, Brigham Young University, 2005
  PhD, Texas Tech University, 2008

Brubaker, Pamela J.
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** Communications
- **RANK:** Assistant Professor
- **DEGREES:** BA, Brigham Young University, 2000
  MA, Brigham Young University, 2002
  PhD, The Pennsylvania State University, 2012

Callahan, Loy Clark
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** Communications

**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1995
MA, West Texas A&M University, 1995
PhD, University of Oklahoma, 2002

Davies, John J.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Assistant Professor
**DEGREES:** BA, University of Alberta, 1997
MA, Brigham Young University, 2002
PhD, University of Alabama, 2004

Wilson, Christopher E.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1999
MA, Brigham Young University, 2009
PhD, University of Florida, 2014

## Associate Teaching Professors

Campbell, Joel Jay
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1987
MA, Ohio State University, 2000

Kelly, Lincoln Kevin
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Teaching Professor
**DEGREES:** BFA, Art Center Collage of Design, 1977

McKinlay, Douglas R.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1968
MA, Brigham Young University, 1969

Ogden, Joseph
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1995
MBA, Brigham Young University, 2001

Walz, J. Robert
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Communications
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1982

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**Dance Department Home**

**Majors**

- BA in Dance
- BA in Dance Education K-12

**Minors**

- Ballroom Dance
- Contemporary Dance
- World Dance

**Course Information**

- Dance Courses

**Faculty**

# Dance

Marilyn Berrett, Chair
294 RB, (801) 422-5087

College of Fine Arts and Communications Advisement Center
D-444 HFAC, (801) 422-3777

## Admission to Degree Program

The degree programs in the Department of Dance carry special enrollment limitations. Please see the college advisement center for specific details.

## The Discipline

Dance is an art form expressed and communicated through human movement. Throughout history, and in every culture, people have danced. Dance incorporates the physical, mental, emotional, and spiritual aspects of each individual in creating a unique nonverbal expression of thoughts and feelings. As both process and product, dance has the power to refine neuromuscular skill, broaden understanding, increase creative potential, and expand aesthetic sensitivity. At Brigham Young University, dance celebrates the best in humankind and strives to enrich the lives of all who experience it.

The BYU Department of Dance has been accredited by the National Association of Schools of Dance (NASD) since 1989.

## Career Opportunities

The majority of career opportunities in the dance field are teaching and performance related. Teaching opportunities are available in colleges and universities (for those with graduate degrees), public schools, private studios, health and fitness spas, special and adult education programs, day care centers, and recreation programs. Performing opportunities are available by audition with professional and regional companies and in theatrical, television, and film production.

Less common, but equally rewarding dance-related careers are also available in the areas of choreography and dance administration, therapy, criticism, history, research, notation, and reconstruction.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in Dance** (Program Outcomes)
**BA in Dance Education K-12** (Program Outcomes)

**Minor in Ballroom Dance**
**Minor in Contemporary Dance**
**Minor in World Dance**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## General Information

The Department of Dance includes four areas: Ballet, Ballroom Dance, Contemporary Dance, and World Dance. These areas work cooperatively to provide opportunities for all students at the university to develop their potential in dance. Most dance technique classes and performance opportunities are open enrollment and not restricted to dance majors. Placement is determined by audition. Besides the wide variety of basic or beginning courses, there are professional courses that develop leadership, performance, and choreographic ability in all types of dance. Performing opportunities are provided both on and off campus in concerts with groups that tour throughout the world.

### Requirements

1. Majors are counseled to maintain healthy lifestyle practices.
2. Dance technique courses (including Dance 243R and 244R) require a grade of at least B– for advancement to next level.

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# BA in Dance (62-66 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see item 1 below for information regarding requirements for admission to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Students must pass a dance audition for acceptance into the major. Please see the Dance Department for further details.
2. The Dance Department requires a minimum of 30 hours of dance credit to be taken in residency at BYU's Provo campus for this degree program. BYU Independent Study courses do not count toward residency. These hours may also go toward BYU's 30-hour residency requirement for graduation.
3. Students must complete annual mandatory advisement.
4. Complete the following prerequisite course:

   PDBIO 220 : Human Anatomy (with lab). (3:2:2)

   WHEN TAUGHT: Fall; Winter; Spring; Summer

   DESCRIPTION: Structure and function of the human body. Lab included.

   **Course Outcomes**

   - Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
   - Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
   - Students will be able to list the name, location, and function of each of the body's organs and organ systems.

5. Complete the following:

   DANCE 230 : Conditioning and Injury Prevention for Dance. (2:3:3)

   WHEN TAUGHT: Fall; Winter

   PREREQUISITE: PDBIO 220

   DESCRIPTION: Developing conditioning programs specific to dance. Recognizing and resolving dance injuries. Practical application.

   **Course Outcomes**

   - 1. Students will learn how to develop a well rounded conditioning program.
   - 2. Students will gain knowledge of training and conditioning principles that will help them prevent injury.
   - 3. Students will create and participate in an actual conditioning program based on principles learned in the class.
   - 4. Students will be in better physical condition and have a working knowledge of all aspects of conditioning and injury prevention.

   DANCE 241R : Contemporary Dance, Technique and Theory 2. (2:0:6)

   WHEN TAUGHT: Fall; Winter; Summer

   **Course Outcomes**

   - 1. articulate a knowledge and appreciation of the human body regarding physical function, spirituality, and as a tool of expressivity.
   - 2. demonstrate increased technical ability in the areas of:flexibilitystrengthendurancebalancecoordinationphrasingdance performance skillsapplying the Patterns of Total Body Connectivitykinesthetic awareness of body alignment
   - 3. demonstrate knowledge, fundamental control, and application of the elements of dance (as defined by the BEST and BESS vocabularies);
   - 4. articulate an appreciation for dance as an art form.

   DANCE 243R : Studio Workshop in Contemporary Dance Technique and Theory. (2.5:0:7.5)

   WHEN TAUGHT: Fall; Winter

   PREREQUISITE: Dance 241R or equivalent; instructor's consent; concurrent enrollment in Dance 244R the first

time taken.
DESCRIPTION: Technique and theory in a workshop setting.

**Course Outcomes**

- 1. Students will demonstrate increased body connectivity and kinesthetic awareness, including:BreathCore-distalHead-tailUpper-lowerBody-halfCross-lateral connections
- 2. demonstrate performance skills including intent, nuance, dynamics, and sense of ensemble.
- 3. articulate and analyze the above principles of technique using accurate anatomical and dance elements language.

DANCE 244R : Studio Workshop in Contemporary Dance Improvisation and Choreography. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 241R or equivalent; instructor's consent; concurrent enrollment in Dance 243R the first time taken.
DESCRIPTION: Beginning improvisation and choreography in a workshop setting.

**Course Outcomes**

- 1. Students will demonstrate, apply, and articulate a fundamental understanding of the elements of dance in improvisation and choreography.
- 2. Students will demonstrate problem solving skills in collaborative group and solo improvisation and choreography.
- 3. Students will demonstrate the ability to create original and personally meaningful movement - avoiding habit or cliche.
- 4. Students will articulate a knowledge of, and critically analyze, the creative process and movement intention in improvisation and choreography.
- 5. Students will articulate aesthetic and expressive values in dance and other arts.

DANCE 261 : Orientation to Dance. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction to dance as a discipline and at Brigham Young University.

**Course Outcomes**

- 1. Students will be able to hone in on important information while also providing their own thoughtful reactions to what they have read.
- 2. Students will understand principles, terminology, and execution of Laban Movement Analysis.
- 3. Students will develop critical analysis skills.
- 4. Students will delve into a dance related topic of interest to them and develop group collaboration and presentation skills.
- 5. Students will understand the common aspects of several forms of dance through analysis of how aesthetic principles and varied movement techniques are applied and emphasized within various dance genres.

DANCE 264 : Music for Dancers. (2:1:2)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Basic music notation, simple and complex rhythmic patterns, and polyrhythms; analysis of selected international music styles; brief historical survey.

**Course Outcomes**

- Demonstrate an understanding of basic musical concepts through physical movement.
- Acquire improved awareness of his/her physical responses to music.
- Demonstrate the ability to utilize music appropriately in the technique class and collaborate with musicians.
- Demonstrate musical awareness by creating appropriate movement to odd meter music and binary/ternary rhythms.
- Acquire improved listening skills to use music to stage or create choreography

DANCE 290 : Ballet Accelerated Technique 1. (1.5:0:4.5)
WHEN TAUGHT: Fall; Winter; Spring

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in accelerated beginning ballet technique. These basic skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the Ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at a beginning level standard.
- Each student will:1. Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 291R : Ballet Technique 2. (2.5:0:7.5)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 290 or equivalent.

**Course Outcomes**

- TECHNIQUE OBJECTIVE 1. Acquire a degree of mastery in intermediate beginning ballet technique. These basic skills will be accomplished through active class participation and the practice of the movement vocabulary listed in the appendix. Please consult the appendix for the specific criteria and standards.
- TECHNIQUE OBJECTIVE 2. Increase postural awareness; begin to correct imperfections; add physical strength, endurance, flexibility, extension, coordination, grace, precision and elevation; and improve the health and appearance of the physical body.
- WRITING OBJECTIVE 1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level, then pass an objective written exam prepared by the Ballet Division.
- Each student will: Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 342 : Kinesiology for Dancers. (4:4:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: PDBIO 220 & DANCE 230

DESCRIPTION: Study and analysis of the neuromusculoskeletal system in practical application to dance for more efficient use of the body and reduction of injuries.

**Course Outcomes**

There are no course outcomes available

DANCE 355 : Dance Production, Introduction. (2:2:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Principles and practices of technical aspects of dance production.

**Course Outcomes**

- 1. Students will identify and articulate a knowledge of equipment, techniques, and procedures in technical theatre.
- 2. Students will demonstrate basic competency (in theory and practice) of theatrical production principles, including lighting, costuming, and technologies for dance performances
- Students will demonstrate an understanding of the relationship of light, color, fabric, and technology; and how to use that knowledge to accomplish an artistic vision.

DANCE 356 : Dance and Technology. (2:2.0:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction to techniques and technology of photo, audio, and digital video software.

**Course Outcomes**

There are no course outcomes available

DANCE 459 : Seminar in Dance. (1:1:0)

WHEN TAUGHT: Winter

DESCRIPTION: Seminar exposing students to a variety of dance related topics. Instruction by multiple dance professionals in their areas of expertise.

**Course Outcomes**

- 1. Student will articulate an understanding of advanced degree opportunities
- 2. Student will identify a variety of career opportunities in the field of dance
- 3. Student will demonstrate an understanding of appropriate professional skills needed for entry into the dance field
- 4. Student will generate professional documents relevant to their future in the dance field
- 5. Student will articulate an enhanced perspective on current dance issues
- 6.Student will express personal spiritual views in relation to dance performance, choreography and pedagogy

DANCE 460 : Dance History to 1850. (2:2:0)

WHEN TAUGHT: Fall; Summer Odd Yrs.

DESCRIPTION: Survey of dance in tribal cultures and ancient through Romantic historical periods, emphasizing dance of Western civilization.

**Course Outcomes**

- 1. Students will critically analyze, synthesize, internalize, and apply to present day dance prevalent in Western civilization, dance information gleaned through the study of dance within tribal cultures and ancient through romantic historical periods. (To be evaluated via midterm and final written examinations)
- 2. Students will analyze current dance and culturally related issues in contemporary society and articulate them verbally and in written form through class discussion and completion of course assignments. (To be evaluated via written response questions)
- 3. Students will apply basic historical research concepts and methodology in personal research processes and products. (To be evaluated via unit assignments.)
- 4. Students will become proficient in the use of MLA documentation style and format through application in unit assignments. (To be evaluated via formal documentation associated with unit assignments.)

DANCE 461 : Dance History from 1850. (2:2:0)

WHEN TAUGHT: Winter; Summer Even Yrs.

DESCRIPTION: Survey of dance in modern and postmodern historical periods, emphasizing dance of Western civilization.

**Course Outcomes**

- 1. Students will critically analyze, synthesize, and internalize key Western dance history information focusing on 1850 to the present. (To be evaluated via midterm and final written examinations)
- 2. Students will analyze current dance and culturally related issues in contemporary society; and articulate them verbally and in written form through class discussion and completion of course assignments. (To be evaluated via written response questions)
- 3. Students will apply basic historical research concepts and methodology to strengthen personal research processes and products. (To be evaluated via unit assignments)
- 4. Students will become competent in the use of MLA documentation style and format through application in relevant course assignments. (To be evaluated via formal documentation associated with unit assignments)

DANCE 469 : Capstone in Dance. (2:0:ARR)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: BA in Dance: Dance 362 if a choreographic project. Dance Education: Dance 362; 361 or 462.

**Course Outcomes**

- Students will reflect in their capstone project a philosophy compatible with the mission of BYU
- Students will complete a capstone project, whether it be choreographic, research, or performance that represents a significant and comprehensive synthesis of the learning they have experienced during their years in the program

**Note:** Qualified students may substitute higher-level technique courses for required lower-level technique courses with permission from the Dance Department.

6. Complete one course from the following:

DANCE 362 : Contemporary Choreography Intermediate. (2:0:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 244R

DESCRIPTION: Fundamental choreographic structure emphasizing visual, kinesthetic, and musical aspects in contemporary dance.

**Course Outcomes**

There are no course outcomes available

DANCE 377 : World Dance Choreography. (2:0:4)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Fundamental choreographic structure emphasizing visual, kinesthetic, and musical aspects in World Dance.

**Course Outcomes**

- 1. Students will learn technical elements, process and crafting principles of composition, such as: transitions, traditional formations, dynamic structure, stylistic coherence, form, musical dynamics and phrasing.
- 2. Students will develop a critical eye in analyzing and forming own aesthetic criteria.
- 3. Students will discover ethno-choreographic elements of a particular style or cultural group.
- 4. Students will address issues of authenticity versus creativity, traditional versus contemporary.
- 5. Students will learn to document choreography.

DANCE 387 : Ballroom Dance Choreography. (2:0:4)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Choreography in Ballroom Dance emphasizing formation dancing.

**Course Outcomes**

- 1. Students will find coherence in foundational elements of formation choreography.
- 2. Students will demonstrate basic skills of composing ballroom formation choreography.

DANCE 397 : Ballet Choreography. (2:0:4)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Fundamental choreographic structure emphasizing visual, kinesthetic, and musical aspects in ballet. Exploration of hte choreographic process through theoretical study and analysis as well as practical application in the presentation of choreographic work. Concepts include clarity, creativity, transition, musical accent and phrasing, dynamic structure, form, stylistic coherence, artistic merit.

**Course Outcomes**

- Each student will creatively experiment with and arrange movement with regard to clarity, transition, musical accent and phrasing, dynamic structure, form and stylistic coherence.
- Each student will begin to formulate his/her own aesthetic criteria through the process of watching dance

concerts and writing concise and thoughtful critiques.
- Each student will enhance his/her understanding of choreography through reading, observation, discussion, and active participation.
- Each student will demonstrate knowledge acquired through completion of creative, choreographic project and written examination.

7. Complete one course from the following:

DANCE 343 : Principles of Somatics. (2:2:1)

WHEN TAUGHT: Fall; Spring Even Yrs.

PREREQUISITE: DANCE 243R & DANCE 244R; or DANCE 291R; Dance 342.

DESCRIPTION: Experiential approach to movement training including body patterning. Integration and personal expression of body and movement choices.

**Course Outcomes**

- Students will be able to:1. identify and demonstrate a basic theoretical and practical understanding of selected Somatic principles and practices.
- 2. demonstrate an awareness and understanding of movement from a place of inward knowing.
- 3. physically embody connectivity
- 4. understand the joys and consequences of their own personal movement choices
- 5. integrate the concepts of the class into the practical applications of teaching, coaching and re-patterning for self or other.

DANCE 351 : Laban Movement Analysis. (2:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: DANCE 243R & DANCE 244R & DANCE 291R

DESCRIPTION: Tools to make sense of, and derive meaning from movement. Constituent movement components that facilitate accuracy in teaching, performance, and choreography.

**Course Outcomes**

- Each student will be able to:1. Identify the basic vocabulary, concepts and principles that are used in LMA.
- 2. Describe a movement event systematically using the aspects of the system.
- 3. Demonstrate functional skill in both a personal and professional application of LMA, including appropriate notational forms and/or specialized terminologies.

8. Complete one course from the following:

DANCE 359R : Special Topics and Issues. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: DANCE 243R & DANCE 244R & DANCE 261

DESCRIPTION: Seminar with rotating topics and issues selected from: dance and health, dance and identity, dance and technology, and dance philosophy and aesthetics.

**Course Outcomes**

- PHOTOSHOP OBJECTIVES&1. Students will demonstrate competency in the Photoshop interface.
- 2.Students will acquire knowledge in the use of the key commands.
- 3. Students will apply knowledge of the toning and selection tools to re-touch dance photos.
- 4.Students will create a complex image using layers, digital filters and blending modes.
- 5.Students will construct a dance concert poster.
- LOGIC EXPRESS OBJECTIVES1. Students will demonstrate competency in the Logic Express interface.
- 2.Students will acquire knowledge in the use of key commands
- 3.Students will create background music for a slideshows and video.
- 4.Students will understand and apply audio effects techniques when mixing and exporting music.
- 5.Students will demonstrate audio editing techniques to cut pre-recorded music.
- FINAL EXPRESS OBJECTIVES:1. Students will demonstrate competency in the Final Cut interface.
- 2. Students will acquire knowledge in the use of key commands.
- 3. Students will understand the Final Cut workflow.
- 4. Students will demonstrate knowledge of video editing.
- 5. Students will analyze and color correct video.
- 6.Students will create a solo dance on video.
- 7.Students will create a group dance on video.
- iDVD OBJECTIVES1.Students will demonstrate competency in the iDVD interface.
- 2.Students will Understand the iDVD workflow.
- .Students will Create and author a DVD.

: Dance and Identity.

**Course Outcomes**

: Dance and Health Issues.

**Course Outcomes**

: Dance Philosophy and Aesthetics.

**Course Outcomes**

(**Note:** Choose one from three rotating titles: Dance and Health, Dance and Identity, or Dance Philosophy and Aesthetics.)

DANCE 477 : Dance - a Reflection of Culture. (2:2:0)
WHEN TAUGHT: Winter
DESCRIPTION: Study of dance as an expression of culture.

**Course Outcomes**

- 1. Students will learn cultural concepts and identity associated with world dance
- 2. Students will understand the differences and similarities in traditions and rituals connected to dance
- 3. Students will participate in class discussions and analysis of group research and assigned readings;
- 4. Students will understand ethnochoreology and ethnography and how they interface in cultural dance

9. Complete one course from each of the following categories:

- Foot articulation:

DANCE 135 : Tap Dance, Beginning. (.5:0:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- 1. Students will embrace a philosophy of dance compatible with the mission of BYU that guides their personal choices in the professional or recreational worlds of dance
- 2. Students will demonstrate advanced technical and artistic skill in one dance genre and at least beginning to intermediate skill in another.

DANCE 171 : Clog Dance, Beginning. (.5:0:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Beginning steps and technique, emphasizing slide/drag.

**Course Outcomes**

- 1. Students will learn traditional and contemporary clogging techniques including arm movements, footwork, correct alignment, placement and weight shifts.
- 2. Students will learn a movement vocabulary using correct clog dance terminology.
- 3. Students will learn, dance and test beginning sequences and patterns of movement.
- 4. Students will learn basic presentation skills in clog dance movement patterns, combinations, and skills .
- 5. Students will learn a knowledge of the history and progression of clog dance

DANCE 235 : Tap Dance Technique 1. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 135 or equivalent.

**Course Outcomes**

- 1. Students will embrace a philosophy of dance compatible with the mission of BYU that guides their personal choices in the professional or recreational worlds of dance.
- 2. Students will demonstrate advanced technical and artistic skill in one dance genre and at least beginning to intermediate skill in another.

DANCE 271 : Clog Dance Technique 1. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 171 or equivalent.
DESCRIPTION: Intermediate steps and technique; buck styling; introduction to choreography.

**Course Outcomes**

- Students will learn additional presentation skills in clog dance movement patterns, combinations, and skills.
- Students will learn a movement vocabulary using correct clog dance terminology.
- Students will learn a knowledge of the history and progressions of clog dance.
- Students will learn traditional and contemporary intermediate clogging techniques including arm movements, footwork, correct alignment, placement and weight shifts.

DANCE 274R : Irish Dance: Practice and Theory, Technique 1. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 174 (Ethnic Dance Irish) or equivalent.
DESCRIPTION: Accelerated ethnic dance technique from the Irish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 335R : Tap Dance Technique 2. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 235 or equivalent.

**Course Outcomes**

- Students will explore the intricacies of complex rhythms
- Students will focus on dynamics, accents, and shading, etc.
- Students will continue to work on speed, clarity, and exactness in tap technique
- Students will explore the use of counterpoint, stop time, phrasing, and different time signatures.

Students will enhance improvisational skills, creative thinking and risk-taking.
- Students will learn the theory and process of composition.
- Students will work on their performance skills and personal style.
- Students will learn the skills of tap notation.
- Students will develop a sense of aesthetic perception to self evaluate and self correct.

DANCE 371R : Clog Dance Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 271 or equivalent.

DESCRIPTION: Fundamentals of clog technique at the advanced level.

**Course Outcomes**

- Students will learn traditional and contemporary advanced clogging techniques including arm movements, footwork, correcrt alignment, placement, and weight shifts
- Students will learn a movement vocabulary using correct clog dance terminology.
- Students will learn, dance and test intermediate sequences and patterns of movement.
- Students will learn additional presentation skills in clog dance movement patterns, combinations, and skills.
- Students will learn a knowledge of the history and progression of clog dance.

DANCE 374R : Irish Dance: Practice and Theory, Technique 2. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Dance 274R or equivalent.

DESCRIPTION: Advanced ethnic dance techniques from the Irish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 474R : Percussive Step Styles. (1:0:3)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Two of three possible courses: Dance 371 or 335 or 374R.

DESCRIPTION: Technique and theory, fusing a diversity of percussive dance styles including, but not limited to, French Canadian Gigue, Cape Breton Step, Power Tap, traditional and contemporary Clog Dance. Composition and improvisation included.

**Course Outcomes**

- 1. Students will gain speed, clarity and precise technique in various styles of percussive footwork.
- 2. Students will improve coordination, motor memory, fine and gross motor skills.
- 3. Students will demonstrate correct alignment, placement and weight shifts.
- 4. Students will learn sequences and patterns of movement.
- 5. Students will apply the theory and process of improvisation and composition.
- 6. Students will learn the current movement vocabulary and or terminology.
- 7. Students will gain a kinesthetic perception and concentration in order to self-evaluate and self correct.

- Partnering:

DANCE 172 : Western: Square and Contra Dance. (.5:0:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Fundamental dance skills in western styles of country, round, and square dance.

**Course Outcomes**

There are no course outcomes available

DANCE 184 : Ballroom, International Beginning (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Bronze level. Waltz, fox-trot, tango, quickstep.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate bronze level school figures of International Style Waltz and Quickstep.
- 2. Students will be able to effectively demonstrate beginning level ballroom technique in the following areas: 1) posture and dance position 2) clarity and use timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 185 : Ballroom Dance, International Latin, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Bronze level. Cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate bronze level school figures of International Style Samba and Rumba.
- 2. Students will be able to effectively demonstrate beginning level technique in the following areas:1) posture and dance position 2) clarity and use timing 3)proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 273 : Hungarian Dance: Practice and Theory, Technique 1. (1:0:3)
WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: Dance 173R or previous dance experience.
DESCRIPTION: Accelerated ethnic dance techniques from the Hungarian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 278 : Ukrainian Dance: Practice and Theory, Technique 1. (1:0:3)
WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: Dance 173R or previous dance experience.
DESCRIPTION: Accelerated ethnic dance technique from the Ukrainian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 280 : Social Dance, Technique 1. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 180 or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the school figures associated with each dance by practice and application.
- 2. Students will demonstrate the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to lead and follow through their participation at labs and through exams.

DANCE 284 : Ballroom, International Technique 1. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 184 or equivalent.
DESCRIPTION: Silver level. Waltz, fox-trot, tango, quickstep.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate silver level school figures of International Style Waltz, Tango and Foxtrot.
- 2. Students will be able to effectively demonstrate intermediate level technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 285 : Ballroom Dance, International Latin, Technique 1. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 185 or equivalent.
DESCRIPTION: Silver level. Cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate silver level school figures of International Style Samba, Rumba and Paso Doble.
- 2. Students will be able to effectively demonstrate intermediate level technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 373 : Hungarian Dance: Practice and Theory, Technique 2. (1:0:3)
WHEN TAUGHT: Fall
PREREQUISITE: Dance 273 or equivalent.
DESCRIPTION: Advanced ethnic dance techniques from the Hungarian culture.

**Course Outcomes**

No outcomes are available at this time.

DANCE 380R : Social Dance, Technique 2. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 280 or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the school figures associated with each dance by practice and application.
- 2. Students will demonstrate the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to lead and follow through their participation at labs and through exams.

DANCE 382R : Ballroom, International Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Dance 284 or equivalent; instructor's consent.
DESCRIPTION: Gold 1 level. Waltz, tango, fox-trot, quickstep.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate gold level school figures of International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to effectively demonstrate advanced level ballroom technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 383R : Ballroom Dance, International Latin, Technique 2. (1:0:3)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Dance 285 or equivalent; instructor's consent.
DESCRIPTION: Gold 1 level. Cha-cha, samba, rumba, paso doble.

**Course Outcomes**

- Students will be able to effectively demonstrate gold level school figures of International Style Cha-Cha, Samba, Rumba, Paso Doble
- Students will be able to effectively demonstrate advanced level latin technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 384R : Ballroom, International Technique 3. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 382R or equivalent; instructor's consent.
DESCRIPTION: Gold 2 level. Waltz, fox-trot, tango, quickstep.

**Course Outcomes**

- 1. Students will be able to demonstrate, competitive figures at a pre-championship level in the International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to demonstrate pre-championship level ballroom technique in the following areas: 1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 385R : Ballroom Dance, International Latin, Technique 3. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 383R or equivalent ; instructor's consent.
DESCRIPTION: Gold 2 level. Cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to demonstrate, competitive figures at a pre-championship level in International Style Cha-Cha, Samba, Rumba, Paso Doble
- 2. Students will be able to demonstrate pre-championship level latin technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 480R : Social Dance, Technique 3. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 380R or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the class routines associated with each dance by practice and application
- 2. Students will demonstrate advanced level the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to compete in an open event by participation in the BYU Dancesport competition.

DANCE 484R : Ballroom, International Technique 4. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 384R or equivalent; instructor's consent.
DESCRIPTION: Gold bar level: waltz, tango, fox-trot, quickstep, Viennese waltz.

**Course Outcomes**

- 1. Students will be able to demonstrate competitive figures at a championship level in International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to demonstrate "championship" level ballroom technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 485R : Ballroom Dance, International Latin, Technique 4. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 385R or equivalent; instructor's consent.
DESCRIPTION: Gold bar level: cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to demonstrate competitive figures at a championship level in the International Style Cha-Cha, Samba, Rumba, Paso Doble
- 2. Students will be able to demonstrate "championship" level latin technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 495R : Pas de Deux. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: Audition.

DESCRIPTION: Ballet partnering techniques.

**Course Outcomes**

- 1. Students will find the point of balance for incomplete and complete turns.
- 2. Students will learn to perform falling poses and promenades.
- 3. Students will demonstrate knowledge of three basic turns: finger pirouette, pirouette partnered at the waist, and pirouette partnered at the hand(s) / wrist(s).
- 4. Students will maintain placement and strength during lifts (Female).
- 5. Students will lift partner above the head with stretched elbows and correct position of the back and head, with knees stretched and heel on the floor (Male).
- 6. Students will demonstrate focus on partner during combinations while being cognizant of the facial expressions.
- 7. Students will demonstrate shoulder lift on one side (left or right) with appropriate expression and maintain position for 10 seconds.
- 8. Students will perform a double pirouette, en dehors and en dedans, when partnered at the waist at least 75% of the time.
- 9. Perform triple finger pirouettes, en dehors at least 75% of the time.
- 10. Perform technique and partnering skills correctly to avoid injury.
- 11. Students will achieve traditional manners of courtesy and noble dignity that should be present between the male and female dancers.
- 12. Students will achieve an appreciation for the partner's role in creating a union of movement.
- 13. Students will increase trust between the male and female partner.

- Cultural dance:

DANCE 174 : Ethnic Dance Beginning - Irish. (.5:0:2)

DESCRIPTION: Introduction to Irish dance technique--soft and hard shoe--at a begining level. Instruction in solo and figure dances as well as some cultural background information about music, costumes, traditions and on-going development in this style of dance.

**Course Outcomes**

There are no course outcomes available

DANCE 175 : Ethnic Dance Beginning - Polynesian. (.5:0:2)

DESCRIPTION: Instruction in movement, songs, myths and legends of Hawaii, New Zealand, Tahiti, Samoa, and Tonga.

**Course Outcomes**

There are no course outcomes available

DANCE 270 : World Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Dance 170 or equivalent.

DESCRIPTION: Techniques of selected traditional, folk, and national dance styles.

**Course Outcomes**

- 1. Each student will demonstrate footwork and various rhythmic structures from selected cultures
- 2. Each student will develop proper technique of posture, gesture and free movement
- 3. Each student will interpret proper body alignment and technical execution of movement styles and phrases
- 4. Each student will enhance the ability to recognize and understand world dance vocabulary, significance and context within selected cultures
- 5. Each student will understand the distinction of various patterns concerning tradition and innovation
- 6. Each student will increase awareness and appreciation of world dance and how it relates to other dance forms and styles

DANCE 272 : Chinese Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Dance 173R or previous dance experience.

DESCRIPTION: Accelerated ethnic dance technique from the Chinese culture.

**Course Outcomes**

There are no course outcomes available

DANCE 273 : Hungarian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Dance 173R or previous dance experience.

DESCRIPTION: Accelerated ethnic dance techniques from the Hungarian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 274R : Irish Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 174 (Ethnic Dance Irish) or equivalent.
DESCRIPTION: Accelerated ethnic dance technique from the Irish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 275 : Polynesian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 173R or previous experience.
DESCRIPTION: Accelerated ethnic dance technique from the Polynesian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 277 : Spanish Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall Even Yrs.
PREREQUISITE: Dance 173R or previous dance experience.
DESCRIPTION: Accelerated ethnic dance technique from the Spanish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 278 : Ukrainian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: Dance 173R or previous dance experience.
DESCRIPTION: Accelerated ethnic dance technique from the Ukrainian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 279 : Indian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Winter; Spring
DESCRIPTION: Classical India dance technique, primarily in religious-based styles and motifs of Bharatha Natyam, Ganapathi, Allaripu, and Bollywood.

**Course Outcomes**

There are no course outcomes available

DANCE 370 : World Dance Technique 2. (1:0:3)

WHEN TAUGHT: Winter
PREREQUISITE: DANCE 270
DESCRIPTION: In-depth dance technique of selected traditional, folk, and national dance styles.

**Course Outcomes**

- 1. Demonstrate complex movement patterns from selected cultures
- 2. Develop proper technique of posture and gesture
- 3. Interpret proper body alignment and technical execution of movement styles and phrases
- 4. Enhance the ability to recognize and understand world dance vocabulary, significance andcontext within selected cultures

DANCE 373 : Hungarian Dance: Practice and Theory, Technique 2. (1:0:3)

WHEN TAUGHT: Fall
PREREQUISITE: Dance 273 or equivalent.
DESCRIPTION: Advanced ethnic dance techniques from the Hungarian culture.

**Course Outcomes**

No outcomes are available at this time.

DANCE 374R : Irish Dance: Practice and Theory, Technique 2. (1:0:3)

WHEN TAUGHT: Winter
PREREQUISITE: Dance 274R or equivalent.
DESCRIPTION: Advanced ethnic dance techniques from the Irish culture.

**Course Outcomes**

There are no course outcomes available

**Note 1:** Cultural dance technique courses are offered on a rotation basis. Please see the department for a rotation schedule.

**Note 2:** One course may fulfill two of the required foot articulation, partnering, and cultural dance categories, possibly reducing the number of enrollments for this requirement from three to two: Dance 174, 175, 274R, 277, or 374R will satisfy both foot articulation and cultural categories; Dance 273, 278, 373 will satisfy both partnering and cultural categories.

10. Complete 10.5 hours from the following technique courses (at least 7.0 hours must be from courses 300 and above):

DANCE 192 : Character Dance. (.5:0:2)

WHEN TAUGHT: Winter

DESCRIPTION: Male and female techniques of traditional Hungarian, Polish, and Ukrainian folk forms stylized with classical ballet discipline.

**Course Outcomes**

There are no course outcomes available

DANCE 231R : Jazz Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 240R or Dance 290 or equivalent; Dance 131 or equivalent.

**Course Outcomes**

- Students will gain knowledge of styles within the jazz genre.
- Students will acquire a degree of mastery in jazz dance technique at a intermediate level as their foundation.
- Students will experience the joy of jazz rhythms and motion.
- Students will increase awareness in their physical health and well-being through activity and correct principles of training.
- Students will increase awareness to their overall self-image, emphasizing; discipline, coordination, strength, flexibility and endurance.
- Students will develop more understanding of a relationship between religion and the fine arts.
- Students will acquire the desire to patronize the art to some degree in the future.
- Students will develop an evaluation standard to aid in selecting future quality jazz dance training for self and/or for family.

DANCE 235 : Tap Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 135 or equivalent.

**Course Outcomes**

- 1. Students will embrace a philosophy of dance compatible with the mission of BYU that guides their personal choices in the professional or recreational worlds of dance.
- 2. Students will demonstrate advanced technical and artistic skill in one dance genre and at least beginning to intermediate skill in another.

DANCE 270 : World Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Dance 170 or equivalent.

DESCRIPTION: Techniques of selected traditional, folk, and national dance styles.

**Course Outcomes**

- 1. Each student will demonstrate footwork and various rhythmic structures from selected cultures
- 2. Each student will develop proper technique of posture, gesture and free movement
- 3. Each student will interpret proper body alignment and technical execution of movement styles and phrases
- 4. Each student will enhance the ability to recognize and understand world dance vocabulary, significance and context within selected cultures
- 5. Each student will understand the distinction of various patterns concerning tradition and innovation
- 6. Each student will increase awareness and appreciation of world dance and how it relates to other dance forms and styles

DANCE 271 : Clog Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 171 or equivalent.

DESCRIPTION: Intermediate steps and technique; buck styling; introduction to choreography.

**Course Outcomes**

- Students will learn additional presentation skills in clog dance movement patterns, combinations, and skills.
- Students will learn a movement vocabulary using correct clog dance terminology.
- Students will learn a knowledge of the history and progressions of clog dance.
- Students will learn traditional and contemporary intermediate clogging techniques including arm movements, footwork, correct alignment, placement and weight shifts.

DANCE 272 : Chinese Dance: Practice and Theory, Technique 1. (1:0:3)
WHEN TAUGHT: Winter Odd Yrs.
PREREQUISITE: Dance 173R or previous dance experience.
DESCRIPTION: Accelerated ethnic dance technique from the Chinese culture.

**Course Outcomes**

There are no course outcomes available

DANCE 273 : Hungarian Dance: Practice and Theory, Technique 1. (1:0:3)
WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: Dance 173R or previous dance experience.
DESCRIPTION: Accelerated ethnic dance techniques from the Hungarian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 274R : Irish Dance: Practice and Theory, Technique 1. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 174 (Ethnic Dance Irish) or equivalent.
DESCRIPTION: Accelerated ethnic dance technique from the Irish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 275 : Polynesian Dance: Practice and Theory, Technique 1. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 173R or previous experience.
DESCRIPTION: Accelerated ethnic dance technique from the Polynesian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 277 : Spanish Dance: Practice and Theory, Technique 1. (1:0:3)
WHEN TAUGHT: Fall Even Yrs.
PREREQUISITE: Dance 173R or previous dance experience.
DESCRIPTION: Accelerated ethnic dance technique from the Spanish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 278 : Ukrainian Dance: Practice and Theory, Technique 1. (1:0:3)
WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: Dance 173R or previous dance experience.
DESCRIPTION: Accelerated ethnic dance technique from the Ukrainian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 279 : Indian Dance: Practice and Theory, Technique 1. (1:0:3)
WHEN TAUGHT: Winter; Spring
DESCRIPTION: Classical India dance technique, primarily in religious-based styles and motifs of Bharatha Natyam, Ganapathi, Allaripu, and Bollywood.

**Course Outcomes**

There are no course outcomes available

DANCE 280 : Social Dance, Technique 1. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 180 or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the school figures associated with each dance by practice and application.
- 2. Students will demonstrate the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to lead and follow through their participation at labs and through exams.

DANCE 281 : Country Western Social Dance, Intermediate. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 181 or equivalent.

DESCRIPTION: Intermediate-level instruction in popular country western dances.

**Course Outcomes**

- 1. Students will embrace a philosophy of dance compatible with the mission of BYU that guides their personal choices in the professional or recreational worlds of dance.
- 2. Students will demonstrate advanced technical skill and artistic skill in one dance genre and at least beginning to intermediate skill in another.

DANCE 284 : Ballroom, International Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 184 or equivalent.
DESCRIPTION: Silver level. Waltz, fox-trot, tango, quickstep.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate silver level school figures of International Style Waltz, Tango and Foxtrot.
- 2. Students will be able to effectively demonstrate intermediate level technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 285 : Ballroom Dance, International Latin, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 185 or equivalent.
DESCRIPTION: Silver level. Cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate silver level school figures of International Style Samba, Rumba and Paso Doble.
- 2. Students will be able to effectively demonstrate intermediate level technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 294R : Ballet Technique, Men. (1:0:3)

WHEN TAUGHT: Winter
PREREQUISITE: DANCE 290
DESCRIPTION: Intermediate classical ballet technique for men.

**Course Outcomes**

- 1. Students will acquire a degree of mastery in men's intermediate ballet technique.
- 2. Students will Increase postural awareness; begin to correct imperfections; add physical strength, endurance, flexibility, extension, coordination, grace, precision and elevation; and improve the health and appearance of the physical body.
- 3. Students will Increase their awareness and appreciation for ballet, its aesthetic beauty, demanding discipline, and lifelong benefit of enhancing and integrating the physical, spiritual, intellectual, and emotional aspects.
- 4. Students will acquire improved awareness of the physical body and its capacity to move.
- 5. Students will gain a sense of personal accomplishment and worth.
- 6. Enlarge one's understanding of the relationship between religion and the fine arts.
- 7. Students will increase in desire to patronize the art to some degree in the future.
- 8. Students will develop an evaluation standard to aid in selecting future quality ballet training for self and/or for family.

DANCE 331R : Jazz Dance Technique 2. (1.5:0:4.5)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 231 or equivalent. Dance 241R and Dance 243; or Dance 291R.

**Course Outcomes**

- Students will gain a greater knowledge jazz dance styles through various advance movement combinations.
- Students will acquire a degree of mastery in jazz dance technique at an advance level as their foundation.
- Students will increase their intellectual ability to retain complex and substantial length of movement sequences given in a short amount of time.
- Students will explore the psychology of performance and auditioning.
- Students will experience the joy of jazz rhythms and motion.
- Students will increase awareness in their physical health and well-being through activity and correct principles of training.
- Students will increase awareness to their overall self-image, emphasizing; discipline, coordination, strength, flexibility and endurance.
- Students will gain understanding of the gospel of Jesus Christ as an artist in the world.
- Students will acquire the desire to patronize the art to some degree in the future.
- Students will develop an evaluation standard to aid in selecting future quality jazz dance training for self and/or for family.

DANCE 335R : Tap Dance Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 235 or equivalent.

**Course Outcomes**

- Students will explore the intricacies of complex rhythms
- Students will focus on dynamics, accents, and shading, etc.
- Students will continue to work on speed, clarity, and exactness in tap technique
- Students will explore the use of counterpoint, stop time, phrasing, and different time signatures.
- Students will enhance improvisational skills, creative thinking and risk-taking.
- Students will learn the theory and process of composition.
- Students will work on their performance skills and personal style.
- Students will learn the skills of tap notation.
- Students will develop a sense of aesthetic perception to self evaluate and self correct.

DANCE 340R : Contemporary Dance, Technique and Theory 3. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Dance 243R or equivalent; by audition.

**Course Outcomes**

- Demonstrate intermediate/advanced Contemporary dance technical proficiency in whole body connectivitystrength & flexibilitybreath initiation and supportconsistent core support functional alignmentbalance & coordination groundedness and weight sensingshape clarity, spatial accuracy and rangefocusrhythmic accuracyarticulationdynamic contrastcomplex movement skills
- Demonstrate increased dance performance artistry in:sequence masterymusicalityexpressivitypersonal interpretationnuanceensemble
- Describe, assess and write about demonstrated achievement of technical and performance skill
- Show sustained application of feedback from assessments
- Articulate understanding of Contemporary/Modern dance as an art form
- Articulate dance connections to gospel principles mind, body and spirit

DANCE 341R : Contemporary Dance Technique Forms. (2.5:0:7.5)

WHEN TAUGHT: Winter

PREREQUISITE: Dance 340 or equivalent; by audition.

DESCRIPTION: Contemporary dance forms and techniques, including Chinese contemporary dance, contact improvisation, and other new and hybrid dance forms useful in contemporary dance training. Offerings subject to teacher expertise.

**Course Outcomes**

- 1. Demonstrate intermediate/advanced technical proficiency in both ballet and contemporary dance technique. Areas requiring proficiency include:whole body connectivitystrength & flexibilitybreath initiation and supportconsistent core supportfunctional alignmentbalance & coordinationgroundedness and weight sensingshape clarity, spatial accuracy and rangefocusrhythmic accuracyarticulationdynamic contrastcomplex movement skills
- 2. Demonstrate increased dance performance artistry in:sequence masterymusicalityexpressivitypersonal interpretationnuanceensemble
- 3. Describe, assess, and write about:demonstrated achievement of technical and performance skill.the essential and developing relationship that exists between ballet and contemporary dance movement.
- 4. Show consistent and sustained application of feedback from daily class and assessments.
- 5. Demonstrate intermediate/advanced knowledge of ballet and contemporary vocabulary through participation, observation, discussion, and writing.
- 6. Articulate dance connections of gospel principles in mind, body and spirit

DANCE 370 : World Dance Technique 2. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: DANCE 270

DESCRIPTION: In-depth dance technique of selected traditional, folk, and national dance styles.

**Course Outcomes**

- 1. Demonstrate complex movement patterns from selected cultures
- 2. Develop proper technique of posture and gesture
- 3. Interpret proper body alignment and technical execution of movement styles and phrases
- 4. Enhance the ability to recognize and understand world dance vocabulary, significance andcontext within selected cultures

DANCE 371R : Clog Dance Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 271 or equivalent.

DESCRIPTION: Fundamentals of clog technique at the advanced level.

**Course Outcomes**

- Students will learn traditional and contemporary advanced clogging techniques including arm movements, footwork, correcrt alignment, placement, and weight shifts
- Students will learn a movement vocabulary using correct clog dance terminology.
- Students will learn, dance and test intermediate sequences and patterns of movement.
- Students will learn additional presentation skills in clog dance movement patterns, combinations, and skills.
- Students will learn a knowledge of the history and progression of clog dance.

DANCE 373 : Hungarian Dance: Practice and Theory, Technique 2. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: Dance 273 or equivalent.

DESCRIPTION: Advanced ethnic dance techniques from the Hungarian culture.

**Course Outcomes**

No outcomes are available at this time.

DANCE 374R : Irish Dance: Practice and Theory, Technique 2. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Dance 274R or equivalent.

DESCRIPTION: Advanced ethnic dance techniques from the Irish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 380R : Social Dance, Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 280 or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the school figures associated with each dance by practice and application.
- 2. Students will demonstrate the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to lead and follow through their participation at labs and through exams.

DANCE 382R : Ballroom, International Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Dance 284 or equivalent; instructor's consent.

DESCRIPTION: Gold 1 level. Waltz, tango, fox-trot, quickstep.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate gold level school figures of International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to effectively demonstrate advanced level ballroom technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 383R : Ballroom Dance, International Latin, Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Dance 285 or equivalent; instructor's consent.

DESCRIPTION: Gold 1 level. Cha-cha, samba, rumba, paso doble.

**Course Outcomes**

- Students will be able to effectively demonstrate gold level school figures of International Style Cha-Cha, Samba, Rumba, Paso Doble
- Students will be able to effectively demonstrate advanced level latin technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 384R : Ballroom, International Technique 3. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 382R or equivalent; instructor's consent.

DESCRIPTION: Gold 2 level. Waltz, fox-trot, tango, quickstep.

**Course Outcomes**

- 1. Students will be able to demonstrate, competitive figures at a pre-championship level in the International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to demonstrate pre-championship level ballroom technique in the following areas: 1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 385R : Ballroom Dance, International Latin, Technique 3. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 383R or equivalent ; instructor's consent.

DESCRIPTION: Gold 2 level. Cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to demonstrate, competitive figures at a pre-championship level in International Style Cha-Cha, Samba, Rumba, Paso Doble
- 2. Students will be able to demonstrate pre-championship level latin technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 390R : Ballet Technique 3. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Audition.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advanced/intermediate ballet technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at an advanced/intermediate level standard.
- Each student will:Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 391R : Ballet Technique 4. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advanced levelballet technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at an advanced level standard.
- Each student will:Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 392R : Ballet Pointe 1. (.5:0:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: A minimum of two years of previous pointe technique and concurrent enrollment in Dance 390R.

DESCRIPTION: Intermediate level pointe. Satisfies BA requirements in Dance.

NOTE: Although this is an open enrollment course, all students must receive teacher approval or level placement audition before registering.

**Course Outcomes**

There are no course outcomes available

DANCE 393R : Ballet Pointe 2. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition required; concurrent enrollment in Dance 390R or 391R.

DESCRIPTION: Advanced level pointe. Satisfies BA requirements in Dance.

NOTE: Although this is an open enrollment course, all students must receive teacher approval or level placement audition before registering.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advanced/intermediateballet pointe technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Apply a working knowledge of French ballet terminology, analytical skills, and sound writing skills by submitting a weekly journal entry or written self-evaluation, and a written critique of a live performance.
- Each student will:Participate fully in the pointe technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 440R : Contemporary Dance, Technique and Theory 4. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 340R or equivalent; by audition.

**Course Outcomes**

- 1. Students will demonstrate advanced technique proficiency instrength flexibilityconnectivitycomplex sequence mastery movement problems
- 2. Students will demonstrate performance awareness and control over movement innuancedynamicmusicalityfreedom from tensionshapinginitiationbreath qualityphrasing and composition
- 3. Students will describe, assess and write about achievement of technical skills and performing skills
- 4. Students will articulate appreciation for the divine nature of the human body as it relates to gospel principles as well as the relationship between mind/body/spirit.
- 5. Students will articulate appreciation for dance as an art form

DANCE 474R : Percussive Step Styles. (1:0:3)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Two of three possible courses: Dance 371 or 335 or 374R.

DESCRIPTION: Technique and theory, fusing a diversity of percussive dance styles including, but not limited to, French Canadian Gigue, Cape Breton Step, Power Tap, traditional and contemporary Clog Dance. Composition and improvisation included.

**Course Outcomes**

- 1. Students will gain speed, clarity and precise technique in various styles of percussive footwork.
- 2. Students will improve coordination, motor memory, fine and gross motor skills.
- 3. Students will demonstrate correct alignment, placement and weight shifts.
- 4. Students will learn sequences and patterns of movement.
- 5. Students will apply the theory and process of improvisation and composition.
- 6. Students will learn the current movement vocabulary and or terminology.
- 7. Students will gain a kinesthetic perception and concentration in order to self-evaluate and self correct.

DANCE 480R : Social Dance, Technique 3. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 380R or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the class routines associated with each dance by practice and application
- 2. Students will demonstrate advanced level the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to compete in an open event by participation in the BYU Dancesport competition.

DANCE 484R : Ballroom, International Technique 4. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 384R or equivalent; instructor's consent.

DESCRIPTION: Gold bar level: waltz, tango, fox-trot, quickstep, Viennese waltz.

**Course Outcomes**

- 1. Students will be able to demonstrate competitive figures at a championship level in International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to demonstrate "championship" level ballroom technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 485R : Ballroom Dance, International Latin, Technique 4. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 385R or equivalent; instructor's consent.

DESCRIPTION: Gold bar level: cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to demonstrate competitive figures at a championship level in the International Style Cha-Cha, Samba, Rumba, Paso Doble
- 2. Students will be able to demonstrate "championship" level latin technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 490R : Ballet Technique 5. (3:0:9.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Advanced ballet technique, including advanced pointe work for women and advanced technique for men.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advancedballet technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at an advanced level standard.
- Each student will:Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 494R : Ballet Variations. (1:0:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Dance 391R and 393R or equivalents.

**Course Outcomes**

Students will learn and achieve technical and stylistic mastery of several variations from classical ballets.
- Students will learn and record the background, libretto, and style of the specific ballets through brief lectures.
- Students will compile a notebook with the background, libretto, and details of each variation which will aid in the future instructing of these variations. The student will include specifics on choreographers, composers, and dancers where applicable; as well as all steps of each variation written in a clear, understandable form.
- Students will learn each variation and be required to perform throughout the semester.
- Students will prepare variations to perform and be graded on those technical and stylistic requirements.

DANCE 495R : Pas de Deux. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: Audition.

DESCRIPTION: Ballet partnering techniques.

**Course Outcomes**

- 1. Students will find the point of balance for incomplete and complete turns.
- 2. Students will learn to perform falling poses and promenades.
- 3. Students will demonstrate knowledge of three basic turns: finger pirouette, pirouette partnered at the waist, and pirouette partnered at the hand(s) / wrist(s).
- 4. Students will maintain placement and strength during lifts (Female).
- 5. Students will lift partner above the head with stretched elbows and correct position of the back and head, with knees stretched and heel on the floor (Male).
- 6. Students will demonstrate focus on partner during combinations while being cognizant of the facial expressions.
- 7. Students will demonstrate shoulder lift on one side (left or right) with appropriate expression and maintain position for 10 seconds.
- 8. Students will perform a double pirouette, en dehors and en dedans, when partnered at the waist at least 75% of the time.
- 9. Perform triple finger pirouettes, en dehors at least 75% of the time.
- 10. Perform technique and partnering skills correctly to avoid injury.
- 11. Students will achieve traditional manners of courtesy and noble dignity that should be present between the male and female dancers.
- 12. Students will achieve an appreciation for the partner's role in creating a union of movement.
- 13. Students will increase trust between the male and female partner.

11. Complete two hours from the following teaching methods courses:

DANCE 336 : Methods of Teaching Aerobic Dance. (2:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 342 & DANCE 343; or EXSC 362 & DANCE 343

RECOMMENDED: NDFS 100.

**Course Outcomes**

- 1. Students will identify scientific fitness principles regarding cardiovascular endurance, strength, flexibility and lean/fat body ratio.
- 2. Students will analyze important characteristics of teaching anatomically sound warm-up and cool down sessions and choreographing and teaching aerobic workouts based on sound physiological principles.
- 3. Students will evaluate and administrate physical fitness assessments.

DANCE 365 : Creative Dance for Elementary Education. (2:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: Dance 243R, 244R, or approved Kinnect membership.

DESCRIPTION: Theory and teaching experience in creative movement for preschool and elementary school children.

**Course Outcomes**

- 1. Articulate an understanding of creative dance education theory, content, and pedagogy that facilitates artistic development and process orientation.
- 2. Apply knowledge of developmentally appropriate dance learning activities for children pre-school through grade eight.
- 3. Demonstrate an understanding of dance, elements, concepts and vocabulary physically, verbally and in writing, and apply that knowledge to teaching dance in the elementary setting
- 4. Identify and use clear lesson content objectives drawn from national and state curriculum standards when planning lessons and teaching dance.
- 5. Understand and apply a variety of teaching strategies and management techniques necessary to effectively guide dance skill building, exploration, improvisation, and compositional experiences for young children.
- 6. Explore and identify various forms of dance assessment

DANCE 366 : Methods of Teaching Contemporary Dance. (2:2:2)

WHEN TAUGHT: Winter; Spring Odd Yrs.

PREREQUISITE: DANCE 243R & DANCE 261; Dance 244R or equivalent.

DESCRIPTION: Planning, teaching, and evaluating lessons.

**Course Outcomes**

- 1. develop, articulate and demonstrate a clear philosophy of teaching and learning as it relates to Contemporary Dance.
- 2. demonstrate a conceptual understanding of the content and processes needed to facilitate learning in the field of Contemporary Dance.

- 3. demonstrate teaching competency through experiences in planning, teaching and evaluating lessons.
- 4. demonstrate an ability to use a variety of teaching strategies to produce new knowledge and skills in others.
- 5. facilitate artistic development through process-oriented instruction.

DANCE 367 : Methods of Teaching Children's Creative Dance. (2:1:2)

WHEN TAUGHT: Fall; Spring Even Yrs.

PREREQUISITE: DANCE 243R & DANCE 244R

**Course Outcomes**

- Students will:1. Gain an increased understanding of the importance of Creative Dance for children.
- 2. Learn to teach developmentally appropriate technical dance skills to children.
- 3. Demonstrate an understanding of the methods of encouraging creative problem solving skills and the creative process.
- 4. Demonstrate knowledge, mastery and application of the elements of dance (time, space, and force) in relation to the teaching of children.
- 5. Gain practical experience through teaching children.

DANCE 376 : Methods of Teaching World Dance. (2:2:3)

WHEN TAUGHT: Fall

RECOMMENDED: Dance 170 or equivalent.

**Course Outcomes**

- 1. Students will study logical progressions in the breakdown of steps, formations and positions
- 2. Students will learn to communicate specific verbal cues in the delivery of content
- 3. Students will develop calling ahead techniques
- 4. Students will learn the mechanics of class structure and management
- 5. Students will demonstrate correct styling and technique
- 6. Students will learn how to read and understand world dance descriptions
- 7. Students will learn the skills in successfully teaching large groups in a recreational setting
- 8. Students will develop and actualize a clear philosophy of teaching and learning as it related to dance

DANCE 386 : Methods of Teaching Social Dance. (2:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 280

DESCRIPTION: Pedagogy training in social dance at the bronze and silver skill levels.

**Course Outcomes**

- 1. Students will analyze the most important characteristics of great teachers through discussion.
- 2. Students will demonstrate basic skills of ballroom dance by participation and practice including both the mans and ladies parts.
- 3. Students will demonstrate the basic skills of teaching dance to groups by developing lesson plans and through practical experience.

DANCE 396 : Methods of Teaching Ballet. (2:2:2)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Dance 390R or equivalent.

DESCRIPTION: Teaching classical ballet from preballet through advanced; includes analysis of Bournonville, Cecchetti, Vaganova, RAD, Kneeland, and SAB methods.

**Course Outcomes**

- 1. Students will demonstrate a knowledge of ballet class structure and progression between levels bywriting an 8-year ballet curriculum.
- 2. Students will experience practical observation of ballet classes/labs and analyze teachers at work.
- 3. Students will apply sound musical principles in practical teaching experiences.
- 4. Students will philosophically and historically analyze each of the major ballet methodologies: Cecchetti, Royal Academy of Dancing, Vaganova, etc.
- 5. Students will demonstrate a working knowledge (both written and verbal) of ballet French terminology for the technique appropriate for each level of ballet instruction.

DANCE 486 : Theory and Notation of Ballroom Dance, International. (2:0:4)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: DANCE 384R

DESCRIPTION: Preparation for professional teaching certification examinations.

**Course Outcomes**

- 1. Students will find coherence in technical codification of International Style Waltz, Tango Foxtrot, and Quickstep.
- 2. Students will be able to demonstrate with technical clarity the man and woman's part of Bronze and Silver level school figures of the Waltz, Tango Foxtrot, and Quickstep.
- 3. Students will be able to correctly articulate and deliver the technical information as required for a future professional examination the following categories: Feet Positions, Alignment, Amount of Turn, Rise & Fall, Footwork, C.B.M., and Sway
- 4.Students will be able to successfully amalgamate school figures into a cohesive routine.

DANCE 487 : Theory and Notation of Ballroom Dance, International Latin. (2:0:4)

WHEN Winter Odd Yrs.

TAUGHT:
PREREQUISITE: DANCE 385R
DESCRIPTION: Theory and notation of International Latin Dance and preparation for professional teaching certification examinations.

**Course Outcomes**

- 1. Students will find coherence in technical codification of International Style Cha-Cha, Samba Rumba Paso Doble, and Jive
- 2. Students will be able to demonstrate with technical clarity the man and woman's part of Bronze and Silver level school figures of the Cha-Cha, Samba, Rumba, Paso Doble, and Jive
- 3. Students will be able to correctly articulate and deliver the technical information as required for a future professional examination the following categories: Feet Positions, Alignment, Amount of Turn, Footwork
- 4. Students will be able to successfully amalgamate school figures into a cohesive routine.

12. Complete two semesters (2-4 hours) from the following performance company options:

DANCE 229R : Dance Performance 1. (.5-3:ARR:ARR)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Production director's consent.
DESCRIPTION: Participation as dancers in concert dance production.

**Course Outcomes**

- The learning outcomes of this course will be correlated somewhat with the learning outcomes of one of the regular dance performance groups. However, due to the individualized nature of this course, individual outcomes will be designed by the instructor based upon the needs and opportunities of the student.

DANCE 348R : Kinnect. (1-2:1:6)
WHEN TAUGHT: Winter; Spring
PREREQUISITE: Audition.
DESCRIPTION: Educational outreach dance company specifically focusing on developing teaching, creative, and performance skills.

**Course Outcomes**

- 1. Collaboratively choreograph theme based dances for an educational lecture performance
- 2. Demonstrate creative dance teaching skills with children in elementary schools
- 3. Demonstrate increased performance and improvisation skill in real world venues
- 4. Demonstrate leadership within the group by fulfilling specific roles and assignments related to the creation, production, presentation, and teaching tasks of the company
- 6. Evaluate, modify and adapt original presentations, lessons and dances in authentic dance experiences in schools, museums and/or conferences
- 7. Demonstrate dance education professionalism and advocacy

DANCE 368R : DancEnsemble - Contemporary Dance Performance and Choreography. (1-2:1:2)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.
DESCRIPTION: Experiences in contemporary dance choreography and performance.

**Course Outcomes**

- 1. Demonstrate increasing performance skill, including skills of concentration, discipline, focus and stage presence.
- 2. Demonstrate increasing technical skill, focusing specifically of the refinement of nuance, projection, dynamics and the ability to dance within the context of an ensemble.
- 3. Create and evaluate dances, giving increased attention to the ability to see and respond to the possibilities within any given choreographic situation.
- 4. Investigate and refine their own individual choreographic and performance voice.

DANCE 378R : Folk Dance Performance, Intermediate. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.
DESCRIPTION: Performance techniques and experience in folk dance.

**Course Outcomes**

- 1. Students will learn the traditional dance technique and stylization of selected countries or regions
- 2. Students will develop the performance skills of posture, presentation, and characterization
- 3.Students will explore both the recreational and staged forms of world dance
- 4. Students will demonstrate strong citizenship as a member of a performance team

DANCE 388R : Ballroom Dance Performance, Intermediate. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Audition.
DESCRIPTION: Performance techniques and experience in ballroom dance.

**Course Outcomes**

- 1. Students will demonstrate dance skills through technique, stylization, and choreography.
- 2. Students will find coherence if what it means to represent Brigham Young University and the Church

of Jesus Christ of Latter-day Saints in local areas.

DANCE 429R : Dance Performance 2. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Instructor's consent.

DESCRIPTION: Participation as dancers in concert dance production.

**Course Outcomes**

- The learning outcomes of this course will be correlated somewhat with the learning outcomes of one of the regular dance performance groups. However, due to the individualized nature of this course, individual outcomes will be designed by the instructor based upon the needs and opportunities of the student.

DANCE 468R : Contemporary Dance Theatre. (2:0:12)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Performing modern and contemporary dance repertory on and off campus.

**Course Outcomes**

- 2. Show increased technical ability.
- 1. Develop advanced performance skill and artistry.
- 3. Understand choreographic principles.
- 4. Contribute to the choreographic process.
- 5. Perform dances for audiences on campus, in schools, in professional venues, and at conferences.
- 6. Make visible attitudes of professional behavior.
- 7. Strengthen their testimony of the gospel and deepen their desire to share light and truth through the art form of dance.

DANCE 478R : Folk Dance Performance Company. (2:0:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Performance technique and experience with International Folk Dance Ensemble.

**Course Outcomes**

- 1. Students will embrace a philosophy of dance compatible with the mission of BYU that guides their personal choices in the professional or recreational worlds of dance.
- 2. Students will demonstrate artistry and advanced ability in dance performance.

DANCE 488R : Ballroom Dance Performance Company. (2:0:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Performance techniques and experience with BYU Ballroom Dance Company.

**Course Outcomes**

- 1. Students will demonstrate an increased ability to perform the art of Ballroom Dance through participation in choreographic repertoire .
- 2. Students will exemplify the standards of Brigham Young University and the Church of Jesus Christ of Latter-day Saints, and the United States as student ambassadors
- 3. Students will find coherence of dance as a cultural tradition, an art form, an uplifting form of entertainment, and a social/recreational activity.

DANCE 489R : Preparation for Ballroom Dance Competitions. (1:0:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Creation and presentation of ballroom competitive routines, emphasizing visual and musical aspects.

**Course Outcomes**

- 1. Students will find coherence in the rigor required for competitive dancing. practices for International Style Ballroom Dance.
- 2. Students will demonstrate a repertoire of competitive dances in the Ballroom or Latin style.

DANCE 498R : Ballet Performance Company. (2:0:10)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition and concurrent enrollment in Dance 391R or 490R; 494R or 495R.

DESCRIPTION: Performance technique and experience with BYU Theatre Ballet.

**Course Outcomes**

- Students will:1. Learn and master technically and stylistically several variations from various ballets, thereby expanding his/her ballet knowledge and repertoire. (Specific variations and ballets vary according to semester.)2. Learn the background, libretto, and style of the specific ballets through brief lectures.
- Students will:1. Acquire, through research, a working knowledge of several classical ballets and classical ballet variations2. Compile a notebook with the background, libretto, and details of each variation which will aid in the future instructing of these variations. The student will include specifics on choreographers, composers, and dancers where applicable; as well as all steps of each variation written in a clear, understandable form. This will be a valuable written source that will be a lasting tool for any

future teaching, dancing, or choreographing position.
- Students will:1. Learn the variations and strive to understand the differing technical and stylistic requirements of each. 2. Prepare the variations to perform and be graded on those technical and stylistic requirements.

13. Complete 6 hours from the following elective courses:
Courses in items 6, 7, 8, and 11 not already completed and

DANCE 332R : Cougarette Collegiate Performing Team. (2:0:14)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- 1. Students will represent Brigham Young University with honor and dignity.
- 2. Students will demonstrate advanced level technique.
- 3. Students will compete on a Nationals Level as determined each year.

DANCE 361 : Music Dance Theatre Choreographic Styles. (2:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: DANCE 231R & DANCE 244R & DANCE 291R; Dance 235, 243R, 229.

DESCRIPTION: Physical and conceptual aspects of dance styles as they relate to music dance theatre.

**Course Outcomes**

- Students will:1. Be able to reproduce specific Music Theatre dance styles with clarity. Sequences to be mastered will come from a variety of sources – instructor, guests, and fellow students.
- 2. Acquire knowledge on a specific historical or current Music Theatre choreographer or appropriate style that is pertinent in the field of Music Theatre.
- 3. Increase better understanding of techniques used for professional auditioning.
- 4. Gain specific skills to produce original choreography that can be used in Musical Theatre.
- 5. Develop more understanding of a relationship between religion and the role of Music Theatre in culture and society.

DANCE 363 : Dance Improvisation, Intermediate. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 244R

**Course Outcomes**

- Students will learn to Move! To Explore!
- Students will learn to break comfortable and limiting movement patterns, dancing in ways that you have not moved before.
- Students will learn to "call up spontaneity at will".
- Students will learn to develop improvisational skills of "muscle readiness".
- Students will learn to learn how to suspend judgment.
- Students will learn to evolve movement over an extended period of time without losing spontaneity.
- Students will learn to practice recalling movement.
- Students will learn to practice relating to other dancers in various improvisational structures.
- Students will learn to evolve movement "in the moment" with a sense of form and definition (beginning, middle, end) thus "finding the dance" in the instant of exploration and improvisation.

DANCE 399R : Academic Internship: Dance. (.5-4:0:50)

**Course Outcomes**

- 2. Demonstrate the propensity to interact with professionals in their field of study in a credible, responsible and articulate manner.
- 1. Develop contacts with professionals in their field of study with the intent of creating a network that will be beneficial to future career choices.
- 3. Demonstrate improvement in the assigned responsibilities throughout the course of the internship as evaluated by the mentor teacher/intern supervisor in three periods, early, middle, and end of the internship.

DANCE 462 : Contemporary Choreography, Advanced. (2:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 362

DESCRIPTION: Creation and presentation of complete choreographic works.

**Course Outcomes**

There are no course outcomes available

DANCE 464 : Dance Accompaniment. (1:1:1)

WHEN TAUGHT: Fall; Summer Odd Yrs.

PREREQUISITE: DANCE 264

**Course Outcomes**

- Students will demonstrate leadership skills by teaching and accompanying short dance sequences.
- Students will understand the importance of dynamics, articulation and rhythm in dance.
- Students will understand how to improvise rhythms by practicing and demonstrating rhythms on a djembe drum.
- Students will demonstrate musical proficiency by accompanying dancers movement exercises.

- Students will use technology to edit and enhance audio files used for movement studies.

DANCE 500R : Studies in Dance. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Experience in dance. Possibilities include but are not limited to study abroad, workshops, or pilot dance courses.

**Course Outcomes**

- 2. Students will demonstrate content specific dance skill.
- 1. Students will demonstrate a commitment to BYU and Dance Department standards in dress and behavior.
- 3. Students will demonstrate content specific proficiency through research, presentations, and creative works.

: Workshop in Ballet.

**Course Outcomes**

: Workshop in Ballroom.

**Course Outcomes**

**Note:** R courses may count only once to complete this requirement, with the exception of Dance 359R, 399R, and 500R.

*Hours include courses that may fulfill university core requirements.

## Show all Dance Courses

College of Fine Arts and Communications Home

Dance Department Home

Majors

- BA in Dance
- BA in Dance Education K-12

Minors

- Ballroom Dance
- Contemporary Dance
- World Dance

Course Information

- Dance Courses

Faculty

# BA in Dance Education K-12 (80 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see item 1 below for information regarding requirements for admission to this major.*

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

## Program Acceptance Requirements

Acceptance into the dance education major is a two-step process. To be accepted as a dance education major, students must:

1. Complete an audition at the annual fall dance major auditions and designate dance education as their desired track. Those accepted will receive dance major status and may register for courses in the dance major core. These students will be designated in department records as pre-dance education track and will receive advisement from the dance education faculty.

2. Complete Dance 276R with an appropriate high rating by the teacher *and* receive recommendation by the Dance Education Committee to be advanced to dance education major status. The Dance 276R course is a gateway course at the end of which qualifying students will be officially switched from the general dance major to the dance education major. (Students who are not accepted into the dance education major have the option to continue as a general dance major or retake Dance 276R the following year.)
   **Please note:** Students must have completed the FBI fingerprint and background clearance **before** enrolling in Dance 276R.

Once accepted into the dance education major, continuing dance education major status is contingent upon satisfactory student performance in all major course work. This includes, but is not limited to, skill development in teaching and technique courses. Students who fail to meet required standards for these courses (particularly Dance 365 and 366) may be counseled to consider continuing as a general dance major.

## Program Requirements | View MAP | View Program Outcomes

1. The Dance Department requires at least 21 hours from major courses to be completed in residency at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.

2. Students must complete an annual mandatory advisement.

3. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

4. A teaching minor is recommended.

5. Complete the following prerequisite course:
   PDBIO 220 : Human Anatomy (with lab). (3:2:2)
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: Structure and function of the human body. Lab included.

   **Course Outcomes**
   - Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
   - Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
   - Students will be able to list the name, location, and function of each of the body's organs and organ systems.

6. Complete the following:
   DANCE 230 : Conditioning and Injury Prevention for Dance. (2:3:3)
   WHEN TAUGHT: Fall; Winter
   PREREQUISITE: PDBIO 220
   DESCRIPTION: Developing conditioning programs specific to dance. Recognizing and resolving dance injuries. Practical application.

   **Course Outcomes**

- 1. Students will learn how to develop a well rounded conditioning program.
- 2. Students will gain knowledge of training and conditioning principles that will help them prevent injury.
- 3. Students will create and participate in an actual conditioning program based on principles learned in the class.
- 4. Students will be in better physical condition and have a working knowledge of all aspects of conditioning and injury prevention.

DANCE 241R : Contemporary Dance, Technique and Theory 2. (2:0:6)

WHEN TAUGHT: Fall; Winter; Summer

**Course Outcomes**

- 1. articulate a knowledge and appreciation of the human body regarding physical function, spirituality, and as a tool of expressivity.
- 2. demonstrate increased technical ability in the areas of:flexibilitystrengthendurancebalancecoordinationphrasingdance performance skillsapplying the Patterns of Total Body Connectivitykinesthetic awareness of body alignment
- 3. demonstrate knowledge, fundamental control, and application of the elements of dance (as defined by the BEST and BESS vocabularies);
- 4. articulate an appreciation for dance as an art form.

DANCE 243R : Studio Workshop in Contemporary Dance Technique and Theory. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 241R or equivalent; instructor's consent; concurrent enrollment in Dance 244R the first time taken.

DESCRIPTION: Technique and theory in a workshop setting.

**Course Outcomes**

- 1. Students will demonstrate increased body connectivity and kinesthetic awareness, including:BreathCore-distalHead-tailUpper-lowerBody-halfCross-lateral connections
- 2. demonstrate performance skills including intent, nuance, dynamics, and sense of ensemble.
- 3. articulate and analyze the above principles of technique using accurate anatomical and dance elements language.

DANCE 261 : Orientation to Dance. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to dance as a discipline and at Brigham Young University.

**Course Outcomes**

- 1. Students will be able to hone in on important information while also providing their own thoughtful reactions to what they have read.
- 2. Students will understand principles, terminology, and execution of Laban Movement Analysis.
- 3. Students will develop critical analysis skills.
- 4. Students will delve into a dance related topic of interest to them and develop group collaboration and presentation skills.
- 5. Students will understand the common aspects of several forms of dance through analysis of how aesthetic principles and varied movement techniques are applied and emphasized within various dance genres.

DANCE 264 : Music for Dancers. (2:1:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Basic music notation, simple and complex rhythmic patterns, and polyrhythms; analysis of selected international music styles; brief historical survey.

**Course Outcomes**

- Demonstrate an understanding of basic musical concepts through physical movement.
- Acquire improved awareness of his/her physical responses to music.
- Demonstrate the ability to utilize music appropriately in the technique class and collaborate with musicians.
- Demonstrate musical awareness by creating appropriate movement to odd meter music and binary/ternary rhythms.
- Acquire improved listening skills to use music to stage or create choreography

DANCE 290 : Ballet Accelerated Technique 1. (1.5:0:4.5)

WHEN TAUGHT: Fall; Winter; Spring

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in accelerated beginning ballet technique. These basic skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the Ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at a beginning level standard.
- Each student will:1. Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary

detailed in the appendix.

DANCE 342 : Kinesiology for Dancers. (4:4:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: PDBIO 220 & DANCE 230

DESCRIPTION: Study and analysis of the neuromusculoskeletal system in practical application to dance for more efficient use of the body and reduction of injuries.

**Course Outcomes**

There are no course outcomes available

DANCE 343 : Principles of Somatics. (2:2:1)

WHEN TAUGHT: Fall; Spring Even Yrs.

PREREQUISITE: DANCE 243R & DANCE 244R; or DANCE 291R; Dance 342.

DESCRIPTION: Experiential approach to movement training including body patterning. Integration and personal expression of body and movement choices.

**Course Outcomes**

- Students will be able to:1. identify and demonstrate a basic theoretical and practical understanding of selected Somatic principles and practices.
- 2. demonstrate an awareness and understanding of movement from a place of inward knowing.
- 3. physically embody connectivity
- 4. understand the joys and consequences of their own personal movement choices
- 5. integrate the concepts of the class into the practical applications of teaching, coaching and re-patterning for self or other.

DANCE 355 : Dance Production, Introduction. (2:2:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Principles and practices of technical aspects of dance production.

**Course Outcomes**

- 1. Students will identify and articulate a knowledge of equipment, techniques, and procedures in technical theatre.
- 2. Students will demonstrate basic competency (in theory and practice) of theatrical production principles, including lighting, costuming, and technologies for dance performances
- Students will demonstrate an understanding of the relationship of light, color, fabric, and technology; and how to use that knowledge to accomplish an artistic vision.

DANCE 460 : Dance History to 1850. (2:2:0)

WHEN TAUGHT: Fall; Summer Odd Yrs.

DESCRIPTION: Survey of dance in tribal cultures and ancient through Romantic historical periods, emphasizing dance of Western civilization.

**Course Outcomes**

- 1. Students will critically analyze, synthesize, internalize, and apply to present day dance prevalent in Western civilization, dance information gleaned through the study of dance within tribal cultures and ancient through romantic historical periods. (To be evaluated via midterm and final written examinations)
- 2. Students will analyze current dance and culturally related issues in contemporary society and articulate them verbally and in written form through class discussion and completion of course assignments. (To be evaluated via written response questions)
- 3. Students will apply basic historical research concepts and methodology in personal research processes and products. (To be evaluated via unit assignments.)
- 4. Students will become proficient in the use of MLA documentation style and format through application in unit assignments. (To be evaluated via formal documentation associated with unit assignments.)

DANCE 461 : Dance History from 1850. (2:2:0)

WHEN TAUGHT: Winter; Summer Even Yrs.

DESCRIPTION: Survey of dance in modern and postmodern historical periods, emphasizing dance of Western civilization.

**Course Outcomes**

- 1. Students will critically analyze, synthesize, and internalize key Western dance history information focusing on 1850 to the present. (To be evaluated via midterm and final written examinations)
- 2. Students will analyze current dance and culturally related issues in contemporary society; and articulate them verbally and in written form through class discussion and completion of course assignments. (To be evaluated via written response questions)
- 3. Students will apply basic historical research concepts and methodology to strengthen personal research processes and products. (To be evaluated via unit assignments)
- 4. Students will become competent in the use of MLA documentation style and format through application in relevant course assignments. (To be evaluated via formal documentation associated with unit assignments)

DANCE 464 : Dance Accompaniment. (1:1:1)

WHEN TAUGHT: Fall; Summer Odd Yrs.
PREREQUISITE: DANCE 264

**Course Outcomes**

- Students will demonstrate leadership skills by teaching and accompanying short dance sequences.
- Students will understand the importance of dynamics, articulation and rhythm in dance.
- Students will understand how to improvise rhythms by practicing and demonstrating rhythms on a djembe drum.
- Students will demonstrate musical proficiency by accompanying dancers movement exercises.
- Students will use technology to edit and enhance audio files used for movement studies.

7. Complete two enrollments of the following:

DANCE 340R : Contemporary Dance, Technique and Theory 3. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Dance 243R or equivalent; by audition.

**Course Outcomes**

- Demonstrate intermediate/advanced Contemporary dance technical proficiency in whole body connectivitystrength & flexibilitybreath initiation and supportconsistent core support functional alignmentbalance & coordination groundedness and weight sensingshape clarity, spatial accuracy and rangefocusrhythmic accuracyarticulationdynamic contrastcomplex movement skills
- Demonstrate increased dance performance artistry in:sequence masterymusicalityexpressivitypersonal interpretationnuanceensemble
- Describe, assess and write about demonstrated achievement of technical and performance skill
- Show sustained application of feedback from assessments
- Articulate understanding of Contemporary/Modern dance as an art form
- Articulate dance connections to gospel principles mind, body and spirit

DANCE 341R : Contemporary Dance Technique Forms. (2.5:0:7.5)

WHEN TAUGHT: Winter
PREREQUISITE: Dance 340 or equivalent; by audition.
DESCRIPTION: Contemporary dance forms and techniques, including Chinese contemporary dance, contact improvisation, and other new and hybrid dance forms useful in contemporary dance training. Offerings subject to teacher expertise.

**Course Outcomes**

- 1. Demonstrate intermediate/advanced technical proficiency in both ballet and contemporary dance technique. Areas requiring proficiency include:whole body connectivitystrength & flexibilitybreath initiation and supportconsistent core supportfunctional alignmentbalance & coordinationgroundedness and weight sensingshape clarity, spatial accuracy and rangefocusrhythmic accuracyarticulationdynamic contrastcomplex movement skills
- 2. Demonstrate increased dance performance artistry in:sequence masterymusicalityexpressivitypersonal interpretationnuanceensemble
- 3. Describe, assess, and write about:demonstrated achievement of technical and performance skill.the essential and developing relationship that exists between ballet and contemporary dance movement.
- 4. Show consistent and sustained application of feedback from daily class and assessments.
- 5. Demonstrate intermediate/advanced knowledge of ballet and contemporary vocabulary through participation, observation, discussion, and writing.
- 6. Articulate dance connections of gospel principles in mind, body and spirit

DANCE 440R : Contemporary Dance, Technique and Theory 4. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 340R or equivalent; by audition.

**Course Outcomes**

- 1. Students will demonstrate advanced technique proficiency instrength flexibilityconnectivitycomplex sequence mastery movement problems
- 2. Students will demonstrate performance awareness and control over movement innuancedynamicmusicalityfreedom from tensionshapinginitiationbreath qualityphrasing and composition
- 3. Students will describe, assess and write about achievement of technical skills and performing skills
- 4. Students will articulate appreciation for the divine nature of the human body as it relates to gospel principles as well as the relationship between mind/body/spirit.
- 5. Students will articulate appreciation for dance as an art form

8. Complete 2.5 hours from the following:

DANCE 192 : Character Dance. (.5:0:2)

WHEN TAUGHT: Winter
DESCRIPTION: Male and female techniques of traditional Hungarian, Polish, and Ukrainian folk forms stylized with classical ballet discipline.

**Course Outcomes**

There are no course outcomes available

DANCE 231R : Jazz Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 240R or Dance 290 or equivalent; Dance 131 or equivalent.

**Course Outcomes**

- Students will gain knowledge of styles within the jazz genre.
- Students will acquire a degree of mastery in jazz dance technique at a intermediate level as their foundation.
- Students will experience the joy of jazz rhythms and motion.
- Students will increase awareness in their physical health and well-being through activity and correct principles of training.
- Students will increase awareness to their overall self-image, emphasizing; discipline, coordination, strength, flexibility and endurance.
- Students will develop more understanding of a relationship between religion and the fine arts.
- Students will acquire the desire to patronize the art to some degree in the future.
- Students will develop an evaluation standard to aid in selecting future quality jazz dance training for self and/or for family.

DANCE 235 : Tap Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 135 or equivalent.

**Course Outcomes**

- 1. Students will embrace a philosophy of dance compatible with the mission of BYU that guides their personal choices in the professional or recreational worlds of dance.
- 2. Students will demonstrate advanced technical and artistic skill in one dance genre and at least beginning to intermediate skill in another.

DANCE 270 : World Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Dance 170 or equivalent.

DESCRIPTION: Techniques of selected traditional, folk, and national dance styles.

**Course Outcomes**

- 1. Each student will demonstrate footwork and various rhythmic structures from selected cultures
- 2. Each student will develop proper technique of posture, gesture and free movement
- 3. Each student will interpret proper body alignment and technical execution of movement styles and phrases
- 4. Each student will enhance the ability to recognize and understand world dance vocabulary, significance and context within selected cultures
- 5. Each student will understand the distinction of various patterns concerning tradition and innovation
- 6. Each student will increase awareness and appreciation of world dance and how it relates to other dance forms and styles

DANCE 271 : Clog Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 171 or equivalent.

DESCRIPTION: Intermediate steps and technique; buck styling; introduction to choreography.

**Course Outcomes**

- Students will learn additional presentation skills in clog dance movement patterns, combinations, and skills.
- Students will learn a movement vocabulary using correct clog dance terminology.
- Students will learn a knowledge of the history and progressions of clog dance.
- Students will learn traditional and contemporary intermediate clogging techniques including arm movements, footwork, correct alignment, placement and weight shifts.

DANCE 272 : Chinese Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Dance 173R or previous dance experience.

DESCRIPTION: Accelerated ethnic dance technique from the Chinese culture.

**Course Outcomes**

There are no course outcomes available

DANCE 273 : Hungarian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Dance 173R or previous dance experience.

DESCRIPTION: Accelerated ethnic dance techniques from the Hungarian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 274R : Irish Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 174 (Ethnic Dance Irish) or equivalent.

DESCRIPTION: Accelerated ethnic dance technique from the Irish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 275 : Polynesian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 173R or previous experience.
DESCRIPTION: Accelerated ethnic dance technique from the Polynesian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 277 : Spanish Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall Even Yrs.
PREREQUISITE: Dance 173R or previous dance experience.
DESCRIPTION: Accelerated ethnic dance technique from the Spanish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 278 : Ukrainian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: Dance 173R or previous dance experience.
DESCRIPTION: Accelerated ethnic dance technique from the Ukrainian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 279 : Indian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Winter; Spring
DESCRIPTION: Classical India dance technique, primarily in religious-based styles and motifs of Bharatha Natyam, Ganapathi, Allaripu, and Bollywood.

**Course Outcomes**

There are no course outcomes available

DANCE 280 : Social Dance, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 180 or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the school figures associated with each dance by practice and application.
- 2. Students will demonstrate the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to lead and follow through their participation at labs and through exams.

DANCE 281 : Country Western Social Dance, Intermediate. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 181 or equivalent.
DESCRIPTION: Intermediate-level instruction in popular country western dances.

**Course Outcomes**

- 1. Students will embrace a philosophy of dance compatible with the mission of BYU that guides their personal choices in the professional or recreational worlds of dance.
- 2. Students will demonstrate advanced technical skill and artistic skill in one dance genre and at least beginning to intermediate skill in another.

DANCE 284 : Ballroom, International Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 184 or equivalent.
DESCRIPTION: Silver level. Waltz, fox-trot, tango, quickstep.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate silver level school figures of International Style Waltz, Tango and Foxtrot.
- 2. Students will be able to effectively demonstrate intermediate level technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 285 : Ballroom Dance, International Latin, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 185 or equivalent.
DESCRIPTION: Silver level. Cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate silver level school figures of International Style Samba, Rumba and Paso Doble.
- 2. Students will be able to effectively demonstrate intermediate level technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 291R : Ballet Technique 2. (2.5:0:7.5)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 290 or equivalent.

**Course Outcomes**

- TECHNIQUE OBJECTIVE 1. Acquire a degree of mastery in intermediate beginning ballet technique. These basic skills will be accomplished through active class participation and the practice of the movement vocabulary listed in the appendix. Please consult the appendix for the specific criteria and standards.
- TECHNIQUE OBJECTIVE 2. Increase postural awareness; begin to correct imperfections; add physical strength, endurance, flexibility, extension, coordination, grace, precision and elevation; and improve the health and appearance of the physical body.
- WRITING OBJECTIVE 1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level, then pass an objective written exam prepared by the Ballet Division.
- Each student will: Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 294R : Ballet Technique, Men. (1:0:3)
WHEN TAUGHT: Winter
PREREQUISITE: DANCE 290
DESCRIPTION: Intermediate classical ballet technique for men.

**Course Outcomes**

- 1. Students will acquire a degree of mastery in men's intermediate ballet technique.
- 2. Students will Increase postural awareness; begin to correct imperfections; add physical strength, endurance, flexibility, extension, coordination, grace, precision and elevation; and improve the health and appearance of the physical body.
- 3. Students will Increase their awareness and appreciation for ballet, its aesthetic beauty, demanding discipline, and lifelong benefit of enhancing and integrating the physical, spiritual, intellectual, and emotional aspects.
- 4. Students will acquire improved awareness of the physical body and its capacity to move.
- 5. Students will gain a sense of personal accomplishment and worth.
- 6. Enlarge one's understanding of the relationship between religion and the fine arts.
- 7. Students will increase in desire to patronize the art to some degree in the future.
- 8. Students will develop an evaluation standard to aid in selecting future quality ballet training for self and/or for family.

DANCE 331R : Jazz Dance Technique 2. (1.5:0:4.5)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 231 or equivalent. Dance 241R and Dance 243; or Dance 291R.

**Course Outcomes**

- Students will gain a greater knowledge jazz dance styles through various advance movement combinations.
- Students will acquire a degree of mastery in jazz dance technique at an advance level as their foundation.
- Students will increase their intellectual ability to retain complex and substantial length of movement sequences given in a short amount of time.
- Students will explore the psychology of performance and auditioning.
- Students will experience the joy of jazz rhythms and motion.
- Students will increase awareness in their physical health and well-being through activity and correct principles of training.
- Students will increase awareness to their overall self-image, emphasizing; discipline, coordination, strength, flexibility and endurance.
- Students will gain understanding of the gospel of Jesus Christ as an artist in the world.
- Students will acquire the desire to patronize the art to some degree in the future.
- Students will develop an evaluation standard to aid in selecting future quality jazz dance training for self and/or for family.

DANCE 335R : Tap Dance Technique 2. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 235 or equivalent.

**Course Outcomes**

- Students will explore the intricacies of complex rhythms
- Students will focus on dynamics, accents, and shading, etc.
- Students will continue to work on speed, clarity, and exactness in tap technique
- Students will explore the use of counterpoint, stop time, phrasing, and different time signatures.
- Students will enhance improvisational skills, creative thinking and risk-taking.

Students will learn the theory and process of composition.
- Students will work on their performance skills and personal style.
- Students will learn the skills of tap notation.
- Students will develop a sense of aesthetic perception to self evaluate and self correct.

DANCE 370 : World Dance Technique 2. (1:0:3)

WHEN TAUGHT: Winter
PREREQUISITE: DANCE 270
DESCRIPTION: In-depth dance technique of selected traditional, folk, and national dance styles.

**Course Outcomes**

- 1. Demonstrate complex movement patterns from selected cultures
- 2. Develop proper technique of posture and gesture
- 3. Interpret proper body alignment and technical execution of movement styles and phrases
- 4. Enhance the ability to recognize and understand world dance vocabulary, significance andcontext within selected cultures

DANCE 371R : Clog Dance Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 271 or equivalent.
DESCRIPTION: Fundamentals of clog technique at the advanced level.

**Course Outcomes**

- Students will learn traditional and contemporary advanced clogging techniques including arm movements, footwork, correcrt alignment, placement, and weight shifts
- Students will learn a movement vocabulary using correct clog dance terminology.
- Students will learn, dance and test intermediate sequences and patterns of movement.
- Students will learn additional presentation skills in clog dance movement patterns, combinations, and skills.
- Students will learn a knowledge of the history and progression of clog dance.

DANCE 373 : Hungarian Dance: Practice and Theory, Technique 2. (1:0:3)

WHEN TAUGHT: Fall
PREREQUISITE: Dance 273 or equivalent.
DESCRIPTION: Advanced ethnic dance techniques from the Hungarian culture.

**Course Outcomes**

No outcomes are available at this time.

DANCE 374R : Irish Dance: Practice and Theory, Technique 2. (1:0:3)

WHEN TAUGHT: Winter
PREREQUISITE: Dance 274R or equivalent.
DESCRIPTION: Advanced ethnic dance techniques from the Irish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 377 : World Dance Choreography. (2:0:4)

WHEN TAUGHT: Fall Even Yrs.
DESCRIPTION: Fundamental choreographic structure emphasizing visual, kinesthetic, and musical aspects in World Dance.

**Course Outcomes**

- 1. Students will learn technical elements, process and crafting principles of composition, such as: transitions, traditional formations, dynamic structure, stylistic coherence, form, musical dynamics and phrasing.
- 2. Students will develop a critical eye in analyzing and forming own aesthetic criteria.
- 3. Students will discover ethno-choreographic elements of a particular style or cultural group.
- 4. Students will address issues of authenticity versus creativity, traditional versus contemporary.
- 5. Students will learn to document choreography.

DANCE 380R : Social Dance, Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 280 or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the school figures associated with each dance by practice and application.
- 2. Students will demonstrate the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to lead and follow through their participation at labs and through exams.

DANCE 382R : Ballroom, International Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Dance 284 or equivalent; instructor's consent.
DESCRIPTION: Gold 1 level. Waltz, tango, fox-trot, quickstep.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate gold level school figures of International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to effectively demonstrate advanced level ballroom technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 383R : Ballroom Dance, International Latin, Technique 2. (1:0:3)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Dance 285 or equivalent; instructor's consent.
DESCRIPTION: Gold 1 level. Cha-cha, samba, rumba, paso doble.

**Course Outcomes**

- Students will be able to effectively demonstrate gold level school figures of International Style Cha-Cha, Samba, Rumba, Paso Doble
- Students will be able to effectively demonstrate advanced level latin technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 384R : Ballroom, International Technique 3. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 382R or equivalent; instructor's consent.
DESCRIPTION: Gold 2 level. Waltz, fox-trot, tango, quickstep.

**Course Outcomes**

- 1. Students will be able to demonstrate, competitive figures at a pre-championship level in the International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to demonstrate pre-championship level ballroom technique in the following areas: 1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 385R : Ballroom Dance, International Latin, Technique 3. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 383R or equivalent ; instructor's consent.
DESCRIPTION: Gold 2 level. Cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to demonstrate, competitive figures at a pre-championship level in International Style Cha-Cha, Samba, Rumba, Paso Doble
- 2. Students will be able to demonstrate pre-championship level latin technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 387 : Ballroom Dance Choreography. (2:0:4)
WHEN TAUGHT: Fall Even Yrs.
DESCRIPTION: Choreography in Ballroom Dance emphasizing formation dancing.

**Course Outcomes**

- 1. Students will find coherence in foundational elements of formation choreography.
- 2. Students will demonstrate basic skills of composing ballroom formation choreography.

DANCE 390R : Ballet Technique 3. (2.5:0:7.5)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Audition.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advanced/intermediate ballet technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at an advanced/intermediate level standard.
- Each student will:Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 391R : Ballet Technique 4. (2.5:0:7.5)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advanced levelballet technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at an advanced level standard.
- Each student will:Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 392R : Ballet Pointe 1. (.5:0:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: A minimum of two years of previous pointe technique and concurrent enrollment in Dance 390R.

DESCRIPTION: Intermediate level pointe. Satisfies BA requirements in Dance.

NOTE: Although this is an open enrollment course, all students must receive teacher approval or level placement audition before registering.

**Course Outcomes**

There are no course outcomes available

DANCE 393R : Ballet Pointe 2. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition required; concurrent enrollment in Dance 390R or 391R.

DESCRIPTION: Advanced level pointe. Satisfies BA requirements in Dance.

NOTE: Although this is an open enrollment course, all students must receive teacher approval or level placement audition before registering.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advanced/intermediateballet pointe technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Apply a working knowledge of French ballet terminology, analytical skills, and sound writing skills by submitting a weekly journal entry or written self-evaluation, and a written critique of a live performance.
- Each student will:Participate fully in the pointe technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 397 : Ballet Choreography. (2:0:4)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Fundamental choreographic structure emphasizing visual, kinesthetic, and musical aspects in ballet. Exploration of hte choreographic process through theoretical study and analysis as well as practical application in the presentation of choreographic work. Concepts include clarity, creativity, transition, musical accent and phrasing, dynamic structure, form, stylistic coherence, artistic merit.

**Course Outcomes**

- Each student will creatively experiment with and arrange movement with regard to clarity, transition, musical accent and phrasing, dynamic structure, form and stylistic coherence.
- Each student will begin to formulate his/her own aesthetic criteria through the process of watching dance concerts and writing concise and thoughtful critiques.
- Each student will enhance his/her understanding of choreography through reading, observation, discussion, and active participation.
- Each student will demonstrate knowledge acquired through completion of creative, choreographic project and written examination.

DANCE 440R : Contemporary Dance, Technique and Theory 4. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 340R or equivalent; by audition.

**Course Outcomes**

- 1. Students will demonstrate advanced technique proficiency instrength flexibilityconnectivitycomplex sequence mastery movement problems
- 2. Students will demonstrate performance awareness and control over movement innuancedynamicmusicalityfreedom from tensionshapinginitiationbreath qualityphrasing and composition
- 3. Students will describe, assess and write about achievement of technical skills and performing skills
- 4. Students will articulate appreciation for the divine nature of the human body as it relates to gospel principles as well as the relationship between mind/body/spirit.
- 5. Students will articulate appreciation for dance as an art form

DANCE 474R : Percussive Step Styles. (1:0:3)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Two of three possible courses: Dance 371 or 335 or 374R.

DESCRIPTION: Technique and theory, fusing a diversity of percussive dance styles including, but not limited to, French Canadian Gigue, Cape Breton Step, Power Tap, traditional and contemporary Clog Dance. Composition and improvisation included.

**Course Outcomes**

- 1. Students will gain speed, clarity and precise technique in various styles of percussive footwork.
- 2. Students will improve coordination, motor memory, fine and gross motor skills.
- 3. Students will demonstrate correct alignment, placement and weight shifts.
- 4. Students will learn sequences and patterns of movement.
- 5. Students will apply the theory and process of improvisation and composition.
- 6. Students will learn the current movement vocabulary and or terminology.
- 7. Students will gain a kinesthetic perception and concentration in order to self-evaluate and self correct.

DANCE 480R : Social Dance, Technique 3. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 380R or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the class routines associated with each dance by practice and application
- 2. Students will demonstrate advanced level the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to compete in an open event by participation in the BYU Dancesport competition.

DANCE 484R : Ballroom, International Technique 4. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 384R or equivalent; instructor's consent.

DESCRIPTION: Gold bar level: waltz, tango, fox-trot, quickstep, Viennese waltz.

**Course Outcomes**

- 1. Students will be able to demonstrate competitive figures at a championship level in International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to demonstrate "championship" level ballroom technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 485R : Ballroom Dance, International Latin, Technique 4. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 385R or equivalent; instructor's consent.

DESCRIPTION: Gold bar level: cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to demonstrate competitive figures at a championship level in the International Style Cha-Cha, Samba, Rumba, Paso Doble
- 2. Students will be able to demonstrate "championship" level latin technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 490R : Ballet Technique 5. (3:0:9.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Advanced ballet technique, including advanced pointe work for women and advanced technique for men.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advancedballet technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at an advanced level standard.
- Each student will:Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 494R : Ballet Variations. (1:0:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Dance 391R and 393R or equivalents.

**Course Outcomes**

Students will learn and achieve technical and stylistic mastery of several variations from classical ballets.
- Students will learn and record the background, libretto, and style of the specific ballets through brief lectures.
- Students will compile a notebook with the background, libretto, and details of each variation which will aid in the future instructing of these variations. The student will include specifics on choreographers, composers, and dancers where applicable; as well as all steps of each variation written in a clear, understandable form.
- Students will learn each variation and be required to perform throughout the semester.
- Students will prepare variations to perform and be graded on those technical and stylistic requirements.

DANCE 495R : Pas de Deux. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: Audition.

DESCRIPTION: Ballet partnering techniques.

**Course Outcomes**

- 1. Students will find the point of balance for incomplete and complete turns.
- 2. Students will learn to perform falling poses and promenades.
- 3. Students will demonstrate knowledge of three basic turns: finger pirouette, pirouette partnered at the waist, and pirouette partnered at the hand(s) / wrist(s).
- 4. Students will maintain placement and strength during lifts (Female).
- 5. Students will lift partner above the head with stretched elbows and correct position of the back and head, with knees stretched and heel on the floor (Male).
- 6. Students will demonstrate focus on partner during combinations while being cognizant of the facial expressions.
- 7. Students will demonstrate shoulder lift on one side (left or right) with appropriate expression and maintain position for 10 seconds.
- 8. Students will perform a double pirouette, en dehors and en dedans, when partnered at the waist at least 75% of the time.
- 9. Perform triple finger pirouettes, en dehors at least 75% of the time.
- 10. Perform technique and partnering skills correctly to avoid injury.
- 11. Students will achieve traditional manners of courtesy and noble dignity that should be present between the male and female dancers.
- 12. Students will achieve an appreciation for the partner's role in creating a union of movement.
- 13. Students will increase trust between the male and female partner.

9. Complete the following composition and improvisation courses in the order listed:

DANCE 244R : Studio Workshop in Contemporary Dance Improvisation and Choreography. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 241R or equivalent; instructor's consent; concurrent enrollment in Dance 243R the first time taken.

DESCRIPTION: Beginning improvisation and choreography in a workshop setting.

**Course Outcomes**

- 1. Students will demonstrate, apply, and articulate a fundamental understanding of the elements of dance in improvisation and choreography.
- 2. Students will demonstrate problem solving skills in collaborative group and solo improvisation and choreography.
- 3. Students will demonstrate the ability to create original and personally meaningful movement - avoiding habit or cliche.
- 4. Students will articulate a knowledge of, and critically analyze, the creative process and movement intention in improvisation and choreography.
- 5. Students will articulate aesthetic and expressive values in dance and other arts.

DANCE 362 : Contemporary Choreography Intermediate. (2:0:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 244R

DESCRIPTION: Fundamental choreographic structure emphasizing visual, kinesthetic, and musical aspects in contemporary dance.

**Course Outcomes**

There are no course outcomes available

DANCE 363 : Dance Improvisation, Intermediate. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 244R

**Course Outcomes**

- Students will learn to Move! To Explore!
- Students will learn to break comfortable and limiting movement patterns, dancing in ways that you have not moved before.
- Students will learn to "call up spontaneity at will".
- Students will learn to develop improvisational skills of "muscle readiness".
- Students will learn to learn how to suspend judgment.
- Students will learn to evolve movement over an extended period of time without losing spontaneity.
- Students will learn to practice recalling movement.
- Students will learn to practice relating to other dancers in various improvisational structures.
- Students will learn to evolve movement "in the moment" with a sense of form and definition (beginning, middle, end) thus "finding the dance" in the instant of exploration and improvisation.

DANCE 462 : Contemporary Choreography, Advanced. (2:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 362

DESCRIPTION: Creation and presentation of complete choreographic works.

**Course Outcomes**

There are no course outcomes available

DANCE 469 : Capstone in Dance. (2:0:ARR)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: BA in Dance: Dance 362 if a choreographic project. Dance Education: Dance 362; 361 or 462.

**Course Outcomes**

- Students will reflect in their capstone project a philosophy compatible with the mission of BYU
- Students will complete a capstone project, whether it be choreographic, research, or performance that represents a significant and comprehensive synthesis of the learning they have experienced during their years in the program

10. Complete two credit hours from the following performance courses:

DANCE 348R : Kinnect. (1-2:1:6)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: Audition.

DESCRIPTION: Educational outreach dance company specifically focusing on developing teaching, creative, and performance skills.

**Course Outcomes**

- 1. Collaboratively choreograph theme based dances for an educational lecture performance
- 2. Demonstrate creative dance teaching skills with children in elementary schools
- 3. Demonstrate increased performance and improvisation skill in real world venues
- 4. Demonstrate leadership within the group by fulfilling specific roles and assignments related to the creation, production, presentation, and teaching tasks of the company
- 6. Evaluate, modify and adapt original presentations, lessons and dances in authentic dance experiences in schools, museums and/or conferences
- 7. Demonstrate dance education professionalism and advocacy

DANCE 368R : DancEnsemble - Contemporary Dance Performance and Choreography. (1-2:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Experiences in contemporary dance choreography and performance.

**Course Outcomes**

- 1. Demonstrate increasing performance skill, including skills of concentration, discipline, focus and stage presence.
- 2. Demonstrate increasing technical skill, focusing specifically of the refinement of nuance, projection, dynamics and the ability to dance within the context of an ensemble.
- 3. Create and evaluate dances, giving increased attention to the ability to see and respond to the possibilities within any given choreographic situation.
- 4. Investigate and refine their own individual choreographic and performance voice.

DANCE 468R : Contemporary Dance Theatre. (2:0:12)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Performing modern and contemporary dance repertory on and off campus.

**Course Outcomes**

- 2. Show increased technical ability.
- 1. Develop advanced performance skill and artistry.
- 3. Understand choreographic principles.
- 4. Contribute to the choreographic process.
- 5. Perform dances for audiences on campus, in schools, in professional venues, and at conferences.
- 6. Make visible attitudes of professional behavior.
- 7. Strengthen their testimony of the gospel and deepen their desire to share light and truth through the art form of dance.

11. Complete the Professional Education Component:
    - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

DANCE 276R : Exploration of Teaching. (4:6:8)

PREREQUISITE: DANCE 261 & DANCE 243R & DANCE 244R; Major approval; FBI fingerprint and background clearance.

DESCRIPTION: Field-based, initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching developmentally sequenced dance in K-12 settings.

**Course Outcomes**

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DANCE 346 : Methods of Teaching Dance to Social Groups in Secondary Education. (2:1:2)

WHEN TAUGHT: Fall

RECOMMENDED: Dance 170, 180.

DESCRIPTION: Teaching methodologies in social and world dance, specifically to prepare students in secondary dance education to teach these forms in the public schools.

NOTE: For dance education majors only.

**Course Outcomes**

- 1. Students will learn the basic skill fundamentals of social & world dance.
- 2. Students will learn the vocabulary of the steps associated with social & world dance.
- 3. Students will learn the basic teaching methodology of social & world dance.
- 4. Students will learn basics of calling ahead and prompting for social & world dance.
- 5. Students will understand the value of good teaching skills and techniques in order to help others enjoy these dance styles.
- 6. Students will begin to develop a teaching style of your very own.

DANCE 365 : Creative Dance for Elementary Education. (2:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: Dance 243R, 244R, or approved Kinnect membership.

DESCRIPTION: Theory and teaching experience in creative movement for preschool and elementary school children.

**Course Outcomes**

- 1. Articulate an understanding of creative dance education theory, content, and pedagogy that facilitates artistic development and process orientation.
- 2. Apply knowledge of developmentally appropriate dance learning activities for children pre-school through grade eight.
- 3. Demonstrate an understanding of dance, elements, concepts and vocabulary physically, verbally and in writing, and apply that knowledge to teaching dance in the elementary setting
- 4. Identify and use clear lesson content objectives drawn from national and state curriculum standards when planning lessons and teaching dance.
- 5. Understand and apply a variety of teaching strategies and management techniques necessary to effectively guide dance skill building, exploration, improvisation, and compositional experiences for young children.
- 6. Explore and identify various forms of dance assessment

DANCE 366 : Methods of Teaching Contemporary Dance. (2:2:2)

WHEN TAUGHT: Winter; Spring Odd Yrs.

PREREQUISITE: DANCE 243R & DANCE 261; Dance 244R or equivalent.

DESCRIPTION: Planning, teaching, and evaluating lessons.

**Course Outcomes**

- 1. develop, articulate and demonstrate a clear philosophy of teaching and learning as it relates to Contemporary Dance.
- 2. demonstrate a conceptual understanding of the content and processes needed to facilitate learning in the field of Contemporary Dance.
- 3. demonstrate teaching competency through experiences in planning, teaching and evaluating lessons.
- 4. demonstrate an ability to use a variety of teaching strategies to produce new knowledge and skills in others.
- 5. facilitate artistic development through process-oriented instruction.

DANCE 465 : K-12 Dance Curriculum Design. (2:2:1)

PREREQUISITE: DANCE 276R & DANCE 365 & DANCE 366; Dance 348R or 399R.

DESCRIPTION: Dance unit planning, scope and sequencing, core curriculum, and curriculum mapping with cross-curricular, thematic, and cultural integration K-12.

**Course Outcomes**

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- @font-face { font-family: "Courier New";}@font-face { font-family: "Wingdings";}p.MsoNormal, li.MsoNormal, div.MsoNormal { margin: 0in 0in 0.0001pt; font-size: 10pt; font-family: "Times New Roman"; }div.Section1 { page: Section1; }ol { margin-bottom: 0in; }ul { margin-bottom: 0in; }4. Demonstrate the ability to apply cross-disciplinary concepts within a larger dance curriculum in K-12 settings;
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DANCE 466 : Dance Teaching Practicum. (2:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: Dance major status.

DESCRIPTION: Pre-student teaching course giving students practical teaching and classroom management experience in a mentored environment. Discussion lab integrating theory and experience.

**Course Outcomes**

- 1. Create unit and lesson plans that appropriately align with the Utah core curriculum;
- 2. Demonstrate competent use of INTASC standards while teaching;
- 3. Articulate and demonstrate various strategies for successful classroom management;
- 4. Demonstrate varied student assessment methods and strategies, including successful design and use of a rubric;
- 5. Reflect upon and accurately self-assess teaching strengths and weaknesses.

(prerequisite: Dance 243R, 244R, 261)

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

SC ED 350 : Adolescent Development in an Education Context. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Adolescent development and its implications for integrated school culture, curriculum design, instructional practices, and assessment.

**Course Outcomes**

- The students will demonstrate how the stages of development impact instructional practices.
- The students will understand the social, physical, and cognitive developmental stages of adolescence in relation to the tasks of automony, identity and intimacy.
- The students will demonstrate how the stages of development impact classroom environments and management.

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

**Note 1:** FBI fingerprint and background clearance must be completed before entry into Dance 276R.

**Note 2:** Sc Ed 350 must be taken prior to or concurrently with Dance 466.

- Complete 1 credit hour of the following:

  DANCE 399R : Academic Internship: Dance. (.5-4:0:50)

**Course Outcomes**

- 2. Demonstrate the propensity to interact with professionals in their field of study in a credible, responsible and articulate manner.
- 1. Develop contacts with professionals in their field of study with the intent of creating a network that will be beneficial to future career choices.
- 3. Demonstrate improvement in the assigned responsibilities throughout the course of the internship as evaluated by the mentor teacher/intern supervisor in three periods, early, middle, and end of the internship.

**Note:** Complete an elementary teaching practicum of 42 hours of unpaid dance core curriculum (20 hours planning and reflection, plus 22 hours teaching with children grades K-6) in one of the following ways:

- Kinnect teaching Winter and Spring
- Arts Bridge Side-by-Side Teaching Project
- Other elementary dance teaching internships approved by the dance education faculty

- Complete 12 hours from the following:

  DANCE 476 : Secondary Student Teaching. (12:ARR:ARR)

  WHEN TAUGHT: Fall; Winter

  PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

  DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

Show all Dance Courses

College of Fine Arts and Communications Home

Dance Department Home

Majors

- BA in Dance
- BA in Dance Education K-12

Minors

- Ballroom Dance
- Contemporary Dance
- World Dance

Course Information

- Dance Courses

Faculty

# Minor in Ballroom Dance (15 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Complete the following with a grade of B– or better:

DANCE 284 : Ballroom, International Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 184 or equivalent.
DESCRIPTION: Silver level. Waltz, fox-trot, tango, quickstep.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate silver level school figures of International Style Waltz, Tango and Foxtrot.
- 2. Students will be able to effectively demonstrate intermediate level technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 285 : Ballroom Dance, International Latin, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 185 or equivalent.
DESCRIPTION: Silver level. Cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate silver level school figures of International Style Samba, Rumba and Paso Doble.
- 2. Students will be able to effectively demonstrate intermediate level technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

2. The Dance Department requires a minimum of 10 hours to be completed in residency at BYU for this minor program. These hours may also go toward BYU's 30-hour residency requirement for graduation.

3. Complete the following core courses:

DANCE 260 : Introduction to Dance. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Critical analysis of dance as a cultural and expressive art form, studied through lecture, reading, research, multimedia presentations, and practical movement experiences.
NOTE: No previous dance experience required. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

DANCE 280 : Social Dance, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 180 or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the school figures associated with each dance by practice and application.
- 2. Students will demonstrate the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to lead and follow through their participation at labs and through exams.

4. Complete one course from the following:

DANCE 386 : Methods of Teaching Social Dance. (2:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 280

DESCRIPTION: Pedagogy training in social dance at the bronze and silver skill levels.

**Course Outcomes**

- 1. Students will analyze the most important characteristics of great teachers through discussion.
- 2. Students will demonstrate basic skills of ballroom dance by participation and practice including both the mans and ladies parts.
- 3. Students will demonstrate the basic skills of teaching dance to groups by developing lesson plans and through practical experience.

DANCE 486 : Theory and Notation of Ballroom Dance, International. (2:0:4)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: DANCE 384R

DESCRIPTION: Preparation for professional teaching certification examinations.

**Course Outcomes**

- 1. Students will find coherence in technical codification of International Style Waltz, Tango Foxtrot, and Quickstep.
- 2. Students will be able to demonstrate with technical clarity the man and woman's part of Bronze and Silver level school figures of the Waltz, Tango Foxtrot, and Quickstep.
- 3. Students will be able to correctly articulate and deliver the technical information as required for a future professional examination the following categories: Feet Positions, Alignment, Amount of Turn, Rise & Fall, Footwork, C.B.M., and Sway
- 4.Students will be able to successfully amalgamate school figures into a cohesive routine.

DANCE 487 : Theory and Notation of Ballroom Dance, International Latin. (2:0:4)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: DANCE 385R

DESCRIPTION: Theory and notation of International Latin Dance and preparation for professional teaching certification examinations.

**Course Outcomes**

- 1. Students will find coherence in technical codification of International Style Cha-Cha, Samba Rumba Paso Doble, and Jive
- 2. Students will be able to demonstrate with technical clarity the man and woman's part of Bronze and Silver level school figures of the Cha-Cha, Samba, Rumba, Paso Doble, and Jive
- 3. Students will be able to correctly articulate and deliver the technical information as required for a future professional examination the following categories: Feet Positions, Alignment, Amount of Turn, Footwork
- 4. Students will be able to successfully amalgamate school figures into a cohesive routine.

5. Complete five hours from the following:

DANCE 380R : Social Dance, Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 280 or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the school figures associated with each dance by practice and application.
- 2. Students will demonstrate the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to lead and follow through their participation at labs and through exams.

DANCE 382R : Ballroom, International Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Dance 284 or equivalent; instructor's consent.

DESCRIPTION: Gold 1 level. Waltz, tango, fox-trot, quickstep.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate gold level school figures of International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to effectively demonstrate advanced level ballroom technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 383R : Ballroom Dance, International Latin, Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Dance 285 or equivalent; instructor's consent.

DESCRIPTION: Gold 1 level. Cha-cha, samba, rumba, paso doble.

**Course Outcomes**

- Students will be able to effectively demonstrate gold level school figures of International Style Cha-Cha, Samba, Rumba, Paso Doble
- Students will be able to effectively demonstrate advanced level latin technique in the following areas:1)

posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 384R : Ballroom, International Technique 3. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 382R or equivalent; instructor's consent.
DESCRIPTION: Gold 2 level. Waltz, fox-trot, tango, quickstep.

**Course Outcomes**

- 1. Students will be able to demonstrate, competitive figures at a pre-championship level in the International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to demonstrate pre-championship level ballroom technique in the following areas: 1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 385R : Ballroom Dance, International Latin, Technique 3. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 383R or equivalent ; instructor's consent.
DESCRIPTION: Gold 2 level. Cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to demonstrate, competitive figures at a pre-championship level in International Style Cha-Cha, Samba, Rumba, Paso Doble
- 2. Students will be able to demonstrate pre-championship level latin technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 480R : Social Dance, Technique 3. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 380R or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the class routines associated with each dance by practice and application
- 2. Students will demonstrate advanced level the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to compete in an open event by participation in the BYU Dancesport competition.

DANCE 484R : Ballroom, International Technique 4. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 384R or equivalent; instructor's consent.
DESCRIPTION: Gold bar level: waltz, tango, fox-trot, quickstep, Viennese waltz.

**Course Outcomes**

- 1. Students will be able to demonstrate competitive figures at a championship level in International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to demonstrate "championship" level ballroom technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 485R : Ballroom Dance, International Latin, Technique 4. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 385R or equivalent; instructor's consent.
DESCRIPTION: Gold bar level: cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to demonstrate competitive figures at a championship level in the International Style Cha-Cha, Samba, Rumba, Paso Doble
- 2. Students will be able to demonstrate "championship" level latin technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

**Note:** No more than two hours may be completed from each of the listed R technique courses.

6. Complete two hours from the following:

DANCE 387 : Ballroom Dance Choreography. (2:0:4)
WHEN TAUGHT: Fall Even Yrs.
DESCRIPTION: Choreography in Ballroom Dance emphasizing formation dancing.

**Course Outcomes**

- 1. Students will find coherence in foundational elements of formation choreography.
- 2. Students will demonstrate basic skills of composing ballroom formation choreography.

DANCE 388R : Ballroom Dance Performance, Intermediate. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Audition.
DESCRIPTION: Performance techniques and experience in ballroom dance.

**Course Outcomes**

- 1. Students will demonstrate dance skills through technique, stylization, and choreography.
- 2. Students will find coherence if what it means to represent Brigham Young University and the Church of Jesus Christ of Latter-day Saints in local areas.

DANCE 399R : Academic Internship: Dance. (.5-4:0:50)

**Course Outcomes**

- 2. Demonstrate the propensity to interact with professionals in their field of study in a credible, responsible and articulate manner.
- 1. Develop contacts with professionals in their field of study with the intent of creating a network that will be beneficial to future career choices.
- 3. Demonstrate improvement in the assigned responsibilities throughout the course of the internship as evaluated by the mentor teacher/intern supervisor in three periods, early, middle, and end of the internship.

DANCE 488R : Ballroom Dance Performance Company. (2:0:ARR)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.
DESCRIPTION: Performance techniques and experience with BYU Ballroom Dance Company.

**Course Outcomes**

- 1. Students will demonstrate an increased ability to perform the art of Ballroom Dance through participation in choreographic repertoire .
- 2. Students will exemplify the standards of Brigham Young University and the Church of Jesus Christ of Latter-day Saints, and the United States as student ambassadors
- 3. Students will find coherence of dance as a cultural tradition, an art form, an uplifting form of entertainment, and a social/recreational activity.

*Hours include courses that may fulfill university core requirements.

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- BA in Dance Education K-12

**Minors**

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- Contemporary Dance
- World Dance

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# Minor in Contemporary Dance (18 hours*)

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## Program Requirements | View MAP

1. Before being accepted into the minor, a student must:
   a. Complete the following with a grade of B– or better:
      DANCE 241R : Contemporary Dance, Technique and Theory 2. (2:0:6)
      WHEN TAUGHT: Fall; Winter; Summer

**Course Outcomes**

- 1. articulate a knowledge and appreciation of the human body regarding physical function, spirituality, and as a tool of expressivity.
- 2. demonstrate increased technical ability in the areas of:flexibilitystrengthendurancebalancecoordinationphrasingdance performance skillsapplying the Patterns of Total Body Connectivitykinesthetic awareness of body alignment
- 3. demonstrate knowledge, fundamental control, and application of the elements of dance (as defined by the BEST and BESS vocabularies);
- 4. articulate an appreciation for dance as an art form.

   b. Pass a dance audition for acceptance into the minor. Please see the Dance Department for further details.

2. The Dance Department requires a minimum of 10.5 hours to be completed in residency at BYU for this minor program. These hours may also go toward BYU's 30-hour residency requirement for graduation.

3. Complete the following core courses:
   DANCE 260 : Introduction to Dance. (3:3:0)
   OFFERED: Honors also.
   WHEN TAUGHT: Fall; Winter; Spring
   DESCRIPTION: Critical analysis of dance as a cultural and expressive art form, studied through lecture, reading, research, multimedia presentations, and practical movement experiences.
   NOTE: No previous dance experience required. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

   DANCE 264 : Music for Dancers. (2:1:2)
   WHEN TAUGHT: Fall; Winter; Spring
   DESCRIPTION: Basic music notation, simple and complex rhythmic patterns, and polyrhythms; analysis of selected international music styles; brief historical survey.

**Course Outcomes**

- Demonstrate an understanding of basic musical concepts through physical movement.
- Acquire improved awareness of his/her physical responses to music.
- Demonstrate the ability to utilize music appropriately in the technique class and collaborate with musicians.
- Demonstrate musical awareness by creating appropriate movement to odd meter music and binary/ternary rhythms.
- Acquire improved listening skills to use music to stage or create choreography

4. Complete the following:
   DANCE 243R : Studio Workshop in Contemporary Dance Technique and Theory. (2.5:0:7.5)
   WHEN TAUGHT: Fall; Winter
   PREREQUISITE: Dance 241R or equivalent; instructor's consent; concurrent enrollment in Dance 244R the first time taken.
   DESCRIPTION: Technique and theory in a workshop setting.

**Course Outcomes**

- 1. Students will demonstrate increased body connectivity and kinesthetic awareness, including:BreathCore-distalHead-tailUpper-lowerBody-halfCross-lateral connections
- 2. demonstrate performance skills including intent, nuance, dynamics, and sense of ensemble.
- 3. articulate and analyze the above principles of technique using accurate anatomical and dance elements language.

DANCE 244R : Studio Workshop in Contemporary Dance Improvisation and Choreography. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 241R or equivalent; instructor's consent; concurrent enrollment in Dance 243R the first time taken.

DESCRIPTION: Beginning improvisation and choreography in a workshop setting.

**Course Outcomes**

- 1. Students will demonstrate, apply, and articulate a fundamental understanding of the elements of dance in improvisation and choreography.
- 2. Students will demonstrate problem solving skills in collaborative group and solo improvisation and choreography.
- 3. Students will demonstrate the ability to create original and personally meaningful movement - avoiding habit or cliche.
- 4. Students will articulate a knowledge of, and critically analyze, the creative process and movement intention in improvisation and choreography.
- 5. Students will articulate aesthetic and expressive values in dance and other arts.

DANCE 362 : Contemporary Choreography Intermediate. (2:0:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 244R

DESCRIPTION: Fundamental choreographic structure emphasizing visual, kinesthetic, and musical aspects in contemporary dance.

**Course Outcomes**

There are no course outcomes available

DANCE 363 : Dance Improvisation, Intermediate. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 244R

**Course Outcomes**

- Students will learn to Move! To Explore!
- Students will learn to break comfortable and limiting movement patterns, dancing in ways that you have not moved before.
- Students will learn to "call up spontaneity at will".
- Students will learn to develop improvisational skills of "muscle readiness".
- Students will learn to learn how to suspend judgment.
- Students will learn to evolve movement over an extended period of time without losing spontaneity.
- Students will learn to practice recalling movement.
- Students will learn to practice relating to other dancers in various improvisational structures.
- Students will learn to evolve movement "in the moment" with a sense of form and definition (beginning, middle, end) thus "finding the dance" in the instant of exploration and improvisation.

5. Complete one course from the following:

DANCE 365 : Creative Dance for Elementary Education. (2:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: Dance 243R, 244R, or approved Kinnect membership.

DESCRIPTION: Theory and teaching experience in creative movement for preschool and elementary school children.

**Course Outcomes**

- 1. Articulate an understanding of creative dance education theory, content, and pedagogy that facilitates artistic development and process orientation.
- 2. Apply knowledge of developmentally appropriate dance learning activities for children pre-school through grade eight.
- 3. Demonstrate an understanding of dance, elements, concepts and vocabulary physically, verbally and in writing, and apply that knowledge to teaching dance in the elementary setting
- 4. Identify and use clear lesson content objectives drawn from national and state curriculum standards when planning lessons and teaching dance.
- 5. Understand and apply a variety of teaching strategies and management techniques necessary to effectively guide dance skill building, exploration, improvisation, and compositional experiences for young children.
- 6. Explore and identify various forms of dance assessment

DANCE 366 : Methods of Teaching Contemporary Dance. (2:2:2)

WHEN TAUGHT: Winter; Spring Odd Yrs.

PREREQUISITE: DANCE 243R & DANCE 261; Dance 244R or equivalent.

DESCRIPTION: Planning, teaching, and evaluating lessons.

**Course Outcomes**

- 1. develop, articulate and demonstrate a clear philosophy of teaching and learning as it relates to Contemporary Dance.
- 2. demonstrate a conceptual understanding of the content and processes needed to facilitate learning in the field of Contemporary Dance.
- 3. demonstrate teaching competency through experiences in planning, teaching and evaluating lessons.
- 4. demonstrate an ability to use a variety of teaching strategies to produce new knowledge and skills in others.
- 5. facilitate artistic development through process-oriented instruction.

DANCE 367 : Methods of Teaching Children's Creative Dance. (2:1:2)

WHEN TAUGHT: Fall; Spring Even Yrs.

PREREQUISITE: DANCE 243R & DANCE 244R

**Course Outcomes**

- Students will:1. Gain an increased understanding of the importance of Creative Dance for children.
- 2. Learn to teach developmentally appropriate technical dance skills to children.
- 3. Demonstrate an understanding of the methods of encouraging creative problem solving skills and the creative process.
- 4. Demonstrate knowledge, mastery and application of the elements of dance (time, space, and force) in relation to the teaching of children.
- 5. Gain practical experience through teaching children.

6. Complete a minimum of two hours from the following:

DANCE 340R : Contemporary Dance, Technique and Theory 3. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Dance 243R or equivalent; by audition.

**Course Outcomes**

- Demonstrate intermediate/advanced Contemporary dance technical proficiency in whole body connectivitystrength & flexibilitybreath initiation and supportconsistent core support functional alignmentbalance & coordination groundedness and weight sensingshape clarity, spatial accuracy and rangefocusrhythmic accuracyarticulationdynamic contrastcomplex movement skills
- Demonstrate increased dance performance artistry in:sequence masterymusicalityexpressivitypersonal interpretationnuanceensemble
- Describe, assess and write about demonstrated achievement of technical and performance skill
- Show sustained application of feedback from assessments
- Articulate understanding of Contemporary/Modern dance as an art form
- Articulate dance connections to gospel principles mind, body and spirit

DANCE 348R : Kinnect. (1-2:1:6)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: Audition.

DESCRIPTION: Educational outreach dance company specifically focusing on developing teaching, creative, and performance skills.

**Course Outcomes**

- 1. Collaboratively choreograph theme based dances for an educational lecture performance
- 2. Demonstrate creative dance teaching skills with children in elementary schools
- 3. Demonstrate increased performance and improvisation skill in real world venues
- 4. Demonstrate leadership within the group by fulfilling specific roles and assignments related to the creation, production, presentation, and teaching tasks of the company
- 6. Evaluate, modify and adapt original presentations, lessons and dances in authentic dance experiences in schools, museums and/or conferences
- 7. Demonstrate dance education professionalism and advocacy

DANCE 365 : Creative Dance for Elementary Education. (2:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: Dance 243R, 244R, or approved Kinnect membership.

DESCRIPTION: Theory and teaching experience in creative movement for preschool and elementary school children.

**Course Outcomes**

- 1. Articulate an understanding of creative dance education theory, content, and pedagogy that facilitates artistic development and process orientation.
- 2. Apply knowledge of developmentally appropriate dance learning activities for children pre-school through grade eight.
- 3. Demonstrate an understanding of dance, elements, concepts and vocabulary physically, verbally and in writing, and apply that knowledge to teaching dance in the elementary setting
- 4. Identify and use clear lesson content objectives drawn from national and state curriculum standards when planning lessons and teaching dance.
- 5. Understand and apply a variety of teaching strategies and management techniques necessary to effectively guide dance skill building, exploration, improvisation, and compositional experiences for young children.
- 6. Explore and identify various forms of dance assessment

DANCE 366 : Methods of Teaching Contemporary Dance. (2:2:2)

WHEN TAUGHT: Winter; Spring Odd Yrs.

PREREQUISITE: DANCE 243R & DANCE 261; Dance 244R or equivalent.

DESCRIPTION: Planning, teaching, and evaluating lessons.

**Course Outcomes**

- 1. develop, articulate and demonstrate a clear philosophy of teaching and learning as it relates to Contemporary Dance.
- 2. demonstrate a conceptual understanding of the content and processes needed to facilitate learning in the field of Contemporary Dance.
- 3. demonstrate teaching competency through experiences in planning, teaching and evaluating lessons.
- 4. demonstrate an ability to use a variety of teaching strategies to produce new knowledge and skills in others.
- 5. facilitate artistic development through process-oriented instruction.

DANCE 367 : Methods of Teaching Children's Creative Dance. (2:1:2)

WHEN TAUGHT: Fall; Spring Even Yrs.
PREREQUISITE: DANCE 243R & DANCE 244R

**Course Outcomes**

- Students will:1. Gain an increased understanding of the importance of Creative Dance for children.
- 2. Learn to teach developmentally appropriate technical dance skills to children.
- 3. Demonstrate an understanding of the methods of encouraging creative problem solving skills and the creative process.
- 4. Demonstrate knowledge, mastery and application of the elements of dance (time, space, and force) in relation to the teaching of children.
- 5. Gain practical experience through teaching children.

DANCE 368R : DancEnsemble - Contemporary Dance Performance and Choreography. (1-2:1:2)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.
DESCRIPTION: Experiences in contemporary dance choreography and performance.

**Course Outcomes**

- 1. Demonstrate increasing performance skill, including skills of concentration, discipline, focus and stage presence.
- 2. Demonstrate increasing technical skill, focusing specifically of the refinement of nuance, projection, dynamics and the ability to dance within the context of an ensemble.
- 3. Create and evaluate dances, giving increased attention to the ability to see and respond to the possibilities within any given choreographic situation.
- 4. Investigate and refine their own individual choreographic and performance voice.

DANCE 462 : Contemporary Choreography, Advanced. (2:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: DANCE 362
DESCRIPTION: Creation and presentation of complete choreographic works.

**Course Outcomes**

There are no course outcomes available

DANCE 468R : Contemporary Dance Theatre. (2:0:12)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.
DESCRIPTION: Performing modern and contemporary dance repertory on and off campus.

**Course Outcomes**

- 2. Show increased technical ability.
- 1. Develop advanced performance skill and artistry.
- 3. Understand choreographic principles.
- 4. Contribute to the choreographic process.
- 5. Perform dances for audiences on campus, in schools, in professional venues, and at conferences.
- 6. Make visible attitudes of professional behavior.
- 7. Strengthen their testimony of the gospel and deepen their desire to share light and truth through the art form of dance.

**Note:** R-suffix courses may not be taken more than once for minor credit.

*Hours include courses that may fulfill university core requirements.

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# Minor in World Dance (16-16.5 hours*)

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## Program Requirements | View MAP

1. Complete the following with a grade of B or better:

DANCE 270 : World Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Dance 170 or equivalent.
DESCRIPTION: Techniques of selected traditional, folk, and national dance styles.

**Course Outcomes**

- 1. Each student will demonstrate footwork and various rhythmic structures from selected cultures
- 2. Each student will develop proper technique of posture, gesture and free movement
- 3. Each student will interpret proper body alignment and technical execution of movement styles and phrases
- 4. Each student will enhance the ability to recognize and understand world dance vocabulary, significance and context within selected cultures
- 5. Each student will understand the distinction of various patterns concerning tradition and innovation
- 6. Each student will increase awareness and appreciation of world dance and how it relates to other dance forms and styles

2. The Dance Department requires a minimum of eight hours to be completed in residency at BYU for this minor program. These hours may also go toward BYU's 30-hour residency requirement for graduation.

3. Complete the following core courses:

DANCE 172 : Western: Square and Contra Dance. (.5:0:2)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Fundamental dance skills in western styles of country, round, and square dance.

**Course Outcomes**

There are no course outcomes available

DANCE 260 : Introduction to Dance. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Critical analysis of dance as a cultural and expressive art form, studied through lecture, reading, research, multimedia presentations, and practical movement experiences.
NOTE: No previous dance experience required. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

DANCE 271 : Clog Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 171 or equivalent.
DESCRIPTION: Intermediate steps and technique; buck styling; introduction to choreography.

**Course Outcomes**

- Students will learn additional presentation skills in clog dance movement patterns, combinations, and skills.
- Students will learn a movement vocabulary using correct clog dance terminology.
- Students will learn a knowledge of the history and progressions of clog dance.
- Students will learn traditional and contemporary intermediate clogging techniques including arm movements, footwork, correct alignment, placement and weight shifts.

DANCE 370 : World Dance Technique 2. (1:0:3)

WHEN TAUGHT: Winter
PREREQUISITE: DANCE 270
DESCRIPTION: In-depth dance technique of selected traditional, folk, and national dance styles.

**Course Outcomes**

- 1. Demonstrate complex movement patterns from selected cultures
- 2. Develop proper technique of posture and gesture
- 3. Interpret proper body alignment and technical execution of movement styles and phrases
- 4. Enhance the ability to recognize and understand world dance vocabulary, significance andcontext within selected cultures

DANCE 376 : Methods of Teaching World Dance. (2:2:3)
WHEN TAUGHT: Fall
RECOMMENDED: Dance 170 or equivalent.

**Course Outcomes**

- 1. Students will study logical progressions in the breakdown of steps, formations and positions
- 2. Students will learn to communicate specific verbal cues in the delivery of content
- 3. Students will develop calling ahead techniques
- 4. Students will learn the mechanics of class structure and management
- 5. Students will demonstrate correct styling and technique
- 6. Students will learn how to read and understand world dance descriptions
- 7. Students will learn the skills in successfully teaching large groups in a recreational setting
- 8. Students will develop and actualize a clear philosophy of teaching and learning as it related to dance

4. Complete five credit hours from the following (only two credit hours total may be used for performance classes, either Dance 378R or Dance 478R):

DANCE 371R : Clog Dance Technique 2. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 271 or equivalent.
DESCRIPTION: Fundamentals of clog technique at the advanced level.

**Course Outcomes**

- Students will learn traditional and contemporary advanced clogging techniques including arm movements, footwork, correcrt alignment, placement, and weight shifts
- Students will learn a movement vocabulary using correct clog dance terminology.
- Students will learn, dance and test intermediate sequences and patterns of movement.
- Students will learn additional presentation skills in clog dance movement patterns, combinations, and skills.
- Students will learn a knowledge of the history and progression of clog dance.

DANCE 373 : Hungarian Dance: Practice and Theory, Technique 2. (1:0:3)
WHEN TAUGHT: Fall
PREREQUISITE: Dance 273 or equivalent.
DESCRIPTION: Advanced ethnic dance techniques from the Hungarian culture.

**Course Outcomes**

No outcomes are available at this time.

DANCE 374R : Irish Dance: Practice and Theory, Technique 2. (1:0:3)
WHEN TAUGHT: Winter
PREREQUISITE: Dance 274R or equivalent.
DESCRIPTION: Advanced ethnic dance techniques from the Irish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 377 : World Dance Choreography. (2:0:4)
WHEN TAUGHT: Fall Even Yrs.
DESCRIPTION: Fundamental choreographic structure emphasizing visual, kinesthetic, and musical aspects in World Dance.

**Course Outcomes**

- 1. Students will learn technical elements, process and crafting principles of composition, such as: transitions, traditional formations, dynamic structure, stylistic coherence, form, musical dynamics and phrasing.
- 2. Students will develop a critical eye in analyzing and forming own aesthetic criteria.
- 3. Students will discover ethno-choreographic elements of a particular style or cultural group.
- 4. Students will address issues of authenticity versus creativity, traditional versus contemporary.
- 5. Students will learn to document choreography.

DANCE 378R : Folk Dance Performance, Intermediate. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.
DESCRIPTION: Performance techniques and experience in folk dance.

**Course Outcomes**

- 1. Students will learn the traditional dance technique and stylization of selected countries or regions
- 2. Students will develop the performance skills of posture, presentation, and characterization
- 3.Students will explore both the recreational and staged forms of world dance
- 4. Students will demonstrate strong citizenship as a member of a performance team

DANCE 474R : Percussive Step Styles. (1:0:3)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Two of three possible courses: Dance 371 or 335 or 374R.

DESCRIPTION: Technique and theory, fusing a diversity of percussive dance styles including, but not limited to, French Canadian Gigue, Cape Breton Step, Power Tap, traditional and contemporary Clog Dance. Composition and improvisation included.

**Course Outcomes**

- 1. Students will gain speed, clarity and precise technique in various styles of percussive footwork.
- 2. Students will improve coordination, motor memory, fine and gross motor skills.
- 3. Students will demonstrate correct alignment, placement and weight shifts.
- 4. Students will learn sequences and patterns of movement.
- 5. Students will apply the theory and process of improvisation and composition.
- 6. Students will learn the current movement vocabulary and or terminology.
- 7. Students will gain a kinesthetic perception and concentration in order to self-evaluate and self correct.

DANCE 477 : Dance - a Reflection of Culture. (2:2:0)

WHEN TAUGHT: Winter

DESCRIPTION: Study of dance as an expression of culture.

**Course Outcomes**

- 1. Students will learn cultural concepts and identity associated with world dance
- 2. Students will understand the differences and similarities in traditions and rituals connected to dance
- 3. Students will participate in class discussions and analysis of group research and assigned readings;
- 4. Students will understand ethnochoreology and ethnography and how they interface in cultural dance

DANCE 478R : Folk Dance Performance Company. (2:0:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Performance technique and experience with International Folk Dance Ensemble.

**Course Outcomes**

- 1. Students will embrace a philosophy of dance compatible with the mission of BYU that guides their personal choices in the professional or recreational worlds of dance.
- 2. Students will demonstrate artistry and advanced ability in dance performance.

5. Complete one course from the following (the course that best fits your ballet technique level):

DANCE 190 : Ballet, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamentals of ballet technique for those with little or no previous training.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in beginning ballet technique. These basic skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific technique criteria and standards
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at a beginning level standard
- 1. Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 192 : Character Dance. (.5:0:2)

WHEN TAUGHT: Winter

DESCRIPTION: Male and female techniques of traditional Hungarian, Polish, and Ukrainian folk forms stylized with classical ballet discipline.

**Course Outcomes**

There are no course outcomes available

6. Complete two hours from the following:

DANCE 272 : Chinese Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Dance 173R or previous dance experience.

DESCRIPTION: Accelerated ethnic dance technique from the Chinese culture.

**Course Outcomes**

There are no course outcomes available

DANCE 273 : Hungarian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: Dance 173R or previous dance experience.
DESCRIPTION: Accelerated ethnic dance techniques from the Hungarian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 274R : Irish Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 174 (Ethnic Dance Irish) or equivalent.
DESCRIPTION: Accelerated ethnic dance technique from the Irish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 275 : Polynesian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 173R or previous experience.
DESCRIPTION: Accelerated ethnic dance technique from the Polynesian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 277 : Spanish Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall Even Yrs.
PREREQUISITE: Dance 173R or previous dance experience.
DESCRIPTION: Accelerated ethnic dance technique from the Spanish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 278 : Ukrainian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: Dance 173R or previous dance experience.
DESCRIPTION: Accelerated ethnic dance technique from the Ukrainian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 279 : Indian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Winter; Spring
DESCRIPTION: Classical India dance technique, primarily in religious-based styles and motifs of Bharatha Natyam, Ganapathi, Allaripu, and Bollywood.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

## Show all Dance Courses

College of Fine Arts and Communications Home

Dance Department Home

Majors

- BA in Dance
- BA in Dance Education K-12

Minors

- Ballroom Dance
- Contemporary Dance
- World Dance

Course Information

- Dance Courses

Faculty

# Dance (Dance)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

DANCE 131 : Jazz Dance, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Students will be introduced to jazz dance as a stylized dance form
- Students will acquire a degree of mastery in jazz dance technique at a beginning level as their foundation.
- Students will experience the joy of jazz rhythms and motion.
- Students will increase awareness in their physical health and well-being through activity and correct principles of training.
- Students will increase awareness to their overall self-image, emphasizing; discipline, coordination, strength, flexibility and endurance.
- Students will develop more understanding of a relationship between religion and the fine arts.
- Students will acquire the desire to patronize the art to some degree in the future.
- Students will develop an evaluation standard to aid in selecting future quality jazz dance training for self and /or family.

DANCE 135 : Tap Dance, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- 1. Students will embrace a philosophy of dance compatible with the mission of BYU that guides their personal choices in the professional or recreational worlds of dance
- 2. Students will demonstrate advanced technical and artistic skill in one dance genre and at least beginning to intermediate skill in another.

DANCE 140 : Contemporary Dance, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Students will demonstrate and articulate an understanding of the elements of dance (energy, space, and time).
- Students will demonstrate beginning technical ability in the areas of:·flexibility· strength and endurance· control of parallel and turn out positions
- Students will demonstrate creative problem solving and interpersonal skills through collaborative improvisation and composition experiences
- Students will articulate an awareness and appreciation of dance as an art form.
- Students will articulate knowledge of basic modern/contemporary dance history

DANCE 164 : Movement for Musicians. (.5:0:2)

WHEN TAUGHT: Winter

DESCRIPTION: Developing strength, flexibility, responsiveness, centering, breath, and freedom of movement through both fine and gross motor activities.

**Course Outcomes**

- Students will understand the connection between music and dance by practicing and integrating kinesthetic awareness with musicality.
- Students will analyze the shared characteristics of movement and music by creating and discussing movement phrases.
- Students will evaluate the appropriateness of particular movement disciplines for solving real physical and musical problems.
- Students will increase musical awareness by choreographing and performing a solo to varied musical styles.

DANCE 170 : Recreational World Dance: Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Dances from selected cultures at the beginning skill level.

**Course Outcomes**

There are no course outcomes available

DANCE 171 : Clog Dance, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Beginning steps and technique, emphasizing slide/drag.

**Course Outcomes**

- 1. Students will learn traditional and contemporary clogging techniques including arm movements, footwork, correct alignment, placement and weight shifts.
- 2. Students will learn a movement vocabulary using correct clog dance terminology.
- 3. Students will learn, dance and test beginning sequences and patterns of movement.
- 4. Students will learn basic presentation skills in clog dance movement patterns, combinations, and skills .
- 5. Students will learn a knowledge of the history and progression of clog dance

DANCE 172 : Western: Square and Contra Dance. (.5:0:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Fundamental dance skills in western styles of country, round, and square dance.

**Course Outcomes**

There are no course outcomes available

DANCE 173R : Ethnic Dance, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Ethnic dances selected from the Irish, Polynesian, or Spanish cultures.

**Course Outcomes**

There are no course outcomes available

: Ethnic Dance - Spanish.

**Course Outcomes**

DANCE 174 : Ethnic Dance Beginning - Irish. (.5:0:2)

DESCRIPTION: Introduction to Irish dance technique--soft and hard shoe--at a begining level. Instruction in solo and figure dances as well as some cultural background information about music, costumes, traditions and on-going development in this style of dance.

**Course Outcomes**

There are no course outcomes available

DANCE 175 : Ethnic Dance Beginning - Polynesian. (.5:0:2)

DESCRIPTION: Instruction in movement, songs, myths and legends of Hawaii, New Zealand, Tahiti, Samoa, and Tonga.

**Course Outcomes**

There are no course outcomes available

DANCE 180 : Social Dance, Beginning. (.5:0:2)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Traditional and popular ballroom dance; also social skills.

**Course Outcomes**

- Students will demonstrate beginning level school figures associated with each dance by practice and application.
- Students will demonstrate beginning level the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- Students will demonstrate their ability to lead and follow through their participation at labs and through exams.
- Students will improve their social skills though knowledge and practice.

DANCE 181 : Country Western Social Dance, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Beginning popular country western dance.

**Course Outcomes**

- Students will demonstrate the beginning level school figures associated with each dance by practice and application.
- Students will demonstrate beginning level technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- Students will demonstrate their ability to lead and follow through their participation at labs and through exams.
- Students will improve their social skills though knowledge and practice.

DANCE 184 : Ballroom, International Beginning (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Bronze level. Waltz, fox-trot, tango, quickstep.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate bronze level school figures of International Style Waltz and Quickstep.
- 2. Students will be able to effectively demonstrate beginning level ballroom technique in the following areas: 1) posture and dance position 2) clarity and use timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 185 : Ballroom Dance, International Latin, Beginning. (.5:0:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Bronze level. Cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate bronze level school figures of International Style Samba and Rumba.
- 2. Students will be able to effectively demonstrate beginning level technique in the following areas:1) posture and dance position 2) clarity and use timing 3)proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 190 : Ballet, Beginning. (.5:0:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Fundamentals of ballet technique for those with little or no previous training.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in beginning ballet technique. These basic skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific technique criteria and standards
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at a beginning level standard
- 1. Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 192 : Character Dance. (.5:0:2)
WHEN TAUGHT: Winter
DESCRIPTION: Male and female techniques of traditional Hungarian, Polish, and Ukrainian folk forms stylized with classical ballet discipline.

**Course Outcomes**

There are no course outcomes available

**200-Level Courses**

DANCE 229R : Dance Performance 1. (.5-3:ARR:ARR)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Production director's consent.
DESCRIPTION: Participation as dancers in concert dance production.

**Course Outcomes**

- The learning outcomes of this course will be correlated somewhat with the learning outcomes of one of the regular dance performance groups. However, due to the individualized nature of this course, individual outcomes will be designed by the instructor based upon the needs and opportunities of the student.

DANCE 230 : Conditioning and Injury Prevention for Dance. (2:3:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: PDBIO 220
DESCRIPTION: Developing conditioning programs specific to dance. Recognizing and resolving dance injuries. Practical application.

**Course Outcomes**

- 1. Students will learn how to develop a well rounded conditioning program.
- 2. Students will gain knowledge of training and conditioning principles that will help them prevent injury.
- 3. Students will create and participate in an actual conditioning program based on principles learned in the class.
- 4. Students will be in better physical condition and have a working knowledge of all aspects of conditioning and injury prevention.

DANCE 231R : Jazz Dance Technique 1. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 240R or Dance 290 or equivalent; Dance 131 or equivalent.

**Course Outcomes**

- Students will gain knowledge of styles within the jazz genre.
- Students will acquire a degree of mastery in jazz dance technique at a intermediate level as their foundation.
- Students will experience the joy of jazz rhythms and motion.
- Students will increase awareness in their physical health and well-being through activity and correct principles of training.
- Students will increase awareness to their overall self-image, emphasizing; discipline, coordination, strength, flexibility and endurance.
- Students will develop more understanding of a relationship between religion and the fine arts.
- Students will acquire the desire to patronize the art to some degree in the future.
- Students will develop an evaluation standard to aid in selecting future quality jazz dance training for self and/or for family.

DANCE 235 : Tap Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 135 or equivalent.

**Course Outcomes**

- 1. Students will embrace a philosophy of dance compatible with the mission of BYU that guides their personal choices in the professional or recreational worlds of dance.
- 2. Students will demonstrate advanced technical and artistic skill in one dance genre and at least beginning to intermediate skill in another.

DANCE 240R : Contemporary Dance, Technique and Theory 1. (1.5:0:4.5)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Fundamental dance skills and basic theories.

**Course Outcomes**

There are no course outcomes available

DANCE 241R : Contemporary Dance, Technique and Theory 2. (2:0:6)

WHEN TAUGHT: Fall; Winter; Summer

**Course Outcomes**

- 1. articulate a knowledge and appreciation of the human body regarding physical function, spirituality, and as a tool of expressivity.
- 2. demonstrate increased technical ability in the areas of:flexibilitystrengthendurancebalancecoordinationphrasingdance performance skillsapplying the Patterns of Total Body Connectivitykinesthetic awareness of body alignment
- 3. demonstrate knowledge, fundamental control, and application of the elements of dance (as defined by the BEST and BESS vocabularies);
- 4. articulate an appreciation for dance as an art form.

DANCE 243R : Studio Workshop in Contemporary Dance Technique and Theory. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 241R or equivalent; instructor's consent; concurrent enrollment in Dance 244R the first time taken.

DESCRIPTION: Technique and theory in a workshop setting.

**Course Outcomes**

- 1. Students will demonstrate increased body connectivity and kinesthetic awareness, including:BreathCore-distalHead-tailUpper-lowerBody-halfCross-lateral connections
- 2. demonstrate performance skills including intent, nuance, dynamics, and sense of ensemble.
- 3. articulate and analyze the above principles of technique using accurate anatomical and dance elements language.

DANCE 244R : Studio Workshop in Contemporary Dance Improvisation and Choreography. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 241R or equivalent; instructor's consent; concurrent enrollment in Dance 243R the first time taken.

DESCRIPTION: Beginning improvisation and choreography in a workshop setting.

**Course Outcomes**

- 1. Students will demonstrate, apply, and articulate a fundamental understanding of the elements of dance in improvisation and choreography.
- 2. Students will demonstrate problem solving skills in collaborative group and solo improvisation and choreography.
- 3. Students will demonstrate the ability to create original and personally meaningful movement - avoiding habit or cliche.
- 4. Students will articulate a knowledge of, and critically analyze, the creative process and movement intention in improvisation and choreography.
- 5. Students will articulate aesthetic and expressive values in dance and other arts.

DANCE 260 : Introduction to Dance. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Critical analysis of dance as a cultural and expressive art form, studied through lecture, reading, research, multimedia presentations, and practical movement experiences.

NOTE: No previous dance experience required. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more

information.

**Course Outcomes**

There are no course outcomes available

DANCE 261 : Orientation to Dance. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to dance as a discipline and at Brigham Young University.

**Course Outcomes**

- 1. Students will be able to hone in on important information while also providing their own thoughtful reactions to what they have read.
- 2. Students will understand principles, terminology, and execution of Laban Movement Analysis.
- 3. Students will develop critical analysis skills.
- 4. Students will delve into a dance related topic of interest to them and develop group collaboration and presentation skills.
- 5. Students will understand the common aspects of several forms of dance through analysis of how aesthetic principles and varied movement techniques are applied and emphasized within various dance genres.

DANCE 264 : Music for Dancers. (2:1:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Basic music notation, simple and complex rhythmic patterns, and polyrhythms; analysis of selected international music styles; brief historical survey.

**Course Outcomes**

- Demonstrate an understanding of basic musical concepts through physical movement.
- Acquire improved awareness of his/her physical responses to music.
- Demonstrate the ability to utilize music appropriately in the technique class and collaborate with musicians.
- Demonstrate musical awareness by creating appropriate movement to odd meter music and binary/ternary rhythms.
- Acquire improved listening skills to use music to stage or create choreography

DANCE 270 : World Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Dance 170 or equivalent.

DESCRIPTION: Techniques of selected traditional, folk, and national dance styles.

**Course Outcomes**

- 1. Each student will demonstrate footwork and various rhythmic structures from selected cultures
- 2. Each student will develop proper technique of posture, gesture and free movement
- 3. Each student will interpret proper body alignment and technical execution of movement styles and phrases
- 4. Each student will enhance the ability to recognize and understand world dance vocabulary, significance and context within selected cultures
- 5. Each student will understand the distinction of various patterns concerning tradition and innovation
- 6. Each student will increase awareness and appreciation of world dance and how it relates to other dance forms and styles

DANCE 271 : Clog Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 171 or equivalent.

DESCRIPTION: Intermediate steps and technique; buck styling; introduction to choreography.

**Course Outcomes**

- Students will learn additional presentation skills in clog dance movement patterns, combinations, and skills.
- Students will learn a movement vocabulary using correct clog dance terminology.
- Students will learn a knowledge of the history and progressions of clog dance.
- Students will learn traditional and contemporary intermediate clogging techniques including arm movements, footwork, correct alignment, placement and weight shifts.

DANCE 272 : Chinese Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Dance 173R or previous dance experience.

DESCRIPTION: Accelerated ethnic dance technique from the Chinese culture.

**Course Outcomes**

There are no course outcomes available

DANCE 273 : Hungarian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Dance 173R or previous dance experience.

DESCRIPTION: Accelerated ethnic dance techniques from the Hungarian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 274R : Irish Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 174 (Ethnic Dance Irish) or equivalent.

DESCRIPTION: Accelerated ethnic dance technique from the Irish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 275 : Polynesian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 173R or previous experience.

DESCRIPTION: Accelerated ethnic dance technique from the Polynesian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 276R : Exploration of Teaching. (4:6:8)

PREREQUISITE: DANCE 261 & DANCE 243R & DANCE 244R; Major approval; FBI fingerprint and background clearance.

DESCRIPTION: Field-based, initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching developmentally sequenced dance in K-12 settings.

**Course Outcomes**

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- @font-face { font-family: "Calibri";}@font-face { font-family: "Georgia";}p.MsoNormal, li.MsoNormal, div.MsoNormal { margin: 0in 0in 10pt; line-height: 115%; font-size: 11pt; font-family: "Times New Roman"; }div.Section1 { page: Section1; }ol { margin-bottom: 0in; }ul { margin-bottom: 0in; }5. demonstrate emerging teaching skills, including strong voice, teacher presence, planning/preparation, professionalism, and technical ability for modeling/demonstrating.

DANCE 277 : Spanish Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Dance 173R or previous dance experience.

DESCRIPTION: Accelerated ethnic dance technique from the Spanish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 278 : Ukrainian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Dance 173R or previous dance experience.

DESCRIPTION: Accelerated ethnic dance technique from the Ukrainian culture.

**Course Outcomes**

There are no course outcomes available

DANCE 279 : Indian Dance: Practice and Theory, Technique 1. (1:0:3)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Classical India dance technique, primarily in religious-based styles and motifs of Bharatha Natyam, Ganapathi, Allaripu, and Bollywood.

**Course Outcomes**

There are no course outcomes available

DANCE 280 : Social Dance, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 180 or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the school figures associated with each dance by practice and application.
- 2. Students will demonstrate the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to lead and follow through their participation at labs and through exams.

DANCE 281 : Country Western Social Dance, Intermediate. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 181 or equivalent.

DESCRIPTION: Intermediate-level instruction in popular country western dances.

**Course Outcomes**

- 1. Students will embrace a philosophy of dance compatible with the mission of BYU that guides their personal choices in the professional or recreational worlds of dance.
- 2. Students will demonstrate advanced technical skill and artistic skill in one dance genre and at least beginning to intermediate skill in another.

DANCE 284 : Ballroom, International Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 184 or equivalent.

DESCRIPTION: Silver level. Waltz, fox-trot, tango, quickstep.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate silver level school figures of International Style Waltz, Tango and Foxtrot.
- 2. Students will be able to effectively demonstrate intermediate level technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 285 : Ballroom Dance, International Latin, Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 185 or equivalent.

DESCRIPTION: Silver level. Cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate silver level school figures of International Style Samba, Rumba and Paso Doble.
- 2. Students will be able to effectively demonstrate intermediate level technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 290 : Ballet Accelerated Technique 1. (1.5:0:4.5)

WHEN TAUGHT: Fall; Winter; Spring

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in accelerated beginning ballet technique. These basic skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the Ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at a beginning level standard.
- Each student will:1. Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 291R : Ballet Technique 2. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 290 or equivalent.

**Course Outcomes**

- TECHNIQUE OBJECTIVE 1. Acquire a degree of mastery in intermediate beginning ballet technique. These basic skills will be accomplished through active class participation and the practice of the movement vocabulary listed in the appendix. Please consult the appendix for the specific criteria and standards.
- TECHNIQUE OBJECTIVE 2. Increase postural awareness; begin to correct imperfections; add physical strength, endurance, flexibility, extension, coordination, grace, precision and elevation; and improve the health and appearance of the physical body.
- WRITING OBJECTIVE 1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level, then pass an objective written exam prepared by the Ballet Division.
- Each student will: Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the

appendix.

DANCE 294R : Ballet Technique, Men. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: DANCE 290

DESCRIPTION: Intermediate classical ballet technique for men.

**Course Outcomes**

- 1. Students will acquire a degree of mastery in men's intermediate ballet technique.
- 2. Students will Increase postural awareness; begin to correct imperfections; add physical strength, endurance, flexibility, extension, coordination, grace, precision and elevation; and improve the health and appearance of the physical body.
- 3. Students will Increase their awareness and appreciation for ballet, its aesthetic beauty, demanding discipline, and lifelong benefit of enhancing and integrating the physical, spiritual, intellectual, and emotional aspects.
- 4. Students will acquire improved awareness of the physical body and its capacity to move.
- 5. Students will gain a sense of personal accomplishment and worth.
- 6. Enlarge one's understanding of the relationship between religion and the fine arts.
- 7. Students will increase in desire to patronize the art to some degree in the future.
- 8. Students will develop an evaluation standard to aid in selecting future quality ballet training for self and/or for family.

**300-Level Courses**

DANCE 300 : Music Theatre in Contemporary Culture. (1:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 290 & DANCE 243R & DANCE 244R; Concurrent enrollment in Music 300 and TMA 300.

RECOMMENDED: Concurrent enrollment in Music 328, Dance 328, and TMA 328.

DESCRIPTION: Analysis of the form, evolution and influence of music dance theatre in Western culture.

**Course Outcomes**

- Students will be able to analyze, synthesize and articulate the significant facets of music, dance and theatre within the historical context of the musical theatre genre.

DANCE 326 : Rhythm and Dance. (2:1:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Methodology course for elementary education majors; creative dance and structured rhythmic dance forms.

**Course Outcomes**

- Students will identify the value of dance in the elementary setting, including the following benefits:· Decision making skills· Confidence and self-expression· Cultural perspective· Collaboration and social skills· Physical skills and kinesthetic learning· Accessibility for a diverse population· Recreation and fun
- Students will demonstrate sound dance methodology, including:· Teaching structured dance forms· Leading the creative process· Clear verbalization of directions, cues, side-coaching, and feedback
- Students will identify various dance teaching resources that enrich the curriculum, including:· State Core Curriculum· National Standards· Music resources
- Students will increase knowledge and develop skills in the dance discipline, including:· The elements of dance: space, motion, time, energy· Problem solving through movement· Choreographic skills
- Students will identify age appropriate material and pedagogy that address the needs of the wide age span of elementary students.
- Students will identify ways to incorporate dance into school-wide projects that create community, including dance festivals and performances.

DANCE 327R : Living Legends. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition and director's consent.

DESCRIPTION: Participation as soloists, coaches, or directors in music dance theatre performances.

**Course Outcomes**

There are no course outcomes available

DANCE 328 : Script, Movement and Score Analysis. (1:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 229; Music dance theatre BFA major status; concurrent enrollment in Music 328, TMA 328.

RECOMMENDED: Concurrent enrollment in Music 300, Dance 300, TMA 300.

DESCRIPTION: The integration into performance of information gathered from careful research and analysis of movement style, script and score.

**Course Outcomes**

- Students will be familiar with the selected landmark productions of the American musical theatre.
- Students will have compiled a written record of these landmark musical theatre works as a personal resource.
- Students will have learned to implement into their musical theatre performance essential acting, vocal and movement skills as outlined in the evaluation forms.
- Student's performance work will be consistantly rated in the 3.5 and above catagory based on the evaluation form scale.
- Students will be able to integrate into their performance detailed feedback from faculty and peers.
- Students will approach their work in a competent, courteous and professional manner.

DANCE 331R : Jazz Dance Technique 2. (1.5:0:4.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 231 or equivalent. Dance 241R and Dance 243; or Dance 291R.

**Course Outcomes**

- Students will gain a greater knowledge jazz dance styles through various advance movement combinations.
- Students will acquire a degree of mastery in jazz dance technique at an advance level as their foundation.
- Students will increase their intellectual ability to retain complex and substantial length of movement sequences given in a short amount of time.
- Students will explore the psychology of performance and auditioning.
- Students will experience the joy of jazz rhythms and motion.
- Students will increase awareness in their physical health and well-being through activity and correct principles of training.
- Students will increase awareness to their overall self-image, emphasizing; discipline, coordination, strength, flexibility and endurance.
- Students will gain understanding of the gospel of Jesus Christ as an artist in the world.
- Students will acquire the desire to patronize the art to some degree in the future.
- Students will develop an evaluation standard to aid in selecting future quality jazz dance training for self and/or for family.

DANCE 332R : Cougarette Collegiate Performing Team. (2:0:14)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- 1. Students will represent Brigham Young University with honor and dignity.
- 2. Students will demonstrate advanced level technique.
- 3. Students will compete on a Nationals Level as determined each year.

DANCE 335R : Tap Dance Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 235 or equivalent.

**Course Outcomes**

- Students will explore the intricacies of complex rhythms
- Students will focus on dynamics, accents, and shading, etc.
- Students will continue to work on speed, clarity, and exactness in tap technique
- Students will explore the use of counterpoint, stop time, phrasing, and different time signatures.
- Students will enhance improvisational skills, creative thinking and risk-taking.
- Students will learn the theory and process of composition.
- Students will work on their performance skills and personal style.
- Students will learn the skills of tap notation.
- Students will develop a sense of aesthetic perception to self evaluate and self correct.

DANCE 336 : Methods of Teaching Aerobic Dance. (2:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 342 & DANCE 343; or EXSC 362 & DANCE 343

RECOMMENDED: NDFS 100.

**Course Outcomes**

- 1. Students will identify scientific fitness principles regarding cardiovascular endurance, strength, flexibility and lean/fat body ratio.
- 2. Students will analyze important characteristics of teaching anatomically sound warm-up and cool down sessions and choreographing and teaching aerobic workouts based on sound physiological principles.
- 3. Students will evaluate and administrate physical fitness assessments.

DANCE 340R : Contemporary Dance, Technique and Theory 3. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Dance 243R or equivalent; by audition.

**Course Outcomes**

- Demonstrate intermediate/advanced Contemporary dance technical proficiency in whole body connectivitystrength & flexibilitybreath initiation and supportconsistent core support functional alignmentbalance & coordination groundedness and weight sensingshape clarity, spatial accuracy and rangefocusrhythmic accuracyarticulationdynamic contrastcomplex movement skills
- Demonstrate increased dance performance artistry in:sequence masterymusicalityexpressivitypersonal interpretationnuanceensemble
- Describe, assess and write about demonstrated achievement of technical and performance skill
- Show sustained application of feedback from assessments
- Articulate understanding of Contemporary/Modern dance as an art form
- Articulate dance connections to gospel principles mind, body and spirit

DANCE 341R : Contemporary Dance Technique Forms. (2.5:0:7.5)

WHEN TAUGHT: Winter

PREREQUISITE: Dance 340 or equivalent; by audition.

DESCRIPTION: Contemporary dance forms and techniques, including Chinese contemporary dance, contact improvisation, and other new and hybrid dance forms useful in contemporary dance training. Offerings subject to teacher expertise.

**Course Outcomes**

- 1. Demonstrate intermediate/advanced technical proficiency in both ballet and contemporary dance technique. Areas requiring proficiency include:whole body connectivitystrength & flexibilitybreath initiation and supportconsistent core supportfunctional alignmentbalance & coordinationgroundedness and weight sensingshape clarity, spatial accuracy and rangefocusrhythmic accuracyarticulationdynamic contrastcomplex movement skills
- 2. Demonstrate increased dance performance artistry in:sequence masterymusicalityexpressivitypersonal interpretationnuanceensemble
- 3. Describe, assess, and write about:demonstrated achievement of technical and performance skill.the essential and developing relationship that exists between ballet and contemporary dance movement.
- 4. Show consistent and sustained application of feedback from daily class and assessments.
- 5. Demonstrate intermediate/advanced knowledge of ballet and contemporary vocabulary through participation, observation, discussion, and writing.
- 6. Articulate dance connections of gospel principles in mind, body and spirit

DANCE 342 : Kinesiology for Dancers. (4:4:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: PDBIO 220 & DANCE 230

DESCRIPTION: Study and analysis of the neuromusculoskeletal system in practical application to dance for more efficient use of the body and reduction of injuries.

**Course Outcomes**

There are no course outcomes available

DANCE 343 : Principles of Somatics. (2:2:1)

WHEN TAUGHT: Fall; Spring Even Yrs.

PREREQUISITE: DANCE 243R & DANCE 244R; or DANCE 291R; Dance 342.

DESCRIPTION: Experiential approach to movement training including body patterning. Integration and personal expression of body and movement choices.

**Course Outcomes**

- Students will be able to:1. identify and demonstrate a basic theoretical and practical understanding of selected Somatic principles and practices.
- 2. demonstrate an awareness and understanding of movement from a place of inward knowing.
- 3. physically embody connectivity
- 4. understand the joys and consequences of their own personal movement choices
- 5. integrate the concepts of the class into the practical applications of teaching, coaching and re-patterning for self or other.

DANCE 346 : Methods of Teaching Dance to Social Groups in Secondary Education. (2:1:2)

WHEN TAUGHT: Fall

RECOMMENDED: Dance 170, 180.

DESCRIPTION: Teaching methodologies in social and world dance, specifically to prepare students in secondary dance education to teach these forms in the public schools.

NOTE: For dance education majors only.

**Course Outcomes**

- 1. Students will learn the basic skill fundamentals of social & world dance.
- 2. Students will learn the vocabulary of the steps associated with social & world dance.
- 3. Students will learn the basic teaching methodology of social & world dance.
- 4. Students will learn basics of calling ahead and prompting for social & world dance.
- 5. Students will understand the value of good teaching skills and techniques in order to help others enjoy these dance styles.
- 6. Students will begin to develop a teaching style of your very own.

DANCE 348R : Kinnect. (1-2:1:6)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: Audition.

DESCRIPTION: Educational outreach dance company specifically focusing on developing teaching, creative, and performance skills.

**Course Outcomes**

- 1. Collaboratively choreograph theme based dances for an educational lecture performance
- 2. Demonstrate creative dance teaching skills with children in elementary schools
- 3. Demonstrate increased performance and improvisation skill in real world venues
- 4. Demonstrate leadership within the group by fulfilling specific roles and assignments related to the creation, production, presentation, and teaching tasks of the company
- 6. Evaluate, modify and adapt original presentations, lessons and dances in authentic dance experiences in schools, museums and/or conferences
- 7. Demonstrate dance education professionalism and advocacy

DANCE 351 : Laban Movement Analysis. (2:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: DANCE 243R & DANCE 244R & DANCE 291R

DESCRIPTION: Tools to make sense of, and derive meaning from movement. Constituent movement components that facilitate accuracy in teaching, performance, and choreography.

**Course Outcomes**

- Each student will be able to:1. Identify the basic vocabulary, concepts and principles that are used in LMA.
- 2. Describe a movement event systematically using the aspects of the system.
- 3. Demonstrate functional skill in both a personal and professional application of LMA, including appropriate notational forms and/or specialized terminologies.

DANCE 355 : Dance Production, Introduction. (2:2:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Principles and practices of technical aspects of dance production.

**Course Outcomes**

- 1. Students will identify and articulate a knowledge of equipment, techniques, and procedures in technical theatre.
- 2. Students will demonstrate basic competency (in theory and practice) of theatrical production principles, including lighting, costuming, and technologies for dance performances
- Students will demonstrate an understanding of the relationship of light, color, fabric, and technology; and how to use that knowledge to accomplish an artistic vision.

DANCE 356 : Dance and Technology. (2:2.0:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction to techniques and technology of photo, audio, and digital video software.

**Course Outcomes**

There are no course outcomes available

DANCE 359R : Special Topics and Issues. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: DANCE 243R & DANCE 244R & DANCE 261

DESCRIPTION: Seminar with rotating topics and issues selected from: dance and health, dance and identity, dance and technology, and dance philosophy and aesthetics.

**Course Outcomes**

- PHOTOSHOP OBJECTIVES&1. Students will demonstrate competency in the Photoshop interface.
- 2.Students will acquire knowledge in the use of the key commands.
- 3. Students will apply knowledge of the toning and selection tools to re-touch dance photos.
- 4.Students will create a complex image using layers, digital filters and blending modes.
- 5.Students will construct a dance concert poster.
- LOGIC EXPRESS OBJECTIVES1. Students will demonstrate competency in the Logic Express interface.
- 2.Students will acquire knowledge in the use of key commands
- 3.Students will create background music for a slideshows and video.
- 4.Students will understand and apply audio effects techniques when mixing and exporting music.
- 5.Students will demonstrate audio editing techniques to cut pre-recorded music.
- FINAL EXPRESS OBJECTIVES:1. Students will demonstrate competency in the Final Cut interface.
- 2. Students will acquire knowledge in the use of key commands.
- 3. Students will understand the Final Cut workflow.
- 4. Students will demonstrate knowledge of video editing.
- 5. Students will analyze and color correct video.
- 6.Students will create a solo dance on video.
- 7.Students will create a group dance on video.
- iDVD OBJECTIVES1.Students will demonstrate competency in the iDVD interface.
- 2.Students will Understand the iDVD workflow.
- .Students will Create and author a DVD.

: Dance and Identity.

**Course Outcomes**

: Dance and Health Issues.

**Course Outcomes**

: Dance Philosophy and Aesthetics.

**Course Outcomes**

DANCE 361 : Music Dance Theatre Choreographic Styles. (2:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: DANCE 231R & DANCE 244R & DANCE 291R; Dance 235, 243R, 229.

DESCRIPTION: Physical and conceptual aspects of dance styles as they relate to music dance theatre.

**Course Outcomes**

- Students will:1. Be able to reproduce specific Music Theatre dance styles with clarity. Sequences to be mastered will come from a variety of sources – instructor, guests, and fellow students.
- 2. Acquire knowledge on a specific historical or current Music Theatre choreographer or appropriate style that is pertinent in the field of Music Theatre.
- 3. Increase better understanding of techniques used for professional auditioning.
- 4. Gain specific skills to produce original choreography that can be used in Musical Theatre.
- 5. Develop more understanding of a relationship between religion and the role of Music Theatre in culture and society.

DANCE 362 : Contemporary Choreography Intermediate. (2:0:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 244R

DESCRIPTION: Fundamental choreographic structure emphasizing visual, kinesthetic, and musical aspects in contemporary dance.

**Course Outcomes**

There are no course outcomes available

DANCE 363 : Dance Improvisation, Intermediate. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 244R

**Course Outcomes**

- Students will learn to Move! To Explore!
- Students will learn to break comfortable and limiting movement patterns, dancing in ways that you have not moved before.
- Students will learn to "call up spontaneity at will".
- Students will learn to develop improvisational skills of "muscle readiness".
- Students will learn to learn how to suspend judgment.
- Students will learn to evolve movement over an extended period of time without losing spontaneity.
- Students will learn to practice recalling movement.
- Students will learn to practice relating to other dancers in various improvisational structures.
- Students will learn to evolve movement "in the moment" with a sense of form and definition (beginning, middle, end) thus "finding the dance" in the instant of exploration and improvisation.

DANCE 365 : Creative Dance for Elementary Education. (2:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: Dance 243R, 244R, or approved Kinnect membership.

DESCRIPTION: Theory and teaching experience in creative movement for preschool and elementary school children.

**Course Outcomes**

- 1. Articulate an understanding of creative dance education theory, content, and pedagogy that facilitates artistic development and process orientation.
- 2. Apply knowledge of developmentally appropriate dance learning activities for children pre-school through grade eight.
- 3. Demonstrate an understanding of dance, elements, concepts and vocabulary physically, verbally and in writing, and apply that knowledge to teaching dance in the elementary setting
- 4. Identify and use clear lesson content objectives drawn from national and state curriculum standards when planning lessons and teaching dance.
- 5. Understand and apply a variety of teaching strategies and management techniques necessary to effectively guide dance skill building, exploration, improvisation, and compositional experiences for young children.
- 6. Explore and identify various forms of dance assessment

DANCE 366 : Methods of Teaching Contemporary Dance. (2:2:2)

WHEN TAUGHT: Winter; Spring Odd Yrs.

PREREQUISITE: DANCE 243R & DANCE 261; Dance 244R or equivalent.

DESCRIPTION: Planning, teaching, and evaluating lessons.

**Course Outcomes**

- 1. develop, articulate and demonstrate a clear philosophy of teaching and learning as it relates to Contemporary Dance.
- 2. demonstrate a conceptual understanding of the content and processes needed to facilitate learning in the field of Contemporary Dance.
- 3. demonstrate teaching competency through experiences in planning, teaching and evaluating lessons.
- 4. demonstrate an ability to use a variety of teaching strategies to produce new knowledge and skills in others.
- 5. facilitate artistic development through process-oriented instruction.

DANCE 367 : Methods of Teaching Children's Creative Dance. (2:1:2)

WHEN TAUGHT: Fall; Spring Even Yrs.

PREREQUISITE: DANCE 243R & DANCE 244R

**Course Outcomes**

- Students will:1. Gain an increased understanding of the importance of Creative Dance for children.
- 2. Learn to teach developmentally appropriate technical dance skills to children.
- 3. Demonstrate an understanding of the methods of encouraging creative problem solving skills and the creative process.
- 4. Demonstrate knowledge, mastery and application of the elements of dance (time, space, and force) in relation to the teaching of children.
- 5. Gain practical experience through teaching children.

DANCE 368R : DancEnsemble - Contemporary Dance Performance and Choreography. (1-2:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Experiences in contemporary dance choreography and performance.

**Course Outcomes**

- 1. Demonstrate increasing performance skill, including skills of concentration, discipline, focus and stage presence.
- 2. Demonstrate increasing technical skill, focusing specifically of the refinement of nuance, projection, dynamics and the ability to dance within the context of an ensemble.
- 3. Create and evaluate dances, giving increased attention to the ability to see and respond to the possibilities within any given choreographic situation.
- 4. Investigate and refine their own individual choreographic and performance voice.

DANCE 370 : World Dance Technique 2. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: DANCE 270

DESCRIPTION: In-depth dance technique of selected traditional, folk, and national dance styles.

**Course Outcomes**

- 1. Demonstrate complex movement patterns from selected cultures
- 2. Develop proper technique of posture and gesture
- 3. Interpret proper body alignment and technical execution of movement styles and phrases
- 4. Enhance the ability to recognize and understand world dance vocabulary, significance andcontext within selected cultures

DANCE 371R : Clog Dance Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 271 or equivalent.

DESCRIPTION: Fundamentals of clog technique at the advanced level.

**Course Outcomes**

- Students will learn traditional and contemporary advanced clogging techniques including arm movements, footwork, correcrt alignment, placement, and weight shifts
- Students will learn a movement vocabulary using correct clog dance terminology.
- Students will learn, dance and test intermediate sequences and patterns of movement.
- Students will learn additional presentation skills in clog dance movement patterns, combinations, and skills.
- Students will learn a knowledge of the history and progression of clog dance.

DANCE 373 : Hungarian Dance: Practice and Theory, Technique 2. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: Dance 273 or equivalent.

DESCRIPTION: Advanced ethnic dance techniques from the Hungarian culture.

**Course Outcomes**

No outcomes are available at this time.

DANCE 374R : Irish Dance: Practice and Theory, Technique 2. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Dance 274R or equivalent.

DESCRIPTION: Advanced ethnic dance techniques from the Irish culture.

**Course Outcomes**

There are no course outcomes available

DANCE 376 : Methods of Teaching World Dance. (2:2:3)

WHEN TAUGHT: Fall

RECOMMENDED: Dance 170 or equivalent.

**Course Outcomes**

- 1. Students will study logical progressions in the breakdown of steps, formations and positions
- 2. Students will learn to communicate specific verbal cues in the delivery of content
- 3. Students will develop calling ahead techniques
- 4. Students will learn the mechanics of class structure and management
- 5. Students will demonstrate correct styling and technique
- 6. Students will learn how to read and understand world dance descriptions
- 7. Students will learn the skills in successfully teaching large groups in a recreational setting
- 8. Students will develop and actualize a clear philosophy of teaching and learning as it related to dance

DANCE 377 : World Dance Choreography. (2:0:4)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Fundamental choreographic structure emphasizing visual, kinesthetic, and musical aspects in World Dance.

**Course Outcomes**

- 1. Students will learn technical elements, process and crafting principles of composition, such as: transitions, traditional formations, dynamic structure, stylistic coherence, form, musical dynamics and phrasing.
- 2. Students will develop a critical eye in analyzing and forming own aesthetic criteria.
- 3. Students will discover ethno-choreographic elements of a particular style or cultural group.
- 4. Students will address issues of authenticity versus creativity, traditional versus contemporary.
- 5. Students will learn to document choreography.

DANCE 378R : Folk Dance Performance, Intermediate. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.
DESCRIPTION: Performance techniques and experience in folk dance.

**Course Outcomes**

- 1. Students will learn the traditional dance technique and stylization of selected countries or regions
- 2. Students will develop the performance skills of posture, presentation, and characterization
- 3.Students will explore both the recreational and staged forms of world dance
- 4. Students will demonstrate strong citizenship as a member of a performance team

DANCE 380R : Social Dance, Technique 2. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Dance 280 or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the school figures associated with each dance by practice and application.
- 2. Students will demonstrate the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to lead and follow through their participation at labs and through exams.

DANCE 382R : Ballroom, International Technique 2. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Dance 284 or equivalent; instructor's consent.
DESCRIPTION: Gold 1 level. Waltz, tango, fox-trot, quickstep.

**Course Outcomes**

- 1. Students will be able to effectively demonstrate gold level school figures of International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to effectively demonstrate advanced level ballroom technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 383R : Ballroom Dance, International Latin, Technique 2. (1:0:3)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Dance 285 or equivalent; instructor's consent.
DESCRIPTION: Gold 1 level. Cha-cha, samba, rumba, paso doble.

**Course Outcomes**

- Students will be able to effectively demonstrate gold level school figures of International Style Cha-Cha, Samba, Rumba, Paso Doble
- Students will be able to effectively demonstrate advanced level latin technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 384R : Ballroom, International Technique 3. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 382R or equivalent; instructor's consent.
DESCRIPTION: Gold 2 level. Waltz, fox-trot, tango, quickstep.

**Course Outcomes**

- 1. Students will be able to demonstrate, competitive figures at a pre-championship level in the International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to demonstrate pre-championship level ballroom technique in the following areas: 1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 385R : Ballroom Dance, International Latin, Technique 3. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 383R or equivalent ; instructor's consent.
DESCRIPTION: Gold 2 level. Cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to demonstrate, competitive figures at a pre-championship level in International Style Cha-Cha, Samba, Rumba, Paso Doble
- 2. Students will be able to demonstrate pre-championship level latin technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 386 : Methods of Teaching Social Dance. (2:1:2)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: DANCE 280
DESCRIPTION: Pedagogy training in social dance at the bronze and silver skill levels.

**Course Outcomes**

- 1. Students will analyze the most important characteristics of great teachers through discussion.

- 2. Students will demonstrate basic skills of ballroom dance by participation and practice including both the mans and ladies parts.
- 3. Students will demonstrate the basic skills of teaching dance to groups by developing lesson plans and through practical experience.

DANCE 387 : Ballroom Dance Choreography. (2:0:4)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Choreography in Ballroom Dance emphasizing formation dancing.

**Course Outcomes**

- 1. Students will find coherence in foundational elements of formation choreography.
- 2. Students will demonstrate basic skills of composing ballroom formation choreography.

DANCE 388R : Ballroom Dance Performance, Intermediate. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Audition.

DESCRIPTION: Performance techniques and experience in ballroom dance.

**Course Outcomes**

- 1. Students will demonstrate dance skills through technique, stylization, and choreography.
- 2. Students will find coherence if what it means to represent Brigham Young University and the Church of Jesus Christ of Latter-day Saints in local areas.

DANCE 390R : Ballet Technique 3. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Audition.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advanced/intermediate ballet technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at an advanced/intermediate level standard.
- Each student will:Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 391R : Ballet Technique 4. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advanced levelballet technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at an advanced level standard.
- Each student will:Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 392R : Ballet Pointe 1. (.5:0:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: A minimum of two years of previous pointe technique and concurrent enrollment in Dance 390R.

DESCRIPTION: Intermediate level pointe. Satisfies BA requirements in Dance.

NOTE: Although this is an open enrollment course, all students must receive teacher approval or level placement audition before registering.

**Course Outcomes**

There are no course outcomes available

DANCE 393R : Ballet Pointe 2. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition required; concurrent enrollment in Dance 390R or 391R.

DESCRIPTION: Advanced level pointe. Satisfies BA requirements in Dance.

NOTE: Although this is an open enrollment course, all students must receive teacher approval or level placement audition before registering.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advanced/intermediateballet pointe technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Apply a working knowledge of French ballet terminology, analytical skills, and sound writing skills by submitting a weekly journal entry or written self-evaluation, and a written critique of a live performance.
- Each student will:Participate fully in the pointe technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 396 : Methods of Teaching Ballet. (2:2:2)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Dance 390R or equivalent.

DESCRIPTION: Teaching classical ballet from preballet through advanced; includes analysis of Bournonville, Cecchetti, Vaganova, RAD, Kneeland, and SAB methods.

**Course Outcomes**

- 1. Students will demonstrate a knowledge of ballet class structure and progression between levels bywriting an 8-year ballet curriculum.
- 2. Students will experience practical observation of ballet classes/labs and analyze teachers at work.
- 3. Students will apply sound musical principles in practical teaching experiences.
- 4. Students will philosophically and historically analyze each of the major ballet methodologies: Cecchetti, Royal Academy of Dancing, Vaganova, etc.
- 5. Students will demonstrate a working knowledge (both written and verbal) of ballet French terminology for the technique appropriate for each level of ballet instruction.

DANCE 397 : Ballet Choreography. (2:0:4)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Fundamental choreographic structure emphasizing visual, kinesthetic, and musical aspects in ballet. Exploration of hte choreographic process through theoretical study and analysis as well as practical application in the presentation of choreographic work. Concepts include clarity, creativity, transition, musical accent and phrasing, dynamic structure, form, stylistic coherence, artistic merit.

**Course Outcomes**

- Each student will creatively experiment with and arrange movement with regard to clarity, transition, musical accent and phrasing, dynamic structure, form and stylistic coherence.
- Each student will begin to formulate his/her own aesthetic criteria through the process of watching dance concerts and writing concise and thoughtful critiques.
- Each student will enhance his/her understanding of choreography through reading, observation, discussion, and active participation.
- Each student will demonstrate knowledge acquired through completion of creative, choreographic project and written examination.

DANCE 399R : Academic Internship: Dance. (.5-4:0:50)

**Course Outcomes**

- 2. Demonstrate the propensity to interact with professionals in their field of study in a credible, responsible and articulate manner.
- 1. Develop contacts with professionals in their field of study with the intent of creating a network that will be beneficial to future career choices.
- 3. Demonstrate improvement in the assigned responsibilities throughout the course of the internship as evaluated by the mentor teacher/intern supervisor in three periods, early, middle, and end of the internship.

**400-Level Courses**

DANCE 426 : Music Dance Theatre: Senior Performance Project. (1:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: DANCE 361; Concurrent enrollment in Music 426, and TMA 426.

DESCRIPTION: Participation in an MDT performance group culminating in a showcase for agents and directors in New York City during April.

**Course Outcomes**

- Students will audition for and receive feedback from industry professionals in two markets.
- Students will experience an audition/showcase situation in two entertainment markets.
- Students will have several performance ready audition selections prepared.
- Students will have professioanlly produced personal promotional material on hand.
- Students will experience Master Classes from working Broadway professionals.
- Students will recognize their types and marketability within the entertainment industry.
- Students will establish professional contacts that will aid them in making the transition from the adademic to the professional world of theatre.

DANCE 429R : Dance Performance 2. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Instructor's consent.

DESCRIPTION: Participation as dancers in concert dance production.

**Course Outcomes**

- The learning outcomes of this course will be correlated somewhat with the learning outcomes of one of the regular dance performance groups. However, due to the individualized nature of this course, individual outcomes will be designed by the instructor based upon the needs and opportunities of the student.

DANCE 440R : Contemporary Dance, Technique and Theory 4. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 340R or equivalent; by audition.

**Course Outcomes**

- 1. Students will demonstrate advanced technique proficiency instrength flexibilityconnectivitycomplex sequence mastery movement problems
- 2. Students will demonstrate performance awareness and control over movement innuancedynamicmusicalityfreedom from tensionshapinginitiationbreath qualityphrasing and composition
- 3. Students will describe, assess and write about achievement of technical skills and performing skills
- 4. Students will articulate appreciation for the divine nature of the human body as it relates to gospel principles as well as the relationship between mind/body/spirit.
- 5. Students will articulate appreciation for dance as an art form

DANCE 459 : Seminar in Dance. (1:1:0)

WHEN TAUGHT: Winter

DESCRIPTION: Seminar exposing students to a variety of dance related topics. Instruction by multiple dance professionals in their areas of expertise.

**Course Outcomes**

- 1. Student will articulate an understanding of advanced degree opportunities
- 2. Student will identify a variety of career opportunities in the field of dance
- 3. Student will demonstrate an understanding of appropriate professional skills needed for entry into the dance field
- 4. Student will generate professional documents relevant to their future in the dance field
- 5. Student will articulate an enhanced perspective on current dance issues
- 6.Student will express personal spiritual views in relation to dance performance, choreography and pedagogy

DANCE 460 : Dance History to 1850. (2:2:0)

WHEN TAUGHT: Fall; Summer Odd Yrs.

DESCRIPTION: Survey of dance in tribal cultures and ancient through Romantic historical periods, emphasizing dance of Western civilization.

**Course Outcomes**

- 1. Students will critically analyze, synthesize, internalize, and apply to present day dance prevalent in Western civilization, dance information gleaned through the study of dance within tribal cultures and ancient through romantic historical periods. (To be evaluated via midterm and final written examinations)
- 2. Students will analyze current dance and culturally related issues in contemporary society and articulate them verbally and in written form through class discussion and completion of course assignments. (To be evaluated via written response questions)
- 3. Students will apply basic historical research concepts and methodology in personal research processes and products. (To be evaluated via unit assignments.)
- 4. Students will become proficient in the use of MLA documentation style and format through application in unit assignments. (To be evaluated via formal documentation associated with unit assignments.)

DANCE 461 : Dance History from 1850. (2:2:0)

WHEN TAUGHT: Winter; Summer Even Yrs.

DESCRIPTION: Survey of dance in modern and postmodern historical periods, emphasizing dance of Western civilization.

**Course Outcomes**

- 1. Students will critically analyze, synthesize, and internalize key Western dance history information focusing on 1850 to the present. (To be evaluated via midterm and final written examinations)
- 2. Students will analyze current dance and culturally related issues in contemporary society; and articulate them verbally and in written form through class discussion and completion of course assignments. (To be evaluated via written response questions)
- 3. Students will apply basic historical research concepts and methodology to strengthen personal research processes and products. (To be evaluated via unit assignments)
- 4. Students will become competent in the use of MLA documentation style and format through application in relevant course assignments. (To be evaluated via formal documentation associated with unit assignments)

DANCE 462 : Contemporary Choreography, Advanced. (2:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 362

DESCRIPTION: Creation and presentation of complete choreographic works.

**Course Outcomes**

There are no course outcomes available

DANCE 464 : Dance Accompaniment. (1:1:1)

WHEN TAUGHT: Fall; Summer Odd Yrs.

PREREQUISITE: DANCE 264

**Course Outcomes**

- Students will demonstrate leadership skills by teaching and accompanying short dance sequences.
- Students will understand the importance of dynamics, articulation and rhythm in dance.
- Students will understand how to improvise rhythms by practicing and demonstrating rhythms on a djembe drum.
- Students will demonstrate musical proficiency by accompanying dancers movement exercises.
- Students will use technology to edit and enhance audio files used for movement studies.

DANCE 465 : K-12 Dance Curriculum Design. (2:2:1)

PREREQUISITE: DANCE 276R & DANCE 365 & DANCE 366; Dance 348R or 399R.

DESCRIPTION: Dance unit planning, scope and sequencing, core curriculum, and curriculum mapping with cross-curricular, thematic, and cultural integration K-12.

**Course Outcomes**

- @font-face { font-family: "Courier New";}@font-face { font-family: "Wingdings";}p.MsoNormal, li.MsoNormal, div.MsoNormal { margin: 0in 0in 0.0001pt; font-size: 10pt; font-family: "Times New Roman"; }div.Section1 { page: Section1; }ol { margin-bottom: 0in; }ul { margin-bottom: 0in; }1. Demonstrate the ability to represent existing national and state dance standards within a relevant dance curriculum;
- @font-face { font-family: "Courier New";}@font-face { font-family: "Wingdings";}p.MsoNormal, li.MsoNormal, div.MsoNormal { margin: 0in 0in 0.0001pt; font-size: 10pt; font-family: "Times New Roman"; }div.Section1 { page: Section1; }ol { margin-bottom: 0in; }ul { margin-bottom: 0in; }2. Understand and be able to articulate the value of unit planning and scope and sequencing within a larger curriculum map;
- @font-face { font-family: "Courier New";}@font-face { font-family: "Wingdings";}p.MsoNormal, li.MsoNormal, div.MsoNormal { margin: 0in 0in 0.0001pt; font-size: 10pt; font-family: "Times New Roman"; }div.Section1 { page: Section1; }ol { margin-bottom: 0in; }ul { margin-bottom: 0in; }3. Demonstrate the ability to organize and create unit and curricular plans that are developmentally appropriate for specific populations within the K-12 setting;
- @font-face { font-family: "Courier New";}@font-face { font-family: "Wingdings";}p.MsoNormal, li.MsoNormal, div.MsoNormal { margin: 0in 0in 0.0001pt; font-size: 10pt; font-family: "Times New Roman"; }div.Section1 { page: Section1; }ol { margin-bottom: 0in; }ul { margin-bottom: 0in; }4. Demonstrate the ability to apply cross-disciplinary concepts within a larger dance curriculum in K-12 settings;
- @font-face { font-family: "Courier New";}@font-face { font-family: "Wingdings";}p.MsoNormal, li.MsoNormal, div.MsoNormal { margin: 0in 0in 0.0001pt; font-size: 10pt; font-family: "Times New Roman"; }div.Section1 { page: Section1; }ol { margin-bottom: 0in; }ul { margin-bottom: 0in; }5. Articulate understanding of the language and uses of assessment.

DANCE 466 : Dance Teaching Practicum. (2:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: Dance major status.

DESCRIPTION: Pre-student teaching course giving students practical teaching and classroom management experience in a mentored environment. Discussion lab integrating theory and experience.

**Course Outcomes**

- 1. Create unit and lesson plans that appropriately align with the Utah core curriculum;
- 2. Demonstrate competent use of INTASC standards while teaching;
- 3. Articulate and demonstrate various strategies for successful classroom management;
- 4. Demonstrate varied student assessment methods and strategies, including successful design and use of a rubric;
- 5. Reflect upon and accurately self-assess teaching strengths and weaknesses.

DANCE 468R : Contemporary Dance Theatre. (2:0:12)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Performing modern and contemporary dance repertory on and off campus.

**Course Outcomes**

- 2. Show increased technical ability.
- 1. Develop advanced performance skill and artistry.
- 3. Understand choreographic principles.
- 4. Contribute to the choreographic process.
- 5. Perform dances for audiences on campus, in schools, in professional venues, and at conferences.
- 6. Make visible attitudes of professional behavior.
- 7. Strengthen their testimony of the gospel and deepen their desire to share light and truth through the art form of dance.

DANCE 469 : Capstone in Dance. (2:0:ARR)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: BA in Dance: Dance 362 if a choreographic project. Dance Education: Dance 362; 361 or 462.

**Course Outcomes**

- Students will reflect in their capstone project a philosophy compatible with the mission of BYU
- Students will complete a capstone project, whether it be choreographic, research, or performance that represents a significant and comprehensive synthesis of the learning they have experienced during their years in the program

DANCE 474R : Percussive Step Styles. (1:0:3)

WHEN Fall Even Yrs.

TAUGHT:

PREREQUISITE: Two of three possible courses: Dance 371 or 335 or 374R.

DESCRIPTION: Technique and theory, fusing a diversity of percussive dance styles including, but not limited to, French Canadian Gigue, Cape Breton Step, Power Tap, traditional and contemporary Clog Dance. Composition and improvisation included.

**Course Outcomes**

- 1. Students will gain speed, clarity and precise technique in various styles of percussive footwork.
- 2. Students will improve coordination, motor memory, fine and gross motor skills.
- 3. Students will demonstrate correct alignment, placement and weight shifts.
- 4. Students will learn sequences and patterns of movement.
- 5. Students will apply the theory and process of improvisation and composition.
- 6. Students will learn the current movement vocabulary and or terminology.
- 7. Students will gain a kinesthetic perception and concentration in order to self-evaluate and self correct.

DANCE 476 : Secondary Student Teaching. (12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

DANCE 477 : Dance - a Reflection of Culture. (2:2:0)

WHEN TAUGHT: Winter

DESCRIPTION: Study of dance as an expression of culture.

**Course Outcomes**

- 1. Students will learn cultural concepts and identity associated with world dance
- 2. Students will understand the differences and similarities in traditions and rituals connected to dance
- 3. Students will participate in class discussions and analysis of group research and assigned readings;
- 4. Students will understand ethnochoreology and ethnography and how they interface in cultural dance

DANCE 478R : Folk Dance Performance Company. (2:0:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Performance technique and experience with International Folk Dance Ensemble.

**Course Outcomes**

- 1. Students will embrace a philosophy of dance compatible with the mission of BYU that guides their personal choices in the professional or recreational worlds of dance.
- 2. Students will demonstrate artistry and advanced ability in dance performance.

DANCE 480R : Social Dance, Technique 3. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 380R or equivalent.

**Course Outcomes**

- 1. Students will demonstrate the class routines associated with each dance by practice and application
- 2. Students will demonstrate advanced level the technique (including footwork, rhythm, alignment, and styling) associated with each dance by practice and application.
- 3. Students will demonstrate their ability to compete in an open event by participation in the BYU Dancesport competition.

DANCE 484R : Ballroom, International Technique 4. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 384R or equivalent; instructor's consent.

DESCRIPTION: Gold bar level: waltz, tango, fox-trot, quickstep, Viennese waltz.

**Course Outcomes**

- 1. Students will be able to demonstrate competitive figures at a championship level in International Style Waltz, Tango, Foxtrot and Quickstep.
- 2. Students will be able to demonstrate "championship" level ballroom technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 485R : Ballroom Dance, International Latin, Technique 4. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 385R or equivalent; instructor's consent.

DESCRIPTION: Gold bar level: cha-cha, rumba, samba, jive, paso doble.

**Course Outcomes**

- 1. Students will be able to demonstrate competitive figures at a championship level in the International Style

Cha-Cha, Samba, Rumba, Paso Doble
- 2. Students will be able to demonstrate "championship" level latin technique in the following areas:1) posture and dance position 2) clarity and use of timing 3) proper use of feet 4) correct weight transfer 5) a clear understanding of partnering skills

DANCE 486 : Theory and Notation of Ballroom Dance, International. (2:0:4)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: DANCE 384R

DESCRIPTION: Preparation for professional teaching certification examinations.

**Course Outcomes**

- 1. Students will find coherence in technical codification of International Style Waltz, Tango Foxtrot, and Quickstep.
- 2. Students will be able to demonstrate with technical clarity the man and woman's part of Bronze and Silver level school figures of the Waltz, Tango Foxtrot, and Quickstep.
- 3. Students will be able to correctly articulate and deliver the technical information as required for a future professional examination the following categories: Feet Positions, Alignment, Amount of Turn, Rise & Fall, Footwork, C.B.M., and Sway
- 4.Students will be able to successfully amalgamate school figures into a cohesive routine.

DANCE 487 : Theory and Notation of Ballroom Dance, International Latin. (2:0:4)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: DANCE 385R

DESCRIPTION: Theory and notation of International Latin Dance and preparation for professional teaching certification examinations.

**Course Outcomes**

- 1. Students will find coherence in technical codification of International Style Cha-Cha, Samba Rumba Paso Doble, and Jive
- 2. Students will be able to demonstrate with technical clarity the man and woman's part of Bronze and Silver level school figures of the Cha-Cha, Samba, Rumba, Paso Doble, and Jive
- 3. Students will be able to correctly articulate and deliver the technical information as required for a future professional examination the following categories: Feet Positions, Alignment, Amount of Turn, Footwork
- 4. Students will be able to successfully amalgamate school figures into a cohesive routine.

DANCE 488R : Ballroom Dance Performance Company. (2:0:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Performance techniques and experience with BYU Ballroom Dance Company.

**Course Outcomes**

- 1. Students will demonstrate an increased ability to perform the art of Ballroom Dance through participation in choreographic repertoire .
- 2. Students will exemplify the standards of Brigham Young University and the Church of Jesus Christ of Latter-day Saints, and the United States as student ambassadors
- 3. Students will find coherence of dance as a cultural tradition, an art form, an uplifting form of entertainment, and a social/recreational activity.

DANCE 489R : Preparation for Ballroom Dance Competitions. (1:0:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Creation and presentation of ballroom competitive routines, emphasizing visual and musical aspects.

**Course Outcomes**

- 1. Students will find coherence in the rigor required for competitive dancing. practices for International Style Ballroom Dance.
- 2. Students will demonstrate a repertoire of competitive dances in the Ballroom or Latin style.

DANCE 490R : Ballet Technique 5. (3:0:9.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Advanced ballet technique, including advanced pointe work for women and advanced technique for men.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advancedballet technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at an advanced level standard.
- Each student will:Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 494R : Ballet Variations. (1:0:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Dance 391R and 393R or equivalents.

**Course Outcomes**

- Students will learn and achieve technical and stylistic mastery of several variations from classical ballets.
- Students will learn and record the background, libretto, and style of the specific ballets through brief lectures.
- Students will compile a notebook with the background, libretto, and details of each variation which will aid in the future instructing of these variations. The student will include specifics on choreographers, composers, and dancers where applicable; as well as all steps of each variation written in a clear, understandable form.
- Students will learn each variation and be required to perform throughout the semester.
- Students will prepare variations to perform and be graded on those technical and stylistic requirements.

DANCE 495R : Pas de Deux. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: Audition.

DESCRIPTION: Ballet partnering techniques.

**Course Outcomes**

- 1. Students will find the point of balance for incomplete and complete turns.
- 2. Students will learn to perform falling poses and promenades.
- 3. Students will demonstrate knowledge of three basic turns: finger pirouette, pirouette partnered at the waist, and pirouette partnered at the hand(s) / wrist(s).
- 4. Students will maintain placement and strength during lifts (Female).
- 5. Students will lift partner above the head with stretched elbows and correct position of the back and head, with knees stretched and heel on the floor (Male).
- 6. Students will demonstrate focus on partner during combinations while being cognizant of the facial expressions.
- 7. Students will demonstrate shoulder lift on one side (left or right) with appropriate expression and maintain position for 10 seconds.
- 8. Students will perform a double pirouette, en dehors and en dedans, when partnered at the waist at least 75% of the time.
- 9. Perform triple finger pirouettes, en dehors at least 75% of the time.
- 10. Perform technique and partnering skills correctly to avoid injury.
- 11. Students will achieve traditional manners of courtesy and noble dignity that should be present between the male and female dancers.
- 12. Students will achieve an appreciation for the partner's role in creating a union of movement.
- 13. Students will increase trust between the male and female partner.

DANCE 498R : Ballet Performance Company. (2:0:10)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition and concurrent enrollment in Dance 391R or 490R; 494R or 495R.

DESCRIPTION: Performance technique and experience with BYU Theatre Ballet.

**Course Outcomes**

- Students will:1. Learn and master technically and stylistically several variations from various ballets, thereby expanding his/her ballet knowledge and repertoire. (Specific variations and ballets vary according to semester.)2. Learn the background, libretto, and style of the specific ballets through brief lectures.
- Students will:1. Acquire, through research, a working knowledge of several classical ballets and classical ballet variations2. Compile a notebook with the background, libretto, and details of each variation which will aid in the future instructing of these variations. The student will include specifics on choreographers, composers, and dancers where applicable; as well as all steps of each variation written in a clear, understandable form. This will be a valuable written source that will be a lasting tool for any future teaching, dancing, or choreographing position.
- Students will:1. Learn the variations and strive to understand the differing technical and stylistic requirements of each. 2. Prepare the variations to perform and be graded on those technical and stylistic requirements.

## 500-Level Graduate Courses (available to advanced undergraduates)

DANCE 500R : Studies in Dance. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Experience in dance. Possibilities include but are not limited to study abroad, workshops, or pilot dance courses.

**Course Outcomes**

- 2. Students will demonstrate content specific dance skill.
- 1. Students will demonstrate a commitment to BYU and Dance Department standards in dress and behavior.
- 3. Students will demonstrate content specific proficiency through research, presentations, and creative works.

: Workshop in Ballet.

**Course Outcomes**

: Workshop in Ballroom.

**Course Outcomes**

**College of Fine Arts and Communications Home**

**Dance Department Home**

**Majors**

- BA in Dance
- BA in Dance Education K-12

**Minors**

- Ballroom Dance
- Contemporary Dance
- World Dance

**Course Information**

- Dance Courses

**Faculty**

# Dance Faculty

Show All
Hide All

## Professors

Berrett, Marilyn
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1979
MA, Brigham Young University, 1984

Wakefield, B. Lee
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MA, Brigham Young University, 1982

## Associate Professors

Austin, Edwin G.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1978
MA, Brigham Young University, 1980

Holman, Curt W.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Associate Professor
**DEGREES:** MA, Brigham Young University, 1996

Huang, Jiamin
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Associate Professor
**DEGREES:** BFA, Beijing Dance Academy, China, 1984
MA, Brigham Young University, 1998

Musil, Pamela S.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1978
MA, Brigham Young University, 1985

Prohosky, Caroline
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1972
MA, University of California, Los Angeles, 1980

Robison, Shani Michelle

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1995
MA, Brigham Young University, 1999

West, Colleen N.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1982
MA, Brigham Young University, 1985

## Assistant Professors

Balser, Nathan
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1998
MFA, University of Utah, 2000

Bott, Shayla
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Assistant Professor
**DEGREES:** BFA, University of Utah, 2004
MFA, University of Utah, 2006

Brown, Graham
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Assistant Professor
**DEGREES:** BFA, University of Utah, 2006
MFA, University of Maryland, College Park, 2013

Wakamatsu, Kori
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Dance
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, California State University, Long Beach, 2007

# Fine Arts (FnArt)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 200-Level Courses

FNART 270R : European Fine Arts. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Art, design, music, and theatre of host countries and other European cultures.

**Course Outcomes**

- Students will identify and analyze art, design, music, and theatre of host countries and other European cultures.

### 300-Level Courses

FNART 301R : Creativity and Collaboration in the Arts and Communications. (1-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Explore theories of creativity, collaboration, and innovation in a modern, arts-based mediated world; engage in principles of team-building and communication; practice skills of ideation, research, and execution of interdisciplinary projects from conception to completion.

**Course Outcomes**

There are no course outcomes available

**College of Fine Arts and Communications Home**

**School of Music Home**

**Majors**

- BA in Music
- BM in Commercial Music
- BM in Music Composition
- BM in Music Education
  - Emphases
    - K–12 Choral
    - K–12 Instrumental
    - Elementary Music Specialist
- BM in Music Performance
  - Emphases
    - Brass
    - Combined Piano and Organ
    - Organ
    - Percussion
    - Piano
    - String
    - Vocal
    - Woodwind

**Minor**

- Minor in Music

**Course Information**

- Music (Music) Courses

**Faculty**

# School of Music

Kory L. Katseanes, Director
C-550 HFAC, (801) 422-8903
www.music.byu.edu/

College of Fine Arts and Communications Advisement Center
D-444 HFAC, (801) 422-3777
www.cfac.byu.edu/

## Admission to Degree Program

Enrollment in the School of Music's degree programs is limited. Prospective majors must pass an audition and aural skills exam. Please consult the General Information section below and visit the college advisement center for details.

## The Discipline

The School of Music celebrates musical artistry and understanding as core elements of the human experience, crucial components of a liberal education, and central aspects of a spiritual life.

In the School of Music, students learn self-expression and self-discipline through rigorous practice and passionate performance. They develop an acute sensitivity for collaboration and artistic cooperation through intensive ensemble work. In the study of music theory and history, students learn to hear and appreciate various musical languages, distinguish nuances of style, and discern the connections between musical developments and their cultural contexts.

Students learn in a variety of situations: private lessons, small seminars, multimedia labs, ensembles, recitals, and lectures. They are encouraged to participate actively in the vibrant musical environment of the School of Music by attending concerts, lectures, and workshops, and by contributing to a student culture of independently motivated artistic engagement. These experiences foster a holistic approach that embraces academic rigor, artistic intuition, creative ambition, physical grace, and expressive eloquence.

In pursuit of the University's spiritual aims, students learn the divinity inherent in creativity and the devotion expressed by the nurturing of one's craft.

## Career Opportunities

The School of Music leads its students toward careers in performance, studio teaching, music education, creating and managing music projects for the media, recording and sound technology, arts management, music journalism, composition, and other music-related professions. Because the music curriculum is rigorous, it is also an excellent pre-professional course of study for those interested in fields as diverse as law, business, library science, or medicine. Whatever degrees one obtains, however, an education in music pertains not only to earning a living through art but also using art to enhance one's satisfaction and joy in life.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in Music** (Program Outcomes)
**BM in Commercial Music** (Program Outcomes)
**BM in Music Composition** (Program Outcomes)
**BM in Music Education**
**K-12 Choral Emphasis** (Program Outcomes)
**K-12 Instrumental Emphasis** (Program Outcomes)
**Elementary Music Specialist Emphasis** (Program Outcomes)
**BM in Music Performance**
**Brass Emphasis** (Program Outcomes)
**Combined Piano and Organ Emphasis** (Program Outcomes)
**Organ Emphasis** (Program Outcomes)
**Percussion Emphasis** (Program Outcomes)
**Piano Emphasis** (Program Outcomes)
**String Emphasis** (Program Outcomes)
**Vocal Emphasis** (Program Outcomes)
**Woodwind Emphasis** (Program Outcomes)

**Minor in Music**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MA in Music
MM in Music

For more information see the BYU 2014–2015 Graduate Catalog.

## General Information

1. Admission applications to the School of Music must be received by January 15 (or December 1 for violinists and classical vocalists).

2. All entering students (including transfer students) must pass a performance audition on their major instrument (or voice). Live auditions are held on the last Saturday of January. Students who cannot attend the live audition must submit an audio or video recording for consideration; these recordings must be received by January 15. See the School of Music office (C-550 HFAC) for further details regarding the audition process and requirements, or call (801) 422-8903.

3. All entering students must also pass an aural skills examination. They may take this examination in one of three ways: (1) in a group, at admissions auditions on the last Saturday of January; (2) individually, at the BYU Testing Center (call [801] 422-6147 to schedule times), or (3) individually by proctor at other locations (only if you are NOT coming to campus for a live audition; you live outside of Utah County; and you are unable to come to BYU campus and take the test in the Testing Center. Call the School of Music office to arrange). Students may take the exam as many times as desired to improve their score. (Students who receive a score of 4 or 5 on the aural part of the AP music exam are exempt from this test.)

4. All students who do not have a keyboard emphasis (piano or organ) must complete the piano proficiency requirement by the end of the sophomore year. Students can fulfill this requirement by (1) taking one or both of Music 221, 222, or by (2) taking the Piano Proficiency Exam. (Call the School of Music for more details.)

5. Upon acceptance as a music major, each student must meet with their academic advisor in the college advisement center.

6. Students who pass either part of the AP Music Test with at least a score of 4 should check with the college advisement center before registering for core courses.

7. All major performance instruction must be in the same instrument (or voice).

8. All students registered in Music 161, 250R, 260R, 360R, or 460R must complete an examination before a faculty jury on their major instrument (or voice) near the end of each semester of performance study. (With the approval of the faculty, students may elect to substitute a juried public recital for a jury examination.) Students wanting to enter Music 360R or 460R (normally after the sophomore year) must first be granted approval to do so by a faculty jury.

9. All students must fulfill the ensemble requirements of their individual degree programs as described below. Ensemble requirements are filled through a mixture of assigned "Category 1: Approved Large Ensembles" (Music 311R [University Chorale] if placed by audition, 312R [Men's Chorus], 313R [Women's Chorus], 314R [Concert Choir], 315R [University Singers], 325R [Symphonic Band], 326R [Wind Symphony], 337R [Symphony Orchestra], and 338R [Philharmonic Orchestra]) and "Category 2: Other Ensembles Approved for the Major," as allowed in each degree program. Only one approved large ensemble per semester may count toward this requirement, and this ensemble assignment is determined by the student's major instrumental teacher or by choral audition, not by the student. The total ensemble requirement should be completed in consecutive semesters of enrollment beginning the freshman year. Students may not enroll in more than two conducted or directed ensembles per semester.

10. All transfer students must have their previous university work in music evaluated by the appropriate BYU School of Music faculty members to determine what credits will be accepted in the transfer (see the college advisement center for referrals). We subscribe to the policy of the National Association of Schools of Music and carry no obligation to accept upper-division music credits from other member schools.

11. If a School of Music student receives an E grade twice in any one course within his or her major, s/he will not be allowed to proceed in the major. Also, a registration hold will be placed on the student's records pending a meeting with an academic advisor to determine an alternative plan of study. Only in rare and extreme cases will the School of Music consider petitions to take a course a third time and have major status reinstated.

12. Students temporarily leaving the School of Music for a mission are required to file a deferment form with the university's Admissions Office and notify the School of Music Admissions Assistant of their intent to defer. Students intending to enter the School of Music during the school year immediately following mission service are highly encouraged to apply and audition for admission to the School of Music (see #1-3) prior to departure.

13. All School of Music students are expected to attend at least eight concerts and two School of Music-sponsored lectures each semester. For more information, see the "Undergraduate Handbook" published online by the School of Music.

**College of Fine Arts and Communications Home**

**School of Music Home**

**Majors**

- BA in Music
- BM in Commercial Music
- BM in Music Composition

BM in Music Education Emphases

- K–12 Choral
- K–12 Instrumental
- Elementary Music Specialist

BM in Music Performance Emphases

- Brass
- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

**Minor**

- Minor in Music

**Course Information**

- Music (Music) Courses

**Faculty**

# BA in Music (62 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this major.*

The bachelor of arts degree offers a broad liberal arts education with a concentration in music. It also provides excellent preparation for a variety of professional music careers or graduate work in theory or musicology.

## Program Requirements | View MAP | View Program Outcomes

1. See the college advisement center to obtain information concerning official acceptance into a specific degree program.
2. Complete the following lower-division music core courses:

MUSIC 193 : Dictation 1. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.
DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major.

DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 197.

DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

MUSIC 221 : Functional Piano Skills 1. (2:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Piano skills determined by entrance diagnostic exam; music major status.

DESCRIPTION: Provides music majors with basic keyboarding ability in such areas as sight reading, technique, harmonization, and score reading.

**Course Outcomes**

- At the end of this class, students should be able to:Play major and minor cadences using tonic, sub-dominant and dominant chords in all keys at a tempo of 80, one chord per beat.
- Harmonize melodies using the assigned accompaniment patterns demonstrating an ability to use chords in root and inverted positions.
- Play common melodies by ear using assigned chordal accompaniments.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play the major and harmonic minor scales that begin on the white keys for one octave up and down the keyboard at a tempo of 100 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform assigned accompaniments to solos demonstrating an ability to follow the performance of the soloist.

MUSIC 222 : Functional Piano Skills 2. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 221; music major status.

DESCRIPTION: Continuation of Music 221.

**Course Outcomes**

- Continuing to build upon skills gained from Mus 221, students will also be able to:Play the assigned progressions in all keys up to four sharps and four flats at a tempo of 88 per half note.
- Harmonize given melodies using the assigned accompaniment pattern and chord symbols demonstrating ease in moving from chord to the next.
- By ear, play a common melodies with the right hand as assigned. With the left hand, play a chordal accompaniment using the assigned accompaniment pattern.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play major and harmonic minor scales that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Play major and minor arpeggios that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform a hymn of your choice from the LDS hymnbook or from a standard hymnbook from another denomination.
- Perform accompaniments to solos as assigned demonstrating an ability to follow the performance of the soloist.
- Prepare a score reading example that relates to your major instrument. Play the line of your instrument and one other line of a differing and transposing instrument.

MUSIC 293 : Dictation 3. (1:0:2)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.

DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.

DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.

DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.

DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 198.

DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 297.

DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

3. Complete one course from the following:

MUSIC 235A : Instrumental Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct an instrumental performance ensemble.

**Course Outcomes**

- Students will develop the physical techniques and interpretive skills required to be an instrumental conductor.
- Students will be able to:--Explain and demonstrate the conductor's correct posture, stance, baton grip, and hand/arm position.--Explain and demonstrate the conductor's preparatory gesture, ictus, rebound, the conducting patterns.--Demonstrate expressive and ambidextrous use of both hands as it relates to the musical score.--Conduct in various articulation styles, legato, staccato, marcato, & tenuto--Conduct clear beat patterns, mixed meter, subdivision, and cuing technique.--Define musical terms as useful for a conductor., and understand/explain the transpositions of instruments found within a musical score.--Convincingly conduct a variety of musical excerpts

MUSIC 235B : Choral Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct a choral performance ensemble.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping, irregular meters, and multi metrics.

4. Complete one of the following options:
   a. Instrumentalists and Classical Vocalists complete the following:

MUSIC 260R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

(8 hours).

b. Contemporary Vocalists complete the following:

MUSIC 161 : Voice Technique. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance by audition to the School of Music.

DESCRIPTION: Class instruction in voice technique.

**Course Outcomes**

- Through the understanding and use of proper vocal technique, students will musically perform traditional and contemporary Musical Theatre, as well as “pop” pieces, implementing many vocal colors and styles.
- By studying the basic anatomy involved in vocal production, Students will differentiate between those mechanical processes, which will build healthy production and those, which will lead to vocal problems.
- Students will demonstrate knowledge of vocal technique outlined in the text through taking a series of quizzes.
- Students will memorize and perform repertoire that is representative of the various vocal styles used in Musical Theatre literature.
- Students will expand sight-reading skills by participating in oral drills, enhancing the ability to study and learn musical scores.
- Through class devotionals, group discussion and personal reflection (journal writing) each student will begin to synthesize his/her growing skills with his/her moral, spiritual and ethical values.
- By supporting the growth of each member of the class, each student will develop a sense of community and sharing in the process of magnifying his/her own talent, thus downplaying the intensely competitive element of the performing business.

MUSIC 260R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status.

DESCRIPTION: Private instruction and studio class.

NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

(6 hours).

5. Complete 4 hours of the following:

MUSIC 360R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status; jury approval.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- Students will learn how to improve their technical facility and artistic expression in their chosen area of musical study.

6. Complete one hour of ensemble each semester for four semesters, including 2-3 hours from Category 1: Approved Large Ensembles (see General Information) and 1-2 hours from the following Category 2 ensembles:

MUSIC 316R : Opera Workshop. (1:6:0)

WHEN TAUGHT: Fall
PREREQUISITE: Audition and instructor's consent.
DESCRIPTION: Training and experience in operatic choral music and stage movement.

**Course Outcomes**

- Students will learn the performance techniques required to sing art songs and operatic arias from the western classical vocal traditions.
- Students will apply these skills in the performance of songs or arias in the class.

MUSIC 317R : Opera Ensemble. (.5-3:6:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Audition and instructor's consent.
DESCRIPTION: Training and experience in operatic excerpts, chamber opera, and full productions for operatic soloists.

**Course Outcomes**

- Through performance opportunities before an audience, students will demonstrate a more comprehensive understanding of the basic skills taught in the Opera Workshop course (See Learning Outcomes for the respective courses; Mus 316R and 616R).

MUSIC 318R : Music Theatre Ensemble. (1:0:5)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Audition and instructor's consent.
DESCRIPTION: Auditioned chorus or orchestra for opera or music dance theatre productions.

**Course Outcomes**

No outcomes are available at this time.

MUSIC 320R : Young Ambassadors. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition and director's consent.
DESCRIPTION: Participation as soloists, coaches, or directors in music dance theatre performances.

**Course Outcomes**

- Students will explore the Music Dance Theatre tradition of America as they learn song and dance sequences from the American Songbook.
- Students will progress in their level of proficiency in dance and singing through intensive rehearsal and frequent performance opportunities.
- Students will serve in the community, in public schools, and with service organizations nationally and internationally to build bridges of understanding between cultures and peoples.

MUSIC 323R : Marching Band. (1:0:6)

WHEN TAUGHT: Fall
PREREQUISITE: Audition or director's consent.

**Course Outcomes**

- As learning outcomes, students should be able to apply the musical principles of individual, section, and ensemble musical tone production, correct notes, rhythms and dynamics, balance and blend, and correct marching execution. Students should be able to demonstrate application of these principles by successfully performing college-level marching band repertoire in rehearsal and performances.

MUSIC 330R : Steel Band. (1:0:2)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Director's consent.

**Course Outcomes**

- Students should be exposed to music outside the Western European tradition. Most of the music performed in this ensemble includes Calypso and Soca styles from the island nation of Trinidad and

Tobago. We will sometimes include a pop or classical number, but most of the time we will focus on "groove" music. This means that having a conductor will be rare and the student is expected to listen and learn how to contribute to that "groove".

MUSIC 331R : Jazz Combos. (1:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Students will learn how to function in a traditional jazz combo setting, including learning head charts, standard lead sheet tunes, and arrangements. They will also further their knowledge of and experience in improvising in a typical professional performance setting in a variety of jazz styles.

MUSIC 332R : Show Band. (1:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Contemporary and traditional show music (Young Ambassadors) and ethnic music (Living Legends).

**Course Outcomes**

No outcomes are available at this time.

MUSIC 333R : Jazz Ensemble. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Audition.

DESCRIPTION: Includes Jazz Ensemble (big band), Jazz Lab Band (entry-level big band), and Vocal Jazz Ensembles.

**Course Outcomes**

- Students will learn how to perform in a traditional big band setting. Standard and representative repertoire from the various jazz styles will be taught and explored in this course.

: Jazz Lab Band.

**Course Outcomes**

: Vocal Jazz Ensemble.

**Course Outcomes**

(Vocal Jazz)

MUSIC 333R : Jazz Ensemble. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Audition.

DESCRIPTION: Includes Jazz Ensemble (big band), Jazz Lab Band (entry-level big band), and Vocal Jazz Ensembles.

**Course Outcomes**

- Students will learn how to perform in a traditional big band setting. Standard and representative repertoire from the various jazz styles will be taught and explored in this course.

: Jazz Lab Band.

**Course Outcomes**

: Vocal Jazz Ensemble.

**Course Outcomes**

(Jazz Ensemble)

MUSIC 334R : Synthesis. (1:0:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Students will learn to perform in a traditional big band setting. Music will be selected from the standard and representative repertoire of jazz styles.

MUSIC 335R : Jazz Legacy Band. (1:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Traditional ensemble specializing in early jazz. Band occasionally tours off campus.

**Course Outcomes**

- Students will perform traditional jazz, improvising within the traditional jazz tutti texture. Each student will demonstrate the roll of his or her instrument within the context of traditional jazz.
- Each student will improvise solos in the style of the early jazz masters who play his or her instrument.
- Students will play typical introductions, endings, solo backgrounds, texture routines characteristic of traditional jazz styles
- Students will demonstrate the ability to play 25 "Dixieland Standards." These are among the most commonly performed tunes that are played by professional "Dixieland" bands at casual performance engagements (gigs).Standard tunes: AvalonBasin Street BluesBig Butter and Egg ManBlack and BlueBourbon Street ParadeDo You Know What it MeansHigh Society I Can't Give You Anything But LoveI Found A New BabyIndiana (Back Home Again in)Ja DaJust A Closer Walk With TheeMuskrat RambleRoyal Garden BluesSt. James InfirmarySt. Louis BluesStruttin' With Some BarbecueSweet Georgia BrownThat's A PlentyTin Roof BluesTwelfth Street RagUp a Lazy RiverWhen the Saints Go Marching InWhen You're Smiling Won't You Come Home Bill Bailey

MUSIC 336R : Balinese Gamelan. (1:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Playing and performing on the Balinese gamelan (percussion) instruments.

**Course Outcomes**

- Students participating in Gamelan will learn the mental and technical skills required to memorize and perform works from the traditional Balinese gamelan repertoire, including becoming proficient on one or more of the instruments in the ensemble.
- Students will also use music as a window into the relationship between Balinese musical practice and Balinese social and religious culture, and, more broadly, develop a deep appreciation for this musicâ s profound contribution to the life experience.
- In the spirit of BYUâ s global mission and the breadth of educational experience advocated in BYUâ s guiding documents, successful students in gamelan will develop a greater understanding of and respect for music and traditions outside of their native experience. This respect will better prepare them to represent BYU and the Church in an increasingly interconnected global society.

MUSIC 339R : Chamber Orchestra. (1:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- The Chamber Orchestra seeks to discover the truth imbedded in the greatest works for chamber orchestra through study, preparation, and performance, both for its own musicians and for audiences who hear them. The orchestra bears the responsibility of representing the School of Music, the University, and the Church through regional, national, and international tours.

MUSIC 341R : Brass Chamber Music. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Director's consent.

**Course Outcomes**

- Students will demonstrate the ability to perform standard chamber ensemble music at an appropriate artistic level for their year of study.

: Brass Ensemble.

**Course Outcomes**

: Brass Choir.

**Course Outcomes**

: Trombone Choir.

**Course Outcomes**

MUSIC 342R : Early Music Ensemble. (1:1:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Director's consent.

**Course Outcomes**

No outcomes are available at this time.

MUSIC 343R : Guitar Ensemble. (1:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Director's consent.

**Course Outcomes**

- Students will gain ensemble experience with other guitarists, develop better sight-reading skills, and perform in a formal setting during the semester.

MUSIC 344R : Keyboard in Ensemble. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music 260R or instructor's consent.
DESCRIPTION: Accompanying and ensemble performance.

**Course Outcomes**

- Skills to Develop in 344r:Understand how to best balance their playing with another instrument and comprehend how that balance evolves to meet the needs of different instruments.2. Understand how to communicate musical ideas through body language.3.Develop musical “ESP”. This is achieved when a pianist works with the same person over a long period of time, and develops better sensitivity. The pianist and soloist can sense changes in tempi, phrasing, and dynamics through concentrated listening, needing almost no visual contact. 4.Understand the subtext of the score.5. Develop a genuine appreciation for the art of the accompanist.

MUSIC 345R : Percussion Ensemble. (1:0:2)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Director's consent.

**Course Outcomes**

- To expose students to the music written for percussion ensemble, to help students develop technique(s) on a myriad of instruments while contributing musically, and to present musical situations with and without a conductor. The percussion parts in a percussion ensemble differ drastically from those found in traditional orchestral and band percussion scores in that most performers must be not only rhythmically proficient, but melodically, harmonically and texturally expressive.

MUSIC 346R : String Chamber Music. (1:1:2)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Instructor's consent.

**Course Outcomes**

- There are four main areas of student outcomes important for this course: the building of repertoire, experience performing, exploring the enormous variety of timbre and color in the chamber music setting, and artistically improving how you communicate musically with your performing colleagues, as well as your audience.

MUSIC 347R : Vocal Point. (1:5:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Director's consent.

**Course Outcomes**

- The desired outcome of vocal point is to represent the School of Music and BYU to the World with a high degree of artistry and capturing the personality of our campus, through the medium of male a cappella choral music.

MUSIC 348R : Woodwind Chamber Music. (1:1:2)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Director's consent.

**Course Outcomes**

- Students will demonstrate performance proficiency on their instrument within the context of woodwind chamber music.

: Woodwind Ensemble.

**Course Outcomes**

: Saxophone Ensemble.

**Course Outcomes**

: Flute Choir.

**Course Outcomes**

MUSIC 441R : New Music Ensemble. (1:0:1)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Instructor's consent.

**Course Outcomes**

- Performance practice in modern and experimental musical vocabularies.

7. Complete the following upper-division music core courses:
MUSIC 301 : Survey of Music Literature 1. (2:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**

There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**

There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**

There are no course outcomes available

MUSIC 395 : Form and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C- or higher in Music 293, 295.

DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

8. Complete the following:

MUSIC 307 : World Music. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Exploration of music making from a global perspective.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods through which various cultures conceptualize and taxonomize instruments, and be able to show an understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.
- Students will articulate how a culture's values can be embodied and discerned within musical practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?
- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of

tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 308 : History of Jazz. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists
- Learn to transcribe and analyze jazz solos

9. Complete one course from a GE Arts or Letters requirement outside music (in addition to the GE requirement) or one humanities course approved by faculty advisor.
10. Complete a minimum of six credits from the following music elective courses. Select courses in consultation with faculty advisor.

MUSIC 286 : Introduction to the Music Business. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Music major status.

DESCRIPTION: The music business and its models. Guided research topics for all musicians.

**Course Outcomes**

- Music 286 is required in the media music studies major and is a recommended elective for all music majors. In the vernacular of the day, we teach, "Don't do the music business; be a music business." The course stresses that all musicians need a business plan, and is taught in a manner relevant for all musicians. The semester's work includes exposure to a variety of guest lectures, and creation of personal semester projects, including research, which take the form of a personal business plan. Retention of material is measured with quizzes and a final exam.

MUSIC 336R : Balinese Gamelan. (1:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Playing and performing on the Balinese gamelan (percussion) instruments.

**Course Outcomes**

- Students participating in Gamelan will learn the mental and technical skills required to memorize and perform works from the traditional Balinese gamelan repertoire, including becoming proficient on one or more of the instruments in the ensemble.
- Students will also use music as a window into the relationship between Balinese musical practice and Balinese social and religious culture, and, more broadly, develop a deep appreciation for this musicâ s profound contribution to the life experience.
- In the spirit of BYUâs global mission and the breadth of educational experience advocated in BYUâs guiding documents, successful students in gamelan will develop a greater understanding of and respect for music and traditions outside of their native experience. This respect will better prepare them to represent BYU and the Church in an increasingly interconnected global society.

MUSIC 394 : Jazz Styles and Analysis. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

RECOMMENDED: Music major status; instructor's consent.

DESCRIPTION: In-depth experience in recognizing and differentiating jazz styles, including analyzing and transcribing solo and ensemble jazz materials.

**Course Outcomes**

- In-depth experience in recognizing and differentiating jazz styles, including analyzing and transcribing solo and ensemble jazz materials.

MUSIC 402A : Vocal Literature. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Acceptance into 360R or instructor's consent.

DESCRIPTION: Survey of literature with emphasis on art song. Research in area of concentration.

**Course Outcomes**

- Students will survey the classical vocal art song repertoire in English, Italian, German, and French from the past 400 years.
- Students will be able to prepare and present a class on a given composer or group of composers—consisting of lecture, musical examples, live performance, and appropriate handouts.
- Students will be able to discuss stylistic elements of song, including melody, harmony, rhythm, accompaniment, text, and form.Students will be able to discuss the development of song through

various composers, languages or eras.
- Students will be able to identify listening examples of specific songs.
- Students will be able to perform at least one song in two other student presentations.
- Students will be able to compile a comprehensive personal repertoire list.

MUSIC 402B : Vocal Literature. (2:2:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Acceptance into 360R or instructor's consent.
DESCRIPTION: Continuation of Music 402A with emphasis on opera and oratorio.

**Course Outcomes**

No outcomes are available at this time.

MUSIC 403A : Piano Literature. (2:2:0)

WHEN TAUGHT: Fall
PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.
DESCRIPTION: Survey of literature. Research in area of concentration.

**Course Outcomes**

- This course is designed for the advanced keyboard performer, and consists of projects in keyboard harmony, sight-reading, transposition, modulation, improvisation, playing by ear, and score reading, in pursuit of developing the complete keyboard fluency.

MUSIC 403B : Piano Literature. (2:2:0)

WHEN TAUGHT: Winter
PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.
DESCRIPTION: Continuation of Music 403A.

**Course Outcomes**

- This course will explore piano literature from late Classical, Romantic, Impressionistic, and Contemporary periods of music history including composer surveys, analysis, aural and score recognition, performances and performance practices. The goal of this course is for each student to gain a broad understanding of the subject and develop a love for the rich heritage of the medium. A major purpose of the course is to instill in students a curiosity essential for lifetime discovery. Thorough knowledge and appreciation of the piano repertoire is crucial for a successful career in performance and teaching.

MUSIC 404A : Organ Literature. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.
DESCRIPTION: Survey of literature. Research in area of concentration.

**Course Outcomes**

- The course objective is to further an acquaintance and familiarity with the repertory, composers, forms and genres, stylistic features, analytical techniques and general performance practices associated with organ literature from the earliest sources of the fourteenth century through the music of Johann Sebastian Bach.

MUSIC 404B : Organ Literature. (2:2:0)

WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.
DESCRIPTION: Continuation of Music 404A.

**Course Outcomes**

- A continuation of 404A, with the focus being on organ literature from the mid-eighteenth century to the present.

MUSIC 405 : Chamber Music Literature. (2:2:0)

WHEN TAUGHT: Winter
PREREQUISITE: C- or higher in Music 306; concurrent enrollment in 460R, or instructor's consent.
DESCRIPTION: Survey of literature, including research in field of concentration.

**Course Outcomes**

- To understand the important trends in chamber music through its history.To have opportunities to listen to and become familiar with a small portion of this great literatureTo research, read, and write about the chamber music literature on a topic of your choiceTo attend, and write intelligently about, live performances.To acquire a foundation for your continued enjoyment of chamber music as a listener and performer

MUSIC 406 : String Literature. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.
DESCRIPTION: Survey of literature, including research in field of concentration.

**Course Outcomes**

- Be able to discuss, listen to, dance to and perform standard standard repertoire as well as read and write about it. The ultimate purpose is to expand your understanding of the concert and teaching repertoire. This survey will demonstrate the wealth of string literature available and how you can find, understand and play it well.

MUSIC 407 : Symphonic Literature. (2:2:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: C- or higher in Music 306; concurrent enrollment in 460R, or instructor's consent.
DESCRIPTION: Survey of literature, including research in field of concentration.

**Course Outcomes**

There are no course outcomes available

MUSIC 481 : Orchestration. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: C- or higher in Music 293, 295.
DESCRIPTION: Scoring for standard orchestral instruments.

**Course Outcomes**

- This course is to learn fundamentals and intermediate techniques of orchestration, primarily pre-modern.

MUSIC 483 : Counterpoint. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: C- or higher in Music 294, 296.
DESCRIPTION: Eighteenth-century contrapuntal styles and techniques, emphasizing those of J. S. Bach.

**Course Outcomes**

There are no course outcomes available

MUSIC 595 : Score Analysis. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.; Summer Odd Yrs.
DESCRIPTION: Analysis of representative choral and instrumental works from the Renaissance through contemporary styles.

**Course Outcomes**

- Music 595 is to help you to- Explore the nature and function of scores of all kinds.- Answer the question of any score: what does this score tell me about the intended sound and what does it not tell me?- Learn criteria for identifying style, period, and performance practice of any score.Score types include:1. Vocal music: various a capella genres (choral, barbershop, etc.), congregational hymns (including shape-note symbols and tonic sol-fa), Lieder, popular sheet music, folk transcriptions.2. Instrument-based genres: works for solo instrument, chamber groups, and larger ensembles3. Alternative uses and adaptations of common-practice notation: lead sheets/fake books, charts/graphs (e.g., Schenker graphs), short scores, piano reductions, transcriptions, various indeterminate notations. 4. Miscellaneous non-common-practice notation. These include tablatures, assorted graphic/pictographic representations, verbal scores, mathematical (e.g., ratio-based) notation.

MUSIC 596 : Schenker Analysis. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Music 306, 395; or equivalents.
DESCRIPTION: Schenker's system of tonal analysis.

**Course Outcomes**

- Will learn the principles of structure, prolongation, and related ideas (as articulated by Schenker and his followers).

Note: Music 336R may be used for Requirements #6 or #10, but may not be double-counted in any given semester.

Note: Students should register for the 400-level literature class that corresponds with Music 360R.

11. Present a juried recital (Music 349) during the junior year.
    **Recital:** Enroll in Music 349 (0.0 credit hours) for the semester during which a recital is to be presented. Concurrent enrollment in appropriate performance instruction is required. A prerecital hearing is required at least three weeks before juried recitals. Contact the Harris Fine Arts Center Scheduling Office (D-359, south lobby of Pardoe Theatre) for further information.

*Hours include courses that may fulfill university core requirements.

## Show all Music (Music) Courses

College of Fine Arts and Communications Home

School of Music Home

Majors

- BA in Music
- BM in Commercial Music
- BM in Music Composition

BM in Music Education Emphases

- K–12 Choral
- K–12 Instrumental
- Elementary Music Specialist

BM in Music Performance Emphases

- Brass
- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

Minor

- Minor in Music

Course Information

- Music (Music) Courses

Faculty

# BM in Commercial Music (75-76 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this major.*

The Commercial Music degree encompasses media music, sound recording, and jazz studies tracks. The designated Commercial Music core provides the necessary foundation to understand today's commercial music environment and provides a basis upon which the student can build toward his or her own unique focus. The Commercial Music degree consists of the University Core requirements, the School of Music Core Requirements, and a set of electives that allow students to concentrate on selective studies relevant to their interests and career path.

## Program Requirements | View MAP | View Program Outcomes

1. See the college advisement center for the application procedure for official acceptance into a specific degree program.
2. Complete the following lower-division music core courses:

MUSIC 193 : Dictation 1. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.
DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Acceptance as a music major.

DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 197.

DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

MUSIC 221 : Functional Piano Skills 1. (2:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Piano skills determined by entrance diagnostic exam; music major status.

DESCRIPTION: Provides music majors with basic keyboarding ability in such areas as sight reading, technique, harmonization, and score reading.

**Course Outcomes**

- At the end of this class, students should be able to:Play major and minor cadences using tonic, sub-dominant and dominant chords in all keys at a tempo of 80, one chord per beat.
- Harmonize melodies using the assigned accompaniment patterns demonstrating an ability to use chords in root and inverted positions.
- Play common melodies by ear using assigned chordal accompaniments.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play the major and harmonic minor scales that begin on the white keys for one octave up and down the keyboard at a tempo of 100 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform assigned accompaniments to solos demonstrating an ability to follow the performance of the soloist.

MUSIC 222 : Functional Piano Skills 2. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 221; music major status.

DESCRIPTION: Continuation of Music 221.

**Course Outcomes**

- Continuing to build upon skills gained from Mus 221, students will also be able to:Play the assigned progressions in all keys up to four sharps and four flats at a tempo of 88 per half note.
- Harmonize given melodies using the assigned accompaniment pattern and chord symbols demonstrating ease in moving from chord to the next.
- By ear, play a common melodies with the right hand as assigned. With the left hand, play a chordal accompaniment using the assigned accompaniment pattern.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play major and harmonic minor scales that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Play major and minor arpeggios that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform a hymn of your choice from the LDS hymnbook or from a standard hymnbook from another denomination.
- Perform accompaniments to solos as assigned demonstrating an ability to follow the performance of the soloist.
- Prepare a score reading example that relates to your major instrument. Play the line of your instrument and one other line of a differing and transposing instrument.

MUSIC 293 : Dictation 3. (1:0:2)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.

DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these

harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.
DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.
DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.
DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 198.
DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 297.
DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

3. Complete one course from the following:

MUSIC 235A : Instrumental Conducting Techniques. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.
DESCRIPTION: Physical techniques and musical understanding required to conduct an instrumental performance ensemble.

**Course Outcomes**

- Students will develop the physical techniques and interpretive skills required to be an instrumental conductor.
- Students will be able to:--Explain and demonstrate the conductor's correct posture, stance, baton grip, and hand/arm position.--Explain and demonstrate the conductor's preparatory gesture, ictus, rebound, the conducting patterns.--Demonstrate expressive and ambidextrous use of both hands as it relates to the musical score.--Conduct in various articulation styles, legato, staccato, marcato, & tenuto--Conduct clear beat patterns, mixed meter, subdivision, and cuing technique.--Define musical terms as useful for a conductor., and understand/explain the transpositions of instruments found within a musical score.--Convincingly conduct a variety of musical excerpts

MUSIC 235B : Choral Conducting Techniques. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.
DESCRIPTION: Physical techniques and musical understanding required to conduct a choral performance ensemble.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping, irregular meters, and multi metrics.

4. Complete eight hours from one of the following options:
   a. Instrumentalists and Classical Vocalists complete the following:

MUSIC 260R : Performance Instruction. (.5-2:1:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

b. Contemporary Vocalists complete the following:

MUSIC 161 : Voice Technique. (2:2:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Acceptance by audition to the School of Music.
DESCRIPTION: Class instruction in voice technique.

**Course Outcomes**

- Through the understanding and use of proper vocal technique, students will musically perform traditional and contemporary Musical Theatre, as well as “pop” pieces, implementing many vocal colors and styles.
- By studying the basic anatomy involved in vocal production, Students will differentiate between those mechanical processes, which will build healthy production and those, which will lead to vocal problems.
- Students will demonstrate knowledge of vocal technique outlined in the text through taking a series of quizzes.
- Students will memorize and perform repertoire that is representative of the various vocal styles used in Musical Theatre literature.
- Students will expand sight-reading skills by participating in oral drills, enhancing the ability to study and learn musical scores.
- Through class devotionals, group discussion and personal reflection (journal writing) each student will begin to synthesize his/her growing skills with his/her moral, spiritual and ethical values.
- By supporting the growth of each member of the class, each student will develop a sense of community and sharing in the process of magnifying his/her own talent, thus downplaying the intensely competitive element of the performing business.

MUSIC 260R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

5. Complete one hour of ensemble each semester for four semesters, including 2-3 hours from Category 1: Approved Large Ensembles (see General Information) and 1-2 hours from the following Category 2 ensembles:

MUSIC 316R : Opera Workshop. (1:6:0)

WHEN TAUGHT: Fall

PREREQUISITE: Audition and instructor's consent.

DESCRIPTION: Training and experience in operatic choral music and stage movement.

**Course Outcomes**

- Students will learn the performance techniques required to sing art songs and operatic arias from the western classical vocal traditions.
- Students will apply these skills in the performance of songs or arias in the class.

MUSIC 317R : Opera Ensemble. (.5-3:6:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Audition and instructor's consent.

DESCRIPTION: Training and experience in operatic excerpts, chamber opera, and full productions for operatic soloists.

**Course Outcomes**

- Through performance opportunities before an audience, students will demonstrate a more comprehensive understanding of the basic skills taught in the Opera Workshop course (See Learning Outcomes for the respective courses; Mus 316R and 616R).

MUSIC 318R : Music Theatre Ensemble. (1:0:5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Audition and instructor's consent.

DESCRIPTION: Auditioned chorus or orchestra for opera or music dance theatre productions.

**Course Outcomes**

No outcomes are available at this time.

MUSIC 320R : Young Ambassadors. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition and director's consent.

DESCRIPTION: Participation as soloists, coaches, or directors in music dance theatre performances.

**Course Outcomes**

- Students will explore the Music Dance Theatre tradition of America as they learn song and dance sequences from the American Songbook.
- Students will progress in their level of proficiency in dance and singing through intensive rehearsal and frequent performance opportunities.
- Students will serve in the community, in public schools, and with service organizations nationally and internationally to build bridges of understanding between cultures and peoples.

MUSIC 323R : Marching Band. (1:0:6)

WHEN TAUGHT: Fall

PREREQUISITE: Audition or director's consent.

**Course Outcomes**

- As learning outcomes, students should be able to apply the musical principles of individual, section, and ensemble musical tone production, correct notes, rhythms and dynamics, balance and blend, and correct marching execution. Students should be able to demonstrate application of these principles by successfully performing college-level marching band repertoire in rehearsal and performances.

MUSIC 330R : Steel Band. (1:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Director's consent.

**Course Outcomes**

- Students should be exposed to music outside the Western European tradition. Most of the music performed in this ensemble includes Calypso and Soca styles from the island nation of Trinidad and Tobago. We will sometimes include a pop or classical number, but most of the time we will focus on “groove” music. This means that having a conductor will be rare and the student is expected to listen and learn how to contribute to that “groove”.

MUSIC 331R : Jazz Combos. (1:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

Students will learn how to function in a traditional jazz combo setting, including learning head charts, standard lead sheet tunes, and arrangements. They will also further their knowledge of and experience in improvising in a typical professional performance setting in a variety of jazz styles.

MUSIC 332R : Show Band. (1:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Contemporary and traditional show music (Young Ambassadors) and ethnic music (Living Legends).

**Course Outcomes**

No outcomes are available at this time.

MUSIC 333R : Jazz Ensemble. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Audition.

DESCRIPTION: Includes Jazz Ensemble (big band), Jazz Lab Band (entry-level big band), and Vocal Jazz Ensembles.

**Course Outcomes**

- Students will learn how to perform in a traditional big band setting. Standard and representative repertoire from the various jazz styles will be taught and explored in this course.

: Jazz Lab Band.

**Course Outcomes**

: Vocal Jazz Ensemble.

**Course Outcomes**

(Vocal Jazz or Jazz Ensemble)

MUSIC 334R : Synthesis. (1:0:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Students will learn to perform in a traditional big band setting. Music will be selected from the standard and representative repertoire of jazz styles.

MUSIC 335R : Jazz Legacy Band. (1:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Traditional ensemble specializing in early jazz. Band occasionally tours off campus.

**Course Outcomes**

- Students will perform traditional jazz, improvising within the traditional jazz tutti texture. Each student will demonstrate the roll of his or her instrument within the context of traditional jazz.
- Each student will improvise solos in the style of the early jazz masters who play his or her instrument.
- Students will play typical introductions, endings, solo backgrounds, texture routines characteristic of traditional jazz styles
- Students will demonstrate the ability to play 25 "Dixieland Standards." These are among the most commonly performed tunes that are played by professional "Dixieland" bands at casual performance engagements (gigs).Standard tunes: AvalonBasin Street BluesBig Butter and Egg ManBlack and BlueBourbon Street ParadeDo You Know What it MeansHigh Society I Can't Give You Anything But LoveI Found A New BabyIndiana (Back Home Again in)Ja DaJust A Closer Walk With TheeMuskrat RambleRoyal Garden BluesSt. James InfirmarySt. Louis BluesStruttin' With Some BarbecueSweet Georgia BrownThat's A PlentyTin Roof BluesTwelfth Street RagUp a Lazy RiverWhen the Saints Go Marching InWhen You're Smiling Won't You Come Home Bill Bailey

MUSIC 336R : Balinese Gamelan. (1:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Playing and performing on the Balinese gamelan (percussion) instruments.

**Course Outcomes**

- Students participating in Gamelan will learn the mental and technical skills required to memorize and perform works from the traditional Balinese gamelan repertoire, including becoming proficient on one or more of the instruments in the ensemble.
- Students will also use music as a window into the relationship between Balinese musical practice and Balinese social and religious culture, and, more broadly, develop a deep appreciation for this musicâ s profound contribution to the life experience.
- In the spirit of BYUâ s global mission and the breadth of educational experience advocated in BYUâ s guiding documents, successful students in gamelan will develop a greater understanding of and respect for music and traditions outside of their native experience. This respect will better prepare them to represent BYU and the Church in an increasingly interconnected global society.

MUSIC 339R : Chamber Orchestra. (1:0:2)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.

**Course Outcomes**

- The Chamber Orchestra seeks to discover the truth imbedded in the greatest works for chamber orchestra through study, preparation, and performance, both for its own musicians and for audiences who hear them. The orchestra bears the responsibility of representing the School of Music, the University, and the Church through regional, national, and international tours.

MUSIC 341R : Brass Chamber Music. (1:1:2)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Director's consent.

**Course Outcomes**

- Students will demonstrate the ability to perform standard chamber ensemble music at an appropriate artistic level for their year of study.

: Brass Ensemble.

**Course Outcomes**

: Brass Choir.

**Course Outcomes**

: Trombone Choir.

**Course Outcomes**

MUSIC 342R : Early Music Ensemble. (1:1:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Director's consent.

**Course Outcomes**

No outcomes are available at this time.

MUSIC 343R : Guitar Ensemble. (1:1:2)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Director's consent.

**Course Outcomes**

- Students will gain ensemble experience with other guitarists, develop better sight-reading skills, and perform in a formal setting during the semester.

MUSIC 344R : Keyboard in Ensemble. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music 260R or instructor's consent.
DESCRIPTION: Accompanying and ensemble performance.

**Course Outcomes**

- Skills to Develop in 344r:Understand how to best balance their playing with another instrument and comprehend how that balance evolves to meet the needs of different instruments.2. Understand how to communicate musical ideas through body language.3.Develop musical “ESP”. This is achieved when a pianist works with the same person over a long period of time, and develops better sensitivity. The pianist and soloist can sense changes in tempi, phrasing, and dynamics through concentrated listening, needing almost no visual contact. 4.Understand the subtext of the score.5. Develop a genuine appreciation for the art of the accompanist.

MUSIC 345R : Percussion Ensemble. (1:0:2)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Director's consent.

**Course Outcomes**

- To expose students to the music written for percussion ensemble, to help students develop technique(s) on a myriad of instruments while contributing musically, and to present musical situations with and without a conductor. The percussion parts in a percussion ensemble differ drastically from those found in traditional orchestral and band percussion scores in that most performers must be not only rhythmically proficient, but melodically, harmonically and texturally expressive.

MUSIC 346R : String Chamber Music. (1:1:2)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Instructor's consent.

**Course Outcomes**

- There are four main areas of student outcomes important for this course: the building of repertoire, experience performing, exploring the enormous variety of timbre and color in the chamber music setting, and artistically improving how you communicate musically with your performing colleagues, as well as your audience.

MUSIC 347R : Vocal Point. (1:5:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Director's consent.

**Course Outcomes**
- The desired outcome of vocal point is to represent the School of Music and BYU to the World with a high degree of artistry and capturing the personality of our campus, through the medium of male a cappella choral music.

MUSIC 348R : Woodwind Chamber Music. (1:1:2)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Director's consent.

**Course Outcomes**
- Students will demonstrate performance proficiency on their instrument within the context of woodwind chamber music.

: Woodwind Ensemble.

**Course Outcomes**

: Saxophone Ensemble.

**Course Outcomes**

: Flute Choir.

**Course Outcomes**

MUSIC 441R : New Music Ensemble. (1:0:1)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Instructor's consent.

**Course Outcomes**
- Performance practice in modern and experimental musical vocabularies.

6. Complete the following upper-division music core courses:

MUSIC 301 : Survey of Music Literature 1. (2:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.
DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**
There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.
DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**
There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)
WHEN TAUGHT: Fall; Winter; Summer Contact Department
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.
DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**
There are no course outcomes available

MUSIC 308 : History of Jazz. (2:2:0)
WHEN Fall; Winter; Spring

TAUGHT:
PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists
- Learn to transcribe and analyze jazz solos

MUSIC 395 : Form and Analysis. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: C- or higher in Music 293, 295.
DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

7. Complete the following Commerical Music core courses:

MUSIC 186 : Songwriting 1. (2:2:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Basic music reading and keyboard skills.
DESCRIPTION: Songwriting for present-day music publishing industry; basic songwriting theory; form, content, and style.

**Course Outcomes**

- Students study such topics as creativity itself, writing techniques, and the importance of collaboration. By the end of the semester each student will have completed several preparatory assignments in addition to a culminating creative song project. The students will receive an introduction to a working MIDI-technology studio. Parallel to these assignments are readings about the models of the music business: music publishing, record labels, legal concepts, the copyright law, etc. Quizzes and a final exam measure retention of these concepts. Students who master the principles advanced will be able to function creatively and to manage others involved in the creation of commercial songs.

MUSIC 251 : Music Technology 1. (2:2:2)
WHEN TAUGHT: Fall
PREREQUISITE: Commercial Music major status or instructor's consent.
DESCRIPTION: Music technology concept, principles, and applications. Foundation course in Commercial Music core.

**Course Outcomes**

- Students are introduced to the basics of hardware and software technology used in commerical music production. They will demonstrate a working knowledge of sequencing and notation programs.

MUSIC 256 : Recording Studio 1. (2:2:2)
WHEN TAUGHT: Winter
PREREQUISITE: MUSIC 252
DESCRIPTION: Basic recording theory, operational techniques, and procedures.

**Course Outcomes**

- Student will become familiar with basic audio technology: microphones, monitors, mixers, signal processors, digital audio workstations, audio recorders, etc.
- Student will achieve an intermediate-level of proficiency in audio production techniques, workflows, processes, common tasks, etc.
- Student will develop a sense of the aesthetic values commonly applied to music production.
- This course focuses on experimentation in the studio. Many audio concepts are best understood and appreciated (and greater learning results are achieved) from hands-on demonstration and operation of the involved technology.

MUSIC 286 : Introduction to the Music Business. (2:2:0)
WHEN TAUGHT: Winter
PREREQUISITE: Music major status.
DESCRIPTION: The music business and its models. Guided research topics for all musicians.

**Course Outcomes**

- Music 286 is required in the media music studies major and is a recommended elective for all music majors. In the vernacular of the day, we teach, "Don't do the music business; be a music business." The course stresses that all musicians need a business plan, and is taught in a manner relevant for all musicians. The semester's work includes exposure to a variety of guest lectures, and creation of

personal semester projects, including research, which take the form of a personal business plan. Retention of material is measured with quizzes and a final exam.

MUSIC 389 : Projects in Commercial Music. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 186; Music major status, Music 295 or instructor's consent.

DESCRIPTION: Introductory projects in scoring for broadcast media, publication, and studio recording.

**Course Outcomes**

There are no course outcomes available

MUSIC 399R : Academic Internship. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Internship or externship in creative, performing, producing, or teaching applications of major course work.

**Course Outcomes**

- Students will participate in an off-campus performance or administrative experience to enhance the student's academic training at the university.
- Students will gain access to professional contacts and create a network beneficial to future career choices.
- Students will apply acquired classroom skills in a professional setting.

(Must complete 2 hours of Music 399R.)

8. Complete a minimum of 16 hours from a selection of the following Commercial Music Electives:

BUS M 201 : Financial Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Acc 200 or equivalent.

DESCRIPTION: Financial statement analysis, financial planning, sources of financing, working capital management, risk and return, and valuation.

**Course Outcomes**

There are no course outcomes available

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

BUS M 372 : Basic Entrepreneurship Skills. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Practical aspects of business formation and growth; key skills and principles needed to successfully start up and grow a business.

NOTE: For non-Marriott School of Management students.

**Course Outcomes**

There are no course outcomes available

MUSIC 188 : Composition 1. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Music 195 or instructor's consent.

DESCRIPTION: Introduction to principles of recent art music; composition and performance of student works for one to five instruments.

**Course Outcomes**

- Introduction to composing music with modern and and experimental music vocabularies.

MUSIC 252 : Music Technology 2. (2:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 251

DESCRIPTION: Continuation of Music 251. Music technology concept, principles, and applications.

**Course Outcomes**

- Continuation of Music 251 with more exposure and application of music technology

MUSIC 257 : Recording Studio 2. (2:2:2)

WHEN TAUGHT: Fall
PREREQUISITE: MUSIC 256
DESCRIPTION: Continuation of Music 256.

**Course Outcomes**

- Student will become familiar with basic audio technology: microphones, monitors, mixers, signal processors, digital audio workstations, audio recorders, etc.
- Student will achieve an intermediate-level of proficiency in audio production techniques, workflows, processes, common tasks, etc.
- Student will develop a sense of the aesthetic values commonly applied to music production.
- This course focuses on experimentation in the studio. Many audio concepts are best understood and appreciated (and greater learning results are achieved) from hands-on demonstration and operation of the involved technology.

MUSIC 284 : Jazz Improvisation 1. (2:2:1)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MUSIC 194
DESCRIPTION: Beginning improvisation: theory and technique.

**Course Outcomes**

- Students will learn the fundamentals of jazz improvisation and how to apply them in a performance environment. Such fundamentals will include blues scales and chord progressions, typical jazz chord progressions, melodic patterns for improvisation adn others.

MUSIC 307 : World Music. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Exploration of music making from a global perspective.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods through which various cultures conceptualize and taxonomize instruments, and be able to show an understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.
- Students will articulate how a culture's values can be embodied and discerned within musical practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?
- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 351 : Audio Applications 1. (2:2:2)

WHEN TAUGHT: Fall
PREREQUISITE: MUSIC 257
DESCRIPTION: Advanced concepts in digital sound editing.

**Course Outcomes**

- Students will become familiar with basic audio workstations; particularly the use of ProTools. Basic editing and recording principles using a workstation are taught, including, importing of files, editing, signal processing, and recording.
- This course focuses on experimentation in an audio workstation. Each student will have a workstation available to them in the classroom. This hands-on experience allows the students to follow demonstrations and accomplish tasks on their own workstation. They will be given several projects to accomplish on their own as well.
- Students will achieve an intermediate-level of proficiency in digital audio editing and recording techniques.

MUSIC 352 : Audio Applications 2. (2:2:0)

WHEN TAUGHT: Winter
PREREQUISITE: MUSIC 351
DESCRIPTION: Advanced concepts in digital sound editing.

**Course Outcomes**

- Students will use basic audio workstations; and particularly ProTools to perform advanced editing. Audio workstation are used to import files, edit, and produce recordings.
- This course focuses on advanced use of an audio workstation. Each student will have a workstation available to them in the classroom. This hands-on experience allows the students to follow demonstrations and accomplish tasks on their own workstation. They will be given several projects to accomplish on their own as well.
- Students will achieve advanced proficiency in digital audio editing and recording techniques.

MUSIC 355R : Recording Workshop. (1:1:5)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MUSIC 251; or MUSIC 257
DESCRIPTION: Studio projects in multitrack recording for records, broadcast, film, and television.

**Course Outcomes**

- Music 355R is the final recording projects class before graduation. The assignment is to produce a commercially viable stereo recording utilizing skills acquired from all previous class work, both artistic and technical.

MUSIC 360R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status; jury approval.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- Students will learn how to improve their technical facility and artistic expression in their chosen area of musical study.

MUSIC 384 : Jazz Improvisation 2. (2:2:1)

WHEN TAUGHT: Winter
PREREQUISITE: Music 284 or director's consent.
DESCRIPTION: Intermediate improvisation: theory and technique.

**Course Outcomes**

- Students will continue their study of improvisation techniques and will learn advanced scales, chord progressions, and stylistic approaches to jazz improvisation.

MUSIC 386R : Songwriting 2. (2:2:0)

WHEN TAUGHT: Winter
PREREQUISITE: MUSIC 186; Music major status.
DESCRIPTION: Projects in advanced songwriting.

**Course Outcomes**

- In Music 386R, advanced songwriting, the student is encouraged to think more deeply about the ultimate purpose of songs being written either for personal reasons, or to answer the needs of publishers or producers of movies and television episodes, who are requisitioning specific content or musical style. The course is repeatable to allow the developing student writer multiple chances to hone this important craft. Industry-style collaboration situations are encountered in this class, and the pace of writing, as well as the number of projects expected, reflects a more professional pace of working.

MUSIC 391 : Jazz Keyboard. (2:2:0)

WHEN TAUGHT: Winter; Spring
PREREQUISITE: MUSIC 196 & MUSIC 222
DESCRIPTION: Lead sheets, chord voicings, and other aspects of jazz performance practice.

**Course Outcomes**

- Students learn how to read lead sheets and how to appropriately voice chords on the piano.
- Upon the successful completion of this course a student should be ableMelody in the right hand and basic chord inversions in the left handChords only spread between both hands to comp behind a

soloist, employing upper structure and altered chord harmony.Rootless voicings in the left hand and embellished melody in the right hand while playing with bass and drums.Play a solo piano ballad with rich jazz harmonies and moving textural lines.Play the blues in four keys, demonstrating standard chord voicings and improvisational techniques.Play II-V-I patterns in major and minor, using three voicing systems; 1735-1379, 1357-1793, and rootless voicings. These include harmonic extensions to the 13th and various forms of the altered dominant seventh chords and their substitutions.Know and play all of the following modes and scales with correct fingerings: Dorian, Mixolydian, Jazz Minor, Lydian, Locrian, Whole Tone, Diminished (Octatonic) in two forms, Lydian Dominant, Super Locrian (Diminished Whole-Tone).

MUSIC 394 : Jazz Styles and Analysis. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

RECOMMENDED: Music major status; instructor's consent.

DESCRIPTION: In-depth experience in recognizing and differentiating jazz styles, including analyzing and transcribing solo and ensemble jazz materials.

**Course Outcomes**

- In-depth experience in recognizing and differentiating jazz styles, including analyzing and transcribing solo and ensemble jazz materials.

MUSIC 399R : Academic Internship. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Internship or externship in creative, performing, producing, or teaching applications of major course work.

**Course Outcomes**

- Students will participate in an off-campus performance or administrative experience to enhance the student's academic training at the university.
- Students will gain access to professional contacts and create a network beneficial to future career choices.
- Students will apply acquired classroom skills in a professional setting.

MUSIC 468 : Jazz Pedagogy. (1:2:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Organizing and teaching jazz in the secondary school. Designed for the music educator.

**Course Outcomes**

- Students will learn how to organize and teach jazz in the secondary school. Materials are designed for the music educator.

MUSIC 481 : Orchestration. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C- or higher in Music 293, 295.

DESCRIPTION: Scoring for standard orchestral instruments.

**Course Outcomes**

- This course is to learn fundamentals and intermediate techniques of orchestration, primarily pre-modern.

MUSIC 482 : Choral Arranging. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 296.

DESCRIPTION: Study of published choral arrangements, as well as techniques for adapting and arranging for choirs.

**Course Outcomes**

- This course will help students learn a broad range of techniques in choral arranging, especially as it applies to adapting existing works for different configurations and creating new arrangements based on preexisting melodies.

MUSIC 485 : Jazz Arranging and Composition. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 295

DESCRIPTION: Developing concepts and skills related to the orchestration, arranging, and composition of jazz and related contemporary styles of music.

**Course Outcomes**

- Students will develop concepts and skills related to the orchestration, arranging, and composition of jazz and related contemporary styles of music.

MUSIC 489 : Film Scoring. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 389; Instructor's consent.
DESCRIPTION: Introduction to techniques and technology of film scoring.

**Course Outcomes**

- Successful completion of this class will allow students:1. To develop a practical understanding and approach to film scoring.2. To develop an appreciation of film composition as an art form.3. To have a practical ability of the creative and technical process of film composition.4. Seek to develop a balance between the career and spiritual well-being.5. Ultimately, to gain a greater fascination and increased skill of film composition.

Additional ensembles from Category 1 or approved Category 2 (see requirement 5).

PHSCS 167 : Descriptive Acoustics of Music and Speech. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introductory acoustics course, emphasizing physical principles underlying production and perception of music and speech.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Define the basic terminologies of acoustics, identify physical principles involved in common situations and answer conceptual questions related to hearing, speech, audio, listening environments, and musical instruments.
- Apply scientific models to analysis of hearing, speech and musical instruments, etc.
- Solve basic problems related to hearing, speech, audio, listening environments, and musical instruments.
- Write effectively using the terminology of acoustics and logically outline how acoustics is important in a discipline of their choice.

TMA 102 : Introduction to Film. (3:4:2)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Analytical studies for understanding and appreciating media forms and messages, as well as basic history, theory, and aesthetics. Lab required.

**Course Outcomes**

- Students will become active, intelligent film viewers
- Students will be exposed to the practical elements of film
- Students will learn about a wide range of stories and stylistic strategies utilized by film artists and institutions
- Students will become familiar with new and helpful ways of receiving films. They will be able to evaluate and analyze films in a variety of contexts.

TMA 465 : Sound Reinforcement. (2:4:0)
WHEN TAUGHT: Fall
PREREQUISITE: TMA 365
DESCRIPTION: Sound reinforcement theory and practice.

**Course Outcomes**

There are no course outcomes available

Note: Up to four hours of Music 399R may count toward requirement 8.

9. Complete a capstone project (Music 486) or present a juried recital (Music 349). Final requirement is decided in consultation with student's faculty advisor.

   Recital: Enroll in Music 349 (0.0 credit hour) for the semester during which a recital is to be presented. Concurrent enrollment in appropriate performance instruction is required. A prerecital hearing is required at least three weeks before juried recitals. Contact the Harris Fine Arts Center Scheduling Office (D-359, south lobby of Pardoe Theatre) for further information.

*Hours include courses that may fulfill university core requirements.

## Show all Music (Music) Courses

College of Fine Arts and Communications Home

School of Music Home

Majors

- BA in Music
- BM in Commercial Music
- BM in Music Composition

BM in Music Education

Emphases

- K–12 Choral
- K–12 Instrumental
- Elementary Music Specialist

BM in Music Performance

Emphases

- Brass
- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

Minor

- Minor in Music

Course Information

- Music (Music) Courses

Faculty

# BM in Music Composition (78 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this major.*

The BM in composition degree program teaches young composers to write with modern and experimental music vocabularies as well as historic vocabularies, write for diverse color combinations (including orchestral and electroacoustic), and recruit and rehearse players to perform their music.

The music composition major prepares the student for graduate study in composition and theory or may lead to a professional career in composing, arranging, or related fields.

## Program Requirements | View MAP | View Program Outcomes

1. See the college advisement center for the application procedure for official acceptance into a specific degree program.
2. Complete the following lower-division music core courses:

MUSIC 193 : Dictation 1. (1:0:2)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.
DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Acceptance as a music major.

DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 197.

DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

MUSIC 221 : Functional Piano Skills 1. (2:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Piano skills determined by entrance diagnostic exam; music major status.

DESCRIPTION: Provides music majors with basic keyboarding ability in such areas as sight reading, technique, harmonization, and score reading.

**Course Outcomes**

- At the end of this class, students should be able to:Play major and minor cadences using tonic, sub-dominant and dominant chords in all keys at a tempo of 80, one chord per beat.
- Harmonize melodies using the assigned accompaniment patterns demonstrating an ability to use chords in root and inverted positions.
- Play common melodies by ear using assigned chordal accompaniments.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play the major and harmonic minor scales that begin on the white keys for one octave up and down the keyboard at a tempo of 100 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform assigned accompaniments to solos demonstrating an ability to follow the performance of the soloist.

MUSIC 222 : Functional Piano Skills 2. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 221; music major status.

DESCRIPTION: Continuation of Music 221.

**Course Outcomes**

- Continuing to build upon skills gained from Mus 221, students will also be able to:Play the assigned progressions in all keys up to four sharps and four flats at a tempo of 88 per half note.
- Harmonize given melodies using the assigned accompaniment pattern and chord symbols demonstrating ease in moving from chord to the next.
- By ear, play a common melodies with the right hand as assigned. With the left hand, play a chordal accompaniment using the assigned accompaniment pattern.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play major and harmonic minor scales that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Play major and minor arpeggios that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform a hymn of your choice from the LDS hymnbook or from a standard hymnbook from another denomination.
- Perform accompaniments to solos as assigned demonstrating an ability to follow the performance of the soloist.
- Prepare a score reading example that relates to your major instrument. Play the line of your instrument and one other line of a differing and transposing instrument.

MUSIC 293 : Dictation 3. (1:0:2)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.

DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these

harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.
DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.
DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.
DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 198.
DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 297.
DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

3. Complete one course from the following:

MUSIC 235A : Instrumental Conducting Techniques. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.
DESCRIPTION: Physical techniques and musical understanding required to conduct an instrumental performance ensemble.

**Course Outcomes**

- Students will develop the physical techniques and interpretive skills required to be an instrumental conductor.
- Students will be able to:--Explain and demonstrate the conductor's correct posture, stance, baton grip, and hand/arm position.--Explain and demonstrate the conductor's preparatory gesture, ictus, rebound, the conducting patterns.--Demonstrate expressive and ambidextrous use of both hands as it relates to the musical score.--Conduct in various articulation styles, legato, staccato, marcato, & tenuto--Conduct clear beat patterns, mixed meter, subdivision, and cuing technique.--Define musical terms as useful for a conductor., and understand/explain the transpositions of instruments found within a musical score.--Convincingly conduct a variety of musical excerpts

MUSIC 235B : Choral Conducting Techniques. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.
DESCRIPTION: Physical techniques and musical understanding required to conduct a choral performance ensemble.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping, irregular meters, and multi metrics.

4. Complete one of the following options:
   a. Instrumentalists and Classical Vocalists complete the following:

MUSIC 260R : Performance Instruction. (.5-2:1:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

(8 hours).

b. Contemporary Vocalists complete the following:

MUSIC 161 : Voice Technique. (2:2:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Acceptance by audition to the School of Music.
DESCRIPTION: Class instruction in voice technique.

**Course Outcomes**

- Through the understanding and use of proper vocal technique, students will musically perform traditional and contemporary Musical Theatre, as well as “pop” pieces, implementing many vocal colors and styles.
- By studying the basic anatomy involved in vocal production, Students will differentiate between those mechanical processes, which will build healthy production and those, which will lead to vocal problems.
- Students will demonstrate knowledge of vocal technique outlined in the text through taking a series of quizzes.
- Students will memorize and perform repertoire that is representative of the various vocal styles used in Musical Theatre literature.
- Students will expand sight-reading skills by participating in oral drills, enhancing the ability to study and learn musical scores.
- Through class devotionals, group discussion and personal reflection (journal writing) each student will begin to synthesize his/her growing skills with his/her moral, spiritual and ethical values.
- By supporting the growth of each member of the class, each student will develop a sense of community and sharing in the process of magnifying his/her own talent, thus downplaying the intensely competitive element of the performing business.

MUSIC 260R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

(6 hours).

5. Complete one hour of ensemble each semester for four semesters, including 2-3 hours from Category 1: Approved Large Ensembles (see General Information) and 1-2 hours from the following Category 2 ensembles:

MUSIC 316R : Opera Workshop. (1:6:0)

WHEN TAUGHT: Fall

PREREQUISITE: Audition and instructor's consent.

DESCRIPTION: Training and experience in operatic choral music and stage movement.

**Course Outcomes**

- Students will learn the performance techniques required to sing art songs and operatic arias from the western classical vocal traditions.
- Students will apply these skills in the performance of songs or arias in the class.

MUSIC 317R : Opera Ensemble. (.5-3:6:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Audition and instructor's consent.

DESCRIPTION: Training and experience in operatic excerpts, chamber opera, and full productions for operatic soloists.

**Course Outcomes**

- Through performance opportunities before an audience, students will demonstrate a more comprehensive understanding of the basic skills taught in the Opera Workshop course (See Learning Outcomes for the respective courses; Mus 316R and 616R).

MUSIC 318R : Music Theatre Ensemble. (1:0:5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Audition and instructor's consent.

DESCRIPTION: Auditioned chorus or orchestra for opera or music dance theatre productions.

**Course Outcomes**

No outcomes are available at this time.

MUSIC 320R : Young Ambassadors. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition and director's consent.

DESCRIPTION: Participation as soloists, coaches, or directors in music dance theatre performances.

**Course Outcomes**

- Students will explore the Music Dance Theatre tradition of America as they learn song and dance sequences from the American Songbook.
- Students will progress in their level of proficiency in dance and singing through intensive rehearsal and frequent performance opportunities.
- Students will serve in the community, in public schools, and with service organizations nationally and internationally to build bridges of understanding between cultures and peoples.

MUSIC 323R : Marching Band. (1:0:6)

WHEN TAUGHT: Fall

PREREQUISITE: Audition or director's consent.

**Course Outcomes**

- As learning outcomes, students should be able to apply the musical principles of individual, section, and ensemble musical tone production, correct notes, rhythms and dynamics, balance and blend, and correct marching execution. Students should be able to demonstrate application of these principles by successfully performing college-level marching band repertoire in rehearsal and performances.

MUSIC 330R : Steel Band. (1:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Director's consent.

**Course Outcomes**

- Students should be exposed to music outside the Western European tradition. Most of the music performed in this ensemble includes Calypso and Soca styles from the island nation of Trinidad and Tobago. We will sometimes include a pop or classical number, but most of the time we will focus on “groove” music. This means that having a conductor will be rare and the student is expected to listen and learn how to contribute to that “groove”.

MUSIC 331R : Jazz Combos. (1:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Students will learn how to function in a traditional jazz combo setting, including learning head charts, standard lead sheet tunes, and arrangements. They will also further their knowledge of and experience in improvising in a typical professional performance setting in a variety of jazz styles.

MUSIC 332R : Show Band. (1:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Contemporary and traditional show music (Young Ambassadors) and ethnic music (Living Legends).

**Course Outcomes**

No outcomes are available at this time.

MUSIC 333R : Jazz Ensemble. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Audition.

DESCRIPTION: Includes Jazz Ensemble (big band), Jazz Lab Band (entry-level big band), and Vocal Jazz Ensembles.

**Course Outcomes**

- Students will learn how to perform in a traditional big band setting. Standard and representative repertoire from the various jazz styles will be taught and explored in this course.

: Jazz Lab Band.

**Course Outcomes**

: Vocal Jazz Ensemble.

**Course Outcomes**

(Vocal Jazz)

MUSIC 333R : Jazz Ensemble. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Audition.

DESCRIPTION: Includes Jazz Ensemble (big band), Jazz Lab Band (entry-level big band), and Vocal Jazz Ensembles.

**Course Outcomes**

- Students will learn how to perform in a traditional big band setting. Standard and representative repertoire from the various jazz styles will be taught and explored in this course.

: Jazz Lab Band.

**Course Outcomes**

: Vocal Jazz Ensemble.

**Course Outcomes**

(Jazz Ensemble)

MUSIC 334R : Synthesis. (1:0:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Students will learn to perform in a traditional big band setting. Music will be selected from the standard and representative repertoire of jazz styles.

MUSIC 335R : Jazz Legacy Band. (1:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Traditional ensemble specializing in early jazz. Band occasionally tours off campus.

**Course Outcomes**

- Students will perform traditional jazz, improvising within the traditional jazz tutti texture. Each student will demonstrate the roll of his or her instrument within the context of traditional jazz.
- Each student will improvise solos in the style of the early jazz masters who play his or her instrument.
- Students will play typical introductions, endings, solo backgrounds, texture routines characteristic of traditional jazz styles
- Students will demonstrate the ability to play 25 "Dixieland Standards." These are among the most commonly performed tunes that are played by professional "Dixieland" bands at casual performance engagements (gigs).Standard tunes: AvalonBasin Street BluesBig Butter and Egg ManBlack and BlueBourbon Street ParadeDo You Know What it MeansHigh SocietyI Can't Give You Anything But LoveI

Found A New BabyIndiana (Back Home Again in)Ja DaJust A Closer Walk With TheeMuskrat RambleRoyal Garden BluesSt. James InfirmarySt. Louis BluesStruttin' With Some BarbecueSweet Georgia BrownThat's A PlentyTin Roof BluesTwelfth Street RagUp a Lazy RiverWhen the Saints Go Marching InWhen You're Smiling Won't You Come Home Bill Bailey

MUSIC 336R : Balinese Gamelan. (1:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Playing and performing on the Balinese gamelan (percussion) instruments.

**Course Outcomes**

- Students participating in Gamelan will learn the mental and technical skills required to memorize and perform works from the traditional Balinese gamelan repertoire, including becoming proficient on one or more of the instruments in the ensemble.
- Students will also use music as a window into the relationship between Balinese musical practice and Balinese social and religious culture, and, more broadly, develop a deep appreciation for this musicâ s profound contribution to the life experience.
- In the spirit of BYUâ s global mission and the breadth of educational experience advocated in BYUâ s guiding documents, successful students in gamelan will develop a greater understanding of and respect for music and traditions outside of their native experience. This respect will better prepare them to represent BYU and the Church in an increasingly interconnected global society.

MUSIC 339R : Chamber Orchestra. (1:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- The Chamber Orchestra seeks to discover the truth imbedded in the greatest works for chamber orchestra through study, preparation, and performance, both for its own musicians and for audiences who hear them. The orchestra bears the responsibility of representing the School of Music, the University, and the Church through regional, national, and international tours.

MUSIC 341R : Brass Chamber Music. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Director's consent.

**Course Outcomes**

- Students will demonstrate the ability to perform standard chamber ensemble music at an appropriate artistic level for their year of study.

: Brass Ensemble.

**Course Outcomes**

: Brass Choir.

**Course Outcomes**

: Trombone Choir.

**Course Outcomes**

MUSIC 342R : Early Music Ensemble. (1:1:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Director's consent.

**Course Outcomes**

No outcomes are available at this time.

MUSIC 343R : Guitar Ensemble. (1:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Director's consent.

**Course Outcomes**

- Students will gain ensemble experience with other guitarists, develop better sight-reading skills, and perform in a formal setting during the semester.

MUSIC 344R : Keyboard in Ensemble. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music 260R or instructor's consent.

DESCRIPTION: Accompanying and ensemble performance.

**Course Outcomes**

- Skills to Develop in 344r:Understand how to best balance their playing with another instrument and comprehend how that balance evolves to meet the needs of different instruments.2. Understand how to communicate musical ideas through body language.3.Develop musical "ESP". This is achieved when a pianist works with the same person over a long period of time, and develops better sensitivity. The

pianist and soloist can sense changes in tempi, phrasing, and dynamics through concentrated listening, needing almost no visual contact. 4.Understand the subtext of the score.5. Develop a genuine appreciation for the art of the accompanist.

MUSIC 345R : Percussion Ensemble. (1:0:2)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Director's consent.

**Course Outcomes**
- To expose students to the music written for percussion ensemble, to help students develop technique(s) on a myriad of instruments while contributing musically, and to present musical situations with and without a conductor. The percussion parts in a percussion ensemble differ drastically from those found in traditional orchestral and band percussion scores in that most performers must be not only rhythmically proficient, but melodically, harmonically and texturally expressive.

MUSIC 346R : String Chamber Music. (1:1:2)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Instructor's consent.

**Course Outcomes**
- There are four main areas of student outcomes important for this course: the building of repertoire, experience performing, exploring the enormous variety of timbre and color in the chamber music setting, and artistically improving how you communicate musically with your performing colleagues, as well as your audience.

MUSIC 347R : Vocal Point. (1:5:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Director's consent.

**Course Outcomes**
- The desired outcome of vocal point is to represent the School of Music and BYU to the World with a high degree of artistry and capturing the personality of our campus, through the medium of male a cappella choral music.

MUSIC 348R : Woodwind Chamber Music. (1:1:2)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Director's consent.

**Course Outcomes**
- Students will demonstrate performance proficiency on their instrument within the context of woodwind chamber music.

: Woodwind Ensemble.

**Course Outcomes**

: Saxophone Ensemble.

**Course Outcomes**

: Flute Choir.

**Course Outcomes**

MUSIC 441R : New Music Ensemble. (1:0:1)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Instructor's consent.

**Course Outcomes**
- Performance practice in modern and experimental musical vocabularies.

6. Complete the following upper-division music core courses:

MUSIC 301 : Survey of Music Literature 1. (2:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.
DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**
There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)
WHEN Fall; Winter; Spring Contact Department

TAUGHT:
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.
DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**

There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.
DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**

There are no course outcomes available

MUSIC 395 : Form and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: C- or higher in Music 293, 295.
DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

7. Complete one course from the following:

MUSIC 307 : World Music. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Exploration of music making from a global perspective.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods through which various cultures conceptualize and taxonomize instruments, and be able to show an understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.
- Students will articulate how a culture's values can be embodied and discerned within musical practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?
- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 308 : History of Jazz. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists
- Learn to transcribe and analyze jazz solos

8. Complete the following lower-division composition courses:

MUSIC 188 : Composition 1. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Music 195 or instructor's consent.

DESCRIPTION: Introduction to principles of recent art music; composition and performance of student works for one to five instruments.

**Course Outcomes**

- Introduction to composing music with modern and and experimental music vocabularies.

MUSIC 287 : Electronic Music Composition. (2:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: Music 188 or instructor's consent.

DESCRIPTION: Introduction to composition with digital audio and related media.

**Course Outcomes**

- Introduction to modern and experimental music vocabularies via composition in electronic media.

MUSIC 288 : Composition 2. (2:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 287

DESCRIPTION: Invention and exploration of sound, control of multivoiced textures and larger forms, and recent art music.

**Course Outcomes**

- Intermediate study of composition with modern and experimental music vocabularies.

9. Complete eight hours of the following upper-division composition seminar:

MUSIC 387R : Composition 3. (2:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C- or higher in Music 288, 296; junior-level screening.

DESCRIPTION: Composition lessons and seminars in principles and techniques of recent art music.

**Course Outcomes**

- Advanced composition study that (a) focuses on modern and postmodern musical vocabularies, (b) enhances knowledge of contemporary repertoire, and (c) prepares students for their senior recitals.

10. Complete the following:

MUSIC 481 : Orchestration. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C- or higher in Music 293, 295.

DESCRIPTION: Scoring for standard orchestral instruments.

**Course Outcomes**

- This course is to learn fundamentals and intermediate techniques of orchestration, primarily pre-modern.

MUSIC 483 : Counterpoint. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C- or higher in Music 294, 296.

DESCRIPTION: Eighteenth-century contrapuntal styles and techniques, emphasizing those of J. S. Bach.

**Course Outcomes**

There are no course outcomes available

MUSIC 581 : Twentieth-Century Orchestration. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Music 481 or equivalent.
DESCRIPTION: New techniques for standard and new instruments; analysis and listening.

**Course Outcomes**

- Learn specialized orchestrational techniques, primarily of the modern era.

MUSIC 583 : Sixteenth-Century Counterpoint. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 294, 296, or equivalent.

DESCRIPTION: Strict modal counterpoint in sixteenth- century style (Palestrina); includes species, text setting, and motet.

**Course Outcomes**

- Learn the techniques of 16-century counterpoint, including principles applicable to later music.

11. Present a juried composition recital (Music 449) during the senior year.

    **Recital:** Enroll in 449 (1 credit hour) for the semester during which a recital is to be presented. A prerecital hearing is required at least three weeks before juried recitals. Contact the Harris Fine Arts Center Scheduling Office (D-359, south lobby of Pardoe Theatre) for further information.

12. After consulting with faculty advisor, complete 4 hours of music electives.

## Show all Music (Music) Courses

College of Fine Arts and Communications Home

School of Music Home

Majors

- BA in Music
- BM in Commercial Music
- BM in Music Composition

BM in Music Education

Emphases

- K–12 Choral
- K–12 Instrumental
- Elementary Music Specialist

BM in Music Performance

Emphases

- Brass
- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

Minor

- Minor in Music

Course Information

- Music (Music) Courses

Faculty

# BM in Music Education: K–12 Choral Emphasis (87 hours, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

A degree in music education prepares the student for K-12 licensure as a public school music teacher with a choral emphasis. The degree program is a composite of music and education. Graduates may obtain a teaching position, pursue graduate work, or use the degree as professional preparation for other fields of endeavor.

## Program Requirements | View MAP | View Program Outcomes

1. See the college advisement center and enroll in Music 176 winter semester or summer term. This course is prerequisite to official acceptance into music education.
2. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
3. Proficiency requirements: Present a juried recital (Music 249) in the last semester of private instruction. Students must prepare a minimum of 18 minutes of music to be performed in a formal public recital. Students will schedule a joint recital in groups of three or fewer.
4. Complete the following lower-division music core courses:

MUSIC 193 : Dictation 1. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.
DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Acceptance as a music major.

DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 197.

DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

MUSIC 221 : Functional Piano Skills 1. (2:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Piano skills determined by entrance diagnostic exam; music major status.

DESCRIPTION: Provides music majors with basic keyboarding ability in such areas as sight reading, technique, harmonization, and score reading.

**Course Outcomes**

- At the end of this class, students should be able to:Play major and minor cadences using tonic, sub-dominant and dominant chords in all keys at a tempo of 80, one chord per beat.
- Harmonize melodies using the assigned accompaniment patterns demonstrating an ability to use chords in root and inverted positions.
- Play common melodies by ear using assigned chordal accompaniments.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play the major and harmonic minor scales that begin on the white keys for one octave up and down the keyboard at a tempo of 100 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform assigned accompaniments to solos demonstrating an ability to follow the performance of the soloist.

MUSIC 235B : Choral Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct a choral performance ensemble.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping, irregular meters, and multi metrics.

MUSIC 293 : Dictation 3. (1:0:2)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.

DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.
DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.
DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.
DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 198.
DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 297.
DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

5. Complete eight hours of lessons from the following:

MUSIC 250R : Performance Study: Voice. (.5-1:0.5:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Music major status (K-12 Choral Emphasis or Elementary Music Specialist Emphasis only).
DESCRIPTION: Performance study, private instruction, and studio class.
NOTE: From one to three hours of daily practice required. Fee.

**Course Outcomes**

- In juried exams and other public performances, students will demonstrate mastery of the basic skills required to perform in the Western tradition.

MUSIC 260R : Performance Instruction: Voice. (.5-2:1:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

**Note:** Voice lessons are required during each semester in the major, with *no more than* one semester exception (excluding the semester in which student teaching is completed).

6. Music education majors must enroll in at least one hour of large ensemble each semester for seven semesters within

student's area of specialization. At least one hour must be the Music 311R Dr. Broomhead's section.

7. Complete the following upper-division music core courses:

MUSIC 301 : Survey of Music Literature 1. (2:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**

There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**

There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**

There are no course outcomes available

MUSIC 395 : Form and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C- or higher in Music 293, 295.

DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

8. Complete one course from the following:

MUSIC 307 : World Music. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Exploration of music making from a global perspective.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods through which various cultures conceptualize and taxonomize instruments, and be able to show an understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.
- Students will articulate how a culture's values can be embodied and discerned within musical practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?
- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the

goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 308 : History of Jazz. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists
- Learn to transcribe and analyze jazz solos

9. Complete the following:

MUSIC 176 : Careers in Music Education. (1:1:1)

WHEN TAUGHT: Winter; Summer

DESCRIPTION: Examining preschool through college teaching career options in music; seeking a good fit between personal aspirations, attributes, skills, and job requirements.

NOTE: Open to music majors and nonmajors.

**Course Outcomes**

- Students will become acquainted with possible career options in musiceducation, and will examine the joys, demand, benefits, and potential hazards inherent in each option. They will also identify critical personal attributes and skills necessary for success in each option.

MUSIC 277 : Elementary General Music Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Music 194 and 198 or concurrent enrollment.

DESCRIPTION: Methods and materials for teaching general music, K--12. Cognitive development and learning styles as a basis for instructional strategies. Includes Dalcroze, Orff, and Kodaly.

**Course Outcomes**

- Students will sing children' s songs with accurate pitch, quality tone, and in a range appropriate for children' s vocaldevelopment.
- Students will increase their personal repertoire of songs for children including songs from other cultures.
- Students will use sounds in creative ways to express musical and extra-musical ideas.
- Students will analyze music literature (songs and recordings) for teaching specific music concepts.
- Students will demonstrate an openness to new ways of teaching, embracing appropriate teaching strategies and literature.
- Students will show a sense of commitment to and willingness to serve music education in part by active participationin the BYU preschool lab, UMEA Conference and MENC student activities.
- Students will articulate a personal philosophy of music education for children and for the " general" student. Include in your discussion, a knowledge of child development in music, how learning takes place, and the issue of talent vs. learning.
- Students will demonstrate their understanding of the music elements with related concepts, and their significance in the teaching/learningprocess.
- Students will know the National Standards in Music and why they are important, and be aware of expectations for eachgrade level.
- Students will be conversant in the music pedagogies of Orff, Dalcroze, MMCP, Kodaly, ETM and others as explored inclass.
- Students will describe musical development from infancy through childhood.
- Students will describe how music impacts the social/emotional, intellectual and physical development of the learner.
- Students will grow in ability to sequence learning activities consistent with what we know about child development, music concepts, and music literature.

MUSIC 278 : Secondary General Music Methods. (2:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: C- or higher in Music 275.

DESCRIPTION: Using an experiential approach, exploring ways to provide rich musical experiences for secondary students in general music situations, including mapping, additive approach, and other methods. Effective teaching and classroom management also addressed.

**Course Outcomes**

- Through an experiential appoach, students will become familiar with secondary education methodssuch as mapping, additive approach and other methods. As well, students will receive instruction of effective classroom management.

MUSIC 363 : Vocal Pedagogy. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Junior standing as vocal performance or choral music education major or instructor's consent.

DESCRIPTION: Introduction to physiology, acoustics, and pedagogy of singing.

**Course Outcomes**

- Students will learn the physiology and biomechanics of the human voice.
- Students will learn the acoustical laws which govern sound as applied to the human voice.
- Students will learn pedagocial approaches to teaching voice which conform to physical and acoustical principles.

MUSIC 374 : Percussion Workshop. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 196 & MUSIC 198

DESCRIPTION: Learning to play and teach percussion instruments; survey of instructional materials.

**Course Outcomes**

- To prepare you to teach basic percussion skills at the public school level to both instrumental students and choral students as well as to help you reach a high level of performance ability with regards to rhythm, counting, and exposure to a variety of percussion instruments. Additional objectives are to develop your abilities in writing/arranging percussion parts for choral works and becoming more familiar with choral repertory that utilizes percussion. Since this is a one semester course, please try to immerse yourself in percussion related activities by attending recitals and concerts where percussion is utilized.

: Percussion Workshop: Instrumental.

**Course Outcomes**

: Percussion Workshop: Choral.

**Course Outcomes**

MUSIC 376A : Choral Practicum. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 235B & MUSIC 296

DESCRIPTION: Applied conducting technique, score analysis and preparation, evaluating solo performance, and application of learning theory.

**Course Outcomes**

- Students will demonstrate clear and expressive conducting in various genres.
- Students will develop and demonstrate mastery of conducting techniques.
- Students will demonstrate principles of effective communication through conducting.
- Students will demonstrate ability to analyze scores in terms of form, phrasing, meter, cueing, balance and harmonic analysis and provide score markings for each.
- Students will demonstrate ability to transpose.
- Students will learn and implement diverse teaching strategies.
- Students will create lesson plans that identify and target specific music elements by predicting and prioritizing rehearsal issues.
- Students will design and customize rehearsal strateigies as an integral part of lesson planning.
- Students will conduct and perform for each other in micro teaching modules.
- Students will rehearse, perform, and evaluate in real time.
- Students will analyze and assess performance practice in live lab settings.
- Students will self-reflect on individiual goals, progress and challenges.
- Students will assess peers in pairs and in groups.
- Students will mini conducting/rehearsal modules will be representative of the skills, knowledge, and techniques required for classroom teaching (rehearsals are filmed).
- Students will show empathy, respect and courtesy towards each other throughout the leanrning process.

MUSIC 376B : Choral Practicum. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 376A

DESCRIPTION: Curriculum design, score analysis and preparation, choral arranging, rehearsal techniques, survey of literature, and vocal pedagogy, including treble voice and changing voice; computers and computer-assisted instruction.

**Course Outcomes**

- Students will be prepared to function competently in the public schoolclassroom as musical artists, as teachers, and as administrators.
- Students will develop processes, build skills, and share knowledge in rehearsal technique by analyzing scores, forecasting rehearsal issues, planning, creating, and prioritizing strategies, executing the rehearsal with a real lab choir.
- Students will be prepared to create their own strategies and policies for themusic classroom based on sound principles.

- Students will develop processes, build skills, and share knowledge in voice building of choral singers by creating an index of vocalises to build technique, modeling for and strategizing to improve the tone of the lab choir over the semester, reading about and discussing group vocal pedagogy.
- Students will develop processes, build skills, and share knowledge in discerning quality choral repertoire, collecting and organizing it into personal choral reference libaries.
- Students will develop processes, build skills, and share knowledge in selecting repertoire and creating quality concert programs for secondary students.
- Students will develop processes, build skills, and share knowledge in creating course documents that outline curriculum goals, classroom management rules and consequences, assessment and grading procedures, budget proposals and purchasing information.
- Students will develop processes, build skills, and share knowledge in recruiting singers, voice testing and discerning stages of the changing voice meeting the range needs of those voices, auditioning.

MUSIC 482 : Choral Arranging. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 296.

DESCRIPTION: Study of published choral arrangements, as well as techniques for adapting and arranging for choirs.

**Course Outcomes**

- This course will help students learn a broad range of techniques in choral arranging, especially as it applies to adapting existing works for different configurations and creating new arrangements based on preexisting melodies.

10. Complete the Professional Education Component:
    - Complete the following:

MUSIC 275 : Exploration of Music Teaching. (4:Arr.:Arr.)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 176; FBI fingerprint and background clearance.

DESCRIPTION: Teaching experiences and seminars aimed at helping prospective music teachers experience the demands and opportunities associated with teaching secondary music students.

**Course Outcomes**

- Students will complete 12 observations of music classes being taught by different local music teachers as an opportunity for exposure, reflection and gathering materials for future reference.
- Each student will complete at least two mentored formal teaching experiences involving junior high music students, with opportunity for reflection and feedback.
- Students will complete an individual Teacher Work Sample to demonstrate their ability to understand a teaching situation, and how to plan, implement and reflect on teaching a series of lessons.
- @font-face { font-family: "Times";}@font-face { font-family: "Book Antiqua";}p.MsoNormal, li.MsoNormal, div.MsoNormal { margin: 0in 0in 0.0001pt; font-size: 12pt; font-family: "Times New Roman"; }div.Section1 { page: Section1; }ol { margin-bottom: 0in; }ul { margin-bottom: 0in; }Students will interact with musics of diverse cultures, styles and contexts in class activities.

MUSIC 379 : Pre-Student Teaching. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C- or better in Music 275.

DESCRIPTION: Analyzing education practice and relationship between theories and research on music education and the practice of teaching.

**Course Outcomes**

- Students will demonstrate a readiness to assume the responsibilities of student teaching in general, choral, or instrumental music through successfully completing a semester-long, part-time field experience in a suitable public school music classroom setting.

SC ED 350 : Adolescent Development in an Education Context. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Adolescent development and its implications for integrated school culture, curriculum design, instructional practices, and assessment.

**Course Outcomes**

- The students will demonstrate how the stages of development impact instructional practices.
- The students will understand the social, physical, and cognitive developmental stages of adolescence in relation to the tasks of automony, identity and intimacy.
- The students will demonstrate how the stages of development impact classroom environments and management.

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or

SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

**Note:** FBI fingerprint and background clearance must be completed prior to enrollment in Music 275.

- Complete 12 hours of student teaching:

MUSIC 476 : Secondary Student Teaching. (12:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or approval; with a major GPA 2.85.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary music students, demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will complete a Teacher Work Sample documenting their ability to understand a teaching situation and their individual students in one specific class, and their ability to plan, teach, reflect on and revise music learning events to teach a learning unit to this class. They will document group and individual progress for the unit.
- Students will demonstrate their ability to effectively plan, teach, reflect and revise music learning events by teaching full-time in a student teaching placement with a mentor teacher. In addition, students will demonstrate their ability to communicate effectively with individual students and groups of students, as well as parents, as well as the ability to work well with their mentor teacher and other school colleagues.

**Note:** All professional education courses (above) and Music 260R and 363 credits must be completed before student teaching (Music 476).

## Show all Music (Music) Courses

**College of Fine Arts and Communications Home**

**School of Music Home**

**Majors**

- BA in Music
- BM in Commercial Music
- BM in Music Composition
- BM in Music Education
  - Emphases
    - K–12 Choral
    - K–12 Instrumental
    - Elementary Music Specialist
- BM in Music Performance
  - Emphases
    - Brass
    - Combined Piano and Organ
    - Organ
    - Percussion
    - Piano
    - String
    - Vocal
    - Woodwind

**Minor**

- Minor in Music

**Course Information**

- Music (Music) Courses

**Faculty**

# BM in Music Education: K–12 Instrumental Emphasis (92 hours, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

A degree in music education prepares the student for K-12 licensure as a public school music teacher with a instrumental emphasis. The degree program is a composite of music and education. Graduates may obtain a teaching position, pursue graduate work, or use the degree as professional preparation for other fields of endeavor.

## Program Requirements | View MAP | View Program Outcomes

1. See the college advisement center and enroll in Music 176 winter semester or summer term. This course is prerequisite to official acceptance into music education.
2. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
3. Proficiency requirements: Present a juried recital (Music 349) in the last semester of private instruction. Students must prepare a minimum of 25 minutes of music to be performed in a formal public recital. Students will schedule a joint recital with one other music major, or they may present a full recital if encouraged to do so by their major instructor.
4. Complete the following lower-division music core courses:

MUSIC 193 : Dictation 1. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.
DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Acceptance as a music major.

DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 197.

DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

MUSIC 221 : Functional Piano Skills 1. (2:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Piano skills determined by entrance diagnostic exam; music major status.

DESCRIPTION: Provides music majors with basic keyboarding ability in such areas as sight reading, technique, harmonization, and score reading.

**Course Outcomes**

- At the end of this class, students should be able to:Play major and minor cadences using tonic, sub-dominant and dominant chords in all keys at a tempo of 80, one chord per beat.
- Harmonize melodies using the assigned accompaniment patterns demonstrating an ability to use chords in root and inverted positions.
- Play common melodies by ear using assigned chordal accompaniments.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play the major and harmonic minor scales that begin on the white keys for one octave up and down the keyboard at a tempo of 100 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform assigned accompaniments to solos demonstrating an ability to follow the performance of the soloist.

MUSIC 235A : Instrumental Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct an instrumental performance ensemble.

**Course Outcomes**

- Students will develop the physical techniques and interpretive skills required to be an instrumental conductor.
- Students will be able to:--Explain and demonstrate the conductor's correct posture, stance, baton grip, and hand/arm position.--Explain and demonstrate the conductor's preparatory gesture, ictus, rebound, the conducting patterns.--Demonstrate expressive and ambidextrous use of both hands as it relates to the musical score.--Conduct in various articulation styles, legato, staccato, marcato, & tenuto--Conduct clear beat patterns, mixed meter, subdivision, and cuing technique.--Define musical terms as useful for a conductor., and understand/explain the transpositions of instruments found within a musical score.--Convincingly conduct a variety of musical excerpts

MUSIC 293 : Dictation 3. (1:0:2)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.

DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.
DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.
DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.
DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 198.
DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 297.
DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

5. Complete eight hours of the following:

MUSIC 260R : Performance Instruction. (.5-2:1:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

6. Complete four hours of the following:

MUSIC 360R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status; jury approval.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- Students will learn how to improve their technical facility and artistic expression in their chosen area of musical study.

7. Music education majors must enroll in at least one hour of large ensemble each semester for seven semesters. Those who play woodwind, brass, or percussion instruments must enroll in one semester of marching band, which may be counted toward the 7-hour large ensemble requirement if it is completed after the student has been officially accepted as a degree candidate in instrumental music education.

8. Complete the following upper-division music core courses:

MUSIC 301 : Survey of Music Literature 1. (2:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.
DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**

There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.
DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**

There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.
DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**

There are no course outcomes available

MUSIC 395 : Form and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: C- or higher in Music 293, 295.
DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

9. Complete one course from the following:

MUSIC 307 : World Music. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Exploration of music making from a global perspective.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods through which various cultures conceptualize and taxonomize instruments, and be able to show an understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.
- Students will articulate how a culture's values can be embodied and discerned within musical

practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?

- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 308 : History of Jazz. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists
- Learn to transcribe and analyze jazz solos

10. Complete the following:

MUSIC 176 : Careers in Music Education. (1:1:1)

WHEN TAUGHT: Winter; Summer

DESCRIPTION: Examining preschool through college teaching career options in music; seeking a good fit between personal aspirations, attributes, skills, and job requirements.

NOTE: Open to music majors and nonmajors.

**Course Outcomes**

- Students will become acquainted with possible career options in musiceducation, and will examine the joys, demand, benefits, and potential hazards inherent in each option. They will also identify critical personal attributes and skills necessary for success in each option.

MUSIC 277 : Elementary General Music Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Music 194 and 198 or concurrent enrollment.

DESCRIPTION: Methods and materials for teaching general music, K--12. Cognitive development and learning styles as a basis for instructional strategies. Includes Dalcroze, Orff, and Kodaly.

**Course Outcomes**

- Students will sing children' s songs with accurate pitch, quality tone, and in a range appropriate for children' s vocaldevelopment.
- Students will increase their personal repertoire of songs for children including songs from other cultures.
- Students will use sounds in creative ways to express musical and extra-musical ideas.
- Students will analyze music literature (songs and recordings) for teaching specific music concepts.
- Students will demonstrate an openness to new ways of teaching, embracing appropriate teaching strategies and literature.
- Students will show a sense of commitment to and willingness to serve music education in part by active participationin the BYU preschool lab, UMEA Conference and MENC student activities.
- Students will articulate a personal philosophy of music education for children and for the " general" student. Include in your discussion, a knowledge of child development in music, how learning takes place, and the issue of talent vs. learning.
- Students will demonstrate their understanding of the music elements with related concepts, and their significance in the teaching/learningprocess.
- Students will know the National Standards in Music and why they are important, and be aware of

expectations for eachgrade level.
- Students will be conversant in the music pedagogies of Orff, Dalcroze, MMCP, Kodaly, ETM and others as explored inclass.
- Students will describe musical development from infancy through childhood.
- Students will describe how music impacts the social/emotional, intellectual and physical development of the learner.
- Students will grow in ability to sequence learning activities consistent with what we know about child development, music concepts, and music literature.

MUSIC 278 : Secondary General Music Methods. (2:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: C- or higher in Music 275.

DESCRIPTION: Using an experiential approach, exploring ways to provide rich musical experiences for secondary students in general music situations, including mapping, additive approach, and other methods. Effective teaching and classroom management also addressed.

**Course Outcomes**

- Through an experiential appoach, students will become familiar with secondary education methodssuch as mapping, additive approach and other methods. As well, students will receive instruction of effective classroom management.

MUSIC 372A : Woodwind Workshop. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 196 & MUSIC 198

DESCRIPTION: Learning to play and to teach woodwind instruments; survey of instructional materials; emphasis on clarinet and saxophone.

**Course Outcomes**

- Students will demonstrate fundamental performance skills and technique on clarinet, flute, saxophone, oboe and bassoon.
- Students will effectively sequence and demonstrate appropriate strategies for instructing fundamental performance skillsand technique on clarinet, flute, saxophone, oboe and bassoon, and will identify a variety of woodwind teaching resources.
- Students willdemonstrate familiarity with selected woodwind pedagogues and their contributions.

MUSIC 372B : Woodwind Workshop. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 196 & MUSIC 198

DESCRIPTION: Continuation of Music 372A. Emphasis on flute, oboe, and bassoon.

**Course Outcomes**

- Students will demonstrate fundamental performance skills and technique on clarinet, flute, saxophone, oboe and bassoon.
- Students will effectively sequence and demonstrate appropriate strategies for instructing fundamental performance skillsand technique on clarinet, flute, saxophone, oboe and bassoon, and will identify a variety of woodwind teaching resources.
- Students willdemonstrate familiarity with selected woodwind pedagogues and their contributions.

MUSIC 373 : Brass Workshop. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 196 & MUSIC 198

DESCRIPTION: Learning to play and to teach brass instruments; survey of instructional materials.

**Course Outcomes**

There are no course outcomes available

MUSIC 374 : Percussion Workshop. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 196 & MUSIC 198

DESCRIPTION: Learning to play and teach percussion instruments; survey of instructional materials.

**Course Outcomes**

- To prepare you to teach basic percussion skills at the public school level to both instrumental students and choral students as well as to help you reach a high level of performance ability with regards to rhythm, counting, and exposure to a variety of percussion instruments. Additional objectives are to develop your abilities in writing/arranging percussion parts for choral works and becoming more familiar with choral repertory that utilizes percussion. Since this is a one semester course, please try to immerse yourself in percussion related activities by attending recitals and concerts where percussion is utilized.

: Percussion Workshop: Instrumental.

**Course Outcomes**

: Percussion Workshop: Choral.

**Course Outcomes**

MUSIC 375A : String Workshop. (1:0:3)

WHEN TAUGHT: Fall

DESCRIPTION: Learning to play and teach string instruments; survey of instructional materials, emphasis on violin and viola.

**Course Outcomes**

- Students will demonstrate ability to identify skills and techniques common to all string instruments.
- Students will demonstrate enthusiasm for and demonstrate understanding of string instruction as a means of realizing comprehensive music education.
- Students will demonstrate ability to effectively sequence and instruct these fundamental skills.
- Students will be able to articulate the role of string instruction in public school music education curriculum.
- Students will know selected string pedagogues, and demonstrate ability to identify important movements in string education.
- Students will discover ways that playing string instruments can provide'object lessons' in learning the gospel.
- Students will demonstrate ability to diagnose technical problems instudents and propose remedial strategies.

MUSIC 375B : String Workshop. (1:0:3)

WHEN TAUGHT: Winter

DESCRIPTION: Continuation of Music 375A. Emphasis on cello and bass.

**Course Outcomes**

- Students will demonstrate enthusiasm for and demonstrate understanding of string instruction as a means of realizing comprehensive music education.
- Students will be able to articulate the role of string instruction in public school music education curriculum.
- Students will demonstrate ability to effectively sequence and instruct these fundamental skills.
- Students will demonstrate ability to diagnose technical problems in students and propose remedial strategies.
- Students will know selected string pedagogues, and demonstrate ability to identify important movements in string education.
- Students will demonstrate ability to identify skills and techniques common to all string instruments.
- Students will discover ways that playing string instruments can provide'object lessons' in learning the gospel.

MUSIC 377A : Instrumental Practicum. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 235A & MUSIC 296

DESCRIPTION: Applied conducting technique, score analysis and preparation, evaluating solo performance, and applying learning theory.

**Course Outcomes**

- Students will demonstrate clear and expressive conducting in various genres.
- Students will develop and demonstrate mastery of conducting techniques.
- Students will demonstrate principles of effective communication through conducting.
- Students will demonstrate ability to analyze scores in terms of form, phrasing, meter, cueing, balance and harmonic analysis and provide score markings for each.
- Students will demonstrate ability to transpose.
- Students will learn and implement diverse teaching strategies.
- Students will create lesson plans that identify and target specific music elements by predicting and prioritizing rehearsal issues.
- Students will design and customize rehearsal strateigies as an integral part of lesson planning.
- Students will conduct and perform for each other in micro teaching modules.
- Students will rehearse, perform, and evaluate in real time.
- Students will analyze and assess performance practice in live lab settings.
- Students will self-reflect on individiual goals, progress and challenges.
- Students will assess peers in pairs and in groups.
- Students will mini conducting/rehearsal modules will be representative of the skills, knowledge, and techniques required for classroom teaching (rehearsals are filmed).
- Students will show empathy, respect and courtesy towards each other throughout the leanrning process.

MUSIC 377B : Instrumental Practicum. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 377A

DESCRIPTION: Curriculum design, evaluating ensemble performance, advanced rehearsal techniques, administering secondary instrumental music programs; computers and computer-assisted instruction.

**Course Outcomes**

- Students will gain experience in the musical skills of intonation/quality, andtransposition/score reading.
- Students will understand the place in the curriculum for additional ensembles (i.e. jazz,marching band, musical orchestra, folk groups) and demonstrate understanding of the skills required to direct them.
- Students will learn how to appreciate and run alternative performance groups.
- Students will develop and demonstrate the ability to articulate a personal philosophy for music education which accounts for the place of arts in the public schoolcurriculum.
- Students will be able to identify cogent elements in program philosophy that will direct the following kind of choices: Scheduling of a complete music program, musicselection, and travel and performance

philosophy.
- Students will demonstrate ability to locate and resolve errors in ensemble performance and to conduct ensemble music with clarity and purpose.
- Students will learn about many of the various tasks that are required to manage a public school band program including: contest/festival adjudication, facilityplanning, recruiting, public relations, fund raising, budgets and purchasing, and repertoire selection.
- Students will demonstrate ability to locate and resolve errors in ensemble performance and to conduct ensemble music with clarity and purpose.

**Note:** Percussionists complete Music 273A, B instead of 374.

11. Complete the Professional Education Component:
    - Complete the following:

MUSIC 275 : Exploration of Music Teaching. (4:Arr.:Arr.)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 176; FBI fingerprint and background clearance.

DESCRIPTION: Teaching experiences and seminars aimed at helping prospective music teachers experience the demands and opportunities associated with teaching secondary music students.

**Course Outcomes**

- Students will complete 12 observations of music classes being taught by different local music teachers as an opportunity for exposure, reflection and gathering materials for future reference.
- Each student will complete at least two mentored formal teaching experiences involving junior high music students, with opportunity for reflection and feedback.
- Students will complete an individual Teacher Work Sample to demonstrate their ability to understand a teaching situation, and how to plan, implement and reflect on teaching a series of lessons.
- @font-face { font-family: "Times";}@font-face { font-family: "Book Antiqua";}p.MsoNormal, li.MsoNormal, div.MsoNormal { margin: 0in 0in 0.0001pt; font-size: 12pt; font-family: "Times New Roman"; }div.Section1 { page: Section1; }ol { margin-bottom: 0in; }ul { margin-bottom: 0in; }Students will interact with musics of diverse cultures, styles and contexts in class activities.

MUSIC 379 : Pre-Student Teaching. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C- or better in Music 275.

DESCRIPTION: Analyzing education practice and relationship between theories and research on music education and the practice of teaching.

**Course Outcomes**

- Students will demonstrate a readiness to assume the responsibilities of student teaching in general, choral, or instrumental music through successfully completing a semester-long, part-time field experience in a suitable public school music classroom setting.

SC ED 350 : Adolescent Development in an Education Context. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Adolescent development and its implications for integrated school culture, curriculum design, instructional practices, and assessment.

**Course Outcomes**

- The students will demonstrate how the stages of development impact instructional practices.
- The students will understand the social, physical, and cognitive developmental stages of adolescence in relation to the tasks of automony, identity and intimacy.
- The students will demonstrate how the stages of development impact classroom environments and management.

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.

- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

**Note:** FBI fingerprint and background clearance must be completed prior to enrollment in Music 275.

- Complete 12 hours of student teaching:

MUSIC 476 : Secondary Student Teaching. (12:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or approval; with a major GPA 2.85.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary music students, demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will complete a Teacher Work Sample documenting their ability to understand a teaching situation and their individual students in one specific class, and their ability to plan, teach, reflect on and revise music learning events to teach a learning unit to this class. They will document group and individual progress for the unit.
- Students will demonstrate their ability to effectively plan, teach, reflect and revise music learning events by teaching full-time in a student teaching placement with a mentor teacher. In addition, students will demonstrate their ability to communicate effectively with individual students and groups of students, as well as parents, as well as the ability to work well with their mentor teacher and other school colleagues.

**Note:** All professional education courses (above) and Music 260R and 363 credits must be completed before student teaching (Music 476).

## Show all Music (Music) Courses

College of Fine Arts and Communications Home

School of Music Home

Majors

- BA in Music
- BM in Commercial Music
- BM in Music Composition
- BM in Music Education
  - Emphases
    - K–12 Choral
    - K–12 Instrumental
    - Elementary Music Specialist
- BM in Music Performance
  - Emphases
    - Brass
    - Combined Piano and Organ
    - Organ
    - Percussion
    - Piano
    - String
    - Vocal
    - Woodwind

Minor

- Minor in Music

Course Information

- Music (Music) Courses

Faculty

# BM in Music Education: Elementary Music Specialist Emphasis (120 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

A five-year program, the degree offers a dual major in elementary music education and elementary education. It will also prepare the student for licensure as an elementary classroom teacher and as an elementary music specialist. Graduates may obtain a teaching position in either area or a combination of both, pursue graduate work, or use the degree as preparation for other fields of endeavor.

## Program Requirements | View MAP | View Program Outcomes

1. See the college advisement center for information regarding the application procedure for official acceptance into this degree program and course sequence/map.
2. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
3. Proficiency requirements: Present a juried recital (Music 249) in the last semester of private instruction. Students must prepare a minimum of 18 minutes of music to be performed in a formal public recital. Students will schedule a joint recital in groups of three or fewer.
4. Complete the following lower-division music core courses:

MUSIC 193 : Dictation 1. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.

DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Acceptance as a music major.

DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 197.

DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

MUSIC 221 : Functional Piano Skills 1. (2:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Piano skills determined by entrance diagnostic exam; music major status.

DESCRIPTION: Provides music majors with basic keyboarding ability in such areas as sight reading, technique, harmonization, and score reading.

**Course Outcomes**

- At the end of this class, students should be able to:Play major and minor cadences using tonic, sub-dominant and dominant chords in all keys at a tempo of 80, one chord per beat.
- Harmonize melodies using the assigned accompaniment patterns demonstrating an ability to use chords in root and inverted positions.
- Play common melodies by ear using assigned chordal accompaniments.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play the major and harmonic minor scales that begin on the white keys for one octave up and down the keyboard at a tempo of 100 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform assigned accompaniments to solos demonstrating an ability to follow the performance of the soloist.

MUSIC 235B : Choral Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct a choral performance ensemble.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping, irregular meters, and multi metrics.

MUSIC 293 : Dictation 3. (1:0:2)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.

DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.
DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.
DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.
DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 198.
DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 297.
DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

5. Complete one of the following options:
   a. Instrumentalists complete the following for a total of 8 hours:

MUSIC 111R : Basic Vocal Skills. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Class instruction in voice for nonmusic majors.

**Course Outcomes**

- Students will prepare four songs and perform memorized a minimum of three times throughout the semester.
- Students will learn to understand the structure and function of the vocal instrument through: flexibly aligned posture; low, flexible breath management; consistent, projected flow phonation; freedom of vocal mechanism, including mouth and jaw; emerging resonance; emerging musicianship -- including dynamics, legato, accuracy; text and diction.

**Note:** Must take 2 hours.
MUSIC 260R : Performance Instruction. (.5-2:1:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

**Note:** Must take 6 hours.

b. Vocalists complete 8 hours from the following:

MUSIC 250R : Performance Study. (.5-1:0.5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Music major status (K-12 Choral Emphasis or Elementary Music Specialist Emphasis only).
DESCRIPTION: Performance study, private instruction, and studio class.
NOTE: From one to three hours of daily practice required. Fee.

**Course Outcomes**

- In juried exams and other public performances, students will demonstrate mastery of the basic skills required to perform in the Western tradition.

MUSIC 260R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

6. Complete at least one hour of large ensemble each semester for four semesters. Piano and vocal emphasis majors should participate in choral ensembles. At least one choral ensemble experience is recommended for instrumental emphasis majors.

7. Complete the following upper-division music core courses:

MUSIC 301 : Survey of Music Literature 1. (2:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**

There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**

There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**

There are no course outcomes available

MUSIC 395 : Form and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C- or higher in Music 293, 295.

DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

8. Complete one course from the following:

MUSIC 307 : World Music. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Exploration of music making from a global perspective.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods through which various cultures conceptualize and taxonomize instruments, and be able to show an understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.
- Students will articulate how a culture's values can be embodied and discerned within musical practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?
- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 308 : History of Jazz. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists
- Learn to transcribe and analyze jazz solos

9. Complete the following:

MUSIC 271 : Musicality in the Elementary School. (3:2:1)

PREREQUISITE: Acceptance into the Music Education: Elementary Education Emphasis program.

DESCRIPTION: Survey of authentic folk song and art music tonal systems and structures; their use in developing musical intuition through singing, movement, listening, and playing instruments.

**Course Outcomes**

- Students will analyze folk songs according to tone sets, scale types, rhythm patterns, and formal structures and create an organized index/retrieval system based on such analysis.
- Students will demonstrate ability to sing children' s songs with accurate pitch and intonation.
- Students will Improvise on piano and drums, patterns to guide young children' s movement leading toawareness of rhythms, meters, and formal structures.
- Students will demonstrate ability to accompany on autoharp or guitar, children' s folk and traditional songs, showing anunderstanding of keys and chord patterns.
- Students will take from dictation, folk song melodies and rhythms, and sing with accuracy intervals, pentatonic scales, and modes.
- Students will be able to explain how children learn, and how they learn music, including an understanding of development ateach age, windows of opportunity for learning certain things, and ages and stages of growth.
- Students will demontrate different strategies to effectively teach children using the teaching/learning processes explored in class.
- Students will demonstrate growth in knowledge of the use of technology in music education. In this class you will be asked toa. use finale to input music for flash cardsb. use the web to investigate music program offerings for young childrenc. use the web to locate businesses that specialize in early childhood music books, instruments,and other equipment for music development and explorationd. create a song index retrieval system you can use throughout your education career,e. review interactive music teaching computer programs available for children

MUSIC 272 : Developing Children's Musicality, Grades K--2. (3:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 271

DESCRIPTION: Literature-based curriculum design and planning, grades K--2. Issues of pure intonation and vocal/aural development. Microteaching in a demonstration school.

**Course Outcomes**

- Students will analyze folk songs according to tone sets, scale types, rhythm patterns, and formal structures and create an organized index/retrieval system based on such analysis.
- Students will demonstrate ability to sing children' s songs with accurate pitch and intonation.
- Students will Improvise on piano and drums, patterns to guide young children' s movement leading toawareness of rhythms, meters, and formal structures.
- Students will demonstrate ability to accompany on autoharp or guitar, children' s folk and traditional songs, showing anunderstanding of keys and chord patterns.
- Students will take from dictation, folk song melodies and rhythms, and sing with accuracy intervals, pentatonic scales, and modes.
- Students will demonstrate growth in knowledge of the use of technology in music education. In this class you will be asked toa. use finale to input music for flash cardsb. use the web to investigate music program offerings for young childrenc. use the web to locate businesses that specialize in early childhood music books, instruments,and other equipment for music development and explorationd. create a song index retrieval system you can use throughout your education career,e. review interactive music teaching computer programs available for children
- Students will be able to explain how children learn, and how they learn music, including an understanding of development ateach age, windows of opportunity for learning certain things, and ages and stages of growth.
- Students will demontrate different strategies to effectively teach children using the teaching/learning processes explored in class.

MUSIC 371 : Developing Children's Musicality, Grades 3--5. (3:1:2)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 271 & MUSIC 272

DESCRIPTION: Continuation of Music 272 for grades 3--5, emphasizing the relationship of classroom literature to choral experience and instrumental musicianship. Microteaching in a demonstration school.

**Course Outcomes**

- Students will continue to explore relationships between the tonal and formal systems of authentic folksong and composed music.
- Students will help each other develop a Zion-oriented, eternal perspective on musical education.
- Students will continue to develop a working knowledge of developmental music education in the primary and intermediate grades.
- Students will make a special study of children's choral and instrumental development in assigned practice schools.
- Students will improve their ability to determine and find appropriatebeginning pitches for, and refine the intonation of classroom and choral singing by using an A-440 tuning fork.
- Students will demonstrate and/or develop an appropriate elementary specialistsinging model, with attention to proper resonance, intonation, and style; and a knowledge of how to coordinate grade level singing/ solfege curricula and vocal development.

MUSIC 471 : Practicum in Children's Musicality. (3:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 271 & MUSIC 272 & MUSIC 371

DESCRIPTION: Pedagogy for grades 6 and beyond. Children's choir development, including arranging and adapting vocal and instrumental music. Extended pre-student teaching in a demonstration

school.

**Course Outcomes**

- Students will make a special study of children's choral and instrumental development.
- Students will submit a final project of folksong arranged for 2 or 3 part treblechoir.

10. Make formal application for admission to the elementary education program through the Teacher Education Department (201 MCKB).

11. Students who receive a grade lower than C– in any of the professional or support courses, or whose GPA drops below 2.85 in any of the professional or support courses, will be discontinued from the elementary education program.

12. Complete all GE courses, including the following, prior to beginning program:

EL ED 340 : Children's Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Elementary education or early childhood education major status.

DESCRIPTION: Trends and titles in children's and adolescent literature. Reading and critiquing as well as practical uses of children's literature in both school and home.

**Course Outcomes**

- 1. Students will understand and apply criteria in evaluating children's books for quality and function.
- 2. Students will gain a knowledge base concerning the field of children's literature as contained in the assigned textbook and class lectures.

SFL 210 : Human Development. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Growth and development of the child from conception through adolescence; influences of family, peers, and schools.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Comprehend the dynamic and complex interaction among the domains of human development (e.g., biological, cognitive, emotional, social, etc.)Critically apply information learned in class to your own life.Provide knowledge and skills that will benefit the lives of the children for whom you will have stewardship in this life.Acquire a broad base of knowledge of human development.Be conversant with the major human development theories as well as their strengths and weaknesses.
- Improve your writing and critical thinking skills.
- Understand the research methodology utilized in the study of human development.

13. Complete an application seminar (seminar schedule posted on Education Advisement and Certification Center Web page and in 120 MCKB).

14. Complete the following courses after admission to the program:

CPSE 300 : Exceptional Students: Principles of Collaboration. (2:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: FBI fingerprint background clearance.

DESCRIPTION: Basic principles and legislative issues in effectively communicating and collaborating with professionals, parents, and other service providers to meet needs of individuals with disabilities in inclusive educational environments. Lab.

**Course Outcomes**

- Analyze student's learning difficulties and plan appropriate accommodations.
- Describe learning characteristics of special needs students.
- Develop assessment plans to evaluate students' progress and collaborate with school experts to support student learning.
- Collaboration: Candidates work effectively with parents, professionals, paraprofessionals, and others in the school and community to help students with disabilities achieve their IEP goals.
- Interpersonal Relations: Candidates work with students, parents, professionals, paraprofessionals, and others in the school and community with kindness and respect regardless of their diverse backgrounds.
- Professional Practice: Candidates fulfill all duties and assignments, comply with all education laws and policies, and continue to improve professional practice.

EDLF 201 : Foundations of Education. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: The purposes of education and schooling in a democracy and the historical, cultural, philosophical, and sociological foundations underlying the development of the American educational system.

**Course Outcomes**

- Be exposed to the major philosophical, historical, and sociological movements in Western education.
- Confront central issues and contexts of education, e.g., the nature of man, external structure & individual freedom, wealth & poverty, school & family, alternative delivery systems, school & democracy, school & law, religion & education, etc.
- Develop and articulate their own views of education and connect these views to their future professional practice.
- Examine the moral dimensions of education including access to knowledge, providing nurturing

pedagogy, stewardship of schools, and perpetuating our political democracy.

EL ED 203 : Foundations of Multicultural Education. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status.

DESCRIPTION: Cultural identities in family life, physical attributes, culture, and language. Recognizing prejudice in individuals and institutions. Culturally and linguistically relevant pedagogical frameworks.

**Course Outcomes**

- Examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavior.
- Recognize and use a moral spiritual framework and the social science theoretical framework to guide multicultural and English language learner education.
- Recognize and acknowledge racism and discrimination in themselves, in others, and within institutions.
- Acknowledge the dynamics of how culture effects students' language learning and school success and teachers' teaching.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.

EL ED 323 : Foundations of Literacy Development. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Admittance into elementary education program.

DESCRIPTION: Language and literacy development for first and second language learners including theoretical underpinnings, processes, historical foundations, and instructional contexts that support language and literacy development for all K-6 children.

**Course Outcomes**

- Explain, compare and critique theories of reading and writing processes and development with supporting research evidence. (IRA Standard 1.1.1)
- Explain and apply first language acquisition processes that support literacy development across elementary years, e.g., cueing systems, vocabulary, teacher talk). (IRA Standard 1.1.2)
- Explain, apply, and compare/contrast knowedge about second language literacy development in context. (IRA Standard 1.1.3 & NCTE Standard 9)
- Explain and apply reading and writing development across elementary years, e.g., word recognition, language comprehension, strategic knowledge, spelling, qualities of good writing, and reading/writing connections. (IRA Standard 1.1.2)
- Identify and synthesize major milestones in literacy instruction.(IRA Standard 1.2.1)

EL ED 324 : Foundations of Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Exploring philosophies of classroom management focusing on promoting child guidance in an engaging and effective K-6 classroom learning environment.

**Course Outcomes**

- Upon completion of this course, students will be able to compare and contrast various theories and approaches to classroom management, describe ways to prevent management problems, describe practical approaches for addressing problems that arise, and identify approaches that align with the vision of the McKay School of Education.
- Upon completion of this course, students will be able to describe and justify necessary components of an effective learning environment, including, but not limited to, aspects related to physical space, academic approaches, and the social/emotional environment.
- Upon completion of this course, students will formulate a personal philosophy statement describing their approach to management and the learning environment which includes expectations and responsibilities of both the teacher and of the students.

EL ED 333 : Teaching Literacy in the Primary Grades (K-2). (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 323; Concurrent enrollment in El Ed 332.

DESCRIPTION: Instructional practices for teaching children the literacy concepts, skills, and strategies they need to learn in grades K-2. Assessing, monitoring, and evaluating children's literacy knowledge and learning in grades K-2.

**Course Outcomes**

There are no course outcomes available

EL ED 335 : Early Childhood Education Integration Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in El Ed 332.

DESCRIPTION: Methods in designing an early childhood curriculum with attention to hands-on experiences meeting children's individual learning needs and addressing contextual factors in the child's life experiences.

**Course Outcomes**

- a) understanding young childrenâ s characteristics and needs, including issues of diversity, and complex characteristics of families b) understanding effective and appropriate methods for supporting young childrenâ s growth and development in a classroom setting c) knowledge of K-3 instructional and assessment strategies in content areas (literacy, math, science, social studies, arts), d) understanding purposes and application of curriculum integration

EL ED 440 : Grades 3-6 Practicum Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 332; concurrent with El Ed 442; FBI fingerprint and background clearance.

DESCRIPTION: Prepare for and reflect on the 3-6 practicum experience.

**Course Outcomes**

There are no course outcomes available

EL ED 442 : Practicum in the Elementary Education 3-6 Classroom. (2:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 332; Concurrent enrollment in El Ed 440.

DESCRIPTION: Applying knowledge from foundational and content courses to teaching in a 3-6 classroom. Observing, planning, teaching, assessing, and reflecting in a 3-6 public school setting.

**Course Outcomes**

There are no course outcomes available

EL ED 443 : Teaching Literacy in the Intermediate Grades (3-6). (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EL ED 333; Concurrent enrollment in El Ed 442.

DESCRIPTION: Information and skills needed to make informed decisions about literacy instruction and evaluation. Establishing an effective 3-6 grade classroom literacy environment.

**Course Outcomes**

There are no course outcomes available

EL ED 445 : Teaching Social Studies in Grades K-6. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: IP&T 213; Concurrent enrollment in El Ed 442.

DESCRIPTION: The methods, skills, and strategies for teaching social studies in grades K-6. Modeling democratic teaching practices and establishing democratic classrooms to prepare children to assume roles as participatory citizens in a democracy.

**Course Outcomes**

There are no course outcomes available

EL ED 446 : Teaching Science in Grades K-6. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: IP&T 213; Concurrent enrollment in El Ed 442.

DESCRIPTION: Developing the pedagogical knowledge, skills, and dispositions necessary to teach science to elementary children of various ages, abilities, backgrounds, and exceptionalities.

**Course Outcomes**

There are no course outcomes available

EL ED 447 : Teaching Mathematics in Grades K-6. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MTHED 305 & MTHED 306 & IP&T 213; Concurrent enrollment in El Ed 442.

DESCRIPTION: The teaching and learning of elementary school mathematics guided by current principles relating to mathematics content, social interaction, student thinking, and child development.

**Course Outcomes**

- Preservice teachers enrolled in El Ed 447 will:Make appropriate decisions relative to teaching mathematics in K-6 classroomsPlan and implement standards-based lessons to teach mathematics conceptsPlan and use mathematics inquiry groups and student discourse for assessing studentsExamine provisions for students with varying language and cultural backgroundsPractice professionalism: in commitment to learning to teach, in appearance and demeanor, and in the quality of work submitted

IP&T 213 : Foundations of Instructional Design and Assessment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Elementary Education major status.

DESCRIPTION: Curriculum design and assessment theory, strategies, and tools for the K-6 classroom. Backward design and seamless assessment for informing and improving student performance.

**Course Outcomes**

- Teacher candidates will be able to describe, define and apply the principles and science of assessment to determine instructional needs, design and deliver effective instruction and communicate assessment results to appropriate audiences in a multi-tiered system of support.
- Teacher candidates will be able to describe their role and responsibility regarding curriculum standards and ensure that curriculum addresses the needs of diverse students.
- Teacher candidates will be able to synthesize and employ assessment evidence to inform instructional decision-making, interpret data to evaluate instruction, and apply a problem-solving process to address students' cognitive, social-emotional and linguistic learning needs within a multi-tiered system of support.
- Teacher candidates will be able to define, design and employ evidenced-based instructional practices within a multi-tiered system of support.

IP&T 444 : Integrating Technology in Elementary Education. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent with El Ed 445 and El Ed 446.

DESCRIPTION: Integrating instructional technology into K-6 instructional strategies.

**Course Outcomes**

- Students will increase their familiarity with and ability to use a wide range of educational technologies.
- Students will develop positive dispositions towards using educational technologies that can help improve student learning.
- Student will strengthen their knowledge of ways to use technology in teaching core content areas (fine arts, language arts, math, science, & social studies) that lead to improved effectiveness, engagement, and/or efficiency.
- Students will practice their technology integration skills in real-world upper elementary level settings and learn to evaluate the strengths and weaknesses of their performance.
- Students will understand basic issues related to internet safety for children and create lessons that help children have positive, safe experiences with online technologies. Students will follow fairuse guidelines as they incorporate digital media into their teaching.

MTHED 305 : Basic Concepts of Mathematics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Math 110 or equivalent; permission from Teacher Education Department.

DESCRIPTION: Concept-oriented exploration of number, measurement, and informal geometry in relation to children's learning.

NOTE: Required of prospective elementary school teachers.

**Course Outcomes**

- Students have a deep understanding of central concepts in elementary school mathematics related to whole numbers and whole number operations, number theory, integers and integer operations, geometry, and measurement; as well as core representations, canonical examples, patterns in children's thinking, and alternative algorithms germane to teaching these concepts.
- Students understand mathematics as a sense-making activity, can solve problems by employing conceptual understanding and mathematical reasoning, and can reflect on their own learning to make inferences about how children experience and understand mathematics.
- Students engage productively in mathematical inquiry, effectively communicate their mathematical ideas and reasoning with their peers, and reflect on the teaching practices modeled in the MthEd 305 classroom to make inferences about teaching practices that help children learn mathematics.

MTHED 306 : Concepts of Mathematics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MTHED 305; Permission from Teacher Education Department.

DESCRIPTION: Concept-oriented exploration of rational numbers and proportional reasoning, probability, and early algebraic reasoning in relation to children's learning.

NOTE: Required of prospective elementary school teachers.

**Course Outcomes**

- Students have a deep understanding of central concepts in elementary school mathematics related to fractions and fraction operations, probability, and early algebraic reasoning; as well as core representations, canonical examples, patterns in children's thinking, and alternative algorithms germane to teaching these concepts.
- Students engage productively in mathematical inquiry, effectively communicate their mathematical ideas and reasoning with their peers, and reflect on the teaching practices modeled in the MthEd 306 classroom to make inferences about teaching practices that help children learn mathematics.
- Students understand mathematics as a sense-making activity, can solve problems by employing conceptual understanding and mathematical reasoning, and can reflect on their own learning to make inferences about how children experience and understand mathematics.

15. Complete 12 hours of one of the following (prior application required):

EL ED 400R : Elementary Student-Teaching. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Semester-long or two consecutive term, full-day student teaching experience in the public schools. Seminar attendance required.

NOTE: See Education Student Services for application dates.

**Course Outcomes**

- The student teacher will observe, plan, teach, assess, and reflect throughout the course as they participate in a public school setting.
- The student teacher will apply knowledge from various content courses as they relate to teaching in an elementary classroom.
- The student teacher will apply knowledge of various pedagogical approaches and methods and when they are most appropriate for which subject or lesson type.

EL ED 496R : Academic Internship. (8-12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Three-semester professional sequence and prior application; requires a major GPA of 2.85; at least a C- grade in methods courses (El Ed 302, 356, 357, 361, 363, 365, 372).

DESCRIPTION: A full-year classroom teaching internship in the public schools in lieu of El Ed 400, student teaching.

NOTE: See Education Student Services for application dates.

**Course Outcomes**

There are no course outcomes available

## Recommended Courses

The following courses are strongly recommended:

BIO 100 : Principles of Biology. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Introductory course for general education students.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

BIO 175 : Principles of Biology Laboratory. (1:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Elementary education or early childhood education pre-major or major status; concurrent enrollment in Bio 100.

**Course Outcomes**

There are no course outcomes available

EL ED 202 : Foundations of Child Development. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status.

DESCRIPTION: The development of the whole child including cognitive, social, emotional, linguistic, and physical development and how to apply it to planning, teaching, and assessing children.

**Course Outcomes**

- The candidate will demonstrate knowledge of social, cognitive and physical development of children ages birth to 12.
- The candidate will understand how the knowledge of child development will impact instructional practices in the school classroom.

ENGL 313 : Expository Writing for Elementary Education Majors. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Learning to write as professional educators and to teach writing to children. Best taken before the professional sequence. Library research paper.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

There are no course outcomes available

GEOG 120 : Geography and World Affairs. (3:3:0)

OFFERED: Honors also. Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Survey of the world, stressing geography of major political regions.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

PETE 212 : Physical Education for Elementary School Teachers. (2:1:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PETE 169; FBI fingerprint and background clearance.

**Course Outcomes**

- The students will Interact with students with special needs.
- The students will explore interactions of students in the classroom.

VAEDU 326 : Art for Elementary Teachers. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Preservice preparation designed to help elementary classroom teachers understand the visual arts and develop skills necessary for implementing a discipline-based approach for art education.

**Course Outcomes**

No outcomes are available at this time.

*Hours include courses that may fulfill university core requirements.

## Show all Music (Music) Courses

College of Fine Arts and Communications Home

School of Music Home

Majors

- BA in Music
- BM in Commercial Music
- BM in Music Composition

BM in Music Education

Emphases

- K–12 Choral
- K–12 Instrumental
- Elementary Music Specialist

BM in Music Performance

Emphases

- Brass
- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

Minor

- Minor in Music

Course Information

- Music (Music) Courses

Faculty

# BM in Music Performance: Brass Emphasis (77 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

The bachelor of music degree in performance prepares the student for professional work as a performer, a studio teacher, or a combination of both. Some will pursue advanced work on the graduate level to prepare for a performance career or college teaching.

## Program Requirements | View MAP | View Program Outcomes

1. See the college advisement center for the application procedure for official acceptance into a specific degree program.
2. Complete the following lower-division music core courses:

MUSIC 193 : Dictation 1. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.
DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major.

DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 197.

DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

MUSIC 221 : Functional Piano Skills 1. (2:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Piano skills determined by entrance diagnostic exam; music major status.

DESCRIPTION: Provides music majors with basic keyboarding ability in such areas as sight reading, technique, harmonization, and score reading.

**Course Outcomes**

- At the end of this class, students should be able to:Play major and minor cadences using tonic, sub-dominant and dominant chords in all keys at a tempo of 80, one chord per beat.
- Harmonize melodies using the assigned accompaniment patterns demonstrating an ability to use chords in root and inverted positions.
- Play common melodies by ear using assigned chordal accompaniments.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play the major and harmonic minor scales that begin on the white keys for one octave up and down the keyboard at a tempo of 100 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform assigned accompaniments to solos demonstrating an ability to follow the performance of the soloist.

MUSIC 222 : Functional Piano Skills 2. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 221; music major status.

DESCRIPTION: Continuation of Music 221.

**Course Outcomes**

- Continuing to build upon skills gained from Mus 221, students will also be able to:Play the assigned progressions in all keys up to four sharps and four flats at a tempo of 88 per half note.
- Harmonize given melodies using the assigned accompaniment pattern and chord symbols demonstrating ease in moving from chord to the next.
- By ear, play a common melodies with the right hand as assigned. With the left hand, play a chordal accompaniment using the assigned accompaniment pattern.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play major and harmonic minor scales that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Play major and minor arpeggios that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform a hymn of your choice from the LDS hymnbook or from a standard hymnbook from another denomination.
- Perform accompaniments to solos as assigned demonstrating an ability to follow the performance of the soloist.
- Prepare a score reading example that relates to your major instrument. Play the line of your instrument and one other line of a differing and transposing instrument.

MUSIC 293 : Dictation 3. (1:0:2)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.

DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.

DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.

DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.

DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 198.

DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 297.

DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

3. Complete one course from the following:

MUSIC 235A : Instrumental Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct an instrumental performance ensemble.

**Course Outcomes**

- Students will develop the physical techniques and interpretive skills required to be an instrumental conductor.
- Students will be able to:--Explain and demonstrate the conductor's correct posture, stance, baton grip, and hand/arm position.--Explain and demonstrate the conductor's preparatory gesture, ictus, rebound, the conducting patterns.--Demonstrate expressive and ambidextrous use of both hands as it relates to the musical score.--Conduct in various articulation styles, legato, staccato, marcato, & tenuto--Conduct clear beat patterns, mixed meter, subdivision, and cuing technique.--Define musical terms as useful for a conductor., and understand/explain the transpositions of instruments found within a musical score.--Convincingly conduct a variety of musical excerpts

MUSIC 235B : Choral Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct a choral performance ensemble.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping, irregular meters, and multi metrics.

4. Complete eight hours of the following:

MUSIC 260R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

5. Complete 12 hours of the following:

MUSIC 460R : Performance Instruction. (1.5-3:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Major in performance; jury approval.
DESCRIPTION: Advanced private instruction and studio class.
NOTE: From three to five hours of daily practice. Fee.

**Course Outcomes**

- Students will demonstrate the ability to perform standard solo repertoire, orchestral works, and etudes/methods at an appropriate artistic level for their year of study.

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: Conducting.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

6. Complete one hour of Category 1: Approved Large Ensembles (see General Information) each semester for eight semesters.
7. Complete the following upper-division music core courses:

MUSIC 301 : Survey of Music Literature 1. (2:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**

There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**

There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)

WHEN Fall; Winter; Summer Contact Department

TAUGHT:
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.
DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**

There are no course outcomes available

MUSIC 395 : Form and Analysis. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: C- or higher in Music 293, 295.
DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

8. Complete one course from the following:

MUSIC 307 : World Music. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Exploration of music making from a global perspective.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods through which various cultures conceptualize and taxonomize instruments, and be able to show an understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.
- Students will articulate how a culture's values can be embodied and discerned within musical practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?
- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 308 : History of Jazz. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists

- Learn to transcribe and analyze jazz solos

9. Complete the following:

MUSIC 368 : Brass Pedagogy. (2:2:1)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Brass performance major status or instructor's consent.

**Course Outcomes**

- Students will demonstrate an understanding of the fundamentals of brass pedagogy.
- Students will demonstrate a knowledge of the necessary background for becoming good private teachers and beginning a career as a professional teacher in their own established studios.
- Students will demonstrate a working knowledge of brass performance traditions, including recordings, style, and legacy of significant brass performers.

MUSIC 405 : Chamber Music Literature. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 306; concurrent enrollment in 460R, or instructor's consent.

DESCRIPTION: Survey of literature, including research in field of concentration.

**Course Outcomes**

- To understand the important trends in chamber music through its history.To have opportunities to listen to and become familiar with a small portion of this great literatureTo research, read, and write about the chamber music literature on a topic of your choiceTo attend, and write intelligently about, live performances.To acquire a foundation for your continued enjoyment of chamber music as a listener and performer

10. Complete four hours from the following:

MUSIC 331R : Jazz Combos. (1:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Students will learn how to function in a traditional jazz combo setting, including learning head charts, standard lead sheet tunes, and arrangements. They will also further their knowledge of and experience in improvising in a typical professional performance setting in a variety of jazz styles.

MUSIC 341R : Brass Chamber Music. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Director's consent.

**Course Outcomes**

- Students will demonstrate the ability to perform standard chamber ensemble music at an appropriate artistic level for their year of study.

: Brass Ensemble.

**Course Outcomes**

: Brass Choir.

**Course Outcomes**

: Trombone Choir.

**Course Outcomes**

11. Complete five hours of music electives (Music 407 is recommended). See faculty advisor.

12. Present a juried recital (Music 349) during the junior year. A juried senior recital (Music 449) is also required.

**Recital:** Enroll in 349 (0.0 credit hours) or 449 (1.0 credit hour) for the semester during which a recital is to be presented. Concurrent enrollment in appropriate performance instruction is required. A prerecital hearing is required at least three weeks before juried recitals. Contact the Harris Fine Arts Center Scheduling Office (D-359, south lobby of Pardoe Theatre) for further information.

## Show all Music (Music) Courses

**College of Fine Arts and Communications Home**

**School of Music Home**

**Majors**

- BA in Music
- BM in Commercial Music
- BM in Music Composition

BM in Music Education

Emphases

- K–12 Choral
- K–12 Instrumental
- Elementary Music Specialist

BM in Music Performance

Emphases

- Brass
- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

**Minor**

- Minor in Music

**Course Information**

- Music (Music) Courses

**Faculty**

# BM in Music Performance: Combined Piano and Organ Emphasis (77 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

The bachelor of music degree in performance prepares the student for professional work as a performer, a studio teacher, or a combination of both. Some will pursue advanced work on the graduate level to prepare for a performance career or college teaching.

## Program Requirements | View MAP | View Program Outcomes

1. See the college advisement center for the application procedure for official acceptance into a specific degree program.
2. Complete the following lower-division music core courses:

MUSIC 193 : Dictation 1. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.
DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major.

DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 197.
DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

MUSIC 293 : Dictation 3. (1:0:2)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.
DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.
DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.
DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.
DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 198.
DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 297.
DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

3. Complete one course from the following:

MUSIC 235A : Instrumental Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct an instrumental performance ensemble.

**Course Outcomes**

- Students will develop the physical techniques and interpretive skills required to be an instrumental conductor.
- Students will be able to:--Explain and demonstrate the conductor's correct posture, stance, baton grip, and hand/arm position.--Explain and demonstrate the conductor's preparatory gesture, ictus, rebound, the conducting patterns.--Demonstrate expressive and ambidextrous use of both hands as it relates to the musical score.--Conduct in various articulation styles, legato, staccato, marcato, & tenuto--Conduct clear beat patterns, mixed meter, subdivision, and cuing technique.--Define musical terms as useful for a conductor., and understand/explain the transpositions of instruments found within a musical score.--Convincingly conduct a variety of musical excerpts

MUSIC 235B : Choral Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct a choral performance ensemble.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping, irregular meters, and multi metrics.

4. Complete eight hours of the following divided between piano and organ:

MUSIC 260R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status.

DESCRIPTION: Private instruction and studio class.

NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

5. Complete eight hours of the following divided between piano and organ:
   MUSIC 360R : Performance Instruction. (.5-2:1:1)
   WHEN TAUGHT: Fall; Winter; Spring
   PREREQUISITE: Music major status; jury approval.
   DESCRIPTION: Private instruction and studio class.
   NOTE: From one to four hours of daily practice. Fee.

   **Course Outcomes**
   - Students will learn how to improve their technical facility and artistic expression in their chosen area of musical study.

6. Complete one hour of ensemble each semester for six semesters, including two or four hours from Category 1: Approved Large Ensembles (see General Information) and two or four hours of the Category 2 ensemble Music 344R; each two hours of 344R must be taken in consecutive fall and winter semesters.

7. Complete the following upper-division music core courses:

MUSIC 301 : Survey of Music Literature 1. (2:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**

There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**

There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**

There are no course outcomes available

MUSIC 395 : Form and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C- or higher in Music 293, 295.

DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

8. Complete one course from the following:

MUSIC 307 : World Music. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Exploration of music making from a global perspective.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods through which various cultures conceptualize and taxonomize instruments, and be able to show an understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.
- Students will articulate how a culture's values can be embodied and discerned within musical practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?
- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-

scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 308 : History of Jazz. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists
- Learn to transcribe and analyze jazz solos

9. Complete the following:

MUSIC 166 : Organ Registration. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent private or group instruction in organ or instructor's consent

DESCRIPTION: Organ stops and their application to various performance styles.

**Course Outcomes**

- During this class students learn basic concepts of organ registration and organ design as they pertain to hymn playing and general church service playing. Additionally, they learn the registration practices associated with historic periods and musical styles corresponding to the differing instrument types, musical genres and composers from the Middle Ages through the present.

MUSIC 264 : Keyboard Foundations 1. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 194 & MUSIC 198 & MUSIC 260R

DESCRIPTION: Sight-reading, harmonization, improvisation, and technique at the keyboard.

**Course Outcomes**

- The goal of 264/265 is to give students a strong introduction to various musical skills that they will very likely come across in the professional world. Many of these skills will draw on the student's knowledge of music theory and become the concrete application of that knowledge.As keyboard players –they are expected to have the strongest working knowledge of harmony, as the instrument is polyphonic in nature – not homophonic. The ability to see many notes and instantly divide them into harmonic groupings is crucial and a common denominator for nearly every aspect of this class. Sometimes this grouping skill will include adding or subtracting notes from the page, or supplying notes that are only notated by a symbol. Very often students can play their performance repertoire wonderfully, but are virtually helpless and intimidated when attempting to add or subtract some of their own notes when not written specifically on the page. This tendency represents incomplete musicianship - it is instead only well trained muscles. The outcomes for this course include sight reading, modulation, score reading, figured bass, transposition and improvisation. After discussing other items that would be considered foundational material for keyboard players in 2012, it was decided that added emphasis would be given to the history of great pianists.

MUSIC 265 : Keyboard Foundations 2. (2:2:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: MUSIC 264

DESCRIPTION: Continuation of Music 264.

**Course Outcomes**

- The goal of 264/265 is to give students a strong introduction to various musical skills that they will very likely come across in the professional world including: Sightreading, Modulation, Open Score Reading, Figured Bass, Transposition and Fakebook Improvisation.

MUSIC 364 : Keyboard Pedagogy. (2:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 249; Junior standing and successful completion of Music 249.

DESCRIPTION: Basic pedagogical principles as applied to keyboard instruments.

**Course Outcomes**

- The objective of this course is to provide a foundation for teaching private piano to students, to increase the students' ability to utilize the various piano courses and techniques that will help provide basic skills for the art.

- Through reading about successful methods and teachers, and listening to lectures the students will gain the necessary background for becoming good teachers and beginning a career as a professional teacher in their own established studio.

MUSIC 365 : Piano Pedagogy. (2:2:1)
WHEN TAUGHT: Winter
PREREQUISITE: MUSIC 364
DESCRIPTION: Preparation for supervised private or group teaching.

**Course Outcomes**

- As a continuation of Music 364, the objective of this course is to provide a foundation for teaching private piano to students, to increase the students' ability to utilize the various piano courses and techniques that will help provide basic skills for the art.
- As a continuation of Music 364, through reading about successful methods and teachers, and listening to lectures the students will gain the necessary background for becoming good teachers and beginning a career as a professional teacher in their own established studio.

MUSIC 366 : Organ Pedagogy. (2:2:1)
WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: MUSIC 364
DESCRIPTION: Preparation for supervised private or group teaching.

**Course Outcomes**

- Learn teaching techniques from prominent music teachers (including organ teachers) both in and out of the local area.

MUSIC 466R : Organ Practicum. (2:2:1)
WHEN TAUGHT: Fall Odd Yrs.; Winter Odd Yrs.
PREREQUISITE: Music 166 or organ performance major status. Must be taken in consecutive winter and fall semesters.
DESCRIPTION: Developing various practical skills required of the organist.

**Course Outcomes**

- To play hymns using a wide variety of techniques and with artistry, encouraging congregational participation and enthusiasm, and to conduct hymns adequately.
- To accompany choirs at the organ, interpreting and preparing the score properly, managing the console with mastery, and following the director accurately and musically.

10. Complete two hours of the following:

MUSIC 470R : Keyboard Teaching Practicum. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Completion of required pedagogy class or instructor's consent.
DESCRIPTION: Applying pedagogical principles to teaching.

**Course Outcomes**

No outcomes are available at this time.

: Keyboard Teaching Practicum: Piano.

**Course Outcomes**

: Keyboard Teaching Practicum: Organ.

**Course Outcomes**

11. Complete the following:

MUSIC 469 : Theory and Methods of Studio Teaching. (1:1:0)
WHEN TAUGHT: Winter
PREREQUISITE: Completion of required pedagogy class or instructor's consent.
DESCRIPTION: Applying learning theory and secondary education methods to studio teaching.

**Course Outcomes**

- Students will gain a theoretical base in beginning and maintaining a successful studio.

12. Complete three courses from the following:

MUSIC 403A : Piano Literature. (2:2:0)
WHEN TAUGHT: Fall
PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.
DESCRIPTION: Survey of literature. Research in area of concentration.

**Course Outcomes**

- This course is designed for the advanced keyboard performer, and consists of projects in keyboard

harmony, sight-reading, transposition, modulation, improvisation, playing by ear, and score reading, in pursuit of developing the complete keyboard fluency.

MUSIC 403B : Piano Literature. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.

DESCRIPTION: Continuation of Music 403A.

**Course Outcomes**

- This course will explore piano literature from late Classical, Romantic, Impressionistic, and Contemporary periods of music history including composer surveys, analysis, aural and score recognition, performances and performance practices. The goal of this course is for each student to gain a broad understanding of the subject and develop a love for the rich heritage of the medium. A major purpose of the course is to instill in students a curiosity essential for lifetime discovery. Thorough knowledge and appreciation of the piano repertoire is crucial for a successful career in performance and teaching.

MUSIC 404A : Organ Literature. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.

DESCRIPTION: Survey of literature. Research in area of concentration.

**Course Outcomes**

- The course objective is to further an acquaintance and familiarity with the repertory, composers, forms and genres, stylistic features, analytical techniques and general performance practices associated with organ literature from the earliest sources of the fourteenth century through the music of Johann Sebastian Bach.

MUSIC 404B : Organ Literature. (2:2:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.

DESCRIPTION: Continuation of Music 404A.

**Course Outcomes**

- A continuation of 404A, with the focus being on organ literature from the mid-eighteenth century to the present.

13. Present a juried recital (Music 249) during the sophomore year. A juried senior recital (Music 449) is also required.

**Recital:** Enroll in 249 (0.0 credit hours) or 449 (1.0 credit hour) for the semester during which a recital is to be presented. Concurrent enrollment in appropriate performance instruction is required. A prerecital hearing is required at least three weeks before juried recitals. Contact the Harris Fine Arts Center Scheduling Office (D-359, south lobby of Pardoe Theatre) for further information.

## Show all Music (Music) Courses

**College of Fine Arts and Communications Home**

**School of Music Home**

**Majors**

- BA in Music
- BM in Commercial Music
- BM in Music Composition

BM in Music Education

Emphases

- K–12 Choral
- K–12 Instrumental
- Elementary Music Specialist

BM in Music Performance

Emphases

- Brass
- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

**Minor**

- Minor in Music

**Course Information**

- Music (Music) Courses

**Faculty**

# BM in Music Performance: Organ Emphasis (78 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

The bachelor of music degree in performance prepares the student for professional work as a performer, a studio teacher, or a combination of both. Some will pursue advanced work on the graduate level to prepare for a performance career or college teaching.

## Program Requirements | View MAP | View Program Outcomes

1. See the college advisement center for the application procedure for official acceptance into a specific degree program.
2. Complete the following lower-division music core courses:

MUSIC 193 : Dictation 1. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.
DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major.

DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 197.
DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

MUSIC 293 : Dictation 3. (1:0:2)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.
DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.
DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.
DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.
DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 198.
DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 297.
DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

3. Complete one course from the following:

MUSIC 235A : Instrumental Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct an instrumental performance ensemble.

**Course Outcomes**

- Students will develop the physical techniques and interpretive skills required to be an instrumental conductor.
- Students will be able to:--Explain and demonstrate the conductor's correct posture, stance, baton grip, and hand/arm position.--Explain and demonstrate the conductor's preparatory gesture, ictus, rebound, the conducting patterns.--Demonstrate expressive and ambidextrous use of both hands as it relates to the musical score.--Conduct in various articulation styles, legato, staccato, marcato, & tenuto--Conduct clear beat patterns, mixed meter, subdivision, and cuing technique.--Define musical terms as useful for a conductor., and understand/explain the transpositions of instruments found within a musical score.--Convincingly conduct a variety of musical excerpts

MUSIC 235B : Choral Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct a choral performance ensemble.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping, irregular meters, and multi metrics.

4. Complete eight hours of the following:

MUSIC 260R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status.

DESCRIPTION: Private instruction and studio class.

NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

5. Complete four hours of the following:
   MUSIC 360R : Performance Instruction. (.5-2:1:1)
   WHEN TAUGHT: Fall; Winter; Spring
   PREREQUISITE: Music major status; jury approval.
   DESCRIPTION: Private instruction and studio class.
   NOTE: From one to four hours of daily practice. Fee.

   **Course Outcomes**
   - Students will learn how to improve their technical facility and artistic expression in their chosen area of musical study.

6. Complete six hours of the following:
   MUSIC 460R : Performance Instruction. (1.5-3:1:1)
   WHEN TAUGHT: Fall; Winter; Spring
   PREREQUISITE: Major in performance; jury approval.
   DESCRIPTION: Advanced private instruction and studio class.

NOTE: From three to five hours of daily practice. Fee.

**Course Outcomes**

- Students will demonstrate the ability to perform standard solo repertoire, orchestral works, and etudes/methods at an appropriate artistic level for their year of study.

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: Conducting.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

7. Complete one hour of Category 1: Approved Large Ensembles (see General Information) each semester for four semesters. The Category 2 ensemble Music 344R may substitute for two of these four hours, but the two hours must be in consecutive fall and winter semesters.

8. Complete the following upper-division music core courses:

MUSIC 301 : Survey of Music Literature 1. (2:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**

There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**

There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**

There are no course outcomes available

MUSIC 395 : Form and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C- or higher in Music 293, 295.

DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

9. Complete one course from the following:

MUSIC 307 : World Music. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Exploration of music making from a global perspective.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods through which various cultures conceptualize and taxonomize instruments, and be able to show an

understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.

- Students will articulate how a culture's values can be embodied and discerned within musical practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?
- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 308 : History of Jazz. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists
- Learn to transcribe and analyze jazz solos

10. Complete the following:

MUSIC 166 : Organ Registration. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent private or group instruction in organ or instructor's consent

DESCRIPTION: Organ stops and their application to various performance styles.

**Course Outcomes**

- During this class students learn basic concepts of organ registration and organ design as they pertain to hymn playing and general church service playing. Additionally, they learn the registration practices associated with historic periods and musical styles corresponding to the differing instrument types, musical genres and composers from the Middle Ages through the present.

MUSIC 264 : Keyboard Foundations 1. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 194 & MUSIC 198 & MUSIC 260R

DESCRIPTION: Sight-reading, harmonization, improvisation, and technique at the keyboard.

**Course Outcomes**

- The goal of 264/265 is to give students a strong introduction to various musical skills that they will very likely come across in the professional world. Many of these skills will draw on the student's knowledge of music theory and become the concrete application of that knowledge.As keyboard players –they are expected to have the strongest working knowledge of harmony, as the instrument is polyphonic in nature – not homophonic. The ability to see many notes and instantly divide them into harmonic groupings is crucial and a common denominator for nearly every aspect of this class. Sometimes this grouping skill will include adding or subtracting notes from the page, or supplying notes that are only notated by a symbol. Very often students can play their performance repertoire wonderfully, but are virtually helpless and intimidated when attempting to add or subtract some of their own notes when not written specifically on the page. This tendency represents incomplete musicianship - it is instead only well trained muscles. The outcomes for this course include sight reading, modulation, score reading, figured bass, transposition and improvisation. After discussing other items that would be considered foundational material for keyboard players in 2012, it was decided that added emphasis would be given to the history of great pianists.

MUSIC 265 : Keyboard Foundations 2. (2:2:0)

WHEN TAUGHT: Winter; Spring
PREREQUISITE: MUSIC 264
DESCRIPTION: Continuation of Music 264.

**Course Outcomes**

- The goal of 264/265 is to give students a strong introduction to various musical skills that they will very likely come across in the professional world including: Sightreading, Modulation, Open Score Reading, Figured Bass, Transposition and Fakebook Improvisation.

MUSIC 364 : Keyboard Pedagogy. (2:2:1)

WHEN TAUGHT: Fall
PREREQUISITE: MUSIC 249; Junior standing and successful completion of Music 249.
DESCRIPTION: Basic pedagogical principles as applied to keyboard instruments.

**Course Outcomes**

- The objective of this course is to provide a foundation for teaching private piano to students, to increase the students' ability to utilize the various piano courses and techniques that will help provide basic skills for the art.
- Through reading about successful methods and teachers, and listening to lectures the students will gain the necessary background for becoming good teachers and beginning a career as a professional teacher in their own established studio.

MUSIC 366 : Organ Pedagogy. (2:2:1)

WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: MUSIC 364
DESCRIPTION: Preparation for supervised private or group teaching.

**Course Outcomes**

- Learn teaching techniques from prominent music teachers (including organ teachers) both in and out of the local area.

MUSIC 404A : Organ Literature. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.
DESCRIPTION: Survey of literature. Research in area of concentration.

**Course Outcomes**

- The course objective is to further an acquaintance and familiarity with the repertory, composers, forms and genres, stylistic features, analytical techniques and general performance practices associated with organ literature from the earliest sources of the fourteenth century through the music of Johann Sebastian Bach.

MUSIC 404B : Organ Literature. (2:2:0)

WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.
DESCRIPTION: Continuation of Music 404A.

**Course Outcomes**

- A continuation of 404A, with the focus being on organ literature from the mid-eighteenth century to the present.

MUSIC 466R : Organ Practicum. (2:2:1)

WHEN TAUGHT: Fall Odd Yrs.; Winter Odd Yrs.
PREREQUISITE: Music 166 or organ performance major status. Must be taken in consecutive winter and fall semesters.
DESCRIPTION: Developing various practical skills required of the organist.

**Course Outcomes**

- To play hymns using a wide variety of techniques and with artistry, encouraging congregational participation and enthusiasm, and to conduct hymns adequately.
- To accompany choirs at the organ, interpreting and preparing the score properly, managing the console with mastery, and following the director accurately and musically.

(twice).

**Note:** Two semesters of Music 466R must be taken in consecutive winter and fall semesters.

11. Complete two hours of the following:

MUSIC 470R : Keyboard Teaching Practicum. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Completion of required pedagogy class or instructor's consent.
DESCRIPTION: Applying pedagogical principles to teaching.

**Course Outcomes**

No outcomes are available at this time.

: Keyboard Teaching Practicum: Piano.

**Course Outcomes**

: Keyboard Teaching Practicum: Organ.

**Course Outcomes**

12. Complete the following:

MUSIC 469 : Theory and Methods of Studio Teaching. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: Completion of required pedagogy class or instructor's consent.

DESCRIPTION: Applying learning theory and secondary education methods to studio teaching.

**Course Outcomes**

- Students will gain a theoretical base in beginning and maintaining a successful studio.

13. Complete one course from the following:

MUSIC 483 : Counterpoint. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C- or higher in Music 294, 296.

DESCRIPTION: Eighteenth-century contrapuntal styles and techniques, emphasizing those of J. S. Bach.

**Course Outcomes**

There are no course outcomes available

MUSIC 583 : Sixteenth-Century Counterpoint. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 294, 296, or equivalent.

DESCRIPTION: Strict modal counterpoint in sixteenth- century style (Palestrina); includes species, text setting, and motet.

**Course Outcomes**

- Learn the techniques of 16-century counterpoint, including principles applicable to later music.

14. Present a juried recital (Music 249) during the sophomore year. A juried senior recital (Music 449) is also required.

**Recital:** Enroll in 249 (0.0 credit hours) or 449 (1.0 credit hour) for the semester during which a recital is to be presented. Concurrent enrollment in appropriate performance instruction is required. A prerecital hearing is required at least three weeks before juried recitals. Contact the Harris Fine Arts Center Scheduling Office (D-359, south lobby of Pardoe Theatre) for further information.

## Show all Music (Music) Courses

**College of Fine Arts and Communications Home**

**School of Music Home**

**Majors**

- BA in Music
- BM in Commercial Music
- BM in Music Composition

BM in Music Education

Emphases

- K–12 Choral
- K–12 Instrumental
- Elementary Music Specialist

BM in Music Performance

Emphases

- Brass
- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

**Minor**

- Minor in Music

**Course Information**

- Music (Music) Courses

**Faculty**

# BM in Music Performance: Percussion Emphasis (76 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

The bachelor of music degree in performance prepares the student for professional work as a performer, a studio teacher, or a combination of both. Some will pursue advanced work on the graduate level to prepare for a performance career or college teaching.

## Program Requirements | View MAP | View Program Outcomes

1. See the college advisement center for the application procedure for official acceptance into a specific degree program.
2. Complete the following lower-division music core courses:

MUSIC 193 : Dictation 1. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.
DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major.

DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 197.

DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

MUSIC 221 : Functional Piano Skills 1. (2:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Piano skills determined by entrance diagnostic exam; music major status.

DESCRIPTION: Provides music majors with basic keyboarding ability in such areas as sight reading, technique, harmonization, and score reading.

**Course Outcomes**

- At the end of this class, students should be able to:Play major and minor cadences using tonic, sub-dominant and dominant chords in all keys at a tempo of 80, one chord per beat.
- Harmonize melodies using the assigned accompaniment patterns demonstrating an ability to use chords in root and inverted positions.
- Play common melodies by ear using assigned chordal accompaniments.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play the major and harmonic minor scales that begin on the white keys for one octave up and down the keyboard at a tempo of 100 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform assigned accompaniments to solos demonstrating an ability to follow the performance of the soloist.

MUSIC 222 : Functional Piano Skills 2. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 221; music major status.

DESCRIPTION: Continuation of Music 221.

**Course Outcomes**

- Continuing to build upon skills gained from Mus 221, students will also be able to:Play the assigned progressions in all keys up to four sharps and four flats at a tempo of 88 per half note.
- Harmonize given melodies using the assigned accompaniment pattern and chord symbols demonstrating ease in moving from chord to the next.
- By ear, play a common melodies with the right hand as assigned. With the left hand, play a chordal accompaniment using the assigned accompaniment pattern.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play major and harmonic minor scales that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Play major and minor arpeggios that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform a hymn of your choice from the LDS hymnbook or from a standard hymnbook from another denomination.
- Perform accompaniments to solos as assigned demonstrating an ability to follow the performance of the soloist.
- Prepare a score reading example that relates to your major instrument. Play the line of your instrument and one other line of a differing and transposing instrument.

MUSIC 293 : Dictation 3. (1:0:2)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.

DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.

DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.

DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.

DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 198.

DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 297.

DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

3. Complete one course from the following:

MUSIC 235A : Instrumental Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct an instrumental performance ensemble.

**Course Outcomes**

- Students will develop the physical techniques and interpretive skills required to be an instrumental conductor.
- Students will be able to:--Explain and demonstrate the conductor's correct posture, stance, baton grip, and hand/arm position.--Explain and demonstrate the conductor's preparatory gesture, ictus, rebound, the conducting patterns.--Demonstrate expressive and ambidextrous use of both hands as it relates to the musical score.--Conduct in various articulation styles, legato, staccato, marcato, & tenuto--Conduct clear beat patterns, mixed meter, subdivision, and cuing technique.--Define musical terms as useful for a conductor., and understand/explain the transpositions of instruments found within a musical score.--Convincingly conduct a variety of musical excerpts

MUSIC 235B : Choral Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct a choral performance ensemble.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping, irregular meters, and multi metrics.

4. Complete eight hours of the following:

MUSIC 260R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

5. Complete 12 hours of the following:

MUSIC 460R : Performance Instruction. (1.5-3:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Major in performance; jury approval.
DESCRIPTION: Advanced private instruction and studio class.
NOTE: From three to five hours of daily practice. Fee.

**Course Outcomes**

- Students will demonstrate the ability to perform standard solo repertoire, orchestral works, and etudes/methods at an appropriate artistic level for their year of study.

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: Conducting.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

6. Complete one hour of Category 1: Approved Large Ensembles (see General Information) each semester for eight semesters.
7. Complete the following upper-division music core courses:

MUSIC 301 : Survey of Music Literature 1. (2:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**

There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**

There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)

WHEN Fall; Winter; Summer Contact Department

TAUGHT:
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.
DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**

There are no course outcomes available

MUSIC 395 : Form and Analysis. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: C- or higher in Music 293, 295.
DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

8. Complete one course from the following:

MUSIC 307 : World Music. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Exploration of music making from a global perspective.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods through which various cultures conceptualize and taxonomize instruments, and be able to show an understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.
- Students will articulate how a culture's values can be embodied and discerned within musical practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?
- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 308 : History of Jazz. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists

- Learn to transcribe and analyze jazz solos

9. Complete the following:

MUSIC 273A : Percussion Techniques. (.5:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: Percussion performance major or music education major with percussion emphasis.

DESCRIPTION: Accessory and concert percussion instruments and related performance literature.

**Course Outcomes**

- Introduce basic concepts utilized in concert percussion performance. The focus will be on instruments that would be the part of a percussion section in a concert band, orchestra, or percussion ensemble.Students will become familiar with basic techniques on snare drum, bass drum, cymbals, timpani, keyboard percussion and percussion accessory instruments. Application of these techniques will be related to literature as well as an understanding of basic maintenance, tuning and care of the instruments. Students will be able to demonstrate their ability to play these instruments in a variety of ensemble performance situations with confidence.

MUSIC 273B : Percussion Techniques. (.5:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: Music 273A or instructor's consent.

DESCRIPTION: Introduction to world percussion, drum set, and marching percussion techniques.

**Course Outcomes**

- Students will become familiar with basic techniques on instruments from Africa, Brazil, Cuba, the Middle East, Asia, and other parts of the world. Some exposure to these exotic instruments will take place with an emphasis of “hands on” experiences. Application of these techniques will be related to literature and recordings as well as an understanding of basic maintenance, tuning and care of the instruments. Students will be able to demonstrate their ability to play these instruments in a variety of performance situations with confidence.

MUSIC 405 : Chamber Music Literature. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 306; concurrent enrollment in 460R, or instructor's consent.

DESCRIPTION: Survey of literature, including research in field of concentration.

**Course Outcomes**

- To understand the important trends in chamber music through its history.To have opportunities to listen to and become familiar with a small portion of this great literatureTo research, read, and write about the chamber music literature on a topic of your choiceTo attend, and write intelligently about, live performances.To acquire a foundation for your continued enjoyment of chamber music as a listener and performer

10. Complete five hours from the following:

MUSIC 323R : Marching Band. (1:0:6)

WHEN TAUGHT: Fall

PREREQUISITE: Audition or director's consent.

**Course Outcomes**

- As learning outcomes, students should be able to apply the musical principles of individual, section, and ensemble musical tone production, correct notes, rhythms and dynamics, balance and blend, and correct marching execution. Students should be able to demonstrate application of these principles by successfully performing college-level marching band repertoire in rehearsal and performances.

MUSIC 330R : Steel Band. (1:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Director's consent.

**Course Outcomes**

- Students should be exposed to music outside the Western European tradition. Most of the music performed in this ensemble includes Calypso and Soca styles from the island nation of Trinidad and Tobago. We will sometimes include a pop or classical number, but most of the time we will focus on “groove” music. This means that having a conductor will be rare and the student is expected to listen and learn how to contribute to that “groove”.

MUSIC 331R : Jazz Combos. (1:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Students will learn how to function in a traditional jazz combo setting, including learning head charts, standard lead sheet tunes, and arrangements. They will also further their knowledge of and experience in improvising in a typical professional performance setting in a variety of jazz styles.

MUSIC 336R : Balinese Gamelan. (1:2:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Playing and performing on the Balinese gamelan (percussion) instruments.

**Course Outcomes**

- Students participating in Gamelan will learn the mental and technical skills required to memorize and perform works from the traditional Balinese gamelan repertoire, including becoming proficient on one or more of the instruments in the ensemble.
- Students will also use music as a window into the relationship between Balinese musical practice and Balinese social and religious culture, and, more broadly, develop a deep appreciation for this musicâ s profound contribution to the life experience.
- In the spirit of BYUâ s global mission and the breadth of educational experience advocated in BYUâ s guiding documents, successful students in gamelan will develop a greater understanding of and respect for music and traditions outside of their native experience. This respect will better prepare them to represent BYU and the Church in an increasingly interconnected global society.

MUSIC 345R : Percussion Ensemble. (1:0:2)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Director's consent.

**Course Outcomes**

- To expose students to the music written for percussion ensemble, to help students develop technique(s) on a myriad of instruments while contributing musically, and to present musical situations with and without a conductor. The percussion parts in a percussion ensemble differ drastically from those found in traditional orchestral and band percussion scores in that most performers must be not only rhythmically proficient, but melodically, harmonically and texturally expressive.

11. Complete five hours of music electives. See faculty advisor.
12. Present a juried recital (Music 349) during the junior year. A juried senior recital (Music 449) is also required.

**Recital:** Enroll in 349 (0.0 credit hours) or 449 (1.0 credit hour) for the semester during which a recital is to be presented. Concurrent enrollment in appropriate performance instruction is required. A prerecital hearing is required at least three weeks before juried recitals. Contact the Harris Fine Arts Center Scheduling Office (D-359, south lobby of Pardoe Theatre) for further information.

## Show all Music (Music) Courses

College of Fine Arts and Communications Home

School of Music Home

Majors

- BA in Music
- BM in Commercial Music
- BM in Music Composition

BM in Music Education

Emphases

- K–12 Choral
- K–12 Instrumental
- Elementary Music Specialist

BM in Music Performance

Emphases

- Brass
- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

Minor

- Minor in Music

Course Information

- Music (Music) Courses

Faculty

# BM in Music Performance: Piano Emphasis (77-78 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

The keyboard performance degree prepares students for professional work as performers and studio teachers. The degree includes a strong pedagogy emphasis, including supervised teaching. Many performance majors continue their studies on the graduate level to further prepare for a performance career or college teaching.

## Program Requirements | View MAP | View Program Outcomes

1. See the college advisement center for the application procedure for official acceptance into a specific degree program.
2. Complete the following lower-division music core courses:

MUSIC 193 : Dictation 1. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.
DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)
WHEN TAUGHT: Fall; Spring

PREREQUISITE: Acceptance as a music major.
DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 197.
DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

MUSIC 293 : Dictation 3. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.
DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.
DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.
DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.
DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 198.
DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 297.
DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

3. Complete one course from the following:

MUSIC 235A : Instrumental Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct an instrumental performance ensemble.

**Course Outcomes**

- Students will develop the physical techniques and interpretive skills required to be an instrumental conductor.
- Students will be able to:--Explain and demonstrate the conductor's correct posture, stance, baton grip, and hand/arm position.--Explain and demonstrate the conductor's preparatory gesture, ictus, rebound, the conducting patterns.--Demonstrate expressive and ambidextrous use of both hands as it relates to the musical score.--Conduct in various articulation styles, legato, staccato, marcato, & tenuto--Conduct clear beat patterns, mixed meter, subdivision, and cuing technique.--Define musical terms as useful for a conductor., and understand/explain the transpositions of instruments found within a musical score.--Convincingly conduct a variety of musical excerpts

MUSIC 235B : Choral Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct a choral performance ensemble.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping, irregular meters, and multi metrics.

4. Complete eight hours of the following:

MUSIC 260R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status.

DESCRIPTION: Private instruction and studio class.

NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

5. Complete four hours of the following:
   MUSIC 360R : Performance Instruction. (.5-2:1:1)
   WHEN TAUGHT: Fall; Winter; Spring
   PREREQUISITE: Music major status; jury approval.
   DESCRIPTION: Private instruction and studio class.
   NOTE: From one to four hours of daily practice. Fee.

   **Course Outcomes**
   - Students will learn how to improve their technical facility and artistic expression in their chosen area of musical study.

6. Complete six hours of the following:
   MUSIC 460R : Performance Instruction. (1.5-3:1:1)
   WHEN TAUGHT: Fall; Winter; Spring
   PREREQUISITE: Major in performance; jury approval.

DESCRIPTION: Advanced private instruction and studio class.
NOTE: From three to five hours of daily practice. Fee.

**Course Outcomes**

- Students will demonstrate the ability to perform standard solo repertoire, orchestral works, and etudes/methods at an appropriate artistic level for their year of study.

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: Conducting.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

7. Complete one hour of ensemble each semester for six semesters, including two or four hours from Category 1: Approved Large Ensembles (see General Information) and two or four hours of the Category 2 ensemble Music 344R; each two hours of 344R must be taken in consecutive fall and winter semesters.

8. Complete the following upper-division music core courses:

MUSIC 301 : Survey of Music Literature 1. (2:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**

There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**

There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**

There are no course outcomes available

MUSIC 395 : Form and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C- or higher in Music 293, 295.

DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

9. Complete one course from the following:

MUSIC 307 : World Music. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Exploration of music making from a global perspective.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods

through which various cultures conceptualize and taxonomize instruments, and be able to show an understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.
- Students will articulate how a culture's values can be embodied and discerned within musical practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?
- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 308 : History of Jazz. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists
- Learn to transcribe and analyze jazz solos

10. Complete the following:

MUSIC 264 : Keyboard Foundations 1. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 194 & MUSIC 198 & MUSIC 260R

DESCRIPTION: Sight-reading, harmonization, improvisation, and technique at the keyboard.

**Course Outcomes**

- The goal of 264/265 is to give students a strong introduction to various musical skills that they will very likely come across in the professional world. Many of these skills will draw on the student's knowledge of music theory and become the concrete application of that knowledge.As keyboard players –they are expected to have the strongest working knowledge of harmony, as the instrument is polyphonic in nature – not homophonic. The ability to see many notes and instantly divide them into harmonic groupings is crucial and a common denominator for nearly every aspect of this class. Sometimes this grouping skill will include adding or subtracting notes from the page, or supplying notes that are only notated by a symbol. Very often students can play their performance repertoire wonderfully, but are virtually helpless and intimidated when attempting to add or subtract some of their own notes when not written specifically on the page. This tendency represents incomplete musicianship - it is instead only well trained muscles. The outcomes for this course include sight reading, modulation, score reading, figured bass, transposition and improvisation. After discussing other items that would be considered foundational material for keyboard players in 2012, it was decided that added emphasis would be given to the history of great pianists.

MUSIC 265 : Keyboard Foundations 2. (2:2:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: MUSIC 264

DESCRIPTION: Continuation of Music 264.

**Course Outcomes**

- The goal of 264/265 is to give students a strong introduction to various musical skills that they will very likely come across in the professional world including: Sightreading, Modulation, Open Score Reading, Figured Bass, Transposition and Fakebook Improvisation.

MUSIC 364 : Keyboard Pedagogy. (2:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 249; Junior standing and successful completion of Music 249.

DESCRIPTION: Basic pedagogical principles as applied to keyboard instruments.

**Course Outcomes**

- The objective of this course is to provide a foundation for teaching private piano to students, to increase the students' ability to utilize the various piano courses and techniques that will help provide basic skills for the art.
- Through reading about successful methods and teachers, and listening to lectures the students will gain the necessary background for becoming good teachers and beginning a career as a professional teacher in their own established studio.

MUSIC 365 : Piano Pedagogy. (2:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 364

DESCRIPTION: Preparation for supervised private or group teaching.

**Course Outcomes**

- As a continuation of Music 364, the objective of this course is to provide a foundation for teaching private piano to students, to increase the students' ability to utilize the various piano courses and techniques that will help provide basic skills for the art.
- As a continuation of Music 364, through reading about successful methods and teachers, and listening to lectures the students will gain the necessary background for becoming good teachers and beginning a career as a professional teacher in their own established studio.

MUSIC 403A : Piano Literature. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.

DESCRIPTION: Survey of literature. Research in area of concentration.

**Course Outcomes**

- This course is designed for the advanced keyboard performer, and consists of projects in keyboard harmony, sight-reading, transposition, modulation, improvisation, playing by ear, and score reading, in pursuit of developing the complete keyboard fluency.

MUSIC 403B : Piano Literature. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.

DESCRIPTION: Continuation of Music 403A.

**Course Outcomes**

- This course will explore piano literature from late Classical, Romantic, Impressionistic, and Contemporary periods of music history including composer surveys, analysis, aural and score recognition, performances and performance practices. The goal of this course is for each student to gain a broad understanding of the subject and develop a love for the rich heritage of the medium. A major purpose of the course is to instill in students a curiosity essential for lifetime discovery. Thorough knowledge and appreciation of the piano repertoire is crucial for a successful career in performance and teaching.

11. Complete two hours of the following:

MUSIC 470R : Keyboard Teaching Practicum. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of required pedagogy class or instructor's consent.

DESCRIPTION: Applying pedagogical principles to teaching.

**Course Outcomes**

No outcomes are available at this time.

: Keyboard Teaching Practicum: Piano.

**Course Outcomes**

: Keyboard Teaching Practicum: Organ.

**Course Outcomes**

12. Complete the following:

MUSIC 469 : Theory and Methods of Studio Teaching. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: Completion of required pedagogy class or instructor's consent.

DESCRIPTION: Applying learning theory and secondary education methods to studio teaching.

**Course Outcomes**

- Students will gain a theoretical base in beginning and maintaining a successful studio.

13. Complete four hours of the following:

MUSIC 115 : Basic Organ Skills. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Class instruction in organ for nonmusic majors.

**Course Outcomes**

- Students will be able to prepare and play four-part hymns to a high standard.
- Students will be able to know and apply basic principles of organ registration and construction.
- Students will be able to listen in both practice and performance for perfect legato, precise releases, and independence of line.
- Students will be able to use the standard legato manual and pedal techniques fluently, and to play simple pedal parts in combination with elementary manual parts.
- Students will learn use efficient practice techniques.
- To experience (primarily through listening) a wide range of organ repertoire with three main goals: 1) identify registrational characteristics, 2) identify pieces of interest for future learning, and 3) distinguish between that which might be appropriate for worship and that which is appropriate for concert use.

MUSIC 116R : Organ Techniques and Literature. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Music 115 or instructor's consent.

DESCRIPTION: Continuation of Music 115.

**Course Outcomes**

- Understand and be able to employ various advanced hymn playing techniques.
- Learn at least two organ pieces this semester. Also, experience a wide range of organ repertoire with four main goals: associate selected organ masterworks with their respective composers, regions, and time periods; identify registrational characteristics; identify pieces of interest for future learning; and distinguish between that which might be appropriate for worship and that which is appropriate for concert use.
- Understand and apply more advanced principles of organ registration.
- Understand basics of touch, phrasing and articulation, and to know how to utilize them to enhance the expressiveness of a piece of music.
- Develop fluency in manual techniques, including finger independence, redistribution, finger crossings, glissando, and substitution; and develop greater fluency in pedal playing.
- Develop basic accompanying skills on the organ.
- Cultivate more efficient practice techniques.

MUSIC 260R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status.

DESCRIPTION: Private instruction and studio class.

NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

(organ).

14. Complete one course from the following:

MUSIC 394 : Jazz Styles and Analysis. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.
RECOMMENDED: Music major status; instructor's consent.
DESCRIPTION: In-depth experience in recognizing and differentiating jazz styles, including analyzing and transcribing solo and ensemble jazz materials.

**Course Outcomes**

- In-depth experience in recognizing and differentiating jazz styles, including analyzing and transcribing solo and ensemble jazz materials.

MUSIC 483 : Counterpoint. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: C- or higher in Music 294, 296.
DESCRIPTION: Eighteenth-century contrapuntal styles and techniques, emphasizing those of J. S. Bach.

**Course Outcomes**

There are no course outcomes available

MUSIC 485 : Jazz Arranging and Composition. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 295

DESCRIPTION: Developing concepts and skills related to the orchestration, arranging, and composition of jazz and related contemporary styles of music.

**Course Outcomes**

- Students will develop concepts and skills related to the orchestration, arranging, and composition of jazz and related contemporary styles of music.

MUSIC 583 : Sixteenth-Century Counterpoint. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 294, 296, or equivalent.

DESCRIPTION: Strict modal counterpoint in sixteenth- century style (Palestrina); includes species, text setting, and motet.

**Course Outcomes**

- Learn the techniques of 16-century counterpoint, including principles applicable to later music.

MUSIC 595 : Score Analysis. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.; Summer Odd Yrs.

DESCRIPTION: Analysis of representative choral and instrumental works from the Renaissance through contemporary styles.

**Course Outcomes**

- Music 595 is to help you to- Explore the nature and function of scores of all kinds.- Answer the question of any score: what does this score tell me about the intended sound and what does it not tell me?- Learn criteria for identifying style, period, and performance practice of any score.Score types include:1. Vocal music: various a capella genres (choral, barbershop, etc.), congregational hymns (including shape-note symbols and tonic sol-fa), Lieder, popular sheet music, folk transcriptions.2. Instrument-based genres: works for solo instrument, chamber groups, and larger ensembles3. Alternative uses and adaptations of common-practice notation: lead sheets/fake books, charts/graphs (e.g., Schenker graphs), short scores, piano reductions, transcriptions, various indeterminate notations. 4. Miscellaneous non-common-practice notation. These include tablatures, assorted graphic/pictographic representations, verbal scores, mathematical (e.g., ratio-based) notation.

15. Present a juried recital (Music 249) during the sophomore year. A juried senior recital (Music 449) is also required.

**Recital:** Enroll in 249 (0.0 credit hours) or 449 (1.0 credit hour) for the semester during which a recital is to be presented. Concurrent enrollment in appropriate performance instruction is required. A prerecital hearing is required at least three weeks before juried recitals. Contact the Harris Fine Arts Center Scheduling Office (D-359, south lobby of Pardoe Theatre) for further information.

## Show all Music (Music) Courses

College of Fine Arts and Communications Home

School of Music Home

Majors

- BA in Music
- BM in Commercial Music
- BM in Music Composition

BM in Music Education

Emphases

- K–12 Choral
- K–12 Instrumental
- Elementary Music Specialist

BM in Music Performance

Emphases

- Brass
- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

Minor

- Minor in Music

Course Information

- Music (Music) Courses

Faculty

# BM in Music Performance: String Emphasis (77 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

The bachelor of music degree in performance prepares the students for professional work as a performer, a studio teacher, or a combination of both. Some will pursue advanced work on the graduate level to prepare for a performance career or college teaching.

## Program Requirements | View MAP | View Program Outcomes

1. See the college advisement center for the application procedure for official acceptance into a specific degree program.
2. Complete the following lower-division music core courses:

MUSIC 193 : Dictation 1. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.
DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major.

DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 197.

DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

MUSIC 221 : Functional Piano Skills 1. (2:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Piano skills determined by entrance diagnostic exam; music major status.

DESCRIPTION: Provides music majors with basic keyboarding ability in such areas as sight reading, technique, harmonization, and score reading.

**Course Outcomes**

- At the end of this class, students should be able to:Play major and minor cadences using tonic, sub-dominant and dominant chords in all keys at a tempo of 80, one chord per beat.
- Harmonize melodies using the assigned accompaniment patterns demonstrating an ability to use chords in root and inverted positions.
- Play common melodies by ear using assigned chordal accompaniments.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play the major and harmonic minor scales that begin on the white keys for one octave up and down the keyboard at a tempo of 100 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform assigned accompaniments to solos demonstrating an ability to follow the performance of the soloist.

MUSIC 222 : Functional Piano Skills 2. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 221; music major status.

DESCRIPTION: Continuation of Music 221.

**Course Outcomes**

- Continuing to build upon skills gained from Mus 221, students will also be able to:Play the assigned progressions in all keys up to four sharps and four flats at a tempo of 88 per half note.
- Harmonize given melodies using the assigned accompaniment pattern and chord symbols demonstrating ease in moving from chord to the next.
- By ear, play a common melodies with the right hand as assigned. With the left hand, play a chordal accompaniment using the assigned accompaniment pattern.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play major and harmonic minor scales that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Play major and minor arpeggios that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform a hymn of your choice from the LDS hymnbook or from a standard hymnbook from another denomination.
- Perform accompaniments to solos as assigned demonstrating an ability to follow the performance of the soloist.
- Prepare a score reading example that relates to your major instrument. Play the line of your instrument and one other line of a differing and transposing instrument.

MUSIC 235A : Instrumental Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct an instrumental performance ensemble.

**Course Outcomes**

- Students will develop the physical techniques and interpretive skills required to be an instrumental conductor.
- Students will be able to:--Explain and demonstrate the conductor's correct posture, stance, baton grip, and hand/arm position.--Explain and demonstrate the conductor's preparatory gesture, ictus, rebound,

the conducting patterns.--Demonstrate expressive and ambidextrous use of both hands as it relates to the musical score.--Conduct in various articulation styles, legato, staccato, marcato, & tenuto--Conduct clear beat patterns, mixed meter, subdivision, and cuing technique.--Define musical terms as useful for a conductor., and understand/explain the transpositions of instruments found within a musical score.--Convincingly conduct a variety of musical excerpts

MUSIC 293 : Dictation 3. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.
DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.
DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.
DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.
DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 198.
DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 297.
DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

3. Complete eight hours of the following:

MUSIC 260R : Performance Instruction. (.5-2:1:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

4. Complete 12 hours of the following:

MUSIC 460R : Performance Instruction. (1.5-3:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Major in performance; jury approval.
DESCRIPTION: Advanced private instruction and studio class.
NOTE: From three to five hours of daily practice. Fee.

**Course Outcomes**

- Students will demonstrate the ability to perform standard solo repertoire, orchestral works, and etudes/methods at an appropriate artistic level for their year of study.

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: Conducting.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

5. Complete one hour of Category 1: Approved Large Ensembles (see General Information) each semester for eight semesters. Guitarists complete four hours of Guitar Ensemble (Music 343R) and four semesters of Category 1: Approved Large Ensembles.

6. Complete the following upper-division music core courses:

MUSIC 301 : Survey of Music Literature 1. (2:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**

There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**

There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**

There are no course outcomes available

MUSIC 395 : Form and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C- or higher in Music 293, 295.

DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal

structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

7. Complete one course from the following:

MUSIC 307 : World Music. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Exploration of music making from a global perspective.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods through which various cultures conceptualize and taxonomize instruments, and be able to show an understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.
- Students will articulate how a culture's values can be embodied and discerned within musical practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?
- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 308 : History of Jazz. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists
- Learn to transcribe and analyze jazz solos

8. Complete one course from the following depending on instrument:

MUSIC 369A : String Pedagogy. (2:2:1)

WHEN TAUGHT: Fall Even Yrs.
PREREQUISITE: Instrumental music major on violin or viola, or instructor's consent.

**Course Outcomes**

- Students will gain knowledge about the most popular string teaching methods of instruction and will be able to run a private studio from beginner through high school levels. Students will study and know much about several of the main violin and viola pedagogues.

MUSIC 369B : String Pedagogy. (2:2:1)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Instrumental music major on double bass, or instructor's consent.

**Course Outcomes**

- At the end of this course, students will understand all the mechanics of the instrument, know more about their history and evolution, and be able to clearly verbalize, teach and communicate such knowledge.

MUSIC 369C : String Pedagogy. (2:2:1)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Instrumental music major on cello or instructor's consent.

**Course Outcomes**

- Students will develop the basics for a career as a private cello teacher.
- Students will become familiar with a wide variety of teaching methods.
- Students will establish appropriate levels for beginning, intermediate, and advanced teaching.

MUSIC 369D : String Pedagogy. (2:2:1)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Instrumental music major on harp or instructor's consent.

**Course Outcomes**

- The expected outcomes of this course are an increased knowledge and understanding of methods of pedagogy related to teaching harp in a private setting. Each student should end the class with a better understanding of his/her personal teaching philosophy, as well as lesson plans and tools for setting up a private studio.

MUSIC 369E : String Pedagogy. (2:2:1)
WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: Instrumental music major on guitar or instructor's consent.

**Course Outcomes**

- Students will gain experience instructing students at the beginning and intermediate levels, gain a deeper knowledge of classical guitar and jazz guitar techniques, and analyze various guitar methods and approaches.

9. Complete the following:

MUSIC 406 : String Literature. (2:2:0)
WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.
DESCRIPTION: Survey of literature, including research in field of concentration.

**Course Outcomes**

- Be able to discuss, listen to, dance to and perform standard standard repertoire as well as read and write about it. The ultimate purpose is to expand your understanding of the concert and teaching repertoire. This survey will demonstrate the wealth of string literature available and how you can find, understand and play it well.

MUSIC 467 : String Teaching Practicum. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Completion of required pedagogy class (Music 369A-E).
DESCRIPTION: Applying pedagogical principles to teaching.

**Course Outcomes**

No outcomes are available at this time.

: String Teaching Practicum: Violin.

**Course Outcomes**

: String Teaching Practicum: Viola.

**Course Outcomes**

: String Teaching Practicum: Cello.

**Course Outcomes**

: String Teaching Practicum: Bass.

**Course Outcomes**

: String Teaching Practicum: Harp.

**Course Outcomes**

: String Teaching Practicum: Guitar.

**Course Outcomes**

10. Complete one course from the following:

MUSIC 405 : Chamber Music Literature. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 306; concurrent enrollment in 460R, or instructor's consent.

DESCRIPTION: Survey of literature, including research in field of concentration.

**Course Outcomes**

- To understand the important trends in chamber music through its history.To have opportunities to listen to and become familiar with a small portion of this great literatureTo research, read, and write about the chamber music literature on a topic of your choiceTo attend, and write intelligently about, live performances.To acquire a foundation for your continued enjoyment of chamber music as a listener and performer

MUSIC 407 : Symphonic Literature. (2:2:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: C- or higher in Music 306; concurrent enrollment in 460R, or instructor's consent.

DESCRIPTION: Survey of literature, including research in field of concentration.

**Course Outcomes**

There are no course outcomes available

11. Complete four hours from the following:

MUSIC 331R : Jazz Combos. (1:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Students will learn how to function in a traditional jazz combo setting, including learning head charts, standard lead sheet tunes, and arrangements. They will also further their knowledge of and experience in improvising in a typical professional performance setting in a variety of jazz styles.

MUSIC 343R : Guitar Ensemble. (1:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Director's consent.

**Course Outcomes**

- Students will gain ensemble experience with other guitarists, develop better sight-reading skills, and perform in a formal setting during the semester.

MUSIC 346R : String Chamber Music. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- There are four main areas of student outcomes important for this course: the building of repertoire, experience performing, exploring the enormous variety of timbre and color in the chamber music setting, and artistically improving how you communicate musically with your performing colleagues, as well as your audience.

12. Complete two hours from the following (guitarists should complete two hours of music electives):

MUSIC 346R : String Chamber Music. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- There are four main areas of student outcomes important for this course: the building of repertoire, experience performing, exploring the enormous variety of timbre and color in the chamber music setting, and artistically improving how you communicate musically with your performing colleagues, as well as your audience.

MUSIC 462R : Orchestral Excerpts. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Music 460R or instructor's consent.

DESCRIPTION: Performance instruction in standard orchestral repertoire.

NOTE: For string performance majors.

**Course Outcomes**

- This course is a skill development class that is designed to help you to become ready to take professional orchestral auditions and help prepare you to reach your potential as an orchestral musician.Preparation and performance of standard orchestral excerptsSight-reading of several other standard orchestral excerptsPerform for outside adjudicators in “mock audition” settingUnderstand professional audition procedures and processesCollect materials and resources to aid in preparation for future professional auditions

13. With performance instructor's advisement and consent, present a juried recital (Music 249 or 349) during the sophomore or junior year. A juried senior recital (Music 449) is also required.

    **Recital:** Enroll in 249 or 349 (0.0 credit hours) or 449 (1.0 credit hour) for the semester during which a recital is to be presented. Concurrent enrollment in appropriate performance instruction is required. A prerecital hearing is required at least three weeks before juried recitals. Contact the Harris Fine Arts Center Scheduling Office (D-359, south lobby of Pardoe Theatre) for further information.

## Show all Music (Music) Courses

College of Fine Arts and Communications Home

School of Music Home

Majors

- BA in Music
- BM in Commercial Music
- BM in Music Composition

BM in Music Education Emphases

- K–12 Choral
- K–12 Instrumental
- Elementary Music Specialist

BM in Music Performance Emphases

- Brass
- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

Minor

- Minor in Music

Course Information

- Music (Music) Courses

Faculty

# BM in Music Performance: Vocal Emphasis (76 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

The vocal performance degree program prepares students for professional work as performers and studio teachers. The degree includes a strong pedagogy emphasis, including supervised teaching. Many students in this program continue their studies on the graduate level to further prepare for a performing career or college teaching.

## Program Requirements | View MAP | View Program Outcomes

1. See the college advisement center for the application procedure for official acceptance into a specific degree program.
2. Complete the following lower-division music core courses:

MUSIC 193 : Dictation 1. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.
DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)
WHEN TAUGHT: Fall; Spring

PREREQUISITE: Acceptance as a music major.
DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 197.
DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

MUSIC 221 : Functional Piano Skills 1. (2:2:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Piano skills determined by entrance diagnostic exam; music major status.
DESCRIPTION: Provides music majors with basic keyboarding ability in such areas as sight reading, technique, harmonization, and score reading.

**Course Outcomes**

- At the end of this class, students should be able to:Play major and minor cadences using tonic, sub-dominant and dominant chords in all keys at a tempo of 80, one chord per beat.
- Harmonize melodies using the assigned accompaniment patterns demonstrating an ability to use chords in root and inverted positions.
- Play common melodies by ear using assigned chordal accompaniments.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play the major and harmonic minor scales that begin on the white keys for one octave up and down the keyboard at a tempo of 100 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform assigned accompaniments to solos demonstrating an ability to follow the performance of the soloist.

MUSIC 222 : Functional Piano Skills 2. (2:2:0)
WHEN TAUGHT: Winter
PREREQUISITE: C- or higher in Music 221; music major status.
DESCRIPTION: Continuation of Music 221.

**Course Outcomes**

- Continuing to build upon skills gained from Mus 221, students will also be able to:Play the assigned progressions in all keys up to four sharps and four flats at a tempo of 88 per half note.
- Harmonize given melodies using the assigned accompaniment pattern and chord symbols demonstrating ease in moving from chord to the next.
- By ear, play a common melodies with the right hand as assigned. With the left hand, play a chordal accompaniment using the assigned accompaniment pattern.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play major and harmonic minor scales that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Play major and minor arpeggios that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform a hymn of your choice from the LDS hymnbook or from a standard hymnbook from another denomination.
- Perform accompaniments to solos as assigned demonstrating an ability to follow the performance of the soloist.
- Prepare a score reading example that relates to your major instrument. Play the line of your instrument and one other line of a differing and transposing instrument.

MUSIC 235B : Choral Conducting Techniques. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.
DESCRIPTION: Physical techniques and musical understanding required to conduct a choral performance ensemble.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping, irregular meters, and multi

metrics.

MUSIC 293 : Dictation 3. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.
DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.
DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.
DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.
DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: C- or higher in Music 198.
DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 297.
DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

3. Complete 8 hours of the following:

MUSIC 260R : Performance Instruction. (.5-2:1:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

4. Complete eight hours of the following:

MUSIC 360R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status; jury approval.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- Students will learn how to improve their technical facility and artistic expression in their chosen area of musical study.

5. Complete one hour of ensemble each semester for eight semesters, including 2-6 hours from Category 1: Approved Large Ensembles (see General Information) and 2-6 hours of the following Category 2 ensembles:

MUSIC 316R : Opera Workshop. (1:6:0)

WHEN TAUGHT: Fall
PREREQUISITE: Audition and instructor's consent.
DESCRIPTION: Training and experience in operatic choral music and stage movement.

**Course Outcomes**

- Students will learn the performance techniques required to sing art songs and operatic arias from the western classical vocal traditions.
- Students will apply these skills in the performance of songs or arias in the class.

MUSIC 317R : Opera Ensemble. (.5-3:6:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Audition and instructor's consent.
DESCRIPTION: Training and experience in operatic excerpts, chamber opera, and full productions for operatic soloists.

**Course Outcomes**

- Through performance opportunities before an audience, students will demonstrate a more comprehensive understanding of the basic skills taught in the Opera Workshop course (See Learning Outcomes for the respective courses; Mus 316R and 616R).

MUSIC 318R : Music Theatre Ensemble. (1:0:5)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Audition and instructor's consent.
DESCRIPTION: Auditioned chorus or orchestra for opera or music dance theatre productions.

**Course Outcomes**

No outcomes are available at this time.

6. Complete the following upper-division music core courses:

MUSIC 301 : Survey of Music Literature 1. (2:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.
DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**

There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.
DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**

There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**

There are no course outcomes available

MUSIC 395 : Form and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C- or higher in Music 293, 295.

DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

7. Complete one course from the following:

MUSIC 307 : World Music. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.

DESCRIPTION: Exploration of music making from a global perspective.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods through which various cultures conceptualize and taxonomize instruments, and be able to show an understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.
- Students will articulate how a culture's values can be embodied and discerned within musical practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?
- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 308 : History of Jazz. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists
- Learn to transcribe and analyze jazz solos

8. Complete the following:

MUSIC 363 : Vocal Pedagogy. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Junior standing as vocal performance or choral music education major or instructor's consent.
DESCRIPTION: Introduction to physiology, acoustics, and pedagogy of singing.

**Course Outcomes**

- Students will learn the physiology and biomechanics of the human voice.
- Students will learn the acoustical laws which govern sound as applied to the human voice.
- Students will learn pedagocial approaches to teaching voice which conform to physical and acoustical principles.

MUSIC 402A : Vocal Literature. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Acceptance into 360R or instructor's consent.
DESCRIPTION: Survey of literature with emphasis on art song. Research in area of concentration.

**Course Outcomes**

- Students will survey the classical vocal art song repertoire in English, Italian, German, and French from the past 400 years.
- Students will be able to prepare and present a class on a given composer or group of composers—consisting of lecture, musical examples, live performance, and appropriate handouts.
- Students will be able to discuss stylistic elements of song, including melody, harmony, rhythm, accompaniment, text, and form.Students will be able to discuss the development of song through various composers, languages or eras.
- Students will be able to identify listening examples of specific songs.
- Students will be able to perform at least one song in two other student presentations.
- Students will be able to compile a comprehensive personal repertoire list.

MUSIC 472 : Supervised Teaching in Voice. (2:1:3)

WHEN TAUGHT: Winter
PREREQUISITE: MUSIC 363
DESCRIPTION: Lecture, discussion, and practicum in the methodology of studio voice instruction.

**Course Outcomes**

- Students will apply the information gained in Music 363 to teaching at least 2 students, one male and the other female.
- Students will develop through study and experience pedagocial approaches to teaching singing.
- Students will develop a basic list of repertoire appropriate to teaching beginning voice lessons.
- Students will help their pupils prepare at least one song to a performance level which can be presented in a public recital.
- Students will learn the organizational and financial structure of a successful home studio.

9. Complete eight hours from the following:

FREN 101 : First-Year French, Part 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Development of the four language skills: understanding, speaking, reading, and writing.

**Course Outcomes**

- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to satisfy immediate needs. (You will learn to communicate in basic social situations, meet routine travel needs, obtain food and lodging, carry out simple transactions, and talk about a variety of topics of common interest primarily in the present, with limited use of other time frames.)
- Write short messages and well-articulated sentences in French on familiar topics.

FREN 102 : First-Year French, Part 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Fren 101 or equivalent.
DESCRIPTION: Continuation of French 101.

**Course Outcomes**

- Write well-articulated sentences and loosely connected texts related to personal experiences and common events.
- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to handle a variety of simple communicative tasks in basic social situations. You will be able to meet routine travel needs, carry out simple transactions, and talk about a variety of topics of common interest in present, past, and future times.

GERM 101 : First-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.
NOTE: For those who have had no German.

**Course Outcomes**

There are no course outcomes available

GERM 102 : First-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: C grade or better in Germ 101 or equivalent.
DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.

**Course Outcomes**

There are no course outcomes available

ITAL 101 : First-Year Italian, Part 1. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Daily development of the four language skills: understanding, speaking, reading, and writing.

**Course Outcomes**

- Become familiar with basic grammatical rules in Italian, including some verb tenses and their conjugations.
- Will understand simple sentences on familiar subjects in Italian.
- Will speak simple sentences on familiar subjects in Italian.

ITAL 102 : First-Year Italian, Part 2. (4:5:2)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Ital 101 or equivalent.
DESCRIPTION: Continuation of Ital 101.

**Course Outcomes**

- Become familiar with grammatical rules in Italian, especially the verb tenses and their conjugations.
- Students will understand simple sentences on familiar topics in Italian.
- Students will speak simple sentences on familiar topics in Italian.

10. Pass a juried junior recital (Music 349) and a juried senior recital (Music 449).

**Recital:** Enroll in 349 (0.0 credit hours) or 449 (1.0 credit hour) for the semester during which a recital is to be presented. Concurrent enrollment in Music 360R is required. A prerecital hearing is required at least three weeks before juried recitals. Contact the Harris Fine Arts Center Scheduling Office (D-359, south lobby of Pardoe Theatre) for further information.

## Recommended Electives

DANCE 164 : Movement for Musicians. (.5:0:2)
WHEN TAUGHT: Winter
DESCRIPTION: Developing strength, flexibility, responsiveness, centering, breath, and freedom of movement through both fine and gross motor activities.

**Course Outcomes**

- Students will understand the connection between music and dance by practicing and integrating kinesthetic awareness with musicality.
- Students will analyze the shared characteristics of movement and music by creating and discussing movement phrases.
- Students will evaluate the appropriateness of particular movement disciplines for solving real physical and musical problems.
- Students will increase musical awareness by choreographing and performing a solo to varied musical styles.

MUSIC 259 : Psychology of Performance. (2:2:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Psychological skills for performers. Topics include audition preparation, conquering stage fright, preventing overuse injury, attention control, creativity. Skills applicable to any performance situation.

**Course Outcomes**

- Students completing this course will be able to:1. Have the skills to manage anxiety through the implementation of relaxation training.2. Use mental visualization to enhance their performance and their performance preparation.3. Use the 5 stages of the performance process to support future performance.4. Create an optimal performance mindset.5. Approach a performance with confidence.6. Break through what is limiting their self expression.7. Step up, risk and enjoy performing.

MUSIC 261 : Contemporary Vocal Techniques. (2:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: Music 161 or instructor's consent.

DESCRIPTION: Contemporary vocal styles and techniques, including pop/belt, stage, and studio singing.

**Course Outcomes**

- Students will work on, memorize and perform five song excerpts (Two "classical/legit", [one pre 1966 and one, post 1966] pieces from Musical Theatre literature, two mix/belt pieces from Musical Theatre literature and one Mozart aria. Focus will be on technique, musicianship and interpretation.
- Students will use musical skill to create coherent 16 bar audition cuts for each of the assigned Musical Theatre pieces
- Students will enlarge and demonstrate knowledge of vocal anatomy and proper singing technique through a series of quizzes based on information in text
- Students will enlarge knowledge of Musical Theatre literature by creating a literature list to include, but not limited to, all of the music performed in class.
- Students will evaluate their own, in class performances by observing video recordings and writing evaluations.
- Through class discussion and personal reflection (journal writing,) students will create a vision for their place in the professional Musical Theatre industry and how best to incorporate the aims of a BYU education into that vision.
- Students will evaluate in class performances of peers attending to technique, musicality and communication.
- Students will develop the ability to analyze and explain concepts and principles of voice production through working one on one with peers in teacher/ student assignments.
- Students will keep a journal designed to focus on the importance of maintaining strong moral, ethical and spiritual values while functioning within the professional world.

PHSCS 167 : Descriptive Acoustics of Music and Speech. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introductory acoustics course, emphasizing physical principles underlying production and perception of music and speech.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Define the basic terminologies of acoustics, identify physical principles involved in common situations and answer conceptual questions related to hearing, speech, audio, listening environments, and musical instruments.
- Apply scientific models to analysis of hearing, speech and musical instruments, etc.
- Solve basic problems related to hearing, speech, audio, listening environments, and musical instruments.
- Write effectively using the terminology of acoustics and logically outline how acoustics is important in a discipline of their choice.

Students intending to enter graduate school in voice should complete:

FREN 101 : First-Year French, Part 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Development of the four language skills: understanding, speaking, reading, and writing.

**Course Outcomes**

- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to satisfy immediate needs. (You will learn to communicate in basic social situations, meet routine travel needs, obtain food and lodging, carry out simple transactions, and talk about a variety of topics of common interest primarily in the present, with limited use of other time frames.)
- Write short messages and well-articulated sentences in French on familiar topics.

GERM 101 : First-Year German. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.

NOTE: For those who have had no German.

**Course Outcomes**

There are no course outcomes available

ITAL 101 : First-Year Italian, Part 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Daily development of the four language skills: understanding, speaking, reading, and writing.

**Course Outcomes**

- Become familiar with basic grammatical rules in Italian, including some verb tenses and their conjugations.
- Will understand simple sentences on familiar subjects in Italian.
- Will speak simple sentences on familiar subjects in Italian.

## Show all Music (Music) Courses

College of Fine Arts and Communications Home

School of Music Home

Majors

- BA in Music
- BM in Commercial Music
- BM in Music Composition

BM in Music Education

Emphases

- K–12 Choral
- K–12 Instrumental
- Elementary Music Specialist

BM in Music Performance

Emphases

- Brass
- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

Minor

- Minor in Music

Course Information

- Music (Music) Courses

Faculty

# BM in Music Performance: Woodwind Emphasis (77 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

The bachelor of music degree in performance prepares the students for professional work as a performer, a studio teacher, or a combination of both. Some will pursue advanced work on the graduate level to prepare for a performance career or college teaching.

## Program Requirements | View MAP | View Program Outcomes

1. See the college advisement center for the application procedure for official acceptance into a specific degree program.
2. Complete the following lower-division music core courses:

MUSIC 193 : Dictation 1. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.
DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major.

DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 197.

DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

MUSIC 221 : Functional Piano Skills 1. (2:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Piano skills determined by entrance diagnostic exam; music major status.

DESCRIPTION: Provides music majors with basic keyboarding ability in such areas as sight reading, technique, harmonization, and score reading.

**Course Outcomes**

- At the end of this class, students should be able to:Play major and minor cadences using tonic, sub-dominant and dominant chords in all keys at a tempo of 80, one chord per beat.
- Harmonize melodies using the assigned accompaniment patterns demonstrating an ability to use chords in root and inverted positions.
- Play common melodies by ear using assigned chordal accompaniments.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play the major and harmonic minor scales that begin on the white keys for one octave up and down the keyboard at a tempo of 100 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform assigned accompaniments to solos demonstrating an ability to follow the performance of the soloist.

MUSIC 222 : Functional Piano Skills 2. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 221; music major status.

DESCRIPTION: Continuation of Music 221.

**Course Outcomes**

- Continuing to build upon skills gained from Mus 221, students will also be able to:Play the assigned progressions in all keys up to four sharps and four flats at a tempo of 88 per half note.
- Harmonize given melodies using the assigned accompaniment pattern and chord symbols demonstrating ease in moving from chord to the next.
- By ear, play a common melodies with the right hand as assigned. With the left hand, play a chordal accompaniment using the assigned accompaniment pattern.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play major and harmonic minor scales that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Play major and minor arpeggios that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform a hymn of your choice from the LDS hymnbook or from a standard hymnbook from another denomination.
- Perform accompaniments to solos as assigned demonstrating an ability to follow the performance of the soloist.
- Prepare a score reading example that relates to your major instrument. Play the line of your instrument and one other line of a differing and transposing instrument.

MUSIC 293 : Dictation 3. (1:0:2)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.

DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.

DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.

DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.

DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 198.

DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 297.

DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

3. Complete one course from the following:

MUSIC 235A : Instrumental Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct an instrumental performance ensemble.

**Course Outcomes**

- Students will develop the physical techniques and interpretive skills required to be an instrumental conductor.
- Students will be able to:--Explain and demonstrate the conductor's correct posture, stance, baton grip, and hand/arm position.--Explain and demonstrate the conductor's preparatory gesture, ictus, rebound, the conducting patterns.--Demonstrate expressive and ambidextrous use of both hands as it relates to the musical score.--Conduct in various articulation styles, legato, staccato, marcato, & tenuto--Conduct clear beat patterns, mixed meter, subdivision, and cuing technique.--Define musical terms as useful for a conductor., and understand/explain the transpositions of instruments found within a musical score.--Convincingly conduct a variety of musical excerpts

MUSIC 235B : Choral Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct a choral performance ensemble.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping, irregular meters, and multi metrics.

4. Complete eight hours of the following:

MUSIC 260R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

5. Complete 12 hours of the following:

MUSIC 460R : Performance Instruction. (1.5-3:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Major in performance; jury approval.
DESCRIPTION: Advanced private instruction and studio class.
NOTE: From three to five hours of daily practice. Fee.

**Course Outcomes**

- Students will demonstrate the ability to perform standard solo repertoire, orchestral works, and etudes/methods at an appropriate artistic level for their year of study.

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: Conducting.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

6. Complete one hour of Category 1: Approved Large Ensembles (see General Information) each semester for eight semesters.
7. Complete the following upper-division music core courses:

MUSIC 301 : Survey of Music Literature 1. (2:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**

There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**

There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)

WHEN Fall; Winter; Summer Contact Department

TAUGHT:
PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.
DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**

There are no course outcomes available

MUSIC 395 : Form and Analysis. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: C- or higher in Music 293, 295.
DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

8. Complete one course from the following:

MUSIC 307 : World Music. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Exploration of music making from a global perspective.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods through which various cultures conceptualize and taxonomize instruments, and be able to show an understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.
- Students will articulate how a culture's values can be embodied and discerned within musical practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?
- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 308 : History of Jazz. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists

- Learn to transcribe and analyze jazz solos

9. Complete the following:

MUSIC 367 : Woodwind Pedagogy. (2:2:1)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Woodwind performance major status or instructor's consent.

**Course Outcomes**

- Students will gain the knowledge and skill necessary to become en effective private teacher on their chosen instrument.
- Students will demonstrate a knowledge of woodwind pedagogy, especially as it applies to their chosen instrument.

MUSIC 405 : Chamber Music Literature. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 306; concurrent enrollment in 460R, or instructor's consent.

DESCRIPTION: Survey of literature, including research in field of concentration.

**Course Outcomes**

- To understand the important trends in chamber music through its history.To have opportunities to listen to and become familiar with a small portion of this great literatureTo research, read, and write about the chamber music literature on a topic of your choiceTo attend, and write intelligently about, live performances.To acquire a foundation for your continued enjoyment of chamber music as a listener and performer

10. Complete four hours from the following:

MUSIC 331R : Jazz Combos. (1:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Students will learn how to function in a traditional jazz combo setting, including learning head charts, standard lead sheet tunes, and arrangements. They will also further their knowledge of and experience in improvising in a typical professional performance setting in a variety of jazz styles.

(saxophone only)

MUSIC 348R : Woodwind Chamber Music. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Director's consent.

**Course Outcomes**

- Students will demonstrate performance proficiency on their instrument within the context of woodwind chamber music.

: Woodwind Ensemble.

**Course Outcomes**

: Saxophone Ensemble.

**Course Outcomes**

: Flute Choir.

**Course Outcomes**

11. Complete five hours of music electives (Music 407 is recommended). See faculty advisor.

12. Present a juried recital (Music 349) during the junior year. A juried senior recital (Music 449) is also required.

**Recital:** Enroll in 349 (0.0 credit hours) or 449 (1.0 credit hour) for the semester during which a recital is to be presented. Concurrent enrollment in appropriate performance instruction is required. A prerecital hearing is required at least three weeks before juried recitals. Contact the Harris Fine Arts Center Scheduling Office (D-359, south lobby of Pardoe Theatre) for further information.

## Show all Music (Music) Courses

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- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

Minor

- Minor in Music

Course Information

- Music (Music) Courses

Faculty

# Minor in Music (21 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. The School of Music requires a minimum of 10 hours of music credit to be taken in residence at BYU's Provo campus for this minor program. These hours may also go toward BYU's 30-hour residency requirement for graduation.

2. Complete the following:

MUSIC 101 : Introduction to Music. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Nonmusic major status.
DESCRIPTION: Designed to aid nonmusic majors in developing skills needed for listening to music creatively. Emphasis on masterworks of Western music from major style periods.

**Course Outcomes**

- By listening to music, learning about the historical development of music, learning about its composers, participating in in-class discussions, attending concerts, and by acquiring a vocabulary and knowledge of music terms and concepts, students will be capable of identifying practically any piece of classical music by time period and genre. Students will also possess a much greater understanding of musical forms, genres and styles.

MUSIC 190 : Music Fundamentals. (2:2:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Nonmusic major status.
DESCRIPTION: Organizational systems of music, their notation and aural patterns.
NOTE: Required for music minor.

**Course Outcomes**

- Students will learn the fundamentals of music theory and harmony. This course also helps prepare them for the music major aural skills test.

3. Complete two of the following history courses:

MUSIC 202 : Civilization: Music 2. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Winter Contact Department; Spring Contact Department; Summer Contact Department
PREREQUISITE: Ability to read musical notation.
DESCRIPTION: History of civilization from the eighteenth century through the present day, primarily from perspective of musical literature and the arts; exploring fundamental questions in human experience, examining formative events in history; understanding value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate foundational knowledge and skills in the methods of investigating, expressing, and evaluating concepts in the Arts, with a focus on music, from ca. 1720 to the present day.
- Communicate effectively through writing with diverse audiences about music, culture and the arts from ca. 1720 to the present day.
- Identify and describe the major cultural ideas and styles from the Western cultural tradition from ca. 1720 to the present day.
- Demonstrate the skills and abilities needed for a life-long critical and evaluative pursuit of art, literature, music, and philosophy

: Honors Civilization: Music 2.

**Course Outcomes**

MUSIC 203 : World Music Cultures. (3:3:0)

WHEN Fall; Winter

TAUGHT:
PREREQUISITE: Non-music major status.
DESCRIPTION: Traditional music of selected cultures of Asia, Oceania, Africa, Europe, and the Americas, including both folk and art music traditions.
NOTE: For non-music majors. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will recognize the diversity of aesthetic values among the world's cultures.
- Students will understand and appreciate cultural traditions outside of their own.
- Students will transcend natural tendencies towards ethnocentricity.
- Students will discover the various ways in which the arts can express values and devotion.

MUSIC 204 : Introduction to Jazz. (3:3:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Non-music major status.
DESCRIPTION: Fostering an understanding and appreciation of jazz music within the context of American history and culture.
NOTE: For non-music majors.

**Course Outcomes**

There are no course outcomes available

4. Complete the following conducting course:
MUSIC 135 : Basic Conducting. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Fundamental concepts and skills for nonmusic majors.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping.

5. Complete four hours of the following:
MUSIC 160R : Performance Study. (.5-1:.5:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Nonmusic major status. Audition may be required.
DESCRIPTION: Private or semiprivate instruction. One to two hours of daily practice.
NOTE: Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, improve their tonal concepts and strengthen their interpretive skills.

: Trumpet.

**Course Outcomes**

: Horn.

**Course Outcomes**

: Trombone.

**Course Outcomes**

: Tuba.

**Course Outcomes**

: Harpsichord.

**Course Outcomes**

: Organ.

**Course Outcomes**

: Percussion.

**Course Outcomes**

: Piano.

**Course Outcomes**

: Violin.

**Course Outcomes**

: Viola.

**Course Outcomes**

: Cello.

**Course Outcomes**

: String Bass.

**Course Outcomes**

: Harp.

**Course Outcomes**

: Flute.

**Course Outcomes**

: Oboe.

**Course Outcomes**

: Clarinet.

**Course Outcomes**

: Bassoon.

**Course Outcomes**

: Saxophone.

**Course Outcomes**

: Euphonium.

**Course Outcomes**

: Woodwinds.

**Course Outcomes**

: Brass and Percussion.

**Course Outcomes**

: Strings.

**Course Outcomes**

: Guitar.

**Course Outcomes**

: Synthesizer.

**Course Outcomes**

: Carillon.

**Course Outcomes**

: Songwriting.

**Course Outcomes**

: Contemporary Voice.

**Course Outcomes**

: Classical Voice.

**Course Outcomes**

6. Complete four hours of performance ensemble (Music 311R-348R, 441R).

*Hours include courses that may fulfill university core requirements.

## Show all Music (Music) Courses

**College of Fine Arts and Communications Home**

**School of Music Home**

**Majors**

- BA in Music
- BM in Commercial Music
- BM in Music Composition

BM in Music Education Emphases

- K–12 Choral
- K–12 Instrumental
- Elementary Music Specialist

BM in Music Performance Emphases

- Brass
- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

**Minor**

- Minor in Music

**Course Information**

- Music (Music) Courses

**Faculty**

# Music (Music)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

*A course without the R suffix may not be repeated more than one time to improve a grade. (Repeating a course with the R suffix does not change the original grade.)*

### 100-Level Courses

MUSIC 101 : Introduction to Music. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Nonmusic major status.
DESCRIPTION: Designed to aid nonmusic majors in developing skills needed for listening to music creatively. Emphasis on masterworks of Western music from major style periods.

**Course Outcomes**

- By listening to music, learning about the historical development of music, learning about its composers, participating in in-class discussions, attending concerts, and by acquiring a vocabulary and knowledge of music terms and concepts, students will be capable of identifying practically any piece of classical music by time period and genre. Students will also possess a much greater understanding of musical forms, genres and styles.

MUSIC 111R : Basic Vocal Skills. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Class instruction in voice for nonmusic majors.

**Course Outcomes**

- Students will prepare four songs and perform memorized a minimum of three times throughout the semester.
- Students will learn to understand the structure and function of the vocal instrument through: flexibly aligned posture; low, flexible breath management; consistent, projected flow phonation; freedom of vocal mechanism, including mouth and jaw; emerging resonance; emerging musicianship -- including dynamics, legato, accuracy; text and diction.

MUSIC 113 : Beginning Piano Techniques 1. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Class instruction in piano for nonmusic majors.

**Course Outcomes**

- Students will understand basic concepts of music theory including related terms and symbols, note and key names, key signatures and time signatures, and counting.
- Students will be able to play chords in blocked and broken positions and use them to accompany melodies.
- Students will be able to play technical exercises such as the Five Finger Position, major and minor triads, major and minor sales and major and minor cadences.
- Students will be able to improvise simple melodies and play chords with them.
- Students will sight read easier music.
- Students will play repertoire pieces as assigned with all dynamics and articulations.
- Students will be able to play individual part of ensembles.

MUSIC 114R : Beginning Piano Techniques 2. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music 113 or instructor's consent.
DESCRIPTION: Continuation of Music 113.

**Course Outcomes**

- Students will be able to:Understand concepts of music theory including triads and inversions and the quality of seventh chords, sixteenth notes and other rhythms.
- Be able to play triads, triad inversions and seventh chords in blocked and broken positions and use them to accompany melodies.
- Be able to play technical exercises such as major and minor scales and arpeggios.
- Improvise simple melodies and play triads and seventh chords with them.

Sight read easier music.
- Understand and be able to discuss the style characteristics of composers and music from the four standard periods of music.
- Play repertoire pieces as assigned with all dynamics and articulations.
- Play individual parts of ensembles fluently.

MUSIC 115 : Basic Organ Skills. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Class instruction in organ for nonmusic majors.

**Course Outcomes**

- Students will be able to prepare and play four-part hymns to a high standard.
- Students will be able to know and apply basic principles of organ registration and construction.
- Students will be able to listen in both practice and performance for perfect legato, precise releases, and independence of line.
- Students will be able to use the standard legato manual and pedal techniques fluently, and to play simple pedal parts in combination with elementary manual parts.
- Students will learn use efficient practice techniques.
- To experience (primarily through listening) a wide range of organ repertoire with three main goals: 1) identify registrational characteristics, 2) identify pieces of interest for future learning, and 3) distinguish between that which might be appropriate for worship and that which is appropriate for concert use.

MUSIC 116R : Organ Techniques and Literature. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Music 115 or instructor's consent.

DESCRIPTION: Continuation of Music 115.

**Course Outcomes**

- Understand and be able to employ various advanced hymn playing techniques.
- Learn at least two organ pieces this semester. Also, experience a wide range of organ repertoire with four main goals: associate selected organ masterworks with their respective composers, regions, and time periods; identify registrational characteristics; identify pieces of interest for future learning; and distinguish between that which might be appropriate for worship and that which is appropriate for concert use.
- Understand and apply more advanced principles of organ registration.
- Understand basics of touch, phrasing and articulation, and to know how to utilize them to enhance the expressiveness of a piece of music.
- Develop fluency in manual techniques, including finger independence, redistribution, finger crossings, glissando, and substitution; and develop greater fluency in pedal playing.
- Develop basic accompanying skills on the organ.
- Cultivate more efficient practice techniques.

MUSIC 117 : Basic Guitar Skills. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Class instruction in guitar for nonmusic majors.

**Course Outcomes**

- Students with no prior guitar experience will be able to play basic accompaniment patterns. This ability will serve them, their family and the community at large in the future.

MUSIC 118R : Guitar Techniques and Literature. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Music 117 or instructor's consent.

DESCRIPTION: Continuation of Music 117.

**Course Outcomes**

- Building upon Music 117, students will hone their basic guitar skills to an intermediate level of self-accompaniment.

MUSIC 135 : Basic Conducting. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Fundamental concepts and skills for nonmusic majors.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping.

MUSIC 160R : Performance Study. (.5-1:.5:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Nonmusic major status. Audition may be required.

DESCRIPTION: Private or semiprivate instruction. One to two hours of daily practice.

NOTE: Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, improve their tonal concepts and strengthen their interpretive skills.

: Trumpet.

**Course Outcomes**

: Horn.

**Course Outcomes**

: Trombone.

**Course Outcomes**

: Tuba.

**Course Outcomes**

: Harpsichord.

**Course Outcomes**

: Organ.

**Course Outcomes**

: Percussion.

**Course Outcomes**

: Piano.

**Course Outcomes**

: Violin.

**Course Outcomes**

: Viola.

**Course Outcomes**

: Cello.

**Course Outcomes**

: String Bass.

**Course Outcomes**

: Harp.

**Course Outcomes**

: Flute.

**Course Outcomes**

: Oboe.

**Course Outcomes**

: Clarinet.

**Course Outcomes**

: Bassoon.

**Course Outcomes**

: Saxophone.

**Course Outcomes**

: Euphonium.

**Course Outcomes**

: Woodwinds.

**Course Outcomes**

: Brass and Percussion.

**Course Outcomes**

: Strings.

**Course Outcomes**

: Guitar.

**Course Outcomes**

: Synthesizer.

**Course Outcomes**

: Carillon.

**Course Outcomes**

: Songwriting.

**Course Outcomes**

: Contemporary Voice.

**Course Outcomes**

: Classical Voice.

**Course Outcomes**

MUSIC 161 : Voice Technique. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance by audition to the School of Music.

DESCRIPTION: Class instruction in voice technique.

**Course Outcomes**

- Through the understanding and use of proper vocal technique, students will musically perform traditional and contemporary Musical Theatre, as well as “pop” pieces, implementing many vocal colors and styles.
- By studying the basic anatomy involved in vocal production, Students will differentiate between those mechanical processes, which will build healthy production and those, which will lead to vocal problems.
- Students will demonstrate knowledge of vocal technique outlined in the text through taking a series of quizzes.
- Students will memorize and perform repertoire that is representative of the various vocal styles used in Musical Theatre literature.
- Students will expand sight-reading skills by participating in oral drills, enhancing the ability to study and learn musical scores.
- Through class devotionals, group discussion and personal reflection (journal writing) each student will begin to synthesize his/her growing skills with his/her moral, spiritual and ethical values.
- By supporting the growth of each member of the class, each student will develop a sense of community and sharing in the process of magnifying his/her own talent, thus downplaying the intensely competitive element of the performing business.

MUSIC 166 : Organ Registration. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent private or group instruction in organ or instructor's consent

DESCRIPTION: Organ stops and their application to various performance styles.

**Course Outcomes**

- During this class students learn basic concepts of organ registration and organ design as they pertain to hymn playing and general church service playing. Additionally, they learn the registration practices associated with historic periods and musical styles corresponding to the differing instrument types, musical genres and composers from the Middle Ages through the present.

MUSIC 176 : Careers in Music Education. (1:1:1)

WHEN TAUGHT: Winter; Summer

DESCRIPTION: Examining preschool through college teaching career options in music; seeking a good fit between personal aspirations, attributes, skills, and job requirements.

NOTE: Open to music majors and nonmajors.

**Course Outcomes**

- Students will become acquainted with possible career options in musiceducation, and will examine the joys, demand, benefits, and potential hazards inherent in each option. They will also identify critical personal attributes and skills necessary for success in each option.

MUSIC 186 : Songwriting 1. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Basic music reading and keyboard skills.

DESCRIPTION: Songwriting for present-day music publishing industry; basic songwriting theory; form, content, and style.

**Course Outcomes**

- Students study such topics as creativity itself, writing techniques, and the importance of collaboration. By the end of the semester each student will have completed several preparatory assignments in addition to a culminating creative song project. The students will receive an introduction to a working MIDI-technology studio. Parallel to these assignments are readings about the models of the music business: music publishing, record labels, legal concepts, the copyright law, etc. Quizzes and a final exam measure retention of these concepts. Students who master the principles advanced will be able to function creatively and to manage others involved in the creation of commercial songs.

MUSIC 188 : Composition 1. (2:2:0)

WHEN TAUGHT: Winter
PREREQUISITE: Music 195 or instructor's consent.
DESCRIPTION: Introduction to principles of recent art music; composition and performance of student works for one to five instruments.

**Course Outcomes**

- Introduction to composing music with modern and and experimental music vocabularies.

MUSIC 190 : Music Fundamentals. (2:2:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Nonmusic major status.
DESCRIPTION: Organizational systems of music, their notation and aural patterns.
NOTE: Required for music minor.

**Course Outcomes**

- Students will learn the fundamentals of music theory and harmony. This course also helps prepare them for the music major aural skills test.

MUSIC 193 : Dictation 1. (1:0:2)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 195.
DESCRIPTION: Development of aural skills through melodic, rhythmic, and harmonic dictation.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify intervals, triads, and scales. You will also be expected to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the outer voices of primary harmonic progressions and identify them by roman and arabic numerals.

MUSIC 194 : Dictation 2. (1:0:2)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 193; concurrent enrollment in Music 196.
DESCRIPTION: Continuation of Music 193.

**Course Outcomes**

- Continues dictation training in diatonic harmony. At the end of this course you should be able to aurally identify intervals, triads, and scales and also to write out rhythms and melodies up to four bars in length. Finally, you will be asked to write the four voices of diatonic harmonic progressions and identify them by roman and arabic numerals.

MUSIC 195 : Music Theory 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major; concurrent enrollment in Music 193.
DESCRIPTION: Writing and analysis in diatonic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in primary harmony (the three basic chords within keys in tonal harmony).

MUSIC 196 : Music Theory 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 195; concurrent enrollment in 194.
DESCRIPTION: Writing and analysis in diatonic and chromatic harmony.

**Course Outcomes**

- Students will be able to part-write (using figured bass, melodic harmonization, etc.) and analyze (using roman and arabic numerals) in a full range of diatonic harmony. Students will also be able to apply the same techniques to elementary chromatic harmony (secondary dominants and common chord modulations).

MUSIC 197 : Sight Singing 1. (.5:0:1)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance as a music major.
DESCRIPTION: Rhythm and pitch-reading skills using two systems of counting and melodic solfeggio singing with hand signs.

**Course Outcomes**

- Students will demonstrate ability to sight-sing, and show mastery of McHose and Gordon counting systems, Curwen hand signs, and solfege moveable do at level 1.

MUSIC 198 : Sight Singing 2. (.5:0:1)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: C- or higher in Music 197.
DESCRIPTION: Continuation of Music 197.

**Course Outcomes**

- students will demonstrate ability to sight-sing and mastery of Gordon and McHose counting systems, Curwen hand signs and solfege at level 2 ability.

### 200-Level Courses

MUSIC 201 : Civilization: Music 1. (3:3:0)

OFFERED: Honors also
WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department
PREREQUISITE: Ability to read musical notation.
DESCRIPTION: History of civilization from Greek antiquity through the seventeenth century, primarily from perspective of musical literature and the arts; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate foundational knowledge and skills in the methods of investigating, expressing, and evaluating concepts in the Arts, with a focus on music, from Ancient Greece to ca. 1720.
- Communicate effectively through writing with diverse audiences about music, culture and the arts from Ancient Greece to ca. 1720.
- Identify and describe the major cultural ideas and styles from the Western cultural tradition from Ancient Greece to ca. 1720.
- Demonstrate the skills and abilities needed for a life-long critical and evaluative pursuit of art, literature, music, and philosophy

MUSIC 202 : Civilization: Music 2. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Winter Contact Department; Spring Contact Department; Summer Contact Department
PREREQUISITE: Ability to read musical notation.
DESCRIPTION: History of civilization from the eighteenth century through the present day, primarily from perspective of musical literature and the arts; exploring fundamental questions in human experience, examining formative events in history; understanding value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate foundational knowledge and skills in the methods of investigating, expressing, and evaluating concepts in the Arts, with a focus on music, from ca. 1720 to the present day.
- Communicate effectively through writing with diverse audiences about music, culture and the arts from ca. 1720 to the present day.
- Identify and describe the major cultural ideas and styles from the Western cultural tradition from ca. 1720 to the present day.
- Demonstrate the skills and abilities needed for a life-long critical and evaluative pursuit of art, literature, music, and philosophy

: Honors Civilization: Music 2.

**Course Outcomes**

MUSIC 203 : World Music Cultures. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Non-music major status.
DESCRIPTION: Traditional music of selected cultures of Asia, Oceania, Africa, Europe, and the Americas, including both folk and art music traditions.
NOTE: For non-music majors. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will recognize the diversity of aesthetic values among the world's cultures.
- Students will understand and appreciate cultural traditions outside of their own.
- Students will transcend natural tendencies towards ethnocentricity.
- Students will discover the various ways in which the arts can express values and devotion.

MUSIC 204 : Introduction to Jazz. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Non-music major status.
DESCRIPTION: Fostering an understanding and appreciation of jazz music within the context of American history and culture.
NOTE: For non-music majors.

**Course Outcomes**

There are no course outcomes available

MUSIC 210R : Topics in Music. (.5-3:ARR:ARR)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Topics vary.

**Course Outcomes**

- Specific learning outcomes are explicated at the outset of the course, but vary from syllabus to syllabus; each class explores in depth a subject supported by the particular research experience and expertise of the graduate faculty member who teaches the course.

MUSIC 221 : Functional Piano Skills 1. (2:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Piano skills determined by entrance diagnostic exam; music major status.

DESCRIPTION: Provides music majors with basic keyboarding ability in such areas as sight reading, technique, harmonization, and score reading.

**Course Outcomes**

- At the end of this class, students should be able to:Play major and minor cadences using tonic, sub-dominant and dominant chords in all keys at a tempo of 80, one chord per beat.
- Harmonize melodies using the assigned accompaniment patterns demonstrating an ability to use chords in root and inverted positions.
- Play common melodies by ear using assigned chordal accompaniments.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play the major and harmonic minor scales that begin on the white keys for one octave up and down the keyboard at a tempo of 100 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform assigned accompaniments to solos demonstrating an ability to follow the performance of the soloist.

MUSIC 222 : Functional Piano Skills 2. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 221; music major status.

DESCRIPTION: Continuation of Music 221.

**Course Outcomes**

- Continuing to build upon skills gained from Mus 221, students will also be able to:Play the assigned progressions in all keys up to four sharps and four flats at a tempo of 88 per half note.
- Harmonize given melodies using the assigned accompaniment pattern and chord symbols demonstrating ease in moving from chord to the next.
- By ear, play a common melodies with the right hand as assigned. With the left hand, play a chordal accompaniment using the assigned accompaniment pattern.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Improvise a melody with the right hand while playing the assigned chordal accompaniment with the left hand.
- Play major and harmonic minor scales that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Play major and minor arpeggios that begin on the white keys for two octaves up and down the keyboard at a tempo of 120 – two notes per beat.
- Be able to sight read given examples with a minimum of mistakes and hesitations.
- Perform assigned repertoire demonstrating an ability to play expressively while observing all terms and symbols, and fingering, at a tempo appropriate for the piece.
- Perform a hymn of your choice from the LDS hymnbook or from a standard hymnbook from another denomination.
- Perform accompaniments to solos as assigned demonstrating an ability to follow the performance of the soloist.
- Prepare a score reading example that relates to your major instrument. Play the line of your instrument and one other line of a differing and transposing instrument.

MUSIC 235A : Instrumental Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct an instrumental performance ensemble.

**Course Outcomes**

- Students will develop the physical techniques and interpretive skills required to be an instrumental conductor.
- Students will be able to:--Explain and demonstrate the conductor's correct posture, stance, baton grip, and hand/arm position.--Explain and demonstrate the conductor's preparatory gesture, ictus, rebound, the conducting patterns.--Demonstrate expressive and ambidextrous use of both hands as it relates to the musical score.--Conduct in various articulation styles, legato, staccato, marcato, & tenuto--Conduct clear beat patterns, mixed meter, subdivision, and cuing technique.--Define musical terms as useful for a conductor., and understand/explain the transpositions of instruments found within a musical score.--Convincingly conduct a variety of musical excerpts

MUSIC 235B : Choral Conducting Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status, C- or higher in Music 194, 196, 198.

DESCRIPTION: Physical techniques and musical understanding required to conduct a choral performance ensemble.

**Course Outcomes**

- Students will demonstrate in their own conducting an understanding of and proficiency with the following techniques: beat patterns, style (legato/marcato), the conducting field, breath releases, melding, the SuperClick, subdivision of beats, fermatas, dynamics, cuing, phrase shaping, irregular meters, and multi metrics.

MUSIC 236 : Fundamentals for Choir Directors. (2:2.0:0.0)

WHEN TAUGHT: Winter

PREREQUISITE: Music 135 or 235 with grade of B- or better; concurrent enrollment in Music 135 or 235 with instructor's consent.

DESCRIPTION: Choral repertoire, score preparation, vocal production, vowels, consonants, intonation, blend, balance, warm-up, rehearsal techniques, and teaching basic music skills.

**Course Outcomes**

- Students will demonstrate understanding and application of effective, efficient choral rehearsal techniques. Their rehearsal demonstration will show competency with score analysis; planning and pacing the rehearsal; dealing with note, harmonic, rhythmical issues; vowel unification.

MUSIC 249 : Sophomore Recital. (0:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Concurrent enrollment in Music 260R and instructor's consent.

DESCRIPTION: Prerecital hearing required at least three weeks before juried recitals.

NOTE: Fee.

**Course Outcomes**

- Preview the entire recital for the organ faculty at least three weeks prior to the performance, and then perform the recital.

MUSIC 250R : Performance Study. (.5-1:0.5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Music major status (K-12 Choral Emphasis or Elementary Music Specialist Emphasis only).

DESCRIPTION: Performance study, private instruction, and studio class.

NOTE: From one to three hours of daily practice required. Fee.

**Course Outcomes**

- In juried exams and other public performances, students will demonstrate mastery of the basic skills required to perform in the Western tradition.

MUSIC 251 : Music Technology 1. (2:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: Commercial Music major status or instructor's consent.

DESCRIPTION: Music technology concept, principles, and applications. Foundation course in Commercial Music core.

**Course Outcomes**

- Students are introduced to the basics of hardware and software technology used in commerical music production. They will demonstrate a working knowledge of sequencing and notation programs.

MUSIC 252 : Music Technology 2. (2:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 251

DESCRIPTION: Continuation of Music 251. Music technology concept, principles, and applications.

**Course Outcomes**

- Continuation of Music 251 with more exposure and application of music technology

MUSIC 256 : Recording Studio 1. (2:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 252

DESCRIPTION: Basic recording theory, operational techniques, and procedures.

**Course Outcomes**

- Student will become familiar with basic audio technology: microphones, monitors, mixers, signal processors, digital audio workstations, audio recorders, etc.
- Student will achieve an intermediate-level of proficiency in audio production techniques, workflows, processes, common tasks, etc.
- Student will develop a sense of the aesthetic values commonly applied to music production.
- This course focuses on experimentation in the studio. Many audio concepts are best understood and appreciated (and greater learning results are achieved) from hands-on demonstration and operation of the involved technology.

MUSIC 257 : Recording Studio 2. (2:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 256

DESCRIPTION: Continuation of Music 256.

**Course Outcomes**

- Student will become familiar with basic audio technology: microphones, monitors, mixers, signal processors, digital audio workstations, audio recorders, etc.
- Student will achieve an intermediate-level of proficiency in audio production techniques, workflows, processes, common tasks, etc.
- Student will develop a sense of the aesthetic values commonly applied to music production.

- This course focuses on experimentation in the studio. Many audio concepts are best understood and appreciated (and greater learning results are achieved) from hands-on demonstration and operation of the involved technology.

MUSIC 259 : Psychology of Performance. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Psychological skills for performers. Topics include audition preparation, conquering stage fright, preventing overuse injury, attention control, creativity. Skills applicable to any performance situation.

**Course Outcomes**

- Students completing this course will be able to:1. Have the skills to manage anxiety through the implementation of relaxation training.2. Use mental visualization to enhance their performance and their performance preparation.3. Use the 5 stages of the performance process to support future performance.4. Create an optimal performance mindset.5. Approach a performance with confidence.6. Break through what is limiting their self expression.7. Step up, risk and enjoy performing.

MUSIC 260R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status.

DESCRIPTION: Private instruction and studio class.

NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

MUSIC 261 : Contemporary Vocal Techniques. (2:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: Music 161 or instructor's consent.

DESCRIPTION: Contemporary vocal styles and techniques, including pop/belt, stage, and studio singing.

**Course Outcomes**

- Students will work on, memorize and perform five song excerpts (Two "classical/legit", [one pre 1966 and one, post 1966] pieces from Musical Theatre literature, two mix/belt pieces from Musical Theatre literature and one Mozart aria. Focus will be on technique, musicianship and interpretation.
- Students will use musical skill to create coherent 16 bar audition cuts for each of the assigned Musical Theatre pieces
- Students will enlarge and demonstrate knowledge of vocal anatomy and proper singing technique through a series of quizzes based on information in text
- Students will enlarge knowledge of Musical Theatre literature by creating a literature list to include, but not limited to, all of the music performed in class.
- Students will evaluate their own, in class performances by observing video recordings and writing evaluations.
- Through class discussion and personal reflection (journal writing,) students will create a vision for their place in the professional Musical Theatre industry and how best to incorporate the aims of a BYU education into that vision.
- Students will evaluate in class performances of peers attending to technique, musicality and communication.
- Students will develop the ability to analyze and explain concepts and principles of voice production through working one on one with peers in teacher/ student assignments.
- Students will keep a journal designed to focus on the importance of maintaining strong moral, ethical and spiritual values while functioning within the professional world.

MUSIC 264 : Keyboard Foundations 1. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 194 & MUSIC 198 & MUSIC 260R

DESCRIPTION: Sight-reading, harmonization, improvisation, and technique at the keyboard.

**Course Outcomes**

- The goal of 264/265 is to give students a strong introduction to various musical skills that they will very likely come across in the professional world. Many of these skills will draw on the student's knowledge of music theory and become the concrete application of that knowledge.As keyboard players –they are expected to have the strongest working knowledge of harmony, as the instrument is polyphonic in nature – not homophonic. The ability to see many notes and instantly divide them into harmonic groupings is crucial and a common denominator for nearly every aspect of this class. Sometimes this grouping skill will include adding or subtracting notes from the page, or supplying notes that are only notated by a symbol. Very often students can play their performance repertoire wonderfully, but are virtually helpless and intimidated when attempting to add or subtract some of their own notes when not written specifically on the page. This tendency represents incomplete musicianship - it is instead only well trained muscles. The outcomes for this course include sight

reading, modulation, score reading, figured bass, transposition and improvisation. After discussing other items that would be considered foundational material for keyboard players in 2012, it was decided that added emphasis would be given to the history of great pianists.

MUSIC 265 : Keyboard Foundations 2. (2:2:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: MUSIC 264

DESCRIPTION: Continuation of Music 264.

**Course Outcomes**

- The goal of 264/265 is to give students a strong introduction to various musical skills that they will very likely come across in the professional world including: Sightreading, Modulation, Open Score Reading, Figured Bass, Transposition and Fakebook Improvisation.

MUSIC 271 : Musicality in the Elementary School. (3:2:1)

PREREQUISITE: Acceptance into the Music Education: Elementary Education Emphasis program.

DESCRIPTION: Survey of authentic folk song and art music tonal systems and structures; their use in developing musical intuition through singing, movement, listening, and playing instruments.

**Course Outcomes**

- Students will analyze folk songs according to tone sets, scale types, rhythm patterns, and formal structures and create an organized index/retrieval system based on such analysis.
- Students will demonstrate ability to sing children' s songs with accurate pitch and intonation.
- Students will Improvise on piano and drums, patterns to guide young children' s movement leading toawareness of rhythms, meters, and formal structures.
- Students will demonstrate ability to accompany on autoharp or guitar, children' s folk and traditional songs, showing anunderstanding of keys and chord patterns.
- Students will take from dictation, folk song melodies and rhythms, and sing with accuracy intervals, pentatonic scales, and modes.
- Students will be able to explain how children learn, and how they learn music, including an understanding of development ateach age, windows of opportunity for learning certain things, and ages and stages of growth.
- Students will demontrate different strategies to effectively teach children using the teaching/learning processes explored in class.
- Students will demonstrate growth in knowledge of the use of technology in music education. In this class you will be asked toa. use finale to input music for flash cardsb. use the web to investigate music program offerings for young childrenc. use the web to locate businesses that specialize in early childhood music books, instruments,and other equipment for music development and explorationd. create a song index retrieval system you can use throughout your education career,e. review interactive music teaching computer programs available for children

MUSIC 272 : Developing Children's Musicality, Grades K--2. (3:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 271

DESCRIPTION: Literature-based curriculum design and planning, grades K--2. Issues of pure intonation and vocal/aural development. Microteaching in a demonstration school.

**Course Outcomes**

- Students will analyze folk songs according to tone sets, scale types, rhythm patterns, and formal structures and create an organized index/retrieval system based on such analysis.
- Students will demonstrate ability to sing children' s songs with accurate pitch and intonation.
- Students will Improvise on piano and drums, patterns to guide young children' s movement leading toawareness of rhythms, meters, and formal structures.
- Students will demonstrate ability to accompany on autoharp or guitar, children' s folk and traditional songs, showing anunderstanding of keys and chord patterns.
- Students will take from dictation, folk song melodies and rhythms, and sing with accuracy intervals, pentatonic scales, and modes.
- Students will demonstrate growth in knowledge of the use of technology in music education. In this class you will be asked toa. use finale to input music for flash cardsb. use the web to investigate music program offerings for young childrenc. use the web to locate businesses that specialize in early childhood music books, instruments,and other equipment for music development and explorationd. create a song index retrieval system you can use throughout your education career,e. review interactive music teaching computer programs available for children
- Students will be able to explain how children learn, and how they learn music, including an understanding of development ateach age, windows of opportunity for learning certain things, and ages and stages of growth.
- Students will demontrate different strategies to effectively teach children using the teaching/learning processes explored in class.

MUSIC 273A : Percussion Techniques. (.5:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: Percussion performance major or music education major with percussion emphasis.

DESCRIPTION: Accessory and concert percussion instruments and related performance literature.

**Course Outcomes**

- Introduce basic concepts utilized in concert percussion performance. The focus will be on instruments that would be the part of a percussion section in a concert band, orchestra, or percussion ensemble.Students will become familiar with basic techniques on snare drum, bass drum, cymbals, timpani, keyboard percussion and percussion accessory instruments. Application of these techniques will be related to literature as well as an understanding of basic maintenance, tuning and care of the instruments. Students will be able to demonstrate their ability to play these instruments in a variety of ensemble performance situations with confidence.

MUSIC 273B : Percussion Techniques. (.5:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: Music 273A or instructor's consent.

DESCRIPTION: Introduction to world percussion, drum set, and marching percussion techniques.

**Course Outcomes**

- Students will become familiar with basic techniques on instruments from Africa, Brazil, Cuba, the Middle East, Asia, and other parts of the world. Some exposure to these exotic instruments will take place with an emphasis of “hands on” experiences. Application of these techniques will be related to literature and recordings as well as an understanding of basic maintenance, tuning and care of the instruments. Students will be able to demonstrate their ability to play these instruments in a variety of performance situations with confidence.

MUSIC 275 : Exploration of Music Teaching. (4:Arr.:Arr.)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 176; FBI fingerprint and background clearance.

DESCRIPTION: Teaching experiences and seminars aimed at helping prospective music teachers experience the demands and opportunities associated with teaching secondary music students.

**Course Outcomes**

- Students will complete 12 observations of music classes being taught by different local music teachers as an opportunity for exposure, reflection and gathering materials for future reference.
- Each student will complete at least two mentored formal teaching experiences involving junior high music students, with opportunity for reflection and feedback.
- Students will complete an individual Teacher Work Sample to demonstrate their ability to understand a teaching situation, and how to plan, implement and reflect on teaching a series of lessons.
- @font-face { font-family: "Times";}@font-face { font-family: "Book Antiqua";}p.MsoNormal, li.MsoNormal, div.MsoNormal { margin: 0in 0in 0.0001pt; font-size: 12pt; font-family: "Times New Roman"; }div.Section1 { page: Section1; }ol { margin-bottom: 0in; }ul { margin-bottom: 0in; }Students will interact with musics of diverse cultures, styles and contexts in class activities.

MUSIC 277 : Elementary General Music Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Music 194 and 198 or concurrent enrollment.

DESCRIPTION: Methods and materials for teaching general music, K--12. Cognitive development and learning styles as a basis for instructional strategies. Includes Dalcroze, Orff, and Kodaly.

**Course Outcomes**

- Students will sing children’ s songs with accurate pitch, quality tone, and in a range appropriate for children’ s vocaldevelopment.
- Students will increase their personal repertoire of songs for children including songs from other cultures.
- Students will use sounds in creative ways to express musical and extra-musical ideas.
- Students will analyze music literature (songs and recordings) for teaching specific music concepts.
- Students will demonstrate an openness to new ways of teaching, embracing appropriate teaching strategies and literature.
- Students will show a sense of commitment to and willingness to serve music education in part by active participationin the BYU preschool lab, UMEA Conference and MENC student activities.
- Students will articulate a personal philosophy of music education for children and for the “ general” student. Include in your discussion, a knowledge of child development in music, how learning takes place, and the issue of talent vs. learning.
- Students will demonstrate their understanding of the music elements with related concepts, and their significance in the teaching/learningprocess.
- Students will know the National Standards in Music and why they are important, and be aware of expectations for eachgrade level.
- Students will be conversant in the music pedagogies of Orff, Dalcroze, MMCP, Kodaly, ETM and others as explored inclass.
- Students will describe musical development from infancy through childhood.
- Students will describe how music impacts the social/emotional, intellectual and physical development of the learner.
- Students will grow in ability to sequence learning activities consistent with what we know about child development, music concepts, and music literature.

MUSIC 278 : Secondary General Music Methods. (2:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: C- or higher in Music 275.

DESCRIPTION: Using an experiential approach, exploring ways to provide rich musical experiences for secondary students in general music situations, including mapping, additive approach, and other methods. Effective teaching and classroom management also addressed.

**Course Outcomes**

- Through an experiential appoach, students will become familiar with secondary education methodssuch as mapping, additive approach and other methods. As well, students will receive instruction of effective classroom management.

MUSIC 284 : Jazz Improvisation 1. (2:2:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 194

DESCRIPTION: Beginning improvisation: theory and technique.

**Course Outcomes**

- Students will learn the fundamentals of jazz improvisation and how to apply them in a performance environment. Such fundamentals will include blues scales and chord progressions, typical jazz chord progressions, melodic patterns for improvisation adn others.

MUSIC 286 : Introduction to the Music Business. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Music major status.

DESCRIPTION: The music business and its models. Guided research topics for all musicians.

**Course Outcomes**

- Music 286 is required in the media music studies major and is a recommended elective for all music majors. In the vernacular of the day, we teach, "Don't do the music business; be a music business." The course stresses that all musicians need a business plan, and is taught in a manner relevant for all musicians. The semester's work includes exposure to a variety of guest lectures, and creation of personal semester projects, including research, which take the form of a personal business plan. Retention of material is measured with quizzes and a final exam.

MUSIC 287 : Electronic Music Composition. (2:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: Music 188 or instructor's consent.

DESCRIPTION: Introduction to composition with digital audio and related media.

**Course Outcomes**

- Introduction to modern and experimental music vocabularies via composition in electronic media.

MUSIC 288 : Composition 2. (2:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 287

DESCRIPTION: Invention and exploration of sound, control of multivoiced textures and larger forms, and recent art music.

**Course Outcomes**

- Intermediate study of composition with modern and experimental music vocabularies.

MUSIC 290 : Music Theory for MDT Majors. (4:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 113; Music dance theatre (MDT) major status.

DESCRIPTION: Music theory, sight singing, aural dictation, and keyboard harmony.

**Course Outcomes**

- Students will confidently sight read any new piece of music placed in their hands.
- Students will accompany themselves from the chord symbols in sheet music
- Students will 'fill in" at the piano whenever the accompanist is absent.
- Students will create functional, pleasant accompaniments to their vocals using chord symbols.
- Students will discover a new level of confidence based on increased competence.
- Through class discussion students will examine BYU's core values and how they can be applied in future career paths.

MUSIC 293 : Dictation 3. (1:0:2)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 194; concurrent enrollment in Music 295.

DESCRIPTION: Continuation of Music 194.

**Course Outcomes**

- At the conclusion of this course, you should be able to aurally identify compound intervals. You will also be expected to write out rhythms and melodies up to eight bars in length. Finally, you will be asked to write the four parts of harmonic progressions and identify them by roman and arabic numerals (these harmonies will include chromatic harmonies—secondary dominants, borrowed chords, and augmented sixth chords).

MUSIC 294 : Dictation 4. (1:0:2)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 293; concurrent enrollment in Music 296.

DESCRIPTION: Continuation of Music 293.

**Course Outcomes**

- In this concluding course in dictation we practice music dictation of four things: 1. linear tetrachords 2. twelve-tone rows 3. syncopated rhythms (always played in four measures of 3/4) 4. modulating chord progressions

MUSIC 295 : Music Theory 3. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 196; concurrent enrollment in Music 293.

DESCRIPTION: Extended chromatic techniques and introduction to twentieth-century concepts.

**Course Outcomes**

- Students will be able to part-write and analyze (using means covered in Music Theory 1 and 2) in a full range of chromatic harmony (including Neapolitan and augmented sixth chords, as well as enharmonic and common-tone modulations). Students will also be able to identify and analyze impressionist techniques (including types of planing, tall chords, and alternative scales).

MUSIC 296 : Music Theory 4. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 295; concurrent enrollment in Music 294.

DESCRIPTION: Set theory, serialism, and late twentieth-century concepts.

**Course Outcomes**

- Students will learn how to use pitch-class set analysis (identifying, labeling, and comparing any groups of pitches) and various serial techniques (including the twelve-tone method), as well as to analyze post-impressionistic techniques (bichordalism, polytonality, quartal and quintal harmony, secundal harmony, and pandiatonicism) and identify (and possibly write with) a variety of rhythmic, indeterminate, minimalist, microtonal and possibly other contemporary techniques.

MUSIC 297 : Sight Singing 3. (.5:0:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C- or higher in Music 198.

DESCRIPTION: Continuation of Music 198.

**Course Outcomes**

- Students continue to develop skills in sight singing, as built on the foundations of Sight Singing 1 and 2.

MUSIC 298 : Sight Singing 4. (.5:0:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: C- or higher in Music 297.

DESCRIPTION: Continuation of Music 297.

**Course Outcomes**

- Students build on the fundamentals of sight singing 1,2 and 3.

**300-Level Courses**

MUSIC 300 : Music Theatre in Contemporary Culture. (1:3:0)

PREREQUISITE: MUSIC 290; TMA 114; concurrent enrollment in Dance 300 and TMA 300.

DESCRIPTION: Analysis of the form, evolution, and influence of music dance theatre in Western culture.

**Course Outcomes**

- Students will be able to analyze, synthesize and articulate the significant facets of music, dance and theatre within the historical context of the musical theatre genre.
- Students will be able to analyze, synthesize and articulate the significant facets of music, dance and theatre within the historical context of the musical theatre genre.

MUSIC 301 : Survey of Music Literature 1. (2:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices from antiquity to the Enlightenment.

**Course Outcomes**

There are no course outcomes available

MUSIC 302 : Survey of Music Literature 2. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 and 202, or equivalent.

DESCRIPTION: Survey of musical genres, forms, styles, and performance practices in the 18th and 19th centuries.

**Course Outcomes**

There are no course outcomes available

MUSIC 303 : Survey of Music Literature 3. (2:2:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: MUSIC 294 & MUSIC 296 & MUSIC 298; Music major status; Music 201 & 202, or equivalent.

DESCRIPTION: Survey of music genres, forms, styles, and performance practices from the late Romantic era to the present.

**Course Outcomes**

There are no course outcomes available

MUSIC 307 : World Music. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Exploration of music making from a global perspective.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to demonstrate an understanding of the methods of musical creativity in several non-Western cultures, including various approaches to melodic, rhythmic, timbral, and formal organization.They will also be able to identify various musical instruments as well as the methods through which various cultures conceptualize and taxonomize instruments, and be able to show an understanding of how various modes of musical transmission (oral tradition, notation, media) affect musical practices over time.
- Students will articulate how a culture's values can be embodied and discerned within musical practices.Students will learn how music's organizational principles (see the previous learning outcome) can be mapped onto various non-musical aspects of that culture. In other words, students will be able to observe and articulate how the way a musicsounds relates to what that music means. Some areas of exploration related to this learning outcome could include:musical practices in various cultures that project power and legitimacy within political contextsmusical practices in various cultures that reinforce social cohesion in a community contextmusical practices in various cultures that convey reverence or worship in a religious contextIn discussions, assignments, and essays, students will use this concept of "cross-domain mapping" to articulate the connection between sound and meaning in various musical contexts. They will also use this as a basis to for written self-reflection:How does the music the students themselves use in personal, social, and religious contexts resonate with their personal, community, and religious beliefs and values?How do LDS musical practices, for example, reflect, shape, and strengthen Mormon identity?
- Students will be able to articulate and demonstrate how the discipline of ethnomusicology and the scholarly methods it entails foster cross-cultural awareness, understanding, and empathy.Students will fulfill this objective by reading about the history and practices of ethnomusicology as an academic discipline, studying the methods and ethical considerations applied in ethnomusicological fieldwork, writing about their findings in assignments and exam essays, and completing a review of a scholarly monograph based on ethnomusicological fieldwork. Students will articulate in a written essay how the goals, methodologies, and ethical standards of the discipline of ethnomusicology align with the purposes and outcomes articulated in BYU'sGlobal and Cultural Awareness Foundation Document.
- Students will demonstrate an understanding of the ways in which music reflects and contributes to large-scale international and intercultural changes.Students will examine the ways in which major changes such as colonial and postcolonial political shifts, international economic developments, new media technologies, shifting social norms, religious proselytizing, etc., affect and are affected by musical practices. Students will demonstrate an understanding of musical culture as a continual interplay of tradition, hybridization, retrenchment, and change, and will be able to draw on various specific musical case studies to reflect on the complex cultural issues globalism raises. These case studies could include such things as:How various historical encounters, from the Silk Road to the Crusades to the World Fairs of the late 19th and 20th centuries, contributed to musical cross-pollination.How a Colombian soap opera helped turn a little-known provincial folk music style into an international phenomenon.How the advent of the recording industry in India dramatically changed the role of women in Indian classical music.How a Tibetan folk musician living in the U.S. balances his sense of stewardship over his tradition with the desire to broaden his audience.How members of the LDS Church throughout the world navigate the relationship between local traditional culture and shared LDS culture through the musical celebrations that precede temple dedications.Etc.

MUSIC 308 : History of Jazz. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MUSIC 194 & MUSIC 196 & MUSIC 198; Music major status; Music 201, 202 or equivalent.
DESCRIPTION: Survey of jazz history, emphasizing periods, styles, and artists through the analysis of published transcriptions and arrangements.

**Course Outcomes**

- Master an assigned repertory of classic jazz recordings
- Be able to describe the main differences between important styles and artists
- Learn to transcribe and analyze jazz solos

MUSIC 309 : Vocal Techniques for Choir Men. (1:2:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Vocal training to prepare student for participation in an advanced choral ensemble. Topics will cover vocal technique, sight singing, and choral musicianship.

**Course Outcomes**

- Men will demonstrate in their singing the ability to sing with proper breathing, phonation, resonation, and articulation. Men will access head tone, showing it to be part of their overall vocal technique.

MUSIC 311R : University Chorale. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
NOTE: No audition required.

**Course Outcomes**

- Students will demonstrate in performance their ability to read, learn, memorize, and polish the choral literature chosen as the choir's repertoire for the semester, together with all the specific technical and musical demands of the chosen music.

MUSIC 312R : Men's Chorus. (1:0:5)

WHEN TAUGHT: Fall; Winter

**Course Outcomes**

Students will learn to:1. Rehearse selected choral repertoire in disciplined, efficient manner, in order to perform with excellence.2. Develop a personal understanding of the details that contribute to choral excellence; healthy vocal technique, precision, blend, intonation, artistry.3. Participate in choral performances that display the ensemble's mastery of the above.

MUSIC 313R : Women's Chorus. (1:0:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition and director's consent.

**Course Outcomes**

- 1. Rehearse selected choral repertoire in disciplined, efficient manner, in order to perform with excellence.2. Develop a personal understanding of the details that contribute to choral excellence; healthy vocal technique, precision, blend, intonation, artistry.3. Participate in choral performances that display the ensemble's mastery of the above.

MUSIC 314R : Concert Choir. (1:0:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition and director's consent.

**Course Outcomes**

- Students will learn to:1. Rehearse selected choral repertoire in disciplined, efficient manner, in order to perform with excellence.2. Develop a personal understanding of the details that contribute to choral excellence; healthy vocal technique, precision, blend, intonation, artistry.3. Participate in choral performances that display the ensemble's mastery of the above.

MUSIC 315R : University Singers. (1:0:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition and director's consent.

**Course Outcomes**

- Students will demonstrate in performance their ability to read, learn, memorize, and polish the choral literature chosen as the choir's repertoire for the semester, together with all the specific technical and musical demands of the chosen music.

MUSIC 316R : Opera Workshop. (1:6:0)

WHEN TAUGHT: Fall

PREREQUISITE: Audition and instructor's consent.

DESCRIPTION: Training and experience in operatic choral music and stage movement.

**Course Outcomes**

- Students will learn the performance techniques required to sing art songs and operatic arias from the western classical vocal traditions.
- Students will apply these skills in the performance of songs or arias in the class.

MUSIC 317R : Opera Ensemble. (.5-3:6:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Audition and instructor's consent.

DESCRIPTION: Training and experience in operatic excerpts, chamber opera, and full productions for operatic soloists.

**Course Outcomes**

- Through performance opportunities before an audience, students will demonstrate a more comprehensive understanding of the basic skills taught in the Opera Workshop course (See Learning Outcomes for the respective courses; Mus 316R and 616R).

MUSIC 318R : Music Theatre Ensemble. (1:0:5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Audition and instructor's consent.

DESCRIPTION: Auditioned chorus or orchestra for opera or music dance theatre productions.

**Course Outcomes**

No outcomes are available at this time.

MUSIC 320R : Young Ambassadors. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition and director's consent.

DESCRIPTION: Participation as soloists, coaches, or directors in music dance theatre performances.

**Course Outcomes**

- Students will explore the Music Dance Theatre tradition of America as they learn song and dance sequences from the American Songbook.
- Students will progress in their level of proficiency in dance and singing through intensive rehearsal and frequent performance opportunities.
- Students will serve in the community, in public schools, and with service organizations nationally and internationally to build bridges of understanding between cultures and peoples.

MUSIC 321R : University Orchestra. (1:2:0)

WHEN TAUGHT: Fall; Winter

NOTE: No audition required. Does not satisfy large ensemble requirement for majors.

**Course Outcomes**

- The University Orchestra seeks to further the musical development of its musicians, to increase appreciation and understanding of standard works in classical music,and to experience the joy of making music alongside fellow non-music majors.

MUSIC 322R : University Band. (1:2:0)

WHEN TAUGHT: Winter

NOTE: No audition required. Does not satisfy large ensemble requirement for majors.

**Course Outcomes**

- As learning outcomes, Students should be able to apply the musical principles of individual, section, and ensemble musical tone production, correct notes, rhythms and dynamics, balance and blend. Students should be able to demonstrate application of these principles by successfully performing college-level band repertoire in a formal concert at semester's end.

MUSIC 323R : Marching Band. (1:0:6)

WHEN TAUGHT: Fall

PREREQUISITE: Audition or director's consent.

**Course Outcomes**

- As learning outcomes, students should be able to apply the musical principles of individual, section, and ensemble musical tone production, correct notes, rhythms and dynamics, balance and blend, and correct marching execution. Students should be able to demonstrate application of these principles by successfully performing college-level marching band repertoire in rehearsal and performances.

MUSIC 324R : Cougar Band. (1:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: Audition or director's consent.

**Course Outcomes**

- As learning outcomes, students should be able to apply the musical principles of individual, section, and ensemble musical tone production, correct notes, rhythms and dynamics, balance and blend. Students should be able to demonstrate application of these principles by successfully performing college-level pep band repertoire in rehearsals and performances.

MUSIC 325R : Symphonic Band. (1:0:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Students will expand individual confidence and performance proficiency through the medium of a large ensemble.
- Students will develop and demonstrate critical listening skills through the performance of band literature.
- students will expand their aesthetic horizonsby developing an appreciation and understanding of various peoples and their cultures as expressed through music

MUSIC 326R : Wind Symphony. (1:0:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Students will expand individual confidence and performance proficiency through the medium of a large ensemble.
- Students will develop and demonstrate critical listening skills through the performance of band literature.
- Students will expand their aesthetic horizons by developing an appreciation and understanding of various peoples and their cultures as expressed through music

MUSIC 328 : Script, Movement and Score Analysis. (1:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 229; Music dance theatre BFA major status; TMA 114; concurrent enrollment in Dance 328, and TMA 328.

RECOMMENDED: Concurrent enrollment in Music 300, Dance 300, and TMA 300.

DESCRIPTION: The integration into performance of information gathered from careful research and analysis of movement style, script and score.

**Course Outcomes**

- Students will compile a written record of these 'landmark' musical theatre works as a personal resource guide
- Students will be familiar with the selected 'landmark' productions of the American musical theatre.
- Students will learn to implement into their musical theatre performance essential acting, vocal, and movement skills as outlined in the evaluation forms
- Student performance work will be consistently rated in the 3.5 and above category based on the 5 point evaluation form scale.

- Students will be able to integrate into their performance detailed feedback from faculty/peers.
- Students will approach their work in a competent, courteous and professional manner.

MUSIC 329R : Folk Ensemble. (1:0:4)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Director's consent.
DESCRIPTION: Traditional bluegrass ensemble.
NOTE: Performs with BYU International Folk Dancers.

**Course Outcomes**

- Folk Music students will learn to be team players as ensembles members. All Folk Music students are required to perform at least one time per semester. As students become better team players in their respective ensembles they will also learn management, leadership, and music performance, and music arranging skills. These skills will help them to proliferate music in their future lives and families.

MUSIC 330R : Steel Band. (1:0:2)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Director's consent.

**Course Outcomes**

- Students should be exposed to music outside the Western European tradition. Most of the music performed in this ensemble includes Calypso and Soca styles from the island nation of Trinidad and Tobago. We will sometimes include a pop or classical number, but most of the time we will focus on “groove” music. This means that having a conductor will be rare and the student is expected to listen and learn how to contribute to that “groove”.

MUSIC 331R : Jazz Combos. (1:1:2)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.

**Course Outcomes**

- Students will learn how to function in a traditional jazz combo setting, including learning head charts, standard lead sheet tunes, and arrangements. They will also further their knowledge of and experience in improvising in a typical professional performance setting in a variety of jazz styles.

MUSIC 332R : Show Band. (1:0:6)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.
DESCRIPTION: Contemporary and traditional show music (Young Ambassadors) and ethnic music (Living Legends).

**Course Outcomes**

No outcomes are available at this time.

MUSIC 333R : Jazz Ensemble. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Audition.
DESCRIPTION: Includes Jazz Ensemble (big band), Jazz Lab Band (entry-level big band), and Vocal Jazz Ensembles.

**Course Outcomes**

- Students will learn how to perform in a traditional big band setting. Standard and representative repertoire from the various jazz styles will be taught and explored in this course.

: Jazz Lab Band.

**Course Outcomes**

: Vocal Jazz Ensemble.

**Course Outcomes**

MUSIC 334R : Synthesis. (1:0:4)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.

**Course Outcomes**

- Students will learn to perform in a traditional big band setting. Music will be selected from the standard and representative repertoire of jazz styles.

MUSIC 335R : Jazz Legacy Band. (1:2:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.
DESCRIPTION: Traditional ensemble specializing in early jazz. Band occasionally tours off campus.

**Course Outcomes**

- Students will perform traditional jazz, improvising within the traditional jazz tutti texture. Each student will demonstrate the roll of his or her instrument within the context of traditional jazz.
- Each student will improvise solos in the style of the early jazz masters who play his or her instrument.
- Students will play typical introductions, endings, solo backgrounds, texture routines characteristic of traditional jazz styles
- Students will demonstrate the ability to play 25 "Dixieland Standards." These are among the most commonly performed tunes that are played by professional "Dixieland" bands at casual performance engagements (gigs).Standard tunes: AvalonBasin Street BluesBig Butter and Egg ManBlack and BlueBourbon Street ParadeDo You Know What it MeansHigh Societyl Can't Give You Anything But Lovel Found A New BabyIndiana (Back Home Again in)Ja DaJust A Closer Walk With TheeMuskrat RambleRoyal Garden BluesSt. James InfirmarySt. Louis BluesStruttin' With Some BarbecueSweet Georgia BrownThat's A PlentyTin Roof BluesTwelfth Street RagUp a Lazy RiverWhen the Saints Go Marching InWhen You're Smiling Won't You Come Home Bill Bailey

MUSIC 336R : Balinese Gamelan. (1:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Playing and performing on the Balinese gamelan (percussion) instruments.

**Course Outcomes**

- Students participating in Gamelan will learn the mental and technical skills required to memorize and perform works from the traditional Balinese gamelan repertoire, including becoming proficient on one or more of the instruments in the ensemble.
- Students will also use music as a window into the relationship between Balinese musical practice and Balinese social and religious culture, and, more broadly, develop a deep appreciation for this musicâ s profound contribution to the life experience.
- In the spirit of BYUâ s global mission and the breadth of educational experience advocated in BYUâ s guiding documents, successful students in gamelan will develop a greater understanding of and respect for music and traditions outside of their native experience. This respect will better prepare them to represent BYU and the Church in an increasingly interconnected global society.

MUSIC 337R : Symphony Orchestra. (1:0:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Students will enhance their performance proficiency through large ensemble playing.

MUSIC 338R : Philharmonic Orchestra. (1:0:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- The BYU Philharmonic seeks to discover the truth imbedded in the greatest works for symphony orchestra through study, preparation, and performance, both for its own musicians and for audiences who hear them.

MUSIC 339R : Chamber Orchestra. (1:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- The Chamber Orchestra seeks to discover the truth imbedded in the greatest works for chamber orchestra through study, preparation, and performance, both for its own musicians and for audiences who hear them. The orchestra bears the responsibility of representing the School of Music, the University, and the Church through regional, national, and international tours.

MUSIC 340R : Harp Ensemble. (.5:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Director's consent.

**Course Outcomes**

- The expected outcomes of this course are improved ensemble playing and arranging skills, and an expanded ensemble repertoire for each student

MUSIC 341R : Brass Chamber Music. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Director's consent.

**Course Outcomes**

- Students will demonstrate the ability to perform standard chamber ensemble music at an appropriate artistic level for their year of study.

: Brass Ensemble.

**Course Outcomes**

: Brass Choir.

**Course Outcomes**

: Trombone Choir.

**Course Outcomes**

MUSIC 342R : Early Music Ensemble. (1:1:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Director's consent.

**Course Outcomes**

No outcomes are available at this time.

MUSIC 343R : Guitar Ensemble. (1:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Director's consent.

**Course Outcomes**

- Students will gain ensemble experience with other guitarists, develop better sight-reading skills, and perform in a formal setting during the semester.

MUSIC 344R : Keyboard in Ensemble. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music 260R or instructor's consent.

DESCRIPTION: Accompanying and ensemble performance.

**Course Outcomes**

- Skills to Develop in 344r:Understand how to best balance their playing with another instrument and comprehend how that balance evolves to meet the needs of different instruments.2. Understand how to communicate musical ideas through body language.3.Develop musical “ESP”. This is achieved when a pianist works with the same person over a long period of time, and develops better sensitivity. The pianist and soloist can sense changes in tempi, phrasing, and dynamics through concentrated listening, needing almost no visual contact. 4.Understand the subtext of the score.5. Develop a genuine appreciation for the art of the accompanist.

MUSIC 345R : Percussion Ensemble. (1:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Director's consent.

**Course Outcomes**

- To expose students to the music written for percussion ensemble, to help students develop technique(s) on a myriad of instruments while contributing musically, and to present musical situations with and without a conductor. The percussion parts in a percussion ensemble differ drastically from those found in traditional orchestral and band percussion scores in that most performers must be not only rhythmically proficient, but melodically, harmonically and texturally expressive.

MUSIC 346R : String Chamber Music. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- There are four main areas of student outcomes important for this course: the building of repertoire, experience performing, exploring the enormous variety of timbre and color in the chamber music setting, and artistically improving how you communicate musically with your performing colleagues, as well as your audience.

MUSIC 347R : Vocal Point. (1:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Director's consent.

**Course Outcomes**

- The desired outcome of vocal point is to represent the School of Music and BYU to the World with a high degree of artistry and capturing the personality of our campus, through the medium of male a cappella choral music.

MUSIC 348R : Woodwind Chamber Music. (1:1:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Director's consent.

**Course Outcomes**

- Students will demonstrate performance proficiency on their instrument within the context of woodwind chamber music.

: Woodwind Ensemble.

**Course Outcomes**

: Saxophone Ensemble.

**Course Outcomes**

: Flute Choir.

**Course Outcomes**

MUSIC 349 : Junior Recital. (0:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Concurrent enrollment in Music 360R or 460R and instructor's consent. Prerecital hearing required at least three weeks before juried recitals.

NOTE: Fee.

**Course Outcomes**

- Students will perform a full recital of repertory, artistically appropriate to the year of study.

MUSIC 351 : Audio Applications 1. (2:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 257

DESCRIPTION: Advanced concepts in digital sound editing.

**Course Outcomes**

- Students will become familiar with basic audio workstations; particularly the use of ProTools. Basic editing and recording principles using a workstation are taught, including, importing of files, editing, signal processing, and recording.
- This course focuses on experimentation in an audio workstation. Each student will have a workstation available to them in the classroom. This hands-on experience allows the students to follow demonstrations and accomplish tasks on their own workstation. They will be given several projects to accomplish on their own as well.
- Students will achieve an intermediate-level of proficiency in digital audio editing and recording techniques.

MUSIC 352 : Audio Applications 2. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 351

DESCRIPTION: Advanced concepts in digital sound editing.

**Course Outcomes**

- Students will use basic audio workstations; and particularly ProTools to perform advanced editing. Audio workstation are used to import files, edit, and produce recordings.
- This course focuses on advanced use of an audio workstation. Each student will have a workstation available to them in the classroom. This hands-on experience allows the students to follow demonstrations and accomplish tasks on their own workstation. They will be given several projects to accomplish on their own as well.
- Students will achieve advanced proficiency in digital audio editing and recording techniques.

MUSIC 355R : Recording Workshop. (1:1:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 251; or MUSIC 257

DESCRIPTION: Studio projects in multitrack recording for records, broadcast, film, and television.

**Course Outcomes**

- Music 355R is the final recording projects class before graduation. The assignment is to produce a commercially viable stereo recording utilizing skills acquired from all previous class work, both artistic and technical.

MUSIC 359R : Performance Study. (1-2:1:1)

OFFERED: For those who have completed private instruction requirements for their degree.

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status; completion of degree requirements in 260R, 360R, and 460R; instructor's consent.

DESCRIPTION: Private instruction and studio class requiring from one to four hours of daily practice.

NOTE: Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, improve their tonal concepts and strengthen their interpretive skills.

MUSIC 360R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Music major status; jury approval.

DESCRIPTION: Private instruction and studio class.

NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- Students will learn how to improve their technical facility and artistic expression in their chosen area of musical

study.

MUSIC 363 : Vocal Pedagogy. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Junior standing as vocal performance or choral music education major or instructor's consent.

DESCRIPTION: Introduction to physiology, acoustics, and pedagogy of singing.

**Course Outcomes**

- Students will learn the physiology and biomechanics of the human voice.
- Students will learn the acoustical laws which govern sound as applied to the human voice.
- Students will learn pedagocial approaches to teaching voice which conform to physical and acoustical principles.

MUSIC 364 : Keyboard Pedagogy. (2:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 249; Junior standing and successful completion of Music 249.

DESCRIPTION: Basic pedagogical principles as applied to keyboard instruments.

**Course Outcomes**

- The objective of this course is to provide a foundation for teaching private piano to students, to increase the students' ability to utilize the various piano courses and techniques that will help provide basic skills for the art.
- Through reading about successful methods and teachers, and listening to lectures the students will gain the necessary background for becoming good teachers and beginning a career as a professional teacher in their own established studio.

MUSIC 365 : Piano Pedagogy. (2:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 364

DESCRIPTION: Preparation for supervised private or group teaching.

**Course Outcomes**

- As a continuation of Music 364, the objective of this course is to provide a foundation for teaching private piano to students, to increase the students' ability to utilize the various piano courses and techniques that will help provide basic skills for the art.
- As a continuation of Music 364, through reading about successful methods and teachers, and listening to lectures the students will gain the necessary background for becoming good teachers and beginning a career as a professional teacher in their own established studio.

MUSIC 366 : Organ Pedagogy. (2:2:1)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: MUSIC 364

DESCRIPTION: Preparation for supervised private or group teaching.

**Course Outcomes**

- Learn teaching techniques from prominent music teachers (including organ teachers) both in and out of the local area.

MUSIC 367 : Woodwind Pedagogy. (2:2:1)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Woodwind performance major status or instructor's consent.

**Course Outcomes**

- Students will gain the knowledge and skill necessary to become en effective private teacher on their chosen instrument.
- Students will demonstrate a knowledge of woodwind pedagogy, especially as it applies to their chosen instrument.

MUSIC 368 : Brass Pedagogy. (2:2:1)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Brass performance major status or instructor's consent.

**Course Outcomes**

- Students will demonstrate an understanding of the fundamentals of brass pedagogy.
- Students will demonstrate a knowledge of the necessary background for becoming good private teachers and beginning a career as a professional teacher in their own established studios.
- Students will demonstrate a working knowledge of brass performance traditions, including recordings, style, and legacy of significant brass performers.

MUSIC 369B : String Pedagogy. (2:2:1)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instrumental music major on double bass, or instructor's consent.

**Course Outcomes**

- At the end of this course, students will understand all the mechanics of the instrument, know more about their history and evolution, and be able to clearly verbalize, teach and communicate such knowledge.

MUSIC 369C : String Pedagogy. (2:2:1)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instrumental music major on cello or instructor's consent.

**Course Outcomes**

- Students will develop the basics for a career as a private cello teacher.
- Students will become familiar with a wide variety of teaching methods.
- Students will establish appropriate levels for beginning, intermediate, and advanced teaching.

MUSIC 369D : String Pedagogy. (2:2:1)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instrumental music major on harp or instructor's consent.

**Course Outcomes**

- The expected outcomes of this course are an increased knowledge and understanding of methods of pedagogy related to teaching harp in a private setting. Each student should end the class with a better understanding of his/her personal teaching philosophy, as well as lesson plans and tools for setting up a private studio.

MUSIC 369E : String Pedagogy. (2:2:1)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Instrumental music major on guitar or instructor's consent.

**Course Outcomes**

- Students will gain experience instructing students at the beginning and intermediate levels, gain a deeper knowledge of classical guitar and jazz guitar techniques, and analyze various guitar methods and approaches.

MUSIC 369A : String Pedagogy. (2:2:1)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Instrumental music major on violin or viola, or instructor's consent.

**Course Outcomes**

- Students will gain knowledge about the most popular string teaching methods of instruction and will be able to run a private studio from beginner through high school levels. Students will study and know much about several of the main violin and viola pedagogues.

MUSIC 371 : Developing Children's Musicality, Grades 3--5. (3:1:2)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 271 & MUSIC 272

DESCRIPTION: Continuation of Music 272 for grades 3--5, emphasizing the relationship of classroom literature to choral experience and instrumental musicianship. Microteaching in a demonstration school.

**Course Outcomes**

- Students will continue to explore relationships between the tonal and formal systems of authentic folksong and composed music.
- Students will help each other develop a Zion-oriented, eternal perspective on musical education.
- Students will continue to develop a working knowledge of developmental music education in the primary and intermediate grades.
- Students will make a special study of children's choral and instrumental development in assigned practice schools.
- Students will improve their ability to determine and find appropriatebeginning pitches for, and refine the intonation of classroom and choral singing by using an A-440 tuning fork.
- Students will demonstrate and/or develop an appropriate elementary specialistsinging model, with attention to proper resonance, intonation, and style; and a knowledge of how to coordinate grade level singing/ solfege curricula and vocal development.

MUSIC 372A : Woodwind Workshop. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 196 & MUSIC 198

DESCRIPTION: Learning to play and to teach woodwind instruments; survey of instructional materials; emphasis on clarinet and saxophone.

**Course Outcomes**

- Students will demonstrate fundamental performance skills and technique on clarinet, flute, saxophone, oboe and bassoon.
- Students will effectively sequence and demonstrate appropriate strategies for instructing fundamental performance skillsand technique on clarinet, flute, saxophone, oboe and bassoon, and will identify a variety of woodwind teaching resources.
- Students willdemonstrate familiarity with selected woodwind pedagogues and their contributions.

MUSIC 372B : Woodwind Workshop. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 196 & MUSIC 198

DESCRIPTION: Continuation of Music 372A. Emphasis on flute, oboe, and bassoon.

**Course Outcomes**

- Students will demonstrate fundamental performance skills and technique on clarinet, flute, saxophone, oboe and bassoon.
- Students will effectively sequence and demonstrate appropriate strategies for instructing fundamental performance skillsand technique on clarinet, flute, saxophone, oboe and bassoon, and will identify a variety of woodwind teaching resources.
- Students willdemonstrate familiarity with selected woodwind pedagogues and their contributions.

MUSIC 373 : Brass Workshop. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 196 & MUSIC 198

DESCRIPTION: Learning to play and to teach brass instruments; survey of instructional materials.

**Course Outcomes**

There are no course outcomes available

MUSIC 374 : Percussion Workshop. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 196 & MUSIC 198

DESCRIPTION: Learning to play and teach percussion instruments; survey of instructional materials.

**Course Outcomes**

- To prepare you to teach basic percussion skills at the public school level to both instrumental students and choral students as well as to help you reach a high level of performance ability with regards to rhythm, counting, and exposure to a variety of percussion instruments. Additional objectives are to develop your abilities in writing/arranging percussion parts for choral works and becoming more familiar with choral repertory that utilizes percussion. Since this is a one semester course, please try to immerse yourself in percussion related activities by attending recitals and concerts where percussion is utilized.

: Percussion Workshop: Instrumental.

**Course Outcomes**

: Percussion Workshop: Choral.

**Course Outcomes**

MUSIC 375B : String Workshop. (1:0:3)

WHEN TAUGHT: Winter

DESCRIPTION: Continuation of Music 375A. Emphasis on cello and bass.

**Course Outcomes**

- Students will demonstrate enthusiasm for and demonstrate understanding of string instruction as a means of realizing comprehensive music education.
- Students will be able to articulate the role of string instruction in public school music education curriculum.
- Students will demonstrate ability to effectively sequence and instruct these fundamental skills.
- Students will demonstrate ability to diagnose technical problems in students and propose remedial strategies.
- Students will know selected string pedagogues, and demonstrate ability to identify important movements in string education.
- Students will demonstrate ability to identify skills and techniques common to all string instruments.
- Students will discover ways that playing string instruments can provide‘object lessons’ in learning the gospel.

MUSIC 375A : String Workshop. (1:0:3)

WHEN TAUGHT: Fall

DESCRIPTION: Learning to play and teach string instruments; survey of instructional materials, emphasis on violin and viola.

**Course Outcomes**

- Students will demonstrate ability to identify skills and techniques common to all string instruments.
- Students will demonstrate enthusiasm for and demonstrate understanding of string instruction as a means of realizing comprehensive music education.
- Students will demonstrate ability to effectively sequence and instruct these fundamental skills.
- Students will be able to articulate the role of string instruction in public school music education curriculum.
- Students will know selected string pedagogues, and demonstrate ability to identify important movements in string education.
- Students will discover ways that playing string instruments can provide‘object lessons’ in learning the gospel.
- Students will demonstrate ability to diagnose technical problems instudents and propose remedial strategies.

MUSIC 376B : Choral Practicum. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 376A

DESCRIPTION: Curriculum design, score analysis and preparation, choral arranging, rehearsal techniques, survey of literature, and vocal pedagogy, including treble voice and changing voice; computers and computer-assisted instruction.

**Course Outcomes**

- Students will be prepared to function competently in the public schoolclassroom as musical artists, as teachers, and as administrators.
- Students will develop processes, build skills, and share knowledge in rehearsal technique by analyzing scores,

forecasting rehearsal issues, planning, creating, and prioritizing strategies, executing the rehearsal with a real lab choir.
- Students will be prepared to create their own strategies and policies for themusic classroom based on sound principles.
- Students will develop processes, build skills, and share knowledge in voice building of choral singers by creating an index of vocalises to build technique, modeling for and strategizing to improve the tone of the lab choir over the semester, reading about and discussing group vocal pedagogy.
- Students will develop processes, build skills, and share knowledge in discerning quality choral repertoire, collecting and organizing it into personal choral reference libaries.
- Students will develop processes, build skills, and share knowledge in selecting repertoire and creating quality concert programs for secondary students.
- Students will develop processes, build skills, and share knowledge in creating course documents that outline curriculum goals, classroom management rules and consequences, assessment and grading procedures, budget proposals and purchasing information.
- Students will develop processes, build skills, and share knowledge in recruiting singers, voice testing and discerning stages of the changing voice meeting the range needs of those voices, auditioning.

MUSIC 376A : Choral Practicum. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 235B & MUSIC 296

DESCRIPTION: Applied conducting technique, score analysis and preparation, evaluating solo performance, and application of learning theory.

**Course Outcomes**

- Students will demonstrate clear and expressive conducting in various genres.
- Students will develop and demonstrate mastery of conducting techniques.
- Students will demonstrate principles of effective communication through conducting.
- Students will demonstrate ability to analyze scores in terms of form, phrasing, meter, cueing, balance and harmonic analysis and provide score markings for each.
- Students will demonstrate ability to transpose.
- Students will learn and implement diverse teaching strategies.
- Students will create lesson plans that identify and target specific music elements by predicting and prioritizing rehearsal issues.
- Students will design and customize rehearsal strateigies as an integral part of lesson planning.
- Students will conduct and perform for each other in micro teaching modules.
- Students will rehearse, perform, and evaluate in real time.
- Students will analyze and assess performance practice in live lab settings.
- Students will self-reflect on individiual goals, progress and challenges.
- Students will assess peers in pairs and in groups.
- Students will mini conducting/rehearsal modules will be representative of the skills, knowledge, and techniques required for classroom teaching (rehearsals are filmed).
- Students will show empathy, respect and courtesy towards each other throughout the leanrning process.

MUSIC 377B : Instrumental Practicum. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 377A

DESCRIPTION: Curriculum design, evaluating ensemble performance, advanced rehearsal techniques, administering secondary instrumental music programs; computers and computer-assisted instruction.

**Course Outcomes**

- Students will gain experience in the musical skills of intonation/quality, andtransposition/score reading.
- Students will understand the place in the curriculum for additional ensembles (i.e. jazz,marching band, musical orchestra, folk groups) and demonstrate understanding of the skills required to direct them.
- Students will learn how to appreciate and run alternative performance groups.
- Students will develop and demonstrate the ability to articulate a personal philosophy for music education which accounts for the place of arts in the public schoolcurriculum.
- Students will be able to identify cogent elements in program philosophy that will direct the following kind of choices: Scheduling of a complete music program, musicselection, and travel and performance philosophy.
- Students will demonstrate ability to locate and resolve errors in ensemble performance and to conduct ensemble music with clarity and purpose.
- Students will learn about many of the various tasks that are required to manage a public school band program including: contest/festival adjudication, facilityplanning, recruiting, public relations, fund raising, budgets and purchasing, and repertoire selection.
- Students will demonstrate ability to locate and resolve errors in ensemble performance and to conduct ensemble music with clarity and purpose.

MUSIC 377A : Instrumental Practicum. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 235A & MUSIC 296

DESCRIPTION: Applied conducting technique, score analysis and preparation, evaluating solo performance, and applying learning theory.

**Course Outcomes**

- Students will demonstrate clear and expressive conducting in various genres.
- Students will develop and demonstrate mastery of conducting techniques.
- Students will demonstrate principles of effective communication through conducting.
- Students will demonstrate ability to analyze scores in terms of form, phrasing, meter, cueing, balance and harmonic analysis and provide score markings for each.
- Students will demonstrate ability to transpose.
- Students will learn and implement diverse teaching strategies.
- Students will create lesson plans that identify and target specific music elements by predicting and prioritizing rehearsal issues.

- Students will design and customize rehearsal strateigies as an integral part of lesson planning.
- Students will conduct and perform for each other in micro teaching modules.
- Students will rehearse, perform, and evaluate in real time.
- Students will analyze and assess performance practice in live lab settings.
- Students will self-reflect on individiual goals, progress and challenges.
- Students will assess peers in pairs and in groups.
- Students will mini conducting/rehearsal modules will be representative of the skills, knowledge, and techniques required for classroom teaching (rehearsals are filmed).
- Students will show empathy, respect and courtesy towards each other throughout the leanrning process.

MUSIC 378 : Music for the Elementary Classroom Teacher. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Establishing a classroom environment for musical development; emphasis on appropriate songs, activities, resources, and teaching strategies.

**Course Outcomes**

- Students will acquire personal musicianship skills applied to knowledge of age-appropriate musical activities, materials and delivery techniques for grades K–6.
- Students will acquire personal musicianship skills applied to knowledge of age-appropriate musical activities, materials and delivery techniques for grades K–6.

MUSIC 379 : Pre-Student Teaching. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C- or better in Music 275.

DESCRIPTION: Analyzing education practice and relationship between theories and research on music education and the practice of teaching.

**Course Outcomes**

- Students will demonstrate a readiness to assume the responsibilities of student teaching in general, choral, or instrumental music through successfully completing a semester-long, part-time field experience in a suitable public school music classroom setting.

MUSIC 384 : Jazz Improvisation 2. (2:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: Music 284 or director's consent.

DESCRIPTION: Intermediate improvisation: theory and technique.

**Course Outcomes**

- Students will continue their study of improvisation techniques and will learn advanced scales, chord progressions, and stylistic approaches to jazz improvisation.

MUSIC 386R : Songwriting 2. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 186; Music major status.

DESCRIPTION: Projects in advanced songwriting.

**Course Outcomes**

- In Music 386R, advanced songwriting, the student is encouraged to think more deeply about the ultimate purpose of songs being written either for personal reasons, or to answer the needs of publishers or producers of movies and television episodes, who are requisitioning specific content or musical style. The course is repeatable to allow the developing student writer multiple chances to hone this important craft. Industry-style collaboration situations are encountered in this class, and the pace of writing, as well as the number of projects expected, reflects a more professional pace of working.

MUSIC 387R : Composition 3. (2:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C- or higher in Music 288, 296; junior-level screening.

DESCRIPTION: Composition lessons and seminars in principles and techniques of recent art music.

**Course Outcomes**

- Advanced composition study that (a) focuses on modern and postmodern musical vocabularies, (b) enhances knowledge of contemporary repertoire, and (c) prepares students for their senior recitals.

MUSIC 389 : Projects in Commercial Music. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 186; Music major status, Music 295 or instructor's consent.

DESCRIPTION: Introductory projects in scoring for broadcast media, publication, and studio recording.

**Course Outcomes**

There are no course outcomes available

MUSIC 391 : Jazz Keyboard. (2:2:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: MUSIC 196 & MUSIC 222

DESCRIPTION: Lead sheets, chord voicings, and other aspects of jazz performance practice.

**Course Outcomes**

- Students learn how to read lead sheets and how to appropriately voice chords on the piano.
- Upon the successful completion of this course a student should be ableMelody in the right hand and basic chord inversions in the left handChords only spread between both hands to comp behind a soloist, employing upper structure and altered chord harmony.Rootless voicings in the left hand and embellished melody in the right hand while playing with bass and drums.Play a solo piano ballad with rich jazz harmonies and moving textural lines.Play the blues in four keys, demonstrating standard chord voicings and improvisational techniques.Play II-V-I patterns in major and minor, using three voicing systems; 1735-1379, 1357-1793, and rootless voicings. These include harmonic extensions to the 13th and various forms of the altered dominant seventh chords and their substitutions.Know and play all of the following modes and scales with correct fingerings: Dorian, Mixolydian, Jazz Minor, Lydian, Locrian, Whole Tone, Diminished (Octatonic) in two forms, Lydian Dominant, Super Locrian (Diminished Whole-Tone).

MUSIC 394 : Jazz Styles and Analysis. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

RECOMMENDED: Music major status; instructor's consent.

DESCRIPTION: In-depth experience in recognizing and differentiating jazz styles, including analyzing and transcribing solo and ensemble jazz materials.

**Course Outcomes**

- In-depth experience in recognizing and differentiating jazz styles, including analyzing and transcribing solo and ensemble jazz materials.

MUSIC 395 : Form and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C- or higher in Music 293, 295.

DESCRIPTION: Analytical study of forms from the common-practice period, including baroque contrapuntal structures and instrumental forms, classical sonata cycle, and romantic part forms.

**Course Outcomes**

- This course teaches the formal techniques of western music primarily from the 17th through 21st centuries.The specific repertoire and analytical methods you will be expected to master, or the knowledge (theoretical, historical, practical) you will be expected to acquire in any given section of this course may vary from professor to professor. That reflects the nature of a university and the privilege of academic freedom, which despite arbitrary (and actuarial) attempts to curb it, must prevail.

MUSIC 399R : Academic Internship. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Internship or externship in creative, performing, producing, or teaching applications of major course work.

**Course Outcomes**

- Students will participate in an off-campus performance or administrative experience to enhance the student's academic training at the university.
- Students will gain access to professional contacts and create a network beneficial to future career choices.
- Students will apply acquired classroom skills in a professional setting.

**400-Level Courses**

MUSIC 402A : Vocal Literature. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Acceptance into 360R or instructor's consent.

DESCRIPTION: Survey of literature with emphasis on art song. Research in area of concentration.

**Course Outcomes**

- Students will survey the classical vocal art song repertoire in English, Italian, German, and French from the past 400 years.
- Students will be able to prepare and present a class on a given composer or group of composers—consisting of lecture, musical examples, live performance, and appropriate handouts.
- Students will be able to discuss stylistic elements of song, including melody, harmony, rhythm, accompaniment, text, and form.Students will be able to discuss the development of song through various composers, languages or eras.
- Students will be able to identify listening examples of specific songs.
- Students will be able to perform at least one song in two other student presentations.
- Students will be able to compile a comprehensive personal repertoire list.

MUSIC 402B : Vocal Literature. (2:2:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Acceptance into 360R or instructor's consent.

DESCRIPTION: Continuation of Music 402A with emphasis on opera and oratorio.

**Course Outcomes**

No outcomes are available at this time.

MUSIC 403A : Piano Literature. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.

DESCRIPTION: Survey of literature. Research in area of concentration.

**Course Outcomes**

- This course is designed for the advanced keyboard performer, and consists of projects in keyboard harmony, sight-reading, transposition, modulation, improvisation, playing by ear, and score reading, in pursuit of developing the complete keyboard fluency.

MUSIC 403B : Piano Literature. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.

DESCRIPTION: Continuation of Music 403A.

**Course Outcomes**

- This course will explore piano literature from late Classical, Romantic, Impressionistic, and Contemporary periods of music history including composer surveys, analysis, aural and score recognition, performances and performance practices. The goal of this course is for each student to gain a broad understanding of the subject and develop a love for the rich heritage of the medium. A major purpose of the course is to instill in students a curiosity essential for lifetime discovery. Thorough knowledge and appreciation of the piano repertoire is crucial for a successful career in performance and teaching.

MUSIC 404A : Organ Literature. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.

DESCRIPTION: Survey of literature. Research in area of concentration.

**Course Outcomes**

- The course objective is to further an acquaintance and familiarity with the repertory, composers, forms and genres, stylistic features, analytical techniques and general performance practices associated with organ literature from the earliest sources of the fourteenth century through the music of Johann Sebastian Bach.

MUSIC 404B : Organ Literature. (2:2:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.

DESCRIPTION: Continuation of Music 404A.

**Course Outcomes**

- A continuation of 404A, with the focus being on organ literature from the mid-eighteenth century to the present.

MUSIC 405 : Chamber Music Literature. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 306; concurrent enrollment in 460R, or instructor's consent.

DESCRIPTION: Survey of literature, including research in field of concentration.

**Course Outcomes**

- To understand the important trends in chamber music through its history.To have opportunities to listen to and become familiar with a small portion of this great literatureTo research, read, and write about the chamber music literature on a topic of your choiceTo attend, and write intelligently about, live performances.To acquire a foundation for your continued enjoyment of chamber music as a listener and performer

MUSIC 406 : String Literature. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: C- or higher in Music 306; acceptance into 360R or 460R, or instructor's consent.

DESCRIPTION: Survey of literature, including research in field of concentration.

**Course Outcomes**

- Be able to discuss, listen to, dance to and perform standard standard repertoire as well as read and write about it. The ultimate purpose is to expand your understanding of the concert and teaching repertoire. This survey will demonstrate the wealth of string literature available and how you can find, understand and play it well.

MUSIC 407 : Symphonic Literature. (2:2:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: C- or higher in Music 306; concurrent enrollment in 460R, or instructor's consent.

DESCRIPTION: Survey of literature, including research in field of concentration.

**Course Outcomes**

There are no course outcomes available

MUSIC 410R : Advanced Topics in Music. (.5-3:ARR:ARR)

WHEN TAUGHT: Contact Department.
PREREQUISITE: C- or higher in Music 306; Music 222, 294, 296, 298, or instructor's consent.
DESCRIPTION: Topics vary.

**Course Outcomes**

- Specific learning outcomes are explicated at the outset of the course, but vary from syllabus to syllabus; each class explores in depth a subject supported by the particular research experience and expertise of the graduate faculty member who teaches the course.

MUSIC 426 : Music Dance Theatre: Senior Performance Project. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: DANCE 361; Concurrent enrollment in Dance 426, and TMA 426.
DESCRIPTION: Participation in an MDT performance group culminating in a showcase for agents and directors in New York City during April.

**Course Outcomes**

- Students will experience an audition/showcase situation in two entertainment markets
- Students will audition for and receive feedback from industry professionals in two markets
- Students will have several performance-ready audition selections prepared
- Students will have professionally produced personal promotional material on hand
- Students will experience Master Classes from working Broadway professionals
- Students will recognize their 'type' and marketability within the entertainment industry
- Students will establish professional contacts that will aid them in making the transition from the academic to the professional world of theatre

MUSIC 441R : New Music Ensemble. (1:0:1)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Instructor's consent.

**Course Outcomes**

- Performance practice in modern and experimental musical vocabularies.

MUSIC 449 : Senior Recital. (1:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Concurrent enrollment in Music 360R, 387R, or 460R, and instructor's consent. Prerecital hearing required at least three weeks before juried recitals.
NOTE: Fee.

**Course Outcomes**

- Students will perform a full recital of repertory, artistically appropriate to the year of study.

MUSIC 460R : Performance Instruction. (1.5-3:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Major in performance; jury approval.
DESCRIPTION: Advanced private instruction and studio class.
NOTE: From three to five hours of daily practice. Fee.

**Course Outcomes**

- Students will demonstrate the ability to perform standard solo repertoire, orchestral works, and etudes/methods at an appropriate artistic level for their year of study.

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: Conducting.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

MUSIC 462R : Orchestral Excerpts. (1:1:0)

WHEN TAUGHT: Fall
PREREQUISITE: Concurrent enrollment in Music 460R or instructor's consent.
DESCRIPTION: Performance instruction in standard orchestral repertoire.
NOTE: For string performance majors.

**Course Outcomes**

- This course is a skill development class that is designed to help you to become ready to take professional orchestral auditions and help prepare you to reach your potential as an orchestral musician.Preparation and performance of standard orchestral excerptsSight-reading of several other standard orchestral excerptsPerform for outside adjudicators in “mock audition” settingUnderstand professional audition procedures and processesCollect materials and resources to aid in preparation for future professional auditions

: Orchestral Excerpts: Violin.

**Course Outcomes**

: Orchestral Excerpts: Viola.

**Course Outcomes**

: Orchestral Excerpts: Cello.

**Course Outcomes**

: Orchestral Excerpts: Bass.

**Course Outcomes**

: Orchestral Excerpts: Woodwinds.

**Course Outcomes**

: Orchestral Excerpts: Harp.

**Course Outcomes**

MUSIC 466R : Organ Practicum. (2:2:1)

WHEN TAUGHT: Fall Odd Yrs.; Winter Odd Yrs.

PREREQUISITE: Music 166 or organ performance major status. Must be taken in consecutive winter and fall semesters.

DESCRIPTION: Developing various practical skills required of the organist.

**Course Outcomes**

- To play hymns using a wide variety of techniques and with artistry, encouraging congregational participation and enthusiasm, and to conduct hymns adequately.
- To accompany choirs at the organ, interpreting and preparing the score properly, managing the console with mastery, and following the director accurately and musically.

MUSIC 467 : String Teaching Practicum. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of required pedagogy class (Music 369A-E).

DESCRIPTION: Applying pedagogical principles to teaching.

**Course Outcomes**

No outcomes are available at this time.

: String Teaching Practicum: Violin.

**Course Outcomes**

: String Teaching Practicum: Viola.

**Course Outcomes**

: String Teaching Practicum: Cello.

**Course Outcomes**

: String Teaching Practicum: Bass.

**Course Outcomes**

: String Teaching Practicum: Harp.

**Course Outcomes**

: String Teaching Practicum: Guitar.

**Course Outcomes**

MUSIC 468 : Jazz Pedagogy. (1:2:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Organizing and teaching jazz in the secondary school. Designed for the music educator.

**Course Outcomes**

- Students will learn how to organize and teach jazz in the secondary school. Materials are designed for the music educator.

MUSIC 469 : Theory and Methods of Studio Teaching. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: Completion of required pedagogy class or instructor's consent.

DESCRIPTION: Applying learning theory and secondary education methods to studio teaching.

**Course Outcomes**

- Students will gain a theoretical base in beginning and maintaining a successful studio.

MUSIC 470R : Keyboard Teaching Practicum. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of required pedagogy class or instructor's consent.

DESCRIPTION: Applying pedagogical principles to teaching.

**Course Outcomes**

No outcomes are available at this time.

: Keyboard Teaching Practicum: Piano.

**Course Outcomes**

: Keyboard Teaching Practicum: Organ.

**Course Outcomes**

MUSIC 471 : Practicum in Children's Musicality. (3:1:2)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 271 & MUSIC 272 & MUSIC 371

DESCRIPTION: Pedagogy for grades 6 and beyond. Children's choir development, including arranging and adapting vocal and instrumental music. Extended pre-student teaching in a demonstration school.

**Course Outcomes**

- Students will make a special study of children's choral and instrumental development.
- Students will submit a final project of folksong arranged for 2 or 3 part treblechoir.

MUSIC 472 : Supervised Teaching in Voice. (2:1:3)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 363

DESCRIPTION: Lecture, discussion, and practicum in the methodology of studio voice instruction.

**Course Outcomes**

- Students will apply the information gained in Music 363 to teaching at least 2 students, one male and the other female.
- Students will develop through study and experience pedagocial approaches to teaching singing.
- Students will develop a basic list of repertoire appropriate to teaching beginning voice lessons.
- Students will help their pupils prepare at least one song to a performance level which can be presented in a public recital.
- Students will learn the organizational and financial structure of a successful home studio.

MUSIC 476 : Secondary Student Teaching. (12:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or approval; with a major GPA 2.85.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary music students, demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will complete a Teacher Work Sample documenting their ability to understand a teaching situation and their individual students in one specific class, and their ability to plan, teach, reflect on and revise music learning events to teach a learning unit to this class. They will document group and individual progress for the unit.
- Students will demonstrate their ability to effectively plan, teach, reflect and revise music learning events by teaching full-time in a student teaching placement with a mentor teacher. In addition, students will demonstrate their ability to communicate effectively with individual students and groups of students, as well as parents, as well as the ability to work well with their mentor teacher and other school colleagues.

MUSIC 481 : Orchestration. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C- or higher in Music 293, 295.

DESCRIPTION: Scoring for standard orchestral instruments.

**Course Outcomes**

- This course is to learn fundamentals and intermediate techniques of orchestration, primarily pre-modern.

MUSIC 482 : Choral Arranging. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: C- or higher in Music 296.

DESCRIPTION: Study of published choral arrangements, as well as techniques for adapting and arranging for choirs.

**Course Outcomes**

- This course will help students learn a broad range of techniques in choral arranging, especially as it applies to adapting existing works for different configurations and creating new arrangements based on preexisting

melodies.

MUSIC 483 : Counterpoint. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C- or higher in Music 294, 296.

DESCRIPTION: Eighteenth-century contrapuntal styles and techniques, emphasizing those of J. S. Bach.

**Course Outcomes**

There are no course outcomes available

MUSIC 485 : Jazz Arranging and Composition. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 295

DESCRIPTION: Developing concepts and skills related to the orchestration, arranging, and composition of jazz and related contemporary styles of music.

**Course Outcomes**

- Students will develop concepts and skills related to the orchestration, arranging, and composition of jazz and related contemporary styles of music.

MUSIC 486 : Commercial Music Capstone Project. (1:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MUSIC 389; Commercial Music major status.

DESCRIPTION: Creating a demo CD and resume from course work, creative project, and internship experiences. Career goals and opportunities.

**Course Outcomes**

- This capstone level course is a resume/demo-reel combination project presenatatio suitable to show a prospective employer within the music industry. In building a resume, the students are instructed how to show both national and local credits, weighting, effective descriptions and other presenting other related expeirence and proper formatting on the resume. The demo-reel, (A/V recording) part of the requirement needs to show a finish level that would get the positive attention of an industry professional. Skills learned in prior upper division media music courses are all brought to bear here as a final presentaion of the students abilities are showcased.

MUSIC 489 : Film Scoring. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: MUSIC 389; Instructor's consent.

DESCRIPTION: Introduction to techniques and technology of film scoring.

**Course Outcomes**

- Successful completion of this class will allow students:1. To develop a practical understanding and approach to film scoring.2. To develop an appreciation of film composition as an art form.3. To have a practical ability of the creative and technical process of film composition.4. Seek to develop a balance between the career and spiritual well-being.5. Ultimately, to gain a greater fascination and increased skill of film composition.

MUSIC 494R : Independent Readings. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Advising professor's consent as certified by completing a contract obtained from undergraduate studies secretary in E-579 HFAC.

**Course Outcomes**

- Precise learning outcomes vary from student to student, and are negotiated prior to the experience and approved by the supervising faculty member. These specific requirements are written down in a contract and placed on file.

MUSIC 499R : Honors Thesis. (.5-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Senior status.

**Course Outcomes**

- After completion of the project, the student should be prepared to do research at the graduate level.
- Students will become familiar with, and use correctly, proper bibliographic styles.
- Students will gain the experience of producing a well-written and researched thesis and/or thesis project.

## 500-Level Graduate Courses (available to advanced undergraduates)

MUSIC 500 : Musical Research Techniques. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Graduate status.

**Course Outcomes**

- Develop skills of scholarly inquiry, information literacy, and writing that will (1) save time and make graduate coursework easier, (2) facilitate current awareness of developments in the music professions, (3) lay a foundation for your own professional development, (4) and enable lifelong personal learning.
- Learn to think critically (make value judgments) about music and evaluate the purpose of your career in music. Add intellectual and spiritual depth to your musical activities.
- Gain a broad understanding of methodologies and publication types commonly applied in music research.
- Become familiar with reference sources, public services, and actual holdings useful for music research and performance in the Harold B. Lee Library, in other significant music libraries throughout the world, and online.
- Learn the uses and comparative merits of basic and advanced reference sources related to music. Gain the ability to determine the best reference source for a given research need. Learn how to critique reference sources.
- Become proficient in basic and advanced aspects of bibliographic citation, using principles of the Chicago Manual of Style (16th edition) and other writing conventions common to scholarly music publications.
- Develop basic skills necessary to locate and evaluate critically musical manuscripts and various types of editions of scores.

MUSIC 501 : Music Education Research Techniques. (2:2:0)

WHEN TAUGHT: Summer

PREREQUISITE: Graduate status.

**Course Outcomes**

- Students will demonstrate their understanding of how to design research projects for different types of research.

MUSIC 503 : Aesthetics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Music 306 or equivalent.

DESCRIPTION: Fundamental questions of aesthetic theory from classical antiquity to the present, emphasizing musical aesthetics.

**Course Outcomes**

- Students will understand a broad historical range of literature in the philosophy of art, with particular emphasis on music.

MUSIC 505A : Applied Literature. (2:2:1)

PREREQUISITE: Minimum of one enrollment in Music 402-407 or equivalent.

DESCRIPTION: Advanced survey and research of literature.

**Course Outcomes**

No outcomes are available at this time.

MUSIC 505B : Advanced Applied Literature. (2:2:1)

PREREQUISITE: MUSIC 505A

DESCRIPTION: Intensification and deeper study of Music 505A materials.

**Course Outcomes**

No outcomes are available at this time.

MUSIC 506 : Choral Literature 1. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Concentrated analytical study and application of choral literature through Beethoven.

**Course Outcomes**

- 1. You will have begun to assemble your own personal choral music database and library.2. You will have familiarized yourself with many representative pieces of major composers from each historical period. You will know their general characteristics and be able to apply this knowledge to the analysis of many kinds of choral music. You will know the important works of the major composers in each period. You will be able to recognize visually or aurally the musical characteristics of periods and composers in unidentified scores and recordings.3. You will know the names and general characteristics of contemporary arrangers, and composers who write choral music for educational purposes. You will also be able to recognize desirable qualities of repertoire for varying levels of age and ability in school, church, or community choir settings.4. You will know the criteria which affect choral programming. You will have compiled three sample programs, which demonstrate both your ability to create an artistic program and your knowledge of the repertoire.5. You will know about the issues which affect the choral musician's search for repertoire: the focus of well known publishers, music in the public domain, internet resources, copyright issues, out of print music, etc.6. You will have the necessary skills to evaluate each choral piece you encounter and be able to assess why a choral piece is or is not worth performing. Also, you will hopefully find great spiritual enlightenment as you come to know and better understand the world's choral masterpieces.

MUSIC 507 : Choral Literature 2. (2:2:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Concentrated analytical study and application of choral literature from post-Beethoven to the present.

**Course Outcomes**

- 1. You will have begun to assemble your own personal choral music database and library.2. You will have familiarized yourself with many representative pieces of major composers from each historical period. You will know their general characteristics and be able to apply this knowledge to the analysis of many kinds of choral music. You will know the important works of the major composers in each period. You will be able to recognize visually or aurally the musical characteristics of periods and composers in unidentified scores and recordings.3. You will know the names and general characteristics of contemporary arrangers, and composers who write choral music for educational purposes. You will also be able to recognize desirable qualities of repertoire for varying levels of age and ability in school, church, or community choir settings.4. You will know the criteria which affect choral programming. You will have compiled three sample programs, which demonstrate both your ability to create an artistic program and your knowledge of the repertoire.5. You will know about the issues which affect the choral musician's search for repertoire: the focus of well known publishers, music in the public domain, internet resources, copyright issues, out of print music, etc.6. You will have the necessary skills to evaluate each choral piece you encounter and be able to assess why a choral piece is or is not worth performing. Also, you will hopefully find great spiritual enlightenment as you come to know and better understand the world's choral masterpieces.

MUSIC 508 : Orchestra Literature 1. (2:2:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Concentrated analytical study and application of orchestral literature of the baroque and classical eras.

**Course Outcomes**

- The purpose of this course is to study the standard orchestral literature through the eyes of a conductor. Upon completion of the course, students will be familiar with the most important literature of the Baroque, Classical, and Romantic periods up to through the works of Brahms. They will be able to identify the most important composers, their works, and the most significant passages with regards to challenges for the conductor.

MUSIC 509 : Orchestra Literature 2. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Concentrated analytical study and application of orchestral literature of the romantic era and the 20th century.

**Course Outcomes**

- The purpose of this course is to study the standard orchestral literature through the eyes of a conductor. Upon completion of the course, students will be familiar with the most important literature of the late Romantic period up to through the new music of today.. They will be able to identify the most important composers, their works, and the most significant passages with regards to challenges for the conductor.

MUSIC 510 : Band Literature. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Instructor's consent.

DESCRIPTION: Concentrated study of band literature through analysis and conducting.

**Course Outcomes**

- Identify and describe elements of form, rhythm, melody, harmony, texture, dynamics, timbres, style and phrasing in a variety of band or orchestral scores.
- Describe the evolution of various large scale instrumental forms and trace the development of the styles and composition techniques in band history--while citing research sources for adding to that information.
- List significant composers for the instrumental genres of band or orchestra music and name their most prominent works--while citing research sources for additional information.

MUSIC 511 : Oratorio Literature for Solo Voice. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Music 402A or equivalent.

DESCRIPTION: History, repertoire, and performance practice of sacred works with a focus on works from the Baroque Era to Contemporary.

**Course Outcomes**

- 1. Students will study the history of oratorio repertoire and its styles of performance from the baroque era through to the present day.2. Students will focus on specific recitative and arias from the oratorio repertoire, and perform extracts in class. 3. Students will complete assignments and give presentations in class that will pertain to their research on oratorio repertoire.

MUSIC 532R : Score Preparation and Conducting: Instrumental. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- Identify and describe elements of form, rhythm, melody, harmony, texture, dynamics, timbres, style and phrasing in a variety of band or orchestral scores.
- Use a variety of score marking techniques to notate preparation in score analysis and rehearsal planning.
- Demonstrate the ability to clearly signal changes in meter, tempo, style, phrasing and dynamics while conducting the ensemble.
- Demonstrate ability to forecast performance problems and demonstrate techniques and strategies for correcting them.

MUSIC 533R : Choral Conducting and Development. (2:2:0)

WHEN TAUGHT: Fall; Winter Odd Yrs.; Summer

DESCRIPTION: Principles and practices of score preparation, conducting, and choral development as elements of choral artistry.

**Course Outcomes**

- Students will demonstrate (1) the ability to analyze and graph a score, including factors of form, rhythm, melody, harmony, texture, dynamics, and balance, (2) the ability to prepare the score for rehearsal, giving a clear rehearsal approach, while showing challenges in the score and offering the means for meeting those challenges, and (3) conducting the score in a manner that communicates its style and essence.

MUSIC 534R : Score Preparation and Direction: Jazz. (2:2:0)

WHEN TAUGHT: Summer Odd Yrs.

**Course Outcomes**

- Students will be able to prepare a score for rehearsal.

MUSIC 535R : Instrumental Conducting and Error Detection. (2:2:0)

WHEN TAUGHT: Summer

DESCRIPTION: Development of critical rehearsal and conducting skills through score preparation, lesson planning, rehearsal goals and predicting issues, performance accuracy, score transpositions, error detection, conducting gesture analysis, and music-mapping for the development of expressive conducting gesture.

**Course Outcomes**

There are no course outcomes available

MUSIC 560R : Performance Instruction. (1-2:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Graduate music student status.

DESCRIPTION: Performance instruction for students not specializing in performance, and for performance students wishing to study secondary instruments.

NOTE: Fee.

**Course Outcomes**

- Prepare performances at a high level, including knowledge of applicable solo and ensemble literature, and perform from a cross-section of that repertory.

: Graduate Piano Instruction.

**Course Outcomes**

: Graduate Organ Instruction.

**Course Outcomes**

: Graduate Voice Instruction.

**Course Outcomes**

: Graduate Woodwind Instruction.

**Course Outcomes**

: Graduate Brass and Percussion Instruction.

**Course Outcomes**

: Graduate String Instruction.

**Course Outcomes**

: Graduate Conducting Instruction.

**Course Outcomes**

: Harpsichord Instruction.

**Course Outcomes**

MUSIC 570 : Music for Elementary School Teachers. (2:2:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Music 371, 471, or elementary music teaching experience.

DESCRIPTION: Experiences in teaching various music activities in the elementary school.

**Course Outcomes**

No outcomes are available at this time.

MUSIC 571 : Elementary Education Music Pedagogy. (2:2:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Music 371 and equivalent of elementary education teaching minor in music.
DESCRIPTION: Orff, Dalcroze, and Kodaly materials and techniques.

**Course Outcomes**

No outcomes are available at this time.

MUSIC 575R : Summer Music Workshops and Clinics. (.5-4:ARR:ARR)

**Course Outcomes**

- Students will demonstrate ability to apply to their classroom teaching those music education teaching techniques addressed in the given Summer Music Clinic.

: Literature and Research 1. (1-4:ARR:ARR)

**Course Outcomes**

: Literature and Research 2. (1-4:ARR:ARR)

**Course Outcomes**

: Literature and Research 3. (1-4:ARR:ARR)

**Course Outcomes**

: Prepatory Musicianship. (1-4:ARR:ARR)

**Course Outcomes**

: Teacher Musicianship 1. (1-4:ARR:ARR)

**Course Outcomes**

: Teacher Musicianship 2. (1-4:ARR:ARR)

**Course Outcomes**

: Teacher Musicianship 3. (1-4:ARR:ARR)

**Course Outcomes**

: Instructional Methods 1. (1-4:ARR:ARR)

**Course Outcomes**

: Instructional Methods 2. (1-4:ARR:ARR)

**Course Outcomes**

: Instructional Methods 3. (1-4:ARR:ARR)

**Course Outcomes**

MUSIC 576 : Fundamentals and Techniques of the Marching Band. (2:2:2)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Music 294, 296 (or equivalents); music education major status.
DESCRIPTION: Planning, charting, and scoring for marching bands.

**Course Outcomes**

There are no course outcomes available

MUSIC 581 : Twentieth-Century Orchestration. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: Music 481 or equivalent.
DESCRIPTION: New techniques for standard and new instruments; analysis and listening.

**Course Outcomes**

- Learn specialized orchestrational techniques, primarily of the modern era.

MUSIC 583 : Sixteenth-Century Counterpoint. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: C- or higher in Music 294, 296, or equivalent.
DESCRIPTION: Strict modal counterpoint in sixteenth- century style (Palestrina); includes species, text setting, and motet.

**Course Outcomes**

- Learn the techniques of 16-century counterpoint, including principles applicable to later music.

MUSIC 587R : Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter

**Course Outcomes**

- Students will receive advanced training in composition, particularly emphasizing larger forces and extended forms.

MUSIC 591 : Advanced Topics in Keyboard Harmony. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Instructor's consent.

DESCRIPTION: Topics vary.

**Course Outcomes**

- Through projects in keyboard harmony, sight-reading, transposition, modulation, improvisation, playing by ear, and score reading, advanced keyboard students will begin developing a complete keyboard fluency.

MUSIC 595 : Score Analysis. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.; Summer Odd Yrs.

DESCRIPTION: Analysis of representative choral and instrumental works from the Renaissance through contemporary styles.

**Course Outcomes**

- Music 595 is to help you to- Explore the nature and function of scores of all kinds.- Answer the question of any score: what does this score tell me about the intended sound and what does it not tell me?- Learn criteria for identifying style, period, and performance practice of any score.Score types include:1. Vocal music: various a capella genres (choral, barbershop, etc.), congregational hymns (including shape-note symbols and tonic sol-fa), Lieder, popular sheet music, folk transcriptions.2. Instrument-based genres: works for solo instrument, chamber groups, and larger ensembles3. Alternative uses and adaptations of common-practice notation: lead sheets/fake books, charts/graphs (e.g., Schenker graphs), short scores, piano reductions, transcriptions, various indeterminate notations. 4. Miscellaneous non-common-practice notation. These include tablatures, assorted graphic/pictographic representations, verbal scores, mathematical (e.g., ratio-based) notation.

MUSIC 596 : Schenker Analysis. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Music 306, 395; or equivalents.

DESCRIPTION: Schenker's system of tonal analysis.

**Course Outcomes**

- Will learn the principles of structure, prolongation, and related ideas (as articulated by Schenker and his followers).

MUSIC 599R : Academic Internship. (1-6:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Internship in creative, performing, producing, or teaching applications of major course work.

**Course Outcomes**

- Precise learning outcomes vary from student to student, and are negotiated and explicated prior to the experience and approved by the supervising graduate faculty member.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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School of Music Home

Majors

- BA in Music
- BM in Commercial Music
- BM in Music Composition

BM in Music Education Emphases

- K–12 Choral
- K–12 Instrumental
- Elementary Music Specialist

BM in Music Performance Emphases

- Brass
- Combined Piano and Organ
- Organ
- Percussion
- Piano
- String
- Vocal
- Woodwind

Minor

- Minor in Music

Course Information

- Music (Music) Courses

Faculty

# School of Music Faculty

Show All
Hide All

## Professors

Anderson, Richard Paul

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BA, Arizona State University, 1968
MM, Northwestern University, 1970
DMA, University of Colorado, Boulder, 1986

Broomhead, G. Paul

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Brigham Young University, 1987
MM, Brigham Young University, 1990
PhD, University of Washington, 1999

Brough, Ronald Paul

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, North Texas State University, 1981
MM, North Texas State University, 1983
DA, University of Northern Colorado, 1997

Call, Robert Steven

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Utah State University, 1971
MM, Utah State University, 1975
PhD, University of Utah, 2000

Clayton, April Diane

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, University of Cincinnati, 1995
MM, University of Cincinnati, 1996
DMA, The Juilliard School, 2001

Dabczynski, Andrew H.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Eastman School of Music, 1976
MA, University of Connecticut, 1978
PhD, University of Michigan, Ann Arbor, 1994

Dunn, Robert E.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MM, Brigham Young University, 1989

PhD, Northwestern University, 1994

Durham, Thomas L.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, University of Utah, 1974
MM, University of Utah, 1975
PhD, University of Iowa, 1978

Giovannetti, Geralyn

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, University of Western Ontario, 1978
MM, University of Western Ontario, 1980
DMA, University of Michigan, 1990

Harker, Brian Cameron

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1994
MPhil, Columbia University, 1995
PhD, Columbia University, 1997

Hicks, Michael D.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Brigham Young University, 1980
MM, University of Illinois, Urbana-Champaign, 1981
DMA, University of Illinois, Urbana-Champaign, 1984

Johnson, Steven P.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BA, California State University, Fullerton, 1976
MA, California State University, Fullerton, 1979
PhD, California State University, Los Angeles, 1989

Jones, Stephen Morrill

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BMu, Brigham Young University, 1983
MMu, University of Cincinnati, 1986
DMA, University of Cincinnati, 1989

Katseanes, Kory Lynn

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** AA, Ricks College, 1974
BA, University of Utah, 1976
MA, University of Utah, 1979

Lindeman, Steve

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Indiana University, Bloomington, 1977
MA, Queens College, City University of New York, 1983
PhD, Rutgers University, New Brunswick, 1995

Lowe, Laurence M.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, San Francisco Conservatory of Music, 1980
MM, Eastman School of Music, 1981

Peery-Fox, Irene

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, The Juilliard School, 1969
MS, The Juilliard School, 1972
DMA, Peabody Conservatory of Music, Johns Hopkins University, 1987

Saville, Kirt
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Brigham Young University, 1976
MM, North Texas State University, 1983
EdD, Utah State University, 1991

Shumway, Jeffrey L.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1976
MA, Juilliard School of Music, 1977
DM, Indiana University East, 1982

Smith, Charles Raymond
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Brigham Young University, 1975
MM, Indiana University, Bloomington, 1976
DM, Indiana University, Bloomington, 1982

Smith, Christian B.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BM, Brigham Young University, 1991
MM, Brigham Young University, 1993
DMA, University of Michigan, 2006

Staheli, Ronald J.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1972
MM, University of Southern California, 1973
DMA, University of Southern California, 1977

Vincent, Lawrence Paul
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1973
MM, Northern Arizona University, 1978
DMA, University of Michigan, Ann Arbor, 1981

## Associate Professors

Asplund, Christian T.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Brigham Young University, 1988
MA, Mills College, 1993
DMA, University of Washington, 1998

Belknap, Monte L.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, University of Cincinnati Conservatory of Music, 1991
MM, University of Cincinnati Conservatory of Music, 1994

Bigelow, Anny Claudine

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Brigham Young University, 1991
MM, Brigham Young University, 1994
DMA, University of Maryland, 2002

Boothe, Randall Wayne

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University—Hawaii, 1975
MM, Brigham Young University, 1979

Brown, David C.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Indiana University, Bloomington, 1975
MM, University of Toledo, 1997

Cook, R. Don

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Brigham Young University, 1980
MM, Brigham Young University, 1982
DMA, University of Kansas, 1987

Grimshaw, Jeremy

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, University of Utah, 1998
MA, Eastman School of Music, 2002
PhD, Eastman School of Music, 2005

Hall, Rosalind Beth

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, Royal Academy of Music, 1977
MM, Brigham Young University, 1992

Hansen, H. Eric

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BA, Peabody Conservatory of Music, 1988
MA, Peabody Conservatory of Music, 1989

Hinckley, Jaren Smith

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, University of Utah, 1993
MM, Indiana University, 1995
DM, Florida State University, 2002

Holden, Scott L.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** BM, University of Michigan, 1992
MM, The Juilliard School, 1995
DMA, Manhattan School of Music, 2002

Howard, Luke Benjamin

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Professor
**DEGREES:** B Mus Ed, Sydney Conservatorium of Music, 1990
MA, Brigham Young University, 1994

PhD, University of Michigan, 1997

Kimball, Wilford (Will) Wayne
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** School of Music
- **RANK:** Associate Professor
- **DEGREES:** BM, Brigham Young University, 1994
  MM, Duquesne University, 1997
  DMA, Arizona State University, 2001

Peterson, Donald L.
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** School of Music
- **RANK:** Associate Professor
- **DEGREES:** BM, Brigham Young University, 1976
  MA, Brigham Young University, 1983
  DMA, Arizona State University, 1986

Reich, Diane Thueson
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** School of Music
- **RANK:** Associate Professor
- **DEGREES:** BM, Utah State University, 1994
  MM, Indiana University, 1997
  DM, Indiana University, 2003

Ricks, Steven Leon
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** School of Music
- **RANK:** Associate Professor
- **DEGREES:** BM, Brigham Young University, 1993
  MM, University of Illinois, Urbana, 1995
  C.A.M.S., King's College, London, 2000
  PhD, University of Utah, 2001

Thornock, Neil S.
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** School of Music
- **RANK:** Associate Professor
- **DEGREES:** BM, Brigham Young University, 2001
  MM, Brigham Young University, 2003
  DM, Indiana University, 2006

## Assistant Professors

Babidge, Darrell
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** School of Music
- **RANK:** Assistant Professor
- **DEGREES:** BA, Royal Northern College of Music, 1997
  Professional Studies Degree, Manhattan School of Music, 2001

Woods, Alexander G.
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** School of Music
- **RANK:** Assistant Professor
- **DEGREES:** BA, University of Arizona, 2005
  MM, Yale University, 2008

## Teaching Professor

Lockwood, Gayle G.
- **COLLEGE:** Fine Arts and Communications
- **DEPARTMENT:** School of Music
- **RANK:** Teaching Professor
- **DEGREES:** BM, Brigham Young University, 1968
  MM, University of Utah, 1971

# Associate Teaching Professor

Saltmarsh, Ronald M.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** School of Music
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1987
MBA, Brigham Young University, 1989

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**Theatre and Media Arts Home**

**Major**

- BFA in Music Dance Theatre

**Course Information**

- Dance (Dance) Courses
- Music (Music) Courses
- Theatre and Media Arts (TMA) Courses

# Music Dance Theatre

## Admission to Degree Program

This is a limited-enrollment program requiring program admissions approval.

## The Discipline

The BFA in music dance theatre (MDT) is an interdisciplinary degree offered by the College of Fine Arts and Communications through the cooperative involvement of its Department of Dance, School of Music, and Department of Theatre and Media Arts.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BFA in Music Dance Theatre** (Program Outcomes)

Students should see their college advisement center for help or information concerning the undergraduate programs.

**College of Fine Arts and Communications Home**

**Theatre and Media Arts Department Home**

**Majors**

- BA in Media Arts Studies
- BA in Theatre Arts Education K–12
- BA in Theatre Arts Studies
- BFA in Acting

**Minors**

- Media Arts Studies
- Theatre Arts Studies

**Course Information**

- Theatre and Media Arts (TMA) Courses

**Faculty**

# Theatre and Media Arts

Amy P. Jensen, Chair
D-581 HFAC, (801) 422-1886
E-mail: tma_secretary@byu.edu
Internet: https://cfac.byu.edu/tma/

College of Fine Arts and Communications Advisement Center
D-444 HFAC, (801) 422-3777

## Admission to Degree Program

Several degree programs in the Department of Theatre and Media Arts have a departmental application process with enrollment limitations. Theatre arts studies major and minor programs have declaration procedures but are open enrollment. Please see the college advisement center for specific details (1-801-422-3777).

## The Discipline

BYU's theatre programs—Theatre Arts Studies, Theatre Arts Education, and Acting—invite students to explore the possibilities theatre provides for collaboration, citizenship, service, and faith-promotion. The programs emphasize the balance between practical theatre training and critical thinking. They provide extensive opportunities for production in classroom settings, workshops, and fully-mounted productions both at BYU and external venues.

The BYU media arts program is designed to educate students on a foundation of film history, theory, and criticism, along with fundamental production competencies. Possible areas of emphasis include critical studies, fiction production and non-fiction production.

## Mission Statement

The mission of the Department of Theatre and Media Arts is to promote literacy, creativity and spirituality by exploring their interrelatedness in the arts of theatre and media, in an effort to illuminate and confirm truth and the infinite potential of the human soul.

## Career Opportunities

The theatre program provides training and experience in all areas of theatre, from performing to playwriting, from teaching to technical production.

The media arts program provides a foundation and basic experience in analyzing, conceptualizing, writing, directing, and collaboratively producing nonfiction, fiction, and new media. For skill development and specialization, students may select an area of study from the following: critical studies, fiction production, or non-fiction production.

For an area of interest study list, contact the advisement center or the department office.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- Earn a minimum of 120 credit hours
- Have a cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in Media Arts Studies** (Program Outcomes)
**BA in Theatre Arts Education** (Program Outcomes)
**BA in Theatre Arts Studies** (Program Outcomes)
**BFA in Acting** (Program Outcomes)

**Minor in Media Arts Studies**
**Minor in Theatre Arts Studies**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MA in Theatre and Media Arts

For more information see the BYU 2014–2015 Graduate Catalog.

# Additional Degree Programs Offered

## Animation

The BFA in animation is an interdisciplinary degree offered by the College of Fine Arts and Communications through the cooperative involvement of the Department of Theatre and Media Arts, the Department of Visual Arts, and the Ira A. Fulton College of Engineering and Technology's School of Technology. Please see the Visual Arts section of this catalog for degree requirements, or go to the College of Fine Arts and Communications Advisement Center for more information about entrance requirements to this program.

## Music Dance Theatre (MDT)

A BFA in music dance theatre is an interdisciplinary degree offered by the College of Fine Arts and Communications through the cooperative involvement of the Department of Theatre and media Arts, the Department of Dance, and the School of Music. Please see the music dance theatre section of this catalog for degree requirements or go to the college advisement center for more information about entrance requirements.

# General Information

1. The **media arts studies major (or minor)** is a limited enrollment program. Students are required to fulfill the pre-major requirement of TMA 102. See the media arts program description for details. Application must be made for entrance into the program.
2. The **theatre arts studies major (or minor)** is an open enrollment program. Students interested in general theatre studies, dramaturgy, playwriting, directing, stage management, critical studies, or design and technology (costume, lighting, makeup, scenic, or sound), should declare the theatre arts studies major (or minor), using the theatre arts studies declaration form. See program description for details on declaring this major.
3. Students interested in the **theatre arts education major** should also declare a pre-theatre arts education major using the theatre arts education pre-major declaration form. Declaring the pre-major doesn't guarantee entrance into the theatre arts education program. Students must fulfill particular requirements. See program description for details.
4. Students interested in **BFA acting** (unless they have already been accepted into the program) should declare the acting pre-major, using the acting pre-major declaration form. Declaring the pre-major doesn't guarantee entrance into the BFA program. The BFA acting program is a limited enrollment program, and students must fulfill particular requirements. See program description for details.
5. The **animation** and **music dance theatre** (MDT) limited enrollment programs are administered out of other departments. Students interested in animation will need to contact the Visual Arts Department. Students interested in MDT need to declare a pre-music major.
6. Students who are majors, minors, or pre-majors of TMA affiliated programs are eligible to receive a TMA discount card that enables them to attend theatre season performances at a reduced price. TMA discount cards are available at the front desk of the TMA Office in D-581 HFAC.

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**Major**

- BFA in Music Dance Theatre

**Course Information**

- Dance (Dance) Courses
- Music (Music) Courses
- Theatre and Media Arts (TMA) Courses

# BFA in Music Dance Theatre (76.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring program admissions approval. Please see the College of Fine Arts and Communications Advisement Center for information regarding requirements for admission to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Video recorded audition links are due via email by November 15. From the video entrance auditions, approximately 30 potential students are selected to attend live auditions/interviews on the Provo campus the last Saturday of January. An incoming class of about 16 students is then selected from the 30 finalists. Full audition instructions are available on the MDT website at mdt.byu.edu.
2. Pass a proficiency examination in each of the three areas at the end of each semester.
3. The School of Music requires a minimum of 40 hours to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
4. Any grade below C– in major courses is not acceptable for graduation. Dance technique courses require a minimum grade of B– for advancement to the next level.
5. Complete the following:

MUSIC 113 : Beginning Piano Techniques 1. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Class instruction in piano for nonmusic majors.

**Course Outcomes**

- Students will understand basic concepts of music theory including related terms and symbols, note and key names, key signatures and time signatures, and counting.
- Students will be able to play chords in blocked and broken positions and use them to accompany melodies.
- Students will be able to play technical exercises such as the Five Finger Position, major and minor triads, major and minor sales and major and minor cadences.
- Students will be able to improvise simple melodies and play chords with them.
- Students will sight read easier music.
- Students will play repertoire pieces as assigned with all dynamics and articulations.
- Students will be able to play individual part of ensembles.

MUSIC 161 : Voice Technique. (2:2:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Acceptance by audition to the School of Music.
DESCRIPTION: Class instruction in voice technique.

**Course Outcomes**

- Through the understanding and use of proper vocal technique, students will musically perform traditional and contemporary Musical Theatre, as well as “pop” pieces, implementing many vocal colors and styles.
- By studying the basic anatomy involved in vocal production, Students will differentiate between those mechanical processes, which will build healthy production and those, which will lead to vocal problems.
- Students will demonstrate knowledge of vocal technique outlined in the text through taking a series of quizzes.
- Students will memorize and perform repertoire that is representative of the various vocal styles used in Musical Theatre literature.
- Students will expand sight-reading skills by participating in oral drills, enhancing the ability to study and learn musical scores.
- Through class devotionals, group discussion and personal reflection (journal writing) each student will begin to synthesize his/her growing skills with his/her moral, spiritual and ethical values.
- By supporting the growth of each member of the class, each student will develop a sense of community and sharing in the process of magnifying his/her own talent, thus downplaying the intensely competitive element of the performing business.

MUSIC 261 : Contemporary Vocal Techniques. (2:2:1)
WHEN TAUGHT: Winter
PREREQUISITE: Music 161 or instructor's consent.
DESCRIPTION: Contemporary vocal styles and techniques, including pop/belt, stage, and studio singing.

**Course Outcomes**

- Students will work on, memorize and perform five song excerpts (Two "classical/legit", [one pre 1966 and one, post 1966] pieces from Musical Theatre literature, two mix/belt pieces from Musical Theatre literature and one Mozart aria. Focus will be on technique, musicianship and interpretation.
- Students will use musical skill to create coherent 16 bar audition cuts for each of the assigned Musical Theatre pieces
- Students will enlarge and demonstrate knowledge of vocal anatomy and proper singing technique through a series of quizzes based on information in text
- Students will enlarge knowledge of Musical Theatre literature by creating a literature list to include, but not limited to, all of the music performed in class.
- Students will evaluate their own, in class performances by observing video recordings and writing evaluations.
- Through class discussion and personal reflection (journal writing,) students will create a vision for their place in the professional Musical Theatre industry and how best to incorporate the aims of a BYU education into that vision.
- Students will evaluate in class performances of peers attending to technique, musicality and communication.
- Students will develop the ability to analyze and explain concepts and principles of voice production through working one on one with peers in teacher/ student assignments.
- Students will keep a journal designed to focus on the importance of maintaining strong moral, ethical and spiritual values while functioning within the professional world.

MUSIC 290 : Music Theory for MDT Majors. (4:3:2)

WHEN TAUGHT: Winter
PREREQUISITE: MUSIC 113; Music dance theatre (MDT) major status.
DESCRIPTION: Music theory, sight singing, aural dictation, and keyboard harmony.

**Course Outcomes**

- Students will confidently sight read any new piece of music placed in their hands.
- Students will accompany themselves from the chord symbols in sheet music
- Students will 'fill in" at the piano whenever the accompanist is absent.
- Students will create functional, pleasant accompaniments to their vocals using chord symbols.
- Students will discover a new level of confidence based on increased competence.
- Through class discussion students will examine BYU's core values and how they can be applied in future career paths.

6. Complete four hours of the following:

MUSIC 260R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- By preparing for and attending weekly lessons, students will develop their technique, and strengthen their interpretive skills.

: Performance Instruction: Woodwinds.

**Course Outcomes**

: Performance Instruction: Harpsichord.

**Course Outcomes**

: Performance Instruction: Organ.

**Course Outcomes**

: Performance Instruction: Voice.

**Course Outcomes**

: Performance Instruction: Trumpet.

**Course Outcomes**

: Performance Instruction: Horn.

**Course Outcomes**

: Performance Instruction: Trombone.

**Course Outcomes**

: Performance Instruction: Tuba.

**Course Outcomes**

: Performance Instruction: Percussion.

**Course Outcomes**

: Performance Instruction: Piano.

**Course Outcomes**

: Performance Instruction: Violin.

**Course Outcomes**

: Performance Instruction: Viola.

**Course Outcomes**

: Performance Instruction: Cello.

**Course Outcomes**

: Performance Instruction: Harp.

**Course Outcomes**

: Performance Instruction: Flute.

**Course Outcomes**

: Performance Instruction: Oboe.

**Course Outcomes**

: Performance Instruction: Clarinet.

**Course Outcomes**

: Performance Instruction: Bassoon.

**Course Outcomes**

: Performance Instruction: Saxophone.

**Course Outcomes**

: Performance Instruction: Synthesizer.

**Course Outcomes**

: Performance Instruction: Euphonium.

**Course Outcomes**

: Performance Instruction: Brass and Percussion.

**Course Outcomes**

: Performance Instruction: Strings.

**Course Outcomes**

: Performance Instruction: String Bass.

**Course Outcomes**

: Performance Instruction: Guitar.

**Course Outcomes**

: Performance Instruction: Contemporary Voice.

**Course Outcomes**

7. Complete four hours of the following:

MUSIC 360R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status; jury approval.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- Students will learn how to improve their technical facility and artistic expression in their chosen area of musical study.

8. Complete one hour of the following:

MUSIC 399R : Academic Internship. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.
DESCRIPTION: Internship or externship in creative, performing, producing, or teaching applications of major course work.

**Course Outcomes**

- Students will participate in an off-campus performance or administrative experience to enhance the student's academic training at the university.
- Students will gain access to professional contacts and create a network beneficial to future career choices.
- Students will apply acquired classroom skills in a professional setting.

9. Complete the following:

DANCE 131 : Jazz Dance, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Students will be introduced to jazz dance as a stylized dance form
- Students will acquire a degree of mastery in jazz dance technique at a beginning level as their foundation.
- Students will experience the joy of jazz rhythms and motion.
- Students will increase awareness in their physical health and well-being through activity and correct principles of training.
- Students will increase awareness to their overall self-image, emphasizing; discipline, coordination, strength, flexibility and endurance.
- Students will develop more understanding of a relationship between religion and the fine arts.
- Students will acquire the desire to patronize the art to some degree in the future.
- Students will develop an evaluation standard to aid in selecting future quality jazz dance training for self and /or family.

DANCE 135 : Tap Dance, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- 1. Students will embrace a philosophy of dance compatible with the mission of BYU that guides their personal choices in the professional or recreational worlds of dance
- 2. Students will demonstrate advanced technical and artistic skill in one dance genre and at least beginning to intermediate skill in another.

DANCE 231R : Jazz Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 240R or Dance 290 or equivalent; Dance 131 or equivalent.

**Course Outcomes**

- Students will gain knowledge of styles within the jazz genre.
- Students will acquire a degree of mastery in jazz dance technique at a intermediate level as their foundation.
- Students will experience the joy of jazz rhythms and motion.
- Students will increase awareness in their physical health and well-being through activity and correct principles of training.
- Students will increase awareness to their overall self-image, emphasizing; discipline, coordination, strength, flexibility and endurance.
- Students will develop more understanding of a relationship between religion and the fine arts.
- Students will acquire the desire to patronize the art to some degree in the future.
- Students will develop an evaluation standard to aid in selecting future quality jazz dance training for self and/or for family.

DANCE 235 : Tap Dance Technique 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 135 or equivalent.

**Course Outcomes**

- 1. Students will embrace a philosophy of dance compatible with the mission of BYU that guides their personal choices in the professional or recreational worlds of dance.
- 2. Students will demonstrate advanced technical and artistic skill in one dance genre and at least beginning to intermediate skill in another.

DANCE 241R : Contemporary Dance, Technique and Theory 2. (2:0:6)

WHEN TAUGHT: Fall; Winter; Summer

**Course Outcomes**

- 1. articulate a knowledge and appreciation of the human body regarding physical function, spirituality, and as a tool of expressivity.
- 2. demonstrate increased technical ability in the areas of:flexibilitystrengthendurancebalancecoordinationphrasingdance performance skillsapplying the Patterns of Total Body Connectivitykinesthetic awareness of body alignment
- 3. demonstrate knowledge, fundamental control, and application of the elements of dance (as defined by the BEST and BESS vocabularies);
- 4. articulate an appreciation for dance as an art form.

DANCE 243R : Studio Workshop in Contemporary Dance Technique and Theory. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 241R or equivalent; instructor's consent; concurrent enrollment in Dance 244R the first time taken.

DESCRIPTION: Technique and theory in a workshop setting.

**Course Outcomes**

- 1. Students will demonstrate increased body connectivity and kinesthetic awareness, including:BreathCore-distalHead-tailUpper-lowerBody-halfCross-lateral connections
- 2. demonstrate performance skills including intent, nuance, dynamics, and sense of ensemble.
- 3. articulate and analyze the above principles of technique using accurate anatomical and dance elements language.

DANCE 244R : Studio Workshop in Contemporary Dance Improvisation and Choreography. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 241R or equivalent; instructor's consent; concurrent enrollment in Dance 243R the first time taken.

DESCRIPTION: Beginning improvisation and choreography in a workshop setting.

**Course Outcomes**

- 1. Students will demonstrate, apply, and articulate a fundamental understanding of the elements of dance in improvisation and choreography.
- 2. Students will demonstrate problem solving skills in collaborative group and solo improvisation and choreography.
- 3. Students will demonstrate the ability to create original and personally meaningful movement - avoiding habit or cliche.
- 4. Students will articulate a knowledge of, and critically analyze, the creative process and movement intention in improvisation and choreography.
- 5. Students will articulate aesthetic and expressive values in dance and other arts.

DANCE 290 : Ballet Accelerated Technique 1. (1.5:0:4.5)

WHEN TAUGHT: Fall; Winter; Spring

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in accelerated beginning ballet technique. These basic skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the Ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at a beginning level standard.
- Each student will:1. Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 291R : Ballet Technique 2. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Dance 290 or equivalent.

**Course Outcomes**

- TECHNIQUE OBJECTIVE 1. Acquire a degree of mastery in intermediate beginning ballet technique. These basic skills will be accomplished through active class participation and the practice of the movement vocabulary listed in the appendix. Please consult the appendix for the specific criteria and standards.
- TECHNIQUE OBJECTIVE 2. Increase postural awareness; begin to correct imperfections; add physical strength, endurance, flexibility, extension, coordination, grace, precision and elevation; and improve the health and appearance of the physical body.
- WRITING OBJECTIVE 1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level, then pass an objective written exam prepared by the Ballet Division.
- Each student will: Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 331R : Jazz Dance Technique 2. (1.5:0:4.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 231 or equivalent. Dance 241R and Dance 243; or Dance 291R.

**Course Outcomes**

- Students will gain a greater knowledge jazz dance styles through various advance movement combinations.
- Students will acquire a degree of mastery in jazz dance technique at an advance level as their foundation.
- Students will increase their intellectual ability to retain complex and substantial length of movement sequences given in a short amount of time.
- Students will explore the psychology of performance and auditioning.
- Students will experience the joy of jazz rhythms and motion.
- Students will increase awareness in their physical health and well-being through activity and correct principles of training.
- Students will increase awareness to their overall self-image, emphasizing; discipline, coordination, strength, flexibility and endurance.

- Students will gain understanding of the gospel of Jesus Christ as an artist in the world.
- Students will acquire the desire to patronize the art to some degree in the future.
- Students will develop an evaluation standard to aid in selecting future quality jazz dance training for self and/or for family.

DANCE 361 : Music Dance Theatre Choreographic Styles. (2:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: DANCE 231R & DANCE 244R & DANCE 291R; Dance 235, 243R, 229.

DESCRIPTION: Physical and conceptual aspects of dance styles as they relate to music dance theatre.

**Course Outcomes**

- Students will:1. Be able to reproduce specific Music Theatre dance styles with clarity. Sequences to be mastered will come from a variety of sources – instructor, guests, and fellow students.
- 2. Acquire knowledge on a specific historical or current Music Theatre choreographer or appropriate style that is pertinent in the field of Music Theatre.
- 3. Increase better understanding of techniques used for professional auditioning.
- 4. Gain specific skills to produce original choreography that can be used in Musical Theatre.
- 5. Develop more understanding of a relationship between religion and the role of Music Theatre in culture and society.

DANCE 390R : Ballet Technique 3. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Audition.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advanced/intermediate ballet technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at an advanced/intermediate level standard.
- Each student will:Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

10. Complete the following:

TMA 121 : Voice and Diction. (2:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BFA MDT or theatre education major status; or instructor's consent.

DESCRIPTION: Skills involved in producing an effective voice; International Phonetic Alphabet. Lab required.

**Course Outcomes**

- Students will practice voice production techniques, including Fitzmaurice and Linklater methods, identifying a “personal voice”, integrating voice work, acting technique, emotional dexterity, use of impulses , and self-discovery in performance
- Students will identify and articulate key characteristics of the International Phonetic Alphabet and the Standard American Stage Dialect and integrate the Standard American Stage Dialect into acting performance.
- Students will self-evaluate individual progress and performance, practice effective and supportive vocal coaching and peer evaluation, and apply professional work habits.

TMA 128 : Acting 1: BFA or Pre-BFA. (3:6:1)

WHEN TAUGHT: Fall

PREREQUISITE: BFA MDT or acting pre-major status; or instructor's consent.

DESCRIPTION: Accelerated fundamental acting skills: exercises in perception, objective/action, thought processes, scoring of scripts. Lab required.

NOTE: Designed specifically for acting pre-major students and first-year music dance theatre students.

**Course Outcomes**

There are no course outcomes available

TMA 223 : Acting Improvisation. (2:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 124; or TMA 228; BFA acting or BFA MDT or acting pre-major status. By audition only.

DESCRIPTION: Discovery of emotion, thought process, and impulse through improvisation.

**Course Outcomes**

- Students will assess improvised performances.
- Students will analyze scripted texts for objectives, tactics, obstacles, and relationships and apply that analysis to improvised performances.
- Students will demonstrate their acting ability and the ability to suppress reasoned acting choices and embrace their immediate impulses via improvisational exercises and scene work.
- Students will identify and explore different ways of using their body to express emotion and

characterization.

TMA 228 : Acting 2. (3:6:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: TMA 123; or TMA 128; BFA acting or BFA MDT or acting pre-major status. By audition only.

DESCRIPTION: Integrating acting skills; building a character through exercises and scene work.

**Course Outcomes**

There are no course outcomes available

TMA 229 : Musical Scene Study. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 228 & MUSIC 161 & DANCE 140; BFA acting or BFA MDT major status. By audition only.

DESCRIPTION: In-depth study of two genres of musical theatre; text analysis, research, written assignments.

**Course Outcomes**

- Acquire the following knowledge:Recognize the need for all actors to be able to work in a musical production.Recognize the basic construction of a musical.Be familiar with the vocal and dance expectations placed on a performer in a musical.Understand the collaborative process involved in mounting a musical.Understand the demands placed on the performer in a 'golden age' and contemporary musical.
- Acquire the following skills:Text analysis skills that allow the actor to maximize information provided in brief librettosAbility to add depth and history to characters that are not multi-layered as writtenAbility to recognize and play the subtext in brief librettosAbility to bring honesty to extended realism/dated text often found in musical librettos.Ability to service the stereotypes found in musical theatre without pandering to themAbility to submerge quickly into the imaginary world of short scenes often found in musicalsAbility to act IN and ON the text and music in a musicalAbility to make choices that capture the "essence" of an acting scene in a musical as readily as the music and dance doAbility to work quickly with little rehearsal of the "book scenes" of a musicalAbility to adapt one's "concentration mix" when acting/singing/dancing in a musical.
- Synthesize the following behavioral modifications:Develop professional wok habits including dependability, punctuality, cooperation and dedication.Further develop sensory organs that allow one to see, hear, smell, taste and touch more fullyFurther develop the actors' innate sense of following an impulse, objective, honesty, and working through a partner

TMA 267 : Principles of Makeup. (2:4:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to basic makeup application for stage and screen: corrective, glamour and age; stylized approaches; putty construction; crepe hair; wig application techniques.

**Course Outcomes**

- Students will demonstrate basic flat makeup skills through projects in corrective, glamour, and age.
- Students will create special makeup projects using putty and crepe hair.
- Students will perform basic wig applications.
- Students will apply previous makeup skills for a stylized project and a complete character, including makeup and hair.

TMA 421 : The Business: Marketing Yourself as a Performer. (1:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 229; BFA acting or BFA MDT major status. Or instructor's consent.

DESCRIPTION: Business aspects of the entertainment industry, including telephone interviews with entertainment industry personnel. Required research project.

**Course Outcomes**

- Students leave the course with a positive/proactive attitude towards the business aspects of their career.
- Students leave the course with a basic knowledge of the helpful resources available to them for finding employment as an actor and/or continuing their training in the field

TMA 422 : Dialects. (2:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: BFA acting or MDT major status. BFA acting majors: TMA 124 and 222. BFA MDT majors: TMA 121 and 124. By audition only.

DESCRIPTION: Major stage dialects.

**Course Outcomes**

- Students will engage in a process of dialect study for each dialect studied in the course.
- Students will identify and articulate key characteristics of the International Phonetic Alphabet and differentiate key changes in the International Phonetic Alphabet pertaining to each dialect studied.
- Students will integrate dialect, voice, and performance skills.
- Students will peer-evaluate acting and dialect skills, self-evaluate individual progress and performance, apply professional work habits of dependability, promptness, cooperation, preparation, and the ability to make independent choices.

TMA 427 : Auditions. (3:6:0)

WHEN Fall; Winter

TAUGHT:
PREREQUISITE: BFA acting or MDT major status. BFA acting majors: TMA 229 and 325 and 422 and 424. BFA MDT majors: TMA 229 and 422 and Dance 240. By audition only.
DESCRIPTION: Auditions, cold reading, resumes, and the business end of acting, music, and dance for the professional performer.

**Course Outcomes**

- Students will construct a personal ethical framework and a commitment to ethical conduct as it applies to auditioning in the performance industry.
- Students will identify, recognize, and apply effective cold reading, improvisation, prepared auditions and other auditioning skills.
- Students will apply improved acting skills, voice work, objective, use of impulses, and self-discovery to performance practice in general.
- Students will self-evaluate individual progress and performance, practice effective and supportive peer coaching and peer evaluation techniques, and apply professional work habits of dependability, promptness, cooperation, preparation, and the ability to make independent choices.

11. Complete one hour of the following as an ensemble member:

TMA 220R : Workshop 1: Acting. (.5-3:0:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: By audition only.
DESCRIPTION: Experience in production: acting.

**Course Outcomes**

- Students will prepare a role in a mainstage production synthesizing and showcasing the research, creative process, and collaboration of the rehearsal process.
- Students will develop a gospel-centered sense of empathy and compassion that will serve as a foundation for the actor on stage and screen, as well as a foundation for living a more Christian life.
- Students will apply professional work habits of dependability, promptness, cooperation, preparation, and the ability to make independent choices.

12. Complete concurrently the following MDT Seminar courses:

MUSIC 328 : Script, Movement and Score Analysis. (1:2:0)
WHEN TAUGHT: Fall
PREREQUISITE: TMA 229; Music dance theatre BFA major status; TMA 114; concurrent enrollment in Dance 328, and TMA 328.
RECOMMENDED: Concurrent enrollment in Music 300, Dance 300, and TMA 300.
DESCRIPTION: The integration into performance of information gathered from careful research and analysis of movement style, script and score.

**Course Outcomes**

- Students will compile a written record of these 'landmark' musical theatre works as a personal resource guide
- Students will be familiar with the selected 'landmark' productions of the American musical theatre.
- Students will learn to implement into their musical theatre performance essential acting, vocal, and movement skills as outlined in the evaluation forms
- Student performance work will be consistently rated in the 3.5 and above category based on the 5 point evaluation form scale.
- Students will be able to integrate into their performance detailed feedback from faculty/peers.
- Students will approach their work in a competent, courteous and professional manner.

DANCE 328 : Script, Movement and Score Analysis. (1:2:0)
WHEN TAUGHT: Fall
PREREQUISITE: TMA 229; Music dance theatre BFA major status; concurrent enrollment in Music 328, TMA 328.
RECOMMENDED: Concurrent enrollment in Music 300, Dance 300, TMA 300.
DESCRIPTION: The integration into performance of information gathered from careful research and analysis of movement style, script and score.

**Course Outcomes**

- Students will be familiar with the selected landmark productions of the American musical theatre.
- Students will have compiled a written record of these landmark musical theatre works as a personal resource.
- Students will have learned to implement into their musical theatre performance essential acting, vocal and movement skills as outlined in the evaluation forms.
- Student's performance work will be consistantly rated in the 3.5 and above catagory based on the evaluation form scale.
- Students will be able to integrate into their performance detailed feedback from faculty and peers.
- Students will approach their work in a competent, courteous and professional manner.

TMA 328 : Script, Movement and Score Analysis. (1:2:4)
WHEN TAUGHT: Fall
PREREQUISITE: TMA 229; BFA MDT major status. Concurrent enrollment in Dance 328 and Music 328.
RECOMMENDED: Concurrent enrollment in Music 300 and Dance 300 and TMA 300.
DESCRIPTION: The integration and performance of information gathered from careful research and analysis of movement style, script and score.

**Course Outcomes**

- Students will have compiled a written record of these 'landmark' musical theatre works as a personal resource guide.

- Students will be familiar with the selected 'landmark' productions of the American musical theatre.
- Students will have learned to implement into their musical theatre performance essential acting, vocal, and movement skills as outlined in the evaluation forms.
- Student performance work will be consistently rated in the 3.5 and above category based on the evaluation form scale.
- Students will be able to integrate into their performance detailed feedback from faculty/peers.
- Students will approach their work in a competent, courteous and professional manner.

13. Complete concurrently the following History of Music Dance Theatre courses:

MUSIC 300 : Music Theatre in Contemporary Culture. (1:3:0)

PREREQUISITE: MUSIC 290; TMA 114; concurrent enrollment in Dance 300 and TMA 300.

DESCRIPTION: Analysis of the form, evolution, and influence of music dance theatre in Western culture.

**Course Outcomes**

- Students will be able to analyze, synthesize and articulate the significant facets of music, dance and theatre within the historical context of the musical theatre genre.
- Students will be able to analyze, synthesize and articulate the significant facets of music, dance and theatre within the historical context of the musical theatre genre.

DANCE 300 : Music Theatre in Contemporary Culture. (1:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 290 & DANCE 243R & DANCE 244R; Concurrent enrollment in Music 300 and TMA 300.

RECOMMENDED: Concurrent enrollment in Music 328, Dance 328, and TMA 328.

DESCRIPTION: Analysis of the form, evolution and influence of music dance theatre in Western culture.

**Course Outcomes**

- Students will be able to analyze, synthesize and articulate the significant facets of music, dance and theatre within the historical context of the musical theatre genre.

TMA 300 : Music Theatre in Contemporary Culture. (1:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MUSIC 290 & DANCE 243R & DANCE 244R; concurrent enrollment in Dance 300 and Music 300. MDT major status.

RECOMMENDED: Concurrent enrollment in Music 328 and Dance 328 and TMA 328.

DESCRIPTION: Analysis of the form, evolution, and influence of music dance theatre in Western culture.

**Course Outcomes**

- Students will be able to analyze, synthesize and articulate the significant facets of music, dance and theatre within the historical context of the musical theatre genre.
- p.MsoNormal, li.MsoNormal, div.MsoNormal { margin: 0in 0in 0.0001pt; font-size: 10pt; font-family: "Times New Roman"; }.MsoChpDefault { font-size: 10pt; }div.WordSection1 { page: WordSection1; }Students will be able to analyze, synthesize and articulate the significant facets of music, dance and theatre within the historical context of the musical theatre genre.

14. Complete concurrently the following Senior Performance Project courses:

MUSIC 426 : Music Dance Theatre: Senior Performance Project. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 361; Concurrent enrollment in Dance 426, and TMA 426.

DESCRIPTION: Participation in an MDT performance group culminating in a showcase for agents and directors in New York City during April.

**Course Outcomes**

- Students will experience an audition/showcase situation in two entertainment markets
- Students will audition for and receive feedback from industry professionals in two markets
- Students will have several performance-ready audition selections prepared
- Students will have professionally produced personal promotional material on hand
- Students will experience Master Classes from working Broadway professionals
- Students will recognize their 'type' and marketability within the entertainment industry
- Students will establish professional contacts that will aid them in making the transition from the academic to the professional world of theatre

DANCE 426 : Music Dance Theatre: Senior Performance Project. (1:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: DANCE 361; Concurrent enrollment in Music 426, and TMA 426.

DESCRIPTION: Participation in an MDT performance group culminating in a showcase for agents and directors in New York City during April.

**Course Outcomes**

- Students will audition for and receive feedback from industry professionals in two markets.
- Students will experience an audition/showcase situation in two entertainment markets.
- Students will have several performance ready audition selections prepared.
- Students will have professioanlly produced personal promotional material on hand.
- Students will experience Master Classes from working Broadway professionals.
- Students will recognize their types and marketability within the entertainment industry.
- Students will establish professional contacts that will aid them in making the transition from the adademic to the professional world of theatre.

TMA 426 : Music Dance Theatre: Senior Performance Project. (1:0:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 361; MDT major status. Concurrent enrollment in Music 426 and Dance 426. By audition only.

DESCRIPTION: Participation in an MDT performance group culminating in a showcase for agents and directors in New York City during April.

**Course Outcomes**

- Students will audition for and received feedback from industry professionals in two markets
- Students will experience an audition/showcase situation in two entertainment markets
- Students will have several performance-ready audition selections prepared
- Students will have professionally produced personal promotional material on hand
- Students will experience Master Classes from working Broadway professionals
- Students will recognize their 'type' and marketability within the entertainment industry
- Students will establish professional contacts that will aid them in making the transitionfrom the academic to the professional world of theatre

15. Complete 7.5 hours of electives from the following music, dance, or theatre courses:

DANCE 294R : Ballet Technique, Men. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: DANCE 290

DESCRIPTION: Intermediate classical ballet technique for men.

**Course Outcomes**

- 1. Students will acquire a degree of mastery in men's intermediate ballet technique.
- 2. Students will Increase postural awareness; begin to correct imperfections; add physical strength, endurance, flexibility, extension, coordination, grace, precision and elevation; and improve the health and appearance of the physical body.
- 3. Students will Increase their awareness and appreciation for ballet, its aesthetic beauty, demanding discipline, and lifelong benefit of enhancing and integrating the physical, spiritual, intellectual, and emotional aspects.
- 4. Students will acquire improved awareness of the physical body and its capacity to move.
- 5. Students will gain a sense of personal accomplishment and worth.
- 6. Enlarge one's understanding of the relationship between religion and the fine arts.
- 7. Students will increase in desire to patronize the art to some degree in the future.
- 8. Students will develop an evaluation standard to aid in selecting future quality ballet training for self and/or for family.

DANCE 335R : Tap Dance Technique 2. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Dance 235 or equivalent.

**Course Outcomes**

- Students will explore the intricacies of complex rhythms
- Students will focus on dynamics, accents, and shading, etc.
- Students will continue to work on speed, clarity, and exactness in tap technique
- Students will explore the use of counterpoint, stop time, phrasing, and different time signatures.
- Students will enhance improvisational skills, creative thinking and risk-taking.
- Students will learn the theory and process of composition.
- Students will work on their performance skills and personal style.
- Students will learn the skills of tap notation.
- Students will develop a sense of aesthetic perception to self evaluate and self correct.

DANCE 340R : Contemporary Dance, Technique and Theory 3. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Dance 243R or equivalent; by audition.

**Course Outcomes**

- Demonstrate intermediate/advanced Contemporary dance technical proficiency in whole body connectivitystrength & flexibilitybreath initiation and supportconsistent core support functional alignmentbalance & coordination groundedness and weight sensingshape clarity, spatial accuracy and rangefocusrhythmic accuracyarticulationdynamic contrastcomplex movement skills
- Demonstrate increased dance performance artistry in:sequence masterymusicalityexpressivitypersonal interpretationnuanceensemble
- Describe, assess and write about demonstrated achievement of technical and performance skill
- Show sustained application of feedback from assessments
- Articulate understanding of Contemporary/Modern dance as an art form
- Articulate dance connections to gospel principles mind, body and spirit

DANCE 362 : Contemporary Choreography Intermediate. (2:0:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 244R

DESCRIPTION: Fundamental choreographic structure emphasizing visual, kinesthetic, and musical aspects in contemporary dance.

**Course Outcomes**

There are no course outcomes available

DANCE 363 : Dance Improvisation, Intermediate. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 244R

**Course Outcomes**

- Students will learn to Move! To Explore!
- Students will learn to break comfortable and limiting movement patterns, dancing in ways that you have not moved before.
- Students will learn to "call up spontaneity at will".
- Students will learn to develop improvisational skills of "muscle readiness".
- Students will learn to learn how to suspend judgment.
- Students will learn to evolve movement over an extended period of time without losing spontaneity.
- Students will learn to practice recalling movement.
- Students will learn to practice relating to other dancers in various improvisational structures.
- Students will learn to evolve movement "in the moment" with a sense of form and definition (beginning, middle, end) thus "finding the dance" in the instant of exploration and improvisation.

DANCE 368R : DancEnsemble - Contemporary Dance Performance and Choreography. (1-2:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

DESCRIPTION: Experiences in contemporary dance choreography and performance.

**Course Outcomes**

- 1. Demonstrate increasing performance skill, including skills of concentration, discipline, focus and stage presence.
- 2. Demonstrate increasing technical skill, focusing specifically of the refinement of nuance, projection, dynamics and the ability to dance within the context of an ensemble.
- 3. Create and evaluate dances, giving increased attention to the ability to see and respond to the possibilities within any given choreographic situation.
- 4. Investigate and refine their own individual choreographic and performance voice.

DANCE 390R : Ballet Technique 3. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Audition.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advanced/intermediate ballet technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at an advanced/intermediate level standard.
- Each student will:Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 391R : Ballet Technique 4. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advanced levelballet technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at an advanced level standard.
- Each student will:Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 393R : Ballet Pointe 2. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition required; concurrent enrollment in Dance 390R or 391R.

DESCRIPTION: Advanced level pointe. Satisfies BA requirements in Dance.

NOTE: Although this is an open enrollment course, all students must receive teacher approval or level placement audition before registering.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advanced/intermediateballet pointe technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Apply a working knowledge of French ballet terminology, analytical skills, and sound writing skills by submitting a weekly journal entry or written self-evaluation, and a written critique of a live performance.
- Each student will:Participate fully in the pointe technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 399R : Academic Internship: Dance. (.5-4:0:50)

**Course Outcomes**

- 2. Demonstrate the propensity to interact with professionals in their field of study in a credible, responsible and articulate manner.
- 1. Develop contacts with professionals in their field of study with the intent of creating a network that will be beneficial to future career choices.
- 3. Demonstrate improvement in the assigned responsibilities throughout the course of the internship as evaluated by the mentor teacher/intern supervisor in three periods, early, middle, and end of the internship.

DANCE 429R : Dance Performance 2. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Instructor's consent.
DESCRIPTION: Participation as dancers in concert dance production.

**Course Outcomes**

- The learning outcomes of this course will be correlated somewhat with the learning outcomes of one of the regular dance performance groups. However, due to the individualized nature of this course, individual outcomes will be designed by the instructor based upon the needs and opportunities of the student.

DANCE 440R : Contemporary Dance, Technique and Theory 4. (2.5:0:7.5)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Dance 340R or equivalent; by audition.

**Course Outcomes**

- 1. Students will demonstrate advanced technique proficiency instrength flexibilityconnectivitycomplex sequence mastery movement problems
- 2. Students will demonstrate performance awareness and control over movement innuancedynamicmusicalityfreedom from tensionshapinginitiationbreath qualityphrasing and composition
- 3. Students will describe, assess and write about achievement of technical skills and performing skills
- 4. Students will articulate appreciation for the divine nature of the human body as it relates to gospel principles as well as the relationship between mind/body/spirit.
- 5. Students will articulate appreciation for dance as an art form

DANCE 462 : Contemporary Choreography, Advanced. (2:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: DANCE 362
DESCRIPTION: Creation and presentation of complete choreographic works.

**Course Outcomes**

There are no course outcomes available

DANCE 468R : Contemporary Dance Theatre. (2:0:12)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.
DESCRIPTION: Performing modern and contemporary dance repertory on and off campus.

**Course Outcomes**

- 2. Show increased technical ability.
- 1. Develop advanced performance skill and artistry.
- 3. Understand choreographic principles.
- 4. Contribute to the choreographic process.
- 5. Perform dances for audiences on campus, in schools, in professional venues, and at conferences.
- 6. Make visible attitudes of professional behavior.
- 7. Strengthen their testimony of the gospel and deepen their desire to share light and truth through the art form of dance.

DANCE 490R : Ballet Technique 5. (3:0:9.5)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition.
DESCRIPTION: Advanced ballet technique, including advanced pointe work for women and advanced technique for men.

**Course Outcomes**

- Each student will:1. Acquire a degree of mastery in advancedballet technique. These skills will be accomplished through active class participation and the practice of the movement vocabulary detailed in the appendix. Please consult the appendix for the specific criteria and standards.
- Each student will:1. Acquire a working knowledge of French ballet terminology and the correct execution for the technique appropriate at this level and then pass an objective written exam prepared by the ballet program.2. Submit a completed self-assessment rubric and/or written self-evaluation at the individual midterm conference.3. Submit a written critique of a perceptively analyzed live ballet performance according to the guidelines provided. Required expectations include sound writing skills, qualitative reasoning, and an ability to assess ballet technique at an advanced level standard.
- Each student will:Participate fully in the technique class by dancing each class period and pass the required technique exam at the end of the semester/term, being graded on the movement vocabulary detailed in the appendix.

DANCE 494R : Ballet Variations. (1:0:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Dance 391R and 393R or equivalents.

**Course Outcomes**

- Students will learn and achieve technical and stylistic mastery of several variations from classical ballets.
- Students will learn and record the background, libretto, and style of the specific ballets through brief lectures.
- Students will compile a notebook with the background, libretto, and details of each variation which will aid in the future instructing of these variations. The student will include specifics on choreographers, composers, and dancers where applicable; as well as all steps of each variation written in a clear, understandable form.
- Students will learn each variation and be required to perform throughout the semester.
- Students will prepare variations to perform and be graded on those technical and stylistic requirements.

DANCE 495R : Pas de Deux. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: Audition.

DESCRIPTION: Ballet partnering techniques.

**Course Outcomes**

- 1. Students will find the point of balance for incomplete and complete turns.
- 2. Students will learn to perform falling poses and promenades.
- 3. Students will demonstrate knowledge of three basic turns: finger pirouette, pirouette partnered at the waist, and pirouette partnered at the hand(s) / wrist(s).
- 4. Students will maintain placement and strength during lifts (Female).
- 5. Students will lift partner above the head with stretched elbows and correct position of the back and head, with knees stretched and heel on the floor (Male).
- 6. Students will demonstrate focus on partner during combinations while being cognizant of the facial expressions.
- 7. Students will demonstrate shoulder lift on one side (left or right) with appropriate expression and maintain position for 10 seconds.
- 8. Students will perform a double pirouette, en dehors and en dedans, when partnered at the waist at least 75% of the time.
- 9. Perform triple finger pirouettes, en dehors at least 75% of the time.
- 10. Perform technique and partnering skills correctly to avoid injury.
- 11. Students will achieve traditional manners of courtesy and noble dignity that should be present between the male and female dancers.
- 12. Students will achieve an appreciation for the partner's role in creating a union of movement.
- 13. Students will increase trust between the male and female partner.

DANCE 498R : Ballet Performance Company. (2:0:10)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Audition and concurrent enrollment in Dance 391R or 490R; 494R or 495R.

DESCRIPTION: Performance technique and experience with BYU Theatre Ballet.

**Course Outcomes**

- Students will:1. Learn and master technically and stylistically several variations from various ballets, thereby expanding his/her ballet knowledge and repertoire. (Specific variations and ballets vary according to semester.)2. Learn the background, libretto, and style of the specific ballets through brief lectures.
- Students will:1. Acquire, through research, a working knowledge of several classical ballets and classical ballet variations2. Compile a notebook with the background, libretto, and details of each variation which will aid in the future instructing of these variations. The student will include specifics on choreographers, composers, and dancers where applicable; as well as all steps of each variation written in a clear, understandable form. This will be a valuable written source that will be a lasting tool for any future teaching, dancing, or choreographing position.
- Students will:1. Learn the variations and strive to understand the differing technical and stylistic requirements of each. 2. Prepare the variations to perform and be graded on those technical and stylistic requirements.

MUSIC 186 : Songwriting 1. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Basic music reading and keyboard skills.

DESCRIPTION: Songwriting for present-day music publishing industry; basic songwriting theory; form, content, and style.

**Course Outcomes**

- Students study such topics as creativity itself, writing techniques, and the importance of collaboration. By the end of the semester each student will have completed several preparatory assignments in addition to a culminating creative song project. The students will receive an introduction to a working MIDI-technology studio. Parallel to these assignments are readings about the models of the music business: music publishing, record labels, legal concepts, the copyright law, etc. Quizzes and a final exam measure retention of these concepts. Students who master the principles advanced will be able to function creatively and to manage others involved in the creation of commercial songs.

MUSIC 320R : Young Ambassadors. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Audition and director's consent.
DESCRIPTION: Participation as soloists, coaches, or directors in music dance theatre performances.

**Course Outcomes**

- Students will explore the Music Dance Theatre tradition of America as they learn song and dance sequences from the American Songbook.
- Students will progress in their level of proficiency in dance and singing through intensive rehearsal and frequent performance opportunities.
- Students will serve in the community, in public schools, and with service organizations nationally and internationally to build bridges of understanding between cultures and peoples.

MUSIC 360R : Performance Instruction. (.5-2:1:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Music major status; jury approval.
DESCRIPTION: Private instruction and studio class.
NOTE: From one to four hours of daily practice. Fee.

**Course Outcomes**

- Students will learn how to improve their technical facility and artistic expression in their chosen area of musical study.

MUSIC 363 : Vocal Pedagogy. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Junior standing as vocal performance or choral music education major or instructor's consent.
DESCRIPTION: Introduction to physiology, acoustics, and pedagogy of singing.

**Course Outcomes**

- Students will learn the physiology and biomechanics of the human voice.
- Students will learn the acoustical laws which govern sound as applied to the human voice.
- Students will learn pedagocial approaches to teaching voice which conform to physical and acoustical principles.

MUSIC 386R : Songwriting 2. (2:2:0)

WHEN TAUGHT: Winter
PREREQUISITE: MUSIC 186; Music major status.
DESCRIPTION: Projects in advanced songwriting.

**Course Outcomes**

- In Music 386R, advanced songwriting, the student is encouraged to think more deeply about the ultimate purpose of songs being written either for personal reasons, or to answer the needs of publishers or producers of movies and television episodes, who are requisitioning specific content or musical style. The course is repeatable to allow the developing student writer multiple chances to hone this important craft. Industry-style collaboration situations are encountered in this class, and the pace of writing, as well as the number of projects expected, reflects a more professional pace of working.

MUSIC 399R : Academic Internship. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.
DESCRIPTION: Internship or externship in creative, performing, producing, or teaching applications of major course work.

**Course Outcomes**

- Students will participate in an off-campus performance or administrative experience to enhance the student's academic training at the university.
- Students will gain access to professional contacts and create a network beneficial to future career choices.
- Students will apply acquired classroom skills in a professional setting.

TMA 127 : Beginning Stage Combat. (1:2:1)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: BFA acting, acting pre-major, or theatre education major status; or instructor's consent.
DESCRIPTION: Basic hand-to-hand stage combat instruction. Introduction to tumbling and falls.

**Course Outcomes**

- Students will describe the historical development of weapons.
- Students will practice physical dexterity and concentration skills.
- Students will recognize and use basic stage combat vocabulary.
- Students will integrate stage combat choreography into text and scene work.
- Students will practice appropriate safety procedures.

TMA 215R : Special Projects 1. (.5-3:Arr:Arr)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Theatre and media arts major status. By application only.

DESCRIPTION: Special projects in theatre and media arts.

**Course Outcomes**

- Because of the specific nature of the project course, students will work with their advisor to list at least three (3) objectives they hope to achieve that are in line with the program-level learning outcomes.

: Special Projects 1: Media.

**Course Outcomes**

: Special Projects 1: Theatre.

**Course Outcomes**

TMA 220R : Workshop 1: Acting. (.5-3:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: By audition only.

DESCRIPTION: Experience in production: acting.

**Course Outcomes**

- Students will prepare a role in a mainstage production synthesizing and showcasing the research, creative process, and collaboration of the rehearsal process.
- Students will develop a gospel-centered sense of empathy and compassion that will serve as a foundation for the actor on stage and screen, as well as a foundation for living a more Christian life.
- Students will apply professional work habits of dependability, promptness, cooperation, preparation, and the ability to make independent choices.

TMA 224 : Acting for Film and TV. (3:6:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 124; or TMA 228; BFA acting major or acting pre-major status. By audition only.

DESCRIPTION: On-camera techniques for features, sitcoms, industrials, and commercials.

**Course Outcomes**

- Students will analyze a script with an eye toward camera acting.
- Students will practice acting for various genres of electronic media, demonstrating competency in various acting techniques and the ability to take direction.
- Students will evaluate their individual strengths and weaknesses and modify their acting practices based upon that evaluation.
- Students will demonstrate familiarity with film language and tools of the trade in a variety of professional situations, including auditioning.

TMA 225 : Neutral Mask. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 125 & TMA 128 & TMA 228; By audition only.

DESCRIPTION: Use of masks in teaching specificity of movement, communication, and emotion.

**Course Outcomes**

- Students will utilize their bodies to communicate thought process, relationship, and emotion.
- Students will employ laban techniques in order to break old acting habits and acquire a larger palate for physical and emotional choices.
- Students will apply techniques of mask by creating a fully realized character.

TMA 236 : Directing Fundamentals. (2:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: TMA 115 for theatre arts studies majors or minors, or BFA acting majors. Theatre education major or minor status or instructor's consent.

DESCRIPTION: Fundamental elements of stage directing, including observation, collaboration, imagination, casting, working with actors, camera, spaces, words, images, rehearsals, and final product. Lab required.

**Course Outcomes**

- Students will demonstrate storytelling skills through identification of dramatic structures and genres, careful interpretation, and script analysis, both oral and written.
- Students will practice production work towards creating imaginative design, composition, and staging.
- Students will develop a process for working with actors, designers, and dramaturgs in a collaborative way in order to tell compelling stories.
- Students will employ artistic decisions that are informed by principles of human interaction, the spirit of truth, and the light of Christ.

TMA 322 : Classical Voice. (2:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: BFA acting or MDT major status. BFA acting majors: TMA 222 and 228. BFA MDT majors: TMA 121 and 228.

DESCRIPTION: Speech techniques (word stress, inflection, pitch, pace, etc.) applied in the classical play.

**Course Outcomes**

- Students will produce work at a consistently competitive level of expertise.
- Students will demonstrate mastery of Standard American Speech dialect.
- Students will demonstrate mastery of the performance techniques of word stress, inflection and pitch, projection and heroic builds in more challenging monologue work.

TMA 324 : Acting Classics. (3:6:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 222 & TMA 228; BFA acting major status. By audition only.

DESCRIPTION: Acting skills helpful in classical literature, emphasizing Shakespearean scansion and text analysis.

**Course Outcomes**

- Students will show proficiency with scansion and folio text analysis for Shakespearean text.
- Students will apply fundamental acting principles and vocal techniques to the performance of assigned scenes and monologues from classical texts.
- Students will demonstrate their ability to analyze a play from an actor's point of view and choose objectives, actions, and obstacles congruent with the historical text.
- Students will practice positive work habits of an actor, i.e. dependability, punctuality, cooperation, dedication, consideration of fellow actors, and ensemble work.

TMA 325 : Stage Combat. (2:4:2)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 125 & TMA 127 & TMA 225; BFA acting major status.

DESCRIPTION: Skills of safe hand-to-hand combat, including use of rapier, dagger, and broadsword, for stage and screen.

**Course Outcomes**

- Students will use SAFD techniques to safely and believably perform in a theatrical production using various weapons for period stage plays.
- Students will demonstrate improved individual physical coordination.
- Students will use various technical terms from a glossary of SAFD Lexicon.
- Students will model correct fighting techniques for rapier, rapier and dagger, and broadsword.
- Students will demonstrate a deeper awareness of body and its impact on the storytelling process in scene work.

TMA 329 : Theatre and Film Acting Conservatory. (3:6:ARR)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: TMA 122 & TMA 224; BFA acting major status. By audition only.

DESCRIPTION: Extensive work on a theatre or film project through semester, culminating in performance of play or preview of film/video.

**Course Outcomes**

- Students will analyze a script.
- Students will perform a role in a full-length play production.
- Students will demonstrate the ability to work beyond their comfort zone in terms of emotional risks and personal acting habits.
- Students will collaborate with other actors to develop a trusting ensemble.

TMA 336 : Directing Principles and Practices. (3:4:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: TMA 236; Theatre arts studies majors status. Instructor's consent.

DESCRIPTION: Theories and processes of taking a scene from script to production. Lab required.

**Course Outcomes**

- Students will develop their own method of directing through examining and employing a wide variety of prominent directors' processes.
- Students will enlarge the ability to communicate through theatre by taking scenes from the text to performance through interpretation, analysis, composition, and pre-production work.
- Students will practice the collaborative nature of theatre production by working with actors, designers, dramaturgs, and classmates in order to tell compelling stories.
- Students will make artistic decisions that are informed by principles of human interaction, the spirit of truth, and the light of Christ.

TMA 399R : Academic Internship. (.5-9:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Theatre students: TMA 115 and application. Media students: TMA 112 and 114 and 185/105 and application.

DESCRIPTION: Off-campus experience or internship in theatre or media arts.

**Course Outcomes**

- Because of the individual nature of the internship course, students work with their advisor to list at least three (3) objectives they hope to achieve that are in line with the program level learning outcomes.

: Academic Internship: Media.

**Course Outcomes**

: Academic Internship: Theatre.

**Course Outcomes**

TMA 420R : Performance Workshop 2. (.5-3:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: By audition only.

DESCRIPTION: Advanced experience in production: acting.

**Course Outcomes**

- Students will develop a gospel-centered sense of empathy and compassion that will serve as a foundation for the actor on stage and screen, as well as a foundation for living a more Christian life.
- Students will prepare a role in a mainstage production syntehesizing and showcasing the research, creative process, and collaboration of the rehearsal process.
- Students will apply professional work habits of dependability, promptness, cooperation, preparation, and the ability to make independent choices.

TMA 424 : Advanced Acting. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 324. BFA acting major status. By audition only.

DESCRIPTION: Scene studies in extended realism. Absurdism, American classics, Shaw, Chekhov, etc.

**Course Outcomes**

- Students will analyze plays and characters from an actor's point of view, and will choose objectives, actions, and obstacles congruent with the historical text of modern classic texts.
- Students will employ honest communication and listening skills and demonstrate an ability to make choices that challenge individual emotional range.
- Students will continue practice the positive work habits of an actor, i.e. dependability, punctuality, cooperation, dedication, consideration of fellow actors, and ensemble work.

TMA 425 : Character Mask. (2:4:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: BFA acting major status. By audition only.

DESCRIPTION: Use of the body as a primary tool for character and script interpretation.

**Course Outcomes**

- Students will apply created characterizations to performance texts.
- Students will apply the Suzuki method, physicalizing a character "from the outside in."

TMA 429 : Performance: Recital. (3:2:4)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: TMA 229 and 422 and 424. BFA acting major status. By audition only.

DESCRIPTION: Thirty- to forty-five minute performance of cuttings from varied genres.

**Course Outcomes**

- Students will select and prepare four scenes and four monologues that will be performed for an invited audience at the end of the semester.
- Students will practice positive work habits of an actor, i.e. dependability, punctuality, cooperation, dedication, consideration of fellow actors, and ensemble work.
- Students will identify and expand their capabilities as a performer in order to gain flexibility and contrast of voice, movement, energies, dialect, and characterizations in performance.

TMA 443R : Writer/Dramaturg/Actor Workshop. (3:6:1)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115 and instructor's consent.

DESCRIPTION: Collaborative workshop developing new stage and screenplays through exercises, discussion, and writing. Scripts selected competitively; public readings at end of course.

**Course Outcomes**

- Students will develop the ability to objectively explore the merits of a new script and to identify strengths and weakness in new scripts.
- Students will develop the ability to thoughtfully and accurately express their opinions in constrictive ways and to workshop this feedback appropriately.
- Students will develop the ability to evaluate and appropriately apply feedback on their new scripts and to effectively rewrite their new scripts.

TMA 515R : Special Projects 3. (1-6:Arr:Arr)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Theatre and media arts students: by application.
DESCRIPTION: Advanced special projects in theatre or media arts.

**Course Outcomes**

- Because of the individual nature of the internship course students work with their advisor to list at least three objectives they hope to achieve that are in line with the program level learning outcomes.

: Special Projects 3: Media.

**Course Outcomes**

: Special Projects 3: Theatre.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

## Show all Dance Courses

## Show all Music Courses

## Show all Theatre and Media Arts Courses

**College of Fine Arts and Communications Home**

**Theatre and Media Arts Department Home**

**Majors**

- BA in Media Arts Studies
- BA in Theatre Arts Education K–12
- BA in Theatre Arts Studies
- BFA in Acting

**Minors**

- Media Arts Studies
- Theatre Arts Studies

**Course Information**

- Theatre and Media Arts (TMA) Courses

**Faculty**

# Theatre and Media Arts (TMA)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

TMA 100 : Introduction to Visual Literacy. (3:2:2)

DESCRIPTION: Overview of visual communication, with hands-on experience in multimedia design and tools, structured to increase awareness of visual functions and develop beginning proficiency with computer-assisted visual communications.

**Course Outcomes**

No outcomes are available at this time.

TMA 101 : Introduction to the Theatre. (3:3:1)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Reading, viewing, analyzing, writing about, and interacting with contemporary plays and performances to explore both theatre fundamentals and ways theatre addresses questions and concerns of our time. Lab required.

**Course Outcomes**

- Students will demonstrate a deeper appreciation for each of the participating aspects of theatrical production by researching, collaborating, visualizing, and mounting an original play.
- Students will demonstrate the tools to critically observe and read theatre within its historical and contemporary contexts through reading, writing, viewing, analyzing, discussing, and actively participating.
- Students will render a minimum 10 hours of service to a live theatre project during the semester. The service can be in the form of acting, stage-managing, writing, dramaturgy, or working technical on a project.

TMA 102 : Introduction to Film. (3:4:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Analytical studies for understanding and appreciating media forms and messages, as well as basic history, theory, and aesthetics. Lab required.

**Course Outcomes**

- Students will become active, intelligent film viewers
- Students will be exposed to the practical elements of film
- Students will learn about a wide range of stories and stylistic strategies utilized by film artists and institutions
- Students will become familiar with new and helpful ways of receiving films. They will be able to evaluate and analyze films in a variety of contexts.

TMA 104 : New Media Tools. (2:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Media arts major or minor status.

DESCRIPTION: Introductory course to familiarize students with using new media tools.

**Course Outcomes**

There are no course outcomes available

TMA 105 : Using Basic Media Tools. (1:1:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Media arts major or minor status or animation major status; concurrent enrollment in TMA 185.

DESCRIPTION: Introductory course to familiarize students with basics in camera, lighting, and sound fundamentals.

**Course Outcomes**

- Students will become familiar with new and helpful ways of receiving films. They will be able to evaluate and analyze films in a variety of contexts.
- Students will begin to conceptualize, write, shoot, and edit fiction and non-fiction stories.
- Students will present, discuss, analyze, and critique others work in the spirit of peer to peer collaboration.

TMA 110 : Media Arts Experience. (1:0:4)

PREREQUISITE: Premajor status.

DESCRIPTION: Practical introductory experience working in media environments (including film and broadcast facilities).

**Course Outcomes**

No outcomes are available at this time.

TMA 112 : Collaboration, Research, and Visualization. (3:3:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 102; Acceptance into media arts program.

DESCRIPTION: Overview and practical applications of principles of collaboration, research, and visualization as essential elements of appreciation and production of new media and media arts projects.

**Course Outcomes**

- -->Students will identify story resources
- Students will experiment with the ways that those stories might work together
- Think about the ways they might communicate those stories visually and aurally to audiences
- Practice processes of conceptualization, creation, and dissemination of story ideas

TMA 114 : Reading and Constructing Narratives. (3:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Media Arts major or minor status.

DESCRIPTION: Analyzing basic narrative principles; conceptualizing and writing narratives for theatre and media.

**Course Outcomes**

- The objective of this class is to explore a range of story types that you should all know about. You have different career aspirations, but practitioners and scholars alike will want to be able to read, comprehend, and adapt/implement this array of narrative methods.
- To equip students with a set of critical tools that will aid them in their studio work
- To establish a solid foundation for students as they prepare to take higher-level Critical Studies courses—namely, Dramatic Literature (TMA 395 & 396) and Contemporary Performance Practices (TMA 401)
- To provide students a stronger understanding of how the world around them is constructed and how they might better participate in, resist, and/or affect that world.
- Graduates will distinguish themselves through leadership, inspiration, and integrity in professional experience.

TMA 115 : Introduction to Performance Studies. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Theatre arts studies major or minor status; or BFA acting major or acting pre-major status; or theatre education major status.

DESCRIPTION: Textual analysis of traditional plays. Introduction to performance studies. Ritual, play, performativity, performing, performance processes, and global and intercultural performance.

**Course Outcomes**

There are no course outcomes available

TMA 121 : Voice and Diction. (2:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BFA MDT or theatre education major status; or instructor's consent.

DESCRIPTION: Skills involved in producing an effective voice; International Phonetic Alphabet. Lab required.

**Course Outcomes**

- Students will practice voice production techniques, including Fitzmaurice and Linklater methods, identifying a “personal voice”, integrating voice work, acting technique, emotional dexterity, use of impulses , and self-discovery in performance
- Students will identify and articulate key characteristics of the International Phonetic Alphabet and the Standard American Stage Dialect and integrate the Standard American Stage Dialect into acting performance.
- Students will self-evaluate individual progress and performance, practice effective and supportive vocal coaching and peer evaluation, and apply professional work habits.

TMA 122 : Voice Production and Phonetics 1. (2:3:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: BFA acting or acting pre-major status; or instructor's consent.

DESCRIPTION: Foundational exercises to aid in freeing tensions, habits/patterns, and finding the natural state of the voice. Lab required. Introduction to the use of Standard American Stage Dialect with International Phonetic Alphabet. Identification of speech/articulation problems.

**Course Outcomes**

- Have a greater awareness of their own bodies address individual problems which can inhibit sound through specific exercises
- Begin to deconstruct areas of physical and emotional tension and apply restructuring breathing techniques to text
- Gain greater self-awareness and acceptance of their “holistic” self without judgment
- Increase emotional vulnerability in their acting
- Increase breath capacity for power and support in monologue work

- Develop a larger concept of spirituality which includes use of their bodies and voices awell as their spirits; emulate gospel principles in their art as well as in their lives

TMA 123 : Acting Fundamentals. (2:4:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamental acting skills: exercises in perception, objective/action, thought processes, scoring of scripts. Lab required.

**Course Outcomes**

- Develop a gospel-centered sense of empathy and compassion that will serve as a foundation for the actor on stage and screen, as well as a foundation for living a more Christian life. Acting Fundamentals Students will demonstrate a knowledge of and an ability to integrate fundamental acting principles.
- Students will apply professional work habits of dependability, promptness, cooperation, a sense of ensemble, and the ability to make independent choices.
- Develop practical acting analysis skills via studio work including objectives, tactics, obstacles, beats, given circumstances.
- Develop critcial observation skills through attendance at theatrical performances, and the reading of selected dramatic texts.

TMA 125 : Yoga and Alexander Technique. (1:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: BFA acting or acting pre-major status; or instructor's consent.

DESCRIPTION: Techniques of relaxation, breath, focus, and posture to enhance actor's body and voice as a whole integrated tool in performance.

**Course Outcomes**

- Students will have a greater awareness of their own body.
- Students will demonstrate focused control over their own minds and bodies.
- Students will practice various Yoga positions, which creates greater breath capacity, flexibility, strength and relaxation.
- Students will demonstration a sense of balance and centering.

TMA 127 : Beginning Stage Combat. (1:2:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BFA acting, acting pre-major, or theatre education major status; or instructor's consent.

DESCRIPTION: Basic hand-to-hand stage combat instruction. Introduction to tumbling and falls.

**Course Outcomes**

- Students will describe the historical development of weapons.
- Students will practice physical dexterity and concentration skills.
- Students will recognize and use basic stage combat vocabulary.
- Students will integrate stage combat choreography into text and scene work.
- Students will practice appropriate safety procedures.

TMA 128 : Acting 1: BFA or Pre-BFA. (3:6:1)

WHEN TAUGHT: Fall

PREREQUISITE: BFA MDT or acting pre-major status; or instructor's consent.

DESCRIPTION: Accelerated fundamental acting skills: exercises in perception, objective/action, thought processes, scoring of scripts. Lab required.

NOTE: Designed specifically for acting pre-major students and first-year music dance theatre students.

**Course Outcomes**

There are no course outcomes available

TMA 150 : Public Speaking. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Principles and methods of public speaking; speaking experiences.

**Course Outcomes**

- Develop analytical listening and observation skills.
- Know how to speak publicly so your audience will really listen and understand.
- Construct and deliver effective extemporaneous public speeches.
- Manage speech anxiety and effective use nonverbal communication to inform, persuade, enlighten, and impact your audience.
- Be able to produce and employ effective visual aids in your presentations.

TMA 160 : Theatre Production 1. (1:2:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Introduction to technical support for realized production; production team techniques; production concept; realized production analysis.

**Course Outcomes**

- Students will demonstrate an understanding of foundational production theories through oral response.
- Students will analyze the effectiveness of elements of production based on a creative teams' concept, production theories, and design elements.
- Students will receive their hands-on production experiences (TMA 260 and TMA 360).

TMA 170R : Practicum: Television. (.5-6:Arr:1)

DESCRIPTION: Practicum in beginning television production skills. Topics will vary by semester.

**Course Outcomes**

- Students are expected to gain knowlege and skills by shadowing a Television Professional at BYU Broadcasting.

TMA 184R : Practicum: Cinematic Skills. (.5-6:Arr:1)

WHEN TAUGHT: Spring; Summer

DESCRIPTION: Fundamentals of cinematic skills.

**Course Outcomes**

- Students are expected to gain added knowlege and skills by shadowing a Film Professional at the LDS Motion Pictures Studio.

TMA 185 : Basic Media Production. (3:4:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Media arts major/minor status or animation major status; concurrent enrollment in TMA 105.

DESCRIPTION: Introduction to basics of film and video production. Includes lecture and practical lab experiences with audio and video.

**Course Outcomes**

- Students will improve their capacity as story tellers and filmmakers.
- Students will begin to conceptualize, write, shoot, and edit fiction and non-fiction stories.
- Students will engage with texts about storytelling and production processes
- Students will present, discuss, analyze, and critique others work in the spirit of peer to peer collaboration

TMA 187 : Production Management: Beginning. (3:3:3)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

DESCRIPTION: Fundamentals of media production; budgeting, scheduling, and management skills.

**Course Outcomes**

- Understand the responsibilities of all key crew positions; emphasizing what is taken upon yourself when youagree to fill a certain position on a film, specifically the role of Producer and Unit Production Manager
- Effectively break down, schedule, and budget a script and who should be involved; where and how to savemoney and where to spend it;
- Problem solve;
- Grants, scholarships, funds available, student discounts, etc.;

TMA 199R : Academic Internship. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Theatre students: TMA 115 and application. Media students: TMA 112 and 114 and 185/105 and application.

DESCRIPTION: Off-campus experience or internship in theatre and media arts.

**Course Outcomes**

- Because of the individual nature of the internship course, students work with their advisor to list at least three (3) objectives they hope to achieve that are in line with the program-level learning outcomes.

: Academic Internship: Media.

**Course Outcomes**

: Academic Internship: Theatre.

**Course Outcomes**

**200-Level Courses**

TMA 201 : Dramatic Performance: Antiquity to Renaissance. (3:3:0)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Civilization from Greek antiquity through Renaissance, primarily from perspective of dramatic literature and performance. Ways in which performance functions within particular socioeconomic, political, religious, and aesthetic perspectives.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate a general working knowledge of major historical periods, philosophical trends, and performance movements and will draw connections between society and performance, through writing and class discussion.

- Students will analyze great works of literature through multiple perspectives—society, culture, politics, economics, gender roles, religion—to better understand the ways in which dramatic performance functioned in particular times and places.
- Students will appraise 1) how we represent the world, others, and ourselves and 2) the consequences of these representations for our families, our communities, and ourselves.

TMA 202 : Dramatic Performance: Renaissance to the Present. (3:3:0)

WHEN TAUGHT: Winter; Summer

DESCRIPTION: Civilization from Renaissance through present, primarily from perspective of dramatic literature and performance. Ways in which performance functions within particular socioeconomic, political, religious, and aesthetic perspectives.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate a general working knowledge of major historical periods, philosophical trends, and performance movements and will draw connections between society and performance, through writing and class discussion.
- Students will analyze great works of literature through multiple perspectives—society, culture, politics, economics, gender roles, religion—to better understand the ways in which dramatic performance functioned in particular times and places.
- Students will appraise 1) how we represent the world, others, and ourselves and 2) the consequences of these representations for our families, our communities, and ourselves.

TMA 215R : Special Projects 1. (.5-3:Arr:Arr)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Theatre and media arts major status. By application only.

DESCRIPTION: Special projects in theatre and media arts.

**Course Outcomes**

- Because of the specific nature of the project course, students will work with their advisor to list at least three (3) objectives they hope to achieve that are in line with the program-level learning outcomes.

: Special Projects 1: Media.

**Course Outcomes**

: Special Projects 1: Theatre.

**Course Outcomes**

TMA 220R : Workshop 1: Acting. (.5-3:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: By audition only.

DESCRIPTION: Experience in production: acting.

**Course Outcomes**

- Students will prepare a role in a mainstage production synthesizing and showcasing the research, creative process, and collaboration of the rehearsal process.
- Students will develop a gospel-centered sense of empathy and compassion that will serve as a foundation for the actor on stage and screen, as well as a foundation for living a more Christian life.
- Students will apply professional work habits of dependability, promptness, cooperation, preparation, and the ability to make independent choices.

TMA 222 : Voice Production and Phonetics 2. (2:3:1)

WHEN TAUGHT: Winter; Summer Contact Department

PREREQUISITE: TMA 115; BFA acting or acting pre-major status. By audition only.

DESCRIPTION: Advanced exercises to aid in freeing tensions, habits/patterns, and finding the natural state of the voice. Lab required. Continued study and mastery of Standard American Stage Dialect with International Phonetic Alphabet. Identification of speech/articulation problems.

**Course Outcomes**

There are no course outcomes available

TMA 223 : Acting Improvisation. (2:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 124; or TMA 228; BFA acting or BFA MDT or acting pre-major status. By audition only.

DESCRIPTION: Discovery of emotion, thought process, and impulse through improvisation.

**Course Outcomes**

- Students will assess improvised performances.
- Students will analyze scripted texts for objectives, tactics, obstacles, and relationships and apply that analysis to improvised performances.
- Students will demonstrate their acting ability and the ability to suppress reasoned acting choices and embrace their immediate impulses via improvisational exercises and scene work.
- Students will identify and explore different ways of using their body to express emotion and characterization.

TMA 224 : Acting for Film and TV. (3:6:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 124; or TMA 228; BFA acting major or acting pre-major status. By audition only.

DESCRIPTION: On-camera techniques for features, sitcoms, industrials, and commercials.

**Course Outcomes**

- Students will analyze a script with an eye toward camera acting.
- Students will practice acting for various genres of electronic media, demonstrating competency in various acting techniques and the ability to take direction.
- Students will evaluate their individual strengths and weaknesses and modify their acting practices based upon that evaluation.
- Students will demonstrate familiarity with film language and tools of the trade in a variety of professional situations, including auditioning.

TMA 225 : Neutral Mask. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 125 & TMA 128 & TMA 228; By audition only.

DESCRIPTION: Use of masks in teaching specificity of movement, communication, and emotion.

**Course Outcomes**

- Students will utilize their bodies to communicate thought process, relationship, and emotion.
- Students will employ laban techniques in order to break old acting habits and acquire a larger palate for physical and emotional choices.
- Students will apply techniques of mask by creating a fully realized character.

TMA 227 : Acting Explorations. (3:3:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: TMA 123

DESCRIPTION: Exploration into various Western acting techniques, styles, and practices to provide further acting experiences as part of a liberal arts education.

**Course Outcomes**

There are no course outcomes available

TMA 228 : Acting 2. (3:6:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: TMA 123; or TMA 128; BFA acting or BFA MDT or acting pre-major status. By audition only.

DESCRIPTION: Integrating acting skills; building a character through exercises and scene work.

**Course Outcomes**

There are no course outcomes available

TMA 229 : Musical Scene Study. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 228 & MUSIC 161 & DANCE 140; BFA acting or BFA MDT major status. By audition only.

DESCRIPTION: In-depth study of two genres of musical theatre; text analysis, research, written assignments.

**Course Outcomes**

- Acquire the following knowledge:Recognize the need for all actors to be able to work in a musical production.Recognize the basic construction of a musical.Be familiar with the vocal and dance expectations placed on a performer in a musical.Understand the collaborative process involved in mounting a musical.Understand the demands placed on the performer in a 'golden age' and contemporary musical.
- Acquire the following skills:Text analysis skills that allow the actor to maximize information provided in brief librettosAbility to add depth and history to characters that are not multi-layered as writtenAbility to recognize and play the subtext in brief librettosAbility to bring honesty to extended realism/dated text often found in musical librettos.Ability to service the stereotypes found in musical theatre without pandering to themAbility to submerge quickly into the imaginary world of short scenes often found in musicalsAbility to act IN and ON the text and music in a musicalAbility to make choices that capture the "essence" of an acting scene in a musical as readily as the music and dance doAbility to work quickly with little rehearsal of the "book scenes" of a musicalAbility to adapt one's "concentration mix" when acting/singing/dancing in a musical.
- Synthesize the following behavioral modifications:Develop professional wok habits including dependability, punctuality, cooperation and dedication.Further develop sensory organs that allow one to see, hear, smell, taste and touch more fullyFurther develop the actors' innate sense of following an impulse, objective, honesty, and working through a partner

TMA 236 : Directing Fundamentals. (2:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: TMA 115 for theatre arts studies majors or minors, or BFA acting majors. Theatre education major or minor status or instructor's consent.

DESCRIPTION: Fundamental elements of stage directing, including observation, collaboration, imagination, casting, working with actors, camera, spaces, words, images, rehearsals, and final product. Lab required.

**Course Outcomes**

- Students will demonstrate storytelling skills through identification of dramatic structures and genres, careful interpretation, and script analysis, both oral and written.
- Students will practice production work towards creating imaginative design, composition, and staging.

- Students will develop a process for working with actors, designers, and dramaturgs in a collaborative way in order to tell compelling stories.
- Students will employ artistic decisions that are informed by principles of human interaction, the spirit of truth, and the light of Christ.

TMA 241 : Screenwriting 1. (3:4:0)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department; Summer, Contact Department

PREREQUISITE: TMA 291 or 292 or concurrent enrollment.

DESCRIPTION: Basic narrative and nonfiction (documentary, educational, industrial, multimedia) screenwriting principles through reading, viewing, testing, and completing writing assignments.

**Course Outcomes**

- Draw on your own experiences to develop a unique point of view; observe your world to find stories to tell
- Understand and practice the basic artistic principles of screenwriting, including use of character, structure, images, meaning, theme, etc.
- Learn practices of professionalscreenwriting, including formatting, economy of description, etc.
- Give constructive feedback on others' stories; learn to receive constructive feedback on your own work

TMA 251 : Playwriting 1. (3:4:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115 or instructor's consent.

DESCRIPTION: Basic playwriting principles through reading, completing writing assignments, testing, and writing the first draft of a one-act play.

**Course Outcomes**

There are no course outcomes available

TMA 252 : Puppetry. (2:4:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Theatre education major status or instructor's consent.

DESCRIPTION: Theories, techniques, and experience constructing and operating puppets for use in performance, recreational, and educational settings.

**Course Outcomes**

- Students will learn to design, build and manipulate the following types of puppets:MarionetteWannabe PuppetFound Object/Recycled PuppetBig Mouth (Muppet)Parade Puppet
- Students will learn to use puppet strategies and skills in traditional and non-traditional environments includingSchoolsChurchesArts/Community CentersBoys/Girls ClubsEtc
- Use puppets to explore social and ethical issues within a targeted community.

TMA 257 : Storytelling. (2:4:1)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: Theatre education major status or instructor's consent.

DESCRIPTION: Theories, techniques, and practice in the art of constructing and telling stories for use in performance, recreational, and educational settings.

**Course Outcomes**

- Students will develop unique individual skills and styles in storytelling, demonstrating ability to create imagery, use vocal animation and characterization, and produce effective story sequences, supported by skilled delivery (body, voice, use of space).
- Students will survey and respond to a variety of storytelling styles by observing and writing about live, video and audio performances.
- Students will develop teaching strategies and coaching styles designed to support storytellers in targeted communities such as schools, businesses, the entertainment industry, churches, family, etc.
- Students will foster supportive relationships by connecting to national and local storytellers and organizations.

TMA 258 : Theatre Drafting. (2:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Basic training in manual and computer-aided drafting as well as visualization for theatre.

**Course Outcomes**

There are no course outcomes available

TMA 259 : Principles of Design for Stage and Screen. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 101 & 236; or instructor's consent.

DESCRIPTION: Survey of visual design principles for theatre, film, television and related media; collaborative team techniques; research theory; script analysis; production concept; applied approaches to costume, scenic, lighting, makeup, property and sound design.

**Course Outcomes**

- Students will demonstrate basic team collaborative techniques through multiple in-class activities.
- Students will utilize strong research approaches for solving unique production design challenges.
- Students will analyze production scripts for visual design needs.
- Student will employ basic design techniques to realize production designs for theoretical in-class productions.

TMA 260R : Theatre Production 2. (1-3:0:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TMA 160 and instructor's consent.

DESCRIPTION: Practical experience in the scene shop, costume shop, and lighting lab. Hands-on training for further production experience.

**Course Outcomes**

- Students will participate in a hands-on experience in a technical area such as wardrobe, lighting, sound, or as a member of the backstage crew for a fully realized production.

: Theatre Production 2: Costumes.

**Course Outcomes**

: Theatre Production 2: Make-up/Props/Lighting.

**Course Outcomes**

: Theatre Production 2: Theatre Education.

**Course Outcomes**

: Theatre Production 2: Scene Shop.

**Course Outcomes**

TMA 261 : Writing for Animation. (3:4:0)

WHEN TAUGHT: Fall

DESCRIPTION: Traditional screenwriting emphasizing stories for the medium of animation.

**Course Outcomes**

No outcomes are available at this time.

TMA 266 : Principles of Stage Craft. (2:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 115 and 160; or instructor's consent.

DESCRIPTION: Introduction to basic stage craft techniques: scenic tools and materials; construction, rigging and handling of scenery pieces; basic scenery painting techniques; properties construction and acquisition; related stage safety and maintenance.

**Course Outcomes**

- Students will demonstrate a foundational knowledge of basic scenery construction techniques.
- Students will participate in realized scenery construction projects.

TMA 267 : Principles of Makeup. (2:4:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to basic makeup application for stage and screen: corrective, glamour and age; stylized approaches; putty construction; crepe hair; wig application techniques.

**Course Outcomes**

- Students will demonstrate basic flat makeup skills through projects in corrective, glamour, and age.
- Students will create special makeup projects using putty and crepe hair.
- Students will perform basic wig applications.
- Students will apply previous makeup skills for a stylized project and a complete character, including makeup and hair.

TMA 270R : Practicum: Television. (1-6:Arr:1)

DESCRIPTION: Practicum in intermediate television production and direction. Topics will vary depending on specific television programs under production.

**Course Outcomes**

- This class is currently on Hiatus

TMA 273 : Beginning Non-Fiction and New Media Storytelling. (4:4:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 105 & TMA 185 & TMA 187; TMA 293 or concurrent enrollment.

DESCRIPTION: Principles and techniques of new media production, information gathering, conceptualizing, and storytelling.

**Course Outcomes**

There are no course outcomes available

TMA 276 : Exploration of Teaching Theatre. (3:6:3)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 101 & TMA 160; or TMA 102 & TMA 160; Theatre education major status. FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

- Understand the theoretical and practical nature of education;
- Evaluate a variety of learning styles;
- Objectively begin to understand their personal teaching style;
- Gain practical teaching experience;
- Acquire confidence in their teaching talents;
- Learn to develop specific lesson plans and educational units;
- Create a professional education portfolio;
- Learn about teaching resources and information.

TMA 277 : New Media Conceptualization. (3:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: Majors/minors: TMA 293, 295. Non-majors: no prerequisites.

DESCRIPTION: Concepts and techniques for creating new media production.

**Course Outcomes**

- Understand history, theory, principles of new media storytelling
- Develop a new media story. focus story to a specific audience
- incorporate lds themes into story in a way that is authentic and accessible to a modern audience

TMA 284R : Practicum: Cinematic Skills. (1-6:Arr:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Intermediate cinematic skills.

**Course Outcomes**

No outcomes are available at this time.

TMA 285 : Production: Intermediate. (4:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 105 & TMA 185 & TMA 187; TMA 291 or 292 (or concurrent enrollment).

DESCRIPTION: Survey and application of the basics of narrative and nonfiction, including 16-mm film. Lecture, discussion, lab, and individual/group experiences and critiques.

NOTE: Fee.

**Course Outcomes**

- Make practical production decisions
- - Guide a film from pre-production, through production, to post-production;
- Collaborate effectively with other filmmakers in the creation of a film;
- Function in at least 15 different positions, including Unit Production Manager, Location Manager, CastingDirector, Director, 1st Assistant Director, 2nd Assistant Director, Cinematographer, 1st Assistant Camera, Gaffer, Grip, Sound Recordist, Script Supervisor, Art Director, Post-production Supervisor, Editor, Foley Artist, Dialogue Editor, Mixer
- Use the equipment, tools and technologies associated with each position.

TMA 291 : Media Arts History 1. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: TMA 112 & TMA 114

DESCRIPTION: Survey of social, aesthetic, business, and technical dimensions of film and media from 1895 to 1945.

**Course Outcomes**

- familiarize students with the history of world cinema from 1895 to 1946 as informing and informed by culture, social history, emerging technologies and industry adaptations, and trends in visual art

TMA 292 : Media Arts History 2. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: TMA 112 & TMA 114

DESCRIPTION: Survey of social, aesthetic, business, and technical dimensions of film and media from 1946 to present.

**Course Outcomes**

- to familiarize students with the history of post-WWII world cinema as informing and informed by culture, social history, emerging technologies and industry adaptations, and trends in visual art

TMA 293 : History of Documentary and Nonfiction Film. (3:ARR:0)

WHEN TAUGHT: Winter; Spring
PREREQUISITE: TMA 112 & TMA 114
DESCRIPTION: Introduction to and contextualization of documentary film from its inception to present.

**Course Outcomes**

- To watch a lot of non-fiction films. And enjoy them *perhaps immensely). Meanwhile: to consider the idea of the nonfiction film from its beginning to the present day; to explore a range of approaches, styles, and individuals associated with the documentary idea; to discuss social and ethical issues that emerge around documentary film making; finally to consider how our own lives (as film makers, film critics, and normal people) are informed and shaped by documentary sensibilities. (or ought to be)

TMA 294 : History of Animation. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: TMA 102
DESCRIPTION: Origins and developments of animation internationally to the present, focusing on aesthetic, technical, political, and economic aspects of the medium.

**Course Outcomes**

- Students will learn the historical importance of the formation of the animation industry including visionary individuals that shaped the films we see today.

TMA 295 : History of the Moving Image. (3:3:0)
WHEN TAUGHT: Fall; Winter, Contact Department; Spring
PREREQUISITE: TMA 112 & TMA 114
DESCRIPTION: Continuities and changes in the moving image from 1895 to the present, focusing on implications of emerging and converging media for spectatorship, social and individual identity construction, and potential sharing of spirituality.

**Course Outcomes**

- • Examine moving images and their operations as spirituality, art, technology, social force, and economics
- • Explore spectator/user involvement in concrete aspects of the development of the moving image, from 1895 to the present
- • Thoughtfully consider the roles of contemporary media in shaping and revealing individual and social identities
- • Collaboratively identify and share information on current practices involving media interactivity and its impacts upon the “user”

TMA 299R : Academic Internship. (.5-9:ARR:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Theatre students: TMA 115 and application. Media students: TMA 112 and 114 and 185/105 and application.
DESCRIPTION: Off-campus experience or internship in theatre or media arts.

**Course Outcomes**

- Because of the individual nature of the internship course, students work with their advisor to list at least three (3) objectives they hope to achieve that are in line with the program-level learning outcomes.

: Academic Internship: Media.

**Course Outcomes**

: Academic Internship: Theatre.

**Course Outcomes**

### 300-Level Courses

TMA 300 : Music Theatre in Contemporary Culture. (1:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: MUSIC 290 & DANCE 243R & DANCE 244R; concurrent enrollment in Dance 300 and Music 300. MDT major status.
RECOMMENDED: Concurrent enrollment in Music 328 and Dance 328 and TMA 328.
DESCRIPTION: Analysis of the form, evolution, and influence of music dance theatre in Western culture.

**Course Outcomes**

- Students will be able to analyze, synthesize and articulate the significant facets of music, dance and theatre within the historical context of the musical theatre genre.
- p.MsoNormal, li.MsoNormal, div.MsoNormal { margin: 0in 0in 0.0001pt; font-size: 10pt; font-family: "Times New Roman"; }.MsoChpDefault { font-size: 10pt; }div.WordSection1 { page: WordSection1; }Students will be able to analyze, synthesize and articulate the significant facets of music, dance and theatre within the historical context of the musical theatre genre.

TMA 301 : Contemporary Performance Practices. (2:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: TMA 115; Theatre arts studies major status.
DESCRIPTION: Advanced studies in performance theory and practice.

**Course Outcomes**

There are no course outcomes available

TMA 302 : Studies in British Theatre Performance. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: Acceptance in the Theatre in London Study Abroad program.

DESCRIPTION: Analytical and theoretical study of theatre history, dramatic literature, and performance from the Renaissance to the present through pre- and post-performance study and discussion of a play presented in London by some of the world's most notable theatre companies.

**Course Outcomes**

- Students will increase their capacity to read and interpret dramatic texts
- Students will increase their capacity to engage critically in the relationship between the text and the performance through writing and discussion
- Students will increase their capacity to enegage critically with a theatrical performance in terms of aesthetics, values an dpreferences through writing and discussion
- Students will increase their capacity to experience a range of techniques in performance

TMA 315R : Special Projects 2. (.5-3:Arr:Arr)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Theatre and media arts major status. By application only.

DESCRIPTION: Intermediate projects in theatre or media arts.

**Course Outcomes**

- Because of the individual nature of the internship course students work with their advisor to list at least three objectives they hope to achieve that are in line with the program level learning outcomes.

: Special Projects 2: Media.

**Course Outcomes**

: Special Projects 2: Theatre.

**Course Outcomes**

: Special Projects 2: Assistant Stage Managers.

**Course Outcomes**

: Special Projects 2: Young Company Teaching Artists.

**Course Outcomes**

TMA 316 : Theatre and Media Arts Instruction. (1-3:Arr:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Theatre students: instructor's consent. Media arts students: TMA 102 and 112 and 114 and instructor's consent.

DESCRIPTION: Developing teaching methods and techniques for instruction in theatre and media arts classroom.

**Course Outcomes**

- Students will demonstrate an understanding of the principles of good teaching.
- Students will practice effective teaching skills.
- Students will construct a personal teaching philosophy.
- Students will model various pedagogical philosophies.

: Theatre and Media Arts Instruction: Media. (2:2:0)

**Course Outcomes**

: Theatre and Media Arts Instruction: Theatre. (1:1:0)

**Course Outcomes**

TMA 319 : Advanced Narrative Production. (3:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 241 & TMA 285; By application only.

RECOMMENDED: TMA 123.

DESCRIPTION: Preproduction and production of short projects, including digital and 16-mm sound film in narrative form. Discussion, lab, and individual/group experiences and critiques.

NOTE: Fee.

**Course Outcomes**

- This course is designed to help students in focusing and refining their media directing skills aswell as applying producorial skills in an advanced production setting. Film and video productioncan be a costly enterprise. It is hoped that students unable to afford advanced production projects will not be denied the opportunity of developing advanced directing skills. It is further hoped that students hired to direct projects professionally will be able to distinguish themselves as directors by understanding a variety of approaches and the tools available to realize a concept.The course intends to help students utilize the tools of direction – contrasted with the duties of production – to more clearly understand the director's craft as storyteller.

TMA 321 : Voice Over. (2:2:0)

WHEN TAUGHT: Fall

DESCRIPTION: Studio procedures and protocol, skills involved in producing effective reading choices, creation and cataloging voice over characters for commercial and animation voice overs.

NOTE: For acting, advertising, and animation majors, and anyone interested in learning voice over techniques.

**Course Outcomes**

- Students will demonstrate the ability to recognize, create, perform with, and talk about moment-to-moment awareness and authenticity.
- Student will evaluate the voice-acting work of their peers.
- Students will demonstrate fluency in studio protocol and terminology.

TMA 322 : Classical Voice. (2:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: BFA acting or MDT major status. BFA acting majors: TMA 222 and 228. BFA MDT majors: TMA 121 and 228.

DESCRIPTION: Speech techniques (word stress, inflection, pitch, pace, etc.) applied in the classical play.

**Course Outcomes**

- Students will produce work at a consistently competitive level of expertise.
- Students will demonstrate mastery of Standard American Speech dialect.
- Students will demonstrate mastery of the performance techniques of word stress, inflection and pitch, projection and heroic builds in more challenging monologue work.

TMA 323R : Kennedy Center American College Theatre Festival. (1:0:Arr)

PREREQUISITE: By application only.

DESCRIPTION: Coaching students who will participate in the Kennedy Center American College Theatre Festival.

**Course Outcomes**

- Because of the specific nature of the festival course, students work witht heir advisor to list at least three (3) objectives they hope to achieve that are in line with the program-level learning outcomes.

TMA 324 : Acting Classics. (3:6:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 222 & TMA 228; BFA acting major status. By audition only.

DESCRIPTION: Acting skills helpful in classical literature, emphasizing Shakespearean scansion and text analysis.

**Course Outcomes**

- Students will show proficiency with scansion and folio text analysis for Shakespearean text.
- Students will apply fundamental acting principles and vocal techniques to the performance of assigned scenes and monologues from classical texts.
- Students will demonstrate their ability to analyze a play from an actor's point of view and choose objectives, actions, and obstacles congruent with the historical text.
- Students will practice positive work habits of an actor, i.e. dependability, punctuality, cooperation, dedication, consideration of fellow actors, and ensemble work.

TMA 325 : Stage Combat. (2:4:2)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 125 & TMA 127 & TMA 225; BFA acting major status.

DESCRIPTION: Skills of safe hand-to-hand combat, including use of rapier, dagger, and broadsword, for stage and screen.

**Course Outcomes**

- Students will use SAFD techniques to safely and believably perform in a theatrical production using various weapons for period stage plays.
- Students will demonstrate improved individual physical coordination.
- Students will use various technical terms from a glossary of SAFD Lexicon.
- Students will model correct fighting techniques for rapier, rapier and dagger, and broadsword.
- Students will demonstrate a deeper awareness of body and its impact on the storytelling process in scene work.

TMA 326R : Divine Comedy. (.5-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: By audition only.

DESCRIPTION: Participation as performers, writers, directors, or crew members of a sketch comedy group.

**Course Outcomes**

There are no course outcomes available

TMA 328 : Script, Movement and Score Analysis. (1:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 229; BFA MDT major status. Concurrent enrollment in Dance 328 and Music 328.

RECOMMENDED: Concurrent enrollment in Music 300 and Dance 300 and TMA 300.

DESCRIPTION: The integration and performance of information gathered from careful research and analysis of movement style, script and score.

**Course Outcomes**

- Students will have compiled a written record of these 'landmark' musical theatre works as a personal resource guide.
- Students will be familiar with the selected 'landmark' productions of the American musical theatre.
- Students will have learned to implement into their musical theatre performance essential acting, vocal, and movement skills as outlined in the evaluation forms.
- Student performance work will be consistently rated in the 3.5 and above category based on the evaluation form scale.
- Students will be able to integrate into their performance detailed feedback from faculty/peers.
- Students will approach their work in a competent, courteous and professional manner.

TMA 329 : Theatre and Film Acting Conservatory. (3:6:ARR)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: TMA 122 & TMA 224; BFA acting major status. By audition only.

DESCRIPTION: Extensive work on a theatre or film project through semester, culminating in performance of play or preview of film/video.

**Course Outcomes**

- Students will analyze a script.
- Students will perform a role in a full-length play production.
- Students will demonstrate the ability to work beyond their comfort zone in terms of emotional risks and personal acting habits.
- Students will collaborate with other actors to develop a trusting ensemble.

TMA 330R : Assistant Directing. (2:0:9)

WHEN TAUGHT: Fall; Winter; Spring Contact Department

PREREQUISITE: TMA 336; Theatre arts studies major status. Instructor's consent.

DESCRIPTION: Assisting directors for departmental productions.

**Course Outcomes**

- Students will enlarge their skills of rational thinking, problem solving, and decision-making.
- Students will refine their ability to collaborate, innovate, and communicate effectively.
- Students will expand their ability to have patience, faith and charity in the process of helping the director realize the production they have conceived.

TMA 331 : Directing Narrative Literature. (3:3:1)

WHEN TAUGHT: Fall Contact Department

PREREQUISITE: TMA 115; Theatre arts studies major status.

DESCRIPTION: Theory and practice of adapting, directing, and performing nondramatic literature. Readers Theatre.

**Course Outcomes**

No outcomes are available at this time.

TMA 336 : Directing Principles and Practices. (3:4:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: TMA 236; Theatre arts studies majors status. Instructor's consent.

DESCRIPTION: Theories and processes of taking a scene from script to production. Lab required.

**Course Outcomes**

- Students will develop their own method of directing through examining and employing a wide variety of prominent directors' processes.
- Students will enlarge the ability to communicate through theatre by taking scenes from the text to performance through interpretation, analysis, composition, and pre-production work.
- Students will practice the collaborative nature of theatre production by working with actors, designers, dramaturgs, and classmates in order to tell compelling stories.
- Students will make artistic decisions that are informed by principles of human interaction, the spirit of truth, and the light of Christ.

TMA 341R : Screenwriting 2. (3:3:0)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 114 & TMA 241; major status. By application only.

DESCRIPTION: Intermediate conceptualization, screenwriting, and development for narrative or nonnarrative projects.

**Course Outcomes**

There are no course outcomes available

TMA 351 : Playwriting 2. (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 251; or instructor's consent.

DESCRIPTION: Workshop course designed to assist more advanced students in furthering their playwriting skills by writing the first draft of a full-length play.

**Course Outcomes**

- Students will begin to establish their own process of writing and tapping inspirational sources for content and

subject matter by writing and refining 2 one-act plays.
- Students will begin to master the elements and principles of theatrical storytelling and character development through reading the work of other playwrights, writing one-act plays, and participating in classroom discussions and lectures.
- Students will apply appropriate elements of theatrical structures and character development through writing and revising one-act plays, and participating in classroom discussions and lectures.
- Students will demonstrate the skills to accurately and thoughtfully analyze their own theatrical writing and the writing of others by successfully drafting their one-act plays, and participating in classroom discussions and lectures.

TMA 352 : Drama in the Elementary Classroom. (2:4:Arr)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Theatre education major status: TMA 101 or 102; TMA 276. Or early childhood education or elementary education major status. Or instructor's consent.
DESCRIPTION: Varied teaching methodologies for application of drama within the pre-K--6 classroom. Dual emphasis on Utah state elementary drama standards as well as integration with core curricula.

**Course Outcomes**

There are no course outcomes available

TMA 360R : Theatre Production 3. (1-3:0:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: TMA 160; and instructor's consent.
DESCRIPTION: Advanced practical experience in specialized shops or backstage experience on realized productions.

**Course Outcomes**

- Students will participate in a hands-on experience in a technical area such as wardrobe, lighting, sound, or as a member of the backstage crew for a fully realized production.
- Students will evaluate their hands-on experience in writing.

: Theatre Production 3: Costume/Makeup.

**Course Outcomes**

: Theatre Production 3: Scenery/Props.

**Course Outcomes**

: Theatre Production 3: Lights/Sound.

**Course Outcomes**

: Theatre Production 3: Stage Management.

**Course Outcomes**

TMA 361 : Stage Management 1. (2:2:2)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Theatre arts studies major or minor status; or theatre education major status: TMA 276. Or instructor's consent.
DESCRIPTION: Principles and objectives of stage management. Assistant stage managers for departmental productions will be selected from students enrolled in this course.

**Course Outcomes**

- Students will identify the basics of stage management at an introductory level.
- Students will perform the responsibilities of an assistant stage manager in pre-production, rehearsals, tech rehearsals, performance/calling a show, and post-production responsibilities within educational, community, and professional settings.

TMA 362 : Costume Design. (3:4:0)

WHEN TAUGHT: Fall
PREREQUISITE: TMA 236 and 259 or concurrent enrollment; or instructor's consent.
RECOMMENDED: TMA 462 or concurrent enrollment.
DESCRIPTION: Comprehensive course in costume design for stage and screen; renderings; costume theory; script research; costume paperwork; collaboration techniques; preparation for work as assistant and/or full designer positions in departmental productions.

**Course Outcomes**

- Students will apply script analysis and the use of a director's concept in the creation of an effective costume design for a production.
- Students will demonstrate collaborative communication, both orally in a production team and artistically through the costume rendering, as preparation for co-design and full costume design assignments for the Department of Theatre & Media Arts.
- Students will demonstrate professional costume rendering and computer-aided graphic skills in figure proportions, stance and fabric manipulation.
- Students will produce effective visual materials for personal portfolios and demonstrate an ability to constructively critique other designers' portfolios.

TMA 363 : Scenic Design. (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 236 and 258 and 259 or concurrent enrollment; or instructor's consent.

RECOMMENDED: TMA 366R or concurrent enrollment.

DESCRIPTION: Comprehensive course in scenic design for stage and screen: scenic history and theory; renderings and model construction; script research; scenic paperwork; collaboration techniques; preparation for work as assistant and/or full designer positions in departmental productions.

**Course Outcomes**

- Students will employ advanced techniques of scenic design in theoretical productions in preparation for future projects.
- Students will demonstrate advanced knowledge of the art and craft of theatrical scenic design and its role within the collaborative process of theatre production.

TMA 364 : Lighting Design. (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 235 and 258 and 259 or concurrent enrollment; or instructor's consent.

RECOMMENDED: TMA 366R or concurrent.

DESCRIPTION: Comprehensive course in lighting design for stage: collaboration techniques; lighting theory; instruments and lighting systems; preparation for work as assistant and/or full designer positions in departmental productions.

**Course Outcomes**

- Students will evaluate multiple University productions for effective use of controllable qualities of light to achieve desired functions of light.
- Students will practice a process for designing light for live performance.
- Students will experiment with principles that are required to be an artist of faith.
- Students will produce effective visual materials for a design portfolio.

TMA 365 : Sound Design. (3:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 259; or instructor's consent.

DESCRIPTION: Comprehensive course in sound design for stage: sound reinforcement; stage equipment; sound space design; collaboration techniques; preparation for work as assistant and/or full designer positions in departmental productions.

**Course Outcomes**

There are no course outcomes available

TMA 366R : Production Topics. (1-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Topical theory and skill training in specialized performance support areas including: scenic art, hand drafting, CAD systems, and production design.

**Course Outcomes**

- Students will demonstrate professional skills in intermediate topic areas as preparation for realized production work.
- Students will produce effective materials for personal portfolios and demonstrate an ability to constructively critique other designers' portfolios.

TMA 367 : Makeup Design. (3:4:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 259 & TMA 267; or instructor consent.

DESCRIPTION: Comprehensive course in makeup design for stage and screen: prosthetics; advanced makeup effects; makeup theory; script research; collaboration techniques; preparation for work as assistant and/or full designer positions in departmental productions.

**Course Outcomes**

- Students will apply script analysis and the use of a director's concept in the creation of an effective makeup design for a production.
- Students will demonstrate collaborative communication, both orally in a production team and artistically through the makeup and hair renderings, as preparation for co-design and full costume design assignments for the Department of Theatre & Media Arts.
- Students will demonstrate professional rendering and computer-aided graphic skills in makeup, hair and prosthetic design and construction.
- Students will produce effective visual materials for personal portfolios and demonstrate an ability to constructively critique other designers' portfolios.

TMA 368 : Scenic Art. (2:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115 or instructor's consent. Theatre arts studies major or minor status, or theatre education major status.

DESCRIPTION: Basic approaches to painting and finishing scenic elements. Priming, lay-in, texturing, and effects. Possible work painting on departmental productions.

**Course Outcomes**

- Students will demonstrate knowledge of the basic techniques used in scenic painting.
- Students will employ scenic painting techniques in theoretical and realized projects, including the use of textures, graining, marbleizing, washes, bricks, stone, drapery, distressing, as well as other methods used by scenic artists.

TMA 369R : Design Practicum. (.5-4:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TMA 236 and 259 and instructor's consent.

DESCRIPTION: Practical experience working as assistant designers; practicum experience in related performance design and/or technology topic areas.

**Course Outcomes**

There are no course outcomes available

: Design and Technology Projects 1: Production Stage Managers.

**Course Outcomes**

: Design and Technology Projects 1: Assistant Stage Managers. (1:Arr:Arr)

**Course Outcomes**

: Design and Technology Projects 1: Young Ambassadors.

**Course Outcomes**

TMA 370R : Practicum: Television. (1-6:Arr:1)

DESCRIPTION: Practicum in advanced mentored television productions offered as needed for student projects.

**Course Outcomes**

No outcomes are available at this time.

TMA 372R : Media Collaboration. (.5-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TMA 114; major status. By application only.

DESCRIPTION: Experience collaborating with senior capstone media arts experience.

**Course Outcomes**

- This course should give students the opportunities to gain professional film crew experience by working on approved institutional productions

TMA 375 : Theory and Practice of Teaching Drama in Elementary Classrooms. (2:2:2)

WHEN TAUGHT: Fall

DESCRIPTION: Theory and methods of teaching drama to young people, grades K-6. Emphasis on creative drama, process drama and contemporary trends in drama pedagogy at the elementary level.

**Course Outcomes**

- Successful students in this course will be able to use various dramatic activities to effectively teach drama and non-drama curriculum for grades K-5.
- Successful students in this course will be able to create and perform collaborative theatre presentations, lead creative drama activities and utilize process drama with confidence and skill.
- Successful students in this course will be able to identify and implement 21st Century Learning Skills in their drama-based curriculum.

TMA 377A : Theatre Methods and Instruction: Design. (2:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 276; Theatre education major or minor status. FBI fingerprint and background clearance.

DESCRIPTION: Developing meaningful and engaging instruction for secondary students in theatre; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Students will build an understanding of the structure and creative processes involved in teaching technical theatre and designing a theatre production.
- Students will observe and practice teaching technical theatre in a high school setting.
- Students will learn to create and develop specific lesson plans and educational units in technical theatre.
- Students will identify and evaluate a variety of technical theatre resources including the Internet.
- Students will gain confidence in their technical abilities.

TMA 377B : Theatre Methods and Instruction: Secondary Curriculum. (2:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 276 & TMA 377A & TMA 377C; TMA 260R (theatre education section). Theatre education major or minor status. FBI fingerprint and background clearance.

DESCRIPTION: Developing meaningful and engaging instruction for secondary students in theatre; developing critical thinking,

problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Demonstrate competency in theatre content and the pedagogical presentation of theatre concepts.
- Understand basic literacy principles and apply them to theatre content.
- Design and deliver instruction to help young learners develop proficiency in theatre content and critical thinking.
- Design instruction to help young learners develop independent and cooperative life long learning skills.
- Create a nurturing and motivating learning environment that helps diverse learners succeed.
- Plan lessons, units and courses based on the understanding of theatre content and theatre standards, as well as pedagogical strategies.
- Reflect on their personal competence and the effects of their own instructional choices and seeks opportunities to improve.
- Create and use assessments to evaluate learners as well as the effectiveness of their own instruction.

TMA 377C : Theatre Methods and Instruction: Applied Theatre. (2:2:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Practicing contemporary theatre-in-education (TIE) methods to be employed in practical secondary education settings.

**Course Outcomes**

- Successful students in this course will be able to facilitate the devising process for Theatre in Education (TIE) and Theatre of the Oppressed (TO) experiences.
- Successful students in this course will be able to create and facilitate Applied Theatre performances and workshops.

TMA 377D : Theatre Methods and Instruction: Elementary Curriculum. (2:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 375; Theatre Education major status. FBI fingerprint and background clearance.

DESCRIPTION: Practicing contemporary elementary education methods students will later employ in practical education settings.

**Course Outcomes**

There are no course outcomes available

TMA 378R : New Media Producing and Directing. (3:2:3)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 277 & TMA 293 & TMA 295; media arts major or minor status.

DESCRIPTION: Pre-production and production of short projects. Discussion and individual/group experiences and critiques.

**Course Outcomes**

- This course is currently on hiatus.

TMA 379R : Design Studio. (2:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 236 and 259; one or more of TMA 362, 363, 364, 365, and 367; instructor's consent.

DESCRIPTION: Performance design studio experience in team collaboration, portfolio building, and faculty mentored projects.

**Course Outcomes**

There are no course outcomes available

TMA 380 : Dramaturgy 1. (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115; or instructor's consent.

DESCRIPTION: Research and apply hands-on theatrical skills in four critical studies areas: literary management, production dramaturgy, new play development, educational outreach.

**Course Outcomes**

There are no course outcomes available

TMA 384R : Practicum: Cinematic Skills. (1-6:ARR:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Advanced cinematic skills.

**Course Outcomes**

- These courses teach specific cinematic skills regarding Cinematography, Sound, Editing, Visual and Practical Effects, Lighting, Post-Production and more. Students will learn how to use these tools, in collaboration with other students, to prepare to be competitive in the film industry.

TMA 387 : Production Management: Advanced. (3:3:1)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 187; media arts major status; media arts foundation courses.

DESCRIPTION: Overview of techniques for managing large arts projects, involving individual and team projects.

**Course Outcomes**

There are no course outcomes available

TMA 388R : Media Arts Crew. (.5-3:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TMA 114 & TMA 185; By application only.

DESCRIPTION: Practical supervised experience in media arts production. Exposure to protocols, as well as organizational and technical aspects.

**Course Outcomes**

- This course should give students the opportunities to gain professional film crew experience by working on approved professional productions

TMA 389R : Producing Symposium. (3:3:0)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 114; media arts major status. By application only.

DESCRIPTION: Developing organizational skills by workshop meetings with industry professionals, who share their producing experiences, styles, and strategies.

**Course Outcomes**

- This course is currently on hiatus.

TMA 391 : Introduction to Media Arts Theory. (3:6:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: TMA 291; or TMA 292

DESCRIPTION: Identifying and analyzing contemporary film and media theories, with application to specific media texts.

**Course Outcomes**

- articulate and develop your personal framework of how films make meaning and implement those values in his/her own filmmaking. film viewing and film analysis
- using canonical film theory paradigms and vocabulary, understand and apply multiple ways spectators construct meanings while viewing films
- competently analyze key film theories from 1915 to the present and apply them to specific film texts

TMA 392 : Children's Media. (3:3:0)

WHEN TAUGHT: Winter, Contact Department

DESCRIPTION: Historical and theoretical survey of media for and about children and the literature that informs it; discussions and strategies relating to production, reception, pedagogy, and parenting.

**Course Outcomes**

- To survey the history of children's media, its various forebears (children's literature particularly) and components (film, television, interactive mult-media), and to consider some of the theoretical and practical implications of same; to study both texts and authors, signal moments and broad movements; to attend not only to conventional issues relating to production and criticism, but to also give special consideration to audience: reception, phenomenology, appropriation and the likening of outside material to one's own life and circumstances; to identify techniques by which teachers, parents and children together can make media an abiding part of an abundant relationship.

TMA 394 : Intermediate Nonfiction Production. (3:3:2)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 273; media arts major or minor status.

DESCRIPTION: Advanced readings, conceptualization, and practical applications of various nonfiction forms.

**Course Outcomes**

- Students will improve their capacity as story tellers and filmmakers.
- Guide a film from pre-production, through production, to post-production
- Collaborate effectively with other filmmakers in the creation of a film
- Students will present, discuss, analyze, and critique others work in the spirit of peer to peer collaboration

TMA 395 : Dramatic Literature 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre arts studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through Western literary theories, emphasizing performance.

**Course Outcomes**

- Students will synthesize linguistic theory and the social theories and great works of dramatic literature through reading, writing, discussion, film viewing.
- Students will create socially conscious, ideologically-grounded performances that respond both to their world views and contemporary issues in critical theory.
- Students will create cogent, compelling, and mechanically writing for the Humanities in a variety of different mediums—informal responses, production reviews, persuasive essays, and critical analyses.

TMA 396 : Dramatic Literature 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre arts studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through global literary theories, emphasizing performance.

**Course Outcomes**

- Students will synthesize linguistic theory and the social theories and great works of dramatic literature through reading, writing, discussion, film viewing.
- Students will create socially conscious, ideologically-grounded performances that respond both to their world views and contemporary issues in critical theory.
- Students will create cogent, compelling, and mechanically writing for the Humanities in a variety of different mediums—informal responses, production reviews, persuasive essays, and critical analyses.

TMA 397 : Dramatic Literature 3. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre Arts Studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through Western literary theories, emphasizing performance.

**Course Outcomes**

There are no course outcomes available

TMA 399R : Academic Internship. (.5-9:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Theatre students: TMA 115 and application. Media students: TMA 112 and 114 and 185/105 and application.

DESCRIPTION: Off-campus experience or internship in theatre or media arts.

**Course Outcomes**

- Because of the individual nature of the internship course, students work with their advisor to list at least three (3) objectives they hope to achieve that are in line with the program level learning outcomes.

: Academic Internship: Media.

**Course Outcomes**

: Academic Internship: Theatre.

**Course Outcomes**

**400-Level Courses**

TMA 410 : Acting Capstone. (2-3:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BFA acting major status. By audition only.

DESCRIPTION: Participation in a final acting project on the BYU main-stage season.

**Course Outcomes**

- Students will prepare a role in a BFA Senior Project synthesizing and showcasing the cumulative knowledge and skill attaind in the BFA program.
- Students will practice positive work habits, i.e. dependability, punctuality, cooperation, dedication, consideration of fellow actors, and ensemble work.
- Students will develop a gospel-centered sense of empathy and compassion that will serve as a foundation for the actor on stage and screen, as well as a foundation for living a more Christian life.

TMA 416R : Teaching Assistant Credit. (1-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TMA 316; and instructor's consent.

DESCRIPTION: Credit for teaching assistantships for TMA courses.

**Course Outcomes**

- Students will understand the prinicples of good teaching.
- Students will be introduced to various pedagogical philosophies.
- Students will develop skills in teaching.
- Students will discover a personal style that will combine solid pedagogical philosophies and skills in teaching.

: Teaching Assistant Credit: Theatre.

**Course Outcomes**

: Teaching Assistant Credit: Media.

**Course Outcomes**

TMA 419B : Advanced Narrative Directing B. (1-3:arr.:arr.)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 419A; By application only

DESCRIPTION: Working with actors; visual expression; artistic identity. Creating an advanced portfolio. Discussion, lab, individual/group experience and critiques.

**Course Outcomes**

There are no course outcomes available

TMA 419A : Advanced Narrative Directing A. (3:3:0)

PREREQUISITE: TMA 319; By application only.

RECOMMENDED: TMA 123.

DESCRIPTION: Working with actors; visual exression; artistic identity. Creating an advanced portfolio. Discussion, lab, individual/group experience and critiques.

**Course Outcomes**

There are no course outcomes available

TMA 420R : Performance Workshop 2. (.5-3:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: By audition only.

DESCRIPTION: Advanced experience in production: acting.

**Course Outcomes**

- Students will develop a gospel-centered sense of empathy and compassion that will serve as a foundation for the actor on stage and screen, as well as a foundation for living a more Christian life.
- Students will prepare a role in a mainstage production syntehesizing and showcasing the research, creative process, and collaboration of the rehearsal process.
- Students will apply professional work habits of dependability, promptness, cooperation, preparation, and the ability to make independent choices.

TMA 421 : The Business: Marketing Yourself as a Performer. (1:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 229; BFA acting or BFA MDT major status. Or instructor's consent.

DESCRIPTION: Business aspects of the entertainment industry, including telephone interviews with entertainment industry personnel. Required research project.

**Course Outcomes**

- Students leave the course with a positive/proactive attitude towards the business aspects of their career.
- Students leave the course with a basic knowledge of the helpful resources available to them for finding employment as an actor and/or continuing their training in the field

TMA 422 : Dialects. (2:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: BFA acting or MDT major status. BFA acting majors: TMA 124 and 222. BFA MDT majors: TMA 121 and 124. By audition only.

DESCRIPTION: Major stage dialects.

**Course Outcomes**

- Students will engage in a process of dialect study for each dialect studied in the course.
- Students will identify and articulate key characteristics of the International Phonetic Alphabet and differentiate key changes in the International Phonetic Alphabet pertaining to each dialect studied.
- Students will integrate dialect, voice, and performance skills.
- Students will peer-evaluate acting and dialect skills, self-evaluate individual progress and performance, apply professional work habits of dependability, promptness, cooperation, preparation, and the ability to make independent choices.

TMA 423R : Advanced Kennedy Center American College Theatre Festival. (1-3:0:Arr)

PREREQUISITE: By application only.

DESCRIPTION: Coaching advanced students who will participate in the Kennedy Center American College Theatre Festival.

**Course Outcomes**

- Because of the individual nature of the festival course, students work with their advisor to list at least three (3) objectives they hope to achieve that are in line with the program-level learning outcomes.

TMA 424 : Advanced Acting. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 324. BFA acting major status. By audition only.

DESCRIPTION: Scene studies in extended realism. Absurdism, American classics, Shaw, Chekhov, etc.

**Course Outcomes**

- Students will analyze plays and characters from an actor's point of view, and will choose objectives, actions, and obstacles congruent with the historical text of modern classic texts.
- Students will employ honest communication and listening skills and demonstrate an ability to make choices that challenge individual emotional range.
- Students will continue practice the positive work habits of an actor, i.e. dependability, punctuality, cooperation,

dedication, consideration of fellow actors, and ensemble work.

TMA 425 : Character Mask. (2:4:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: BFA acting major status. By audition only.

DESCRIPTION: Use of the body as a primary tool for character and script interpretation.

**Course Outcomes**

- Students will apply created characterizations to performance texts.
- Students will apply the Suzuki method, physicalizing a character "from the outside in."

TMA 426 : Music Dance Theatre: Senior Performance Project. (1:0:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 361; MDT major status. Concurrent enrollment in Music 426 and Dance 426. By audition only.

DESCRIPTION: Participation in an MDT performance group culminating in a showcase for agents and directors in New York City during April.

**Course Outcomes**

- Students will audition for and received feedback from industry professionals in two markets
- Students will experience an audition/showcase situation in two entertainment markets
- Students will have several performance-ready audition selections prepared
- Students will have professionally produced personal promotional material on hand
- Students will experience Master Classes from working Broadway professionals
- Students will recognize their 'type' and marketability within the entertainment industry
- Students will establish professional contacts that will aid them in making the transitionfrom the academic to the professional world of theatre

TMA 427 : Auditions. (3:6:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BFA acting or MDT major status. BFA acting majors: TMA 229 and 325 and 422 and 424. BFA MDT majors: TMA 229 and 422 and Dance 240. By audition only.

DESCRIPTION: Auditions, cold reading, resumes, and the business end of acting, music, and dance for the professional performer.

**Course Outcomes**

- Students will construct a personal ethical framework and a commitment to ethical conduct as it applies to auditioning in the performance industry.
- Students will identify, recognize, and apply effective cold reading, improvisation, prepared auditions and other auditioning skills.
- Students will apply improved acting skills, voice work, objective, use of impulses, and self-discovery to performance practice in general.
- Students will self-evaluate individual progress and performance, practice effective and supportive peer coaching and peer evaluation techniques, and apply professional work habits of dependability, promptness, cooperation, preparation, and the ability to make independent choices.

TMA 429 : Performance: Recital. (3:2:4)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: TMA 229 and 422 and 424. BFA acting major status. By audition only.

DESCRIPTION: Thirty- to forty-five minute performance of cuttings from varied genres.

**Course Outcomes**

- Students will select and prepare four scenes and four monologues that will be performed for an invited audience at the end of the semester.
- Students will practice positive work habits of an actor, i.e. dependability, punctuality, cooperation, dedication, consideration of fellow actors, and ensemble work.
- Students will identify and expand their capabilities as a performer in order to gain flexibility and contrast of voice, movement, energies, dialect, and characterizations in performance.

TMA 436 : Theatre Directing Practicum. (3:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 336. Theatre arts studies major status. Instructor's consent.

DESCRIPTION: Directing projects for class critique and public presentation.

**Course Outcomes**

- Strengthen their relationship with the Holy Spirit through preproduction work, rehearsals, and performances.
- Test and refine their abilities to collaborate and communicate in creating theatrical performances.
- Build and strengthen their characters as they take full responsibility for a fully mounted performance.
- Enlarge the intellectual range of their education by developing skills, breadth, and depth in the discipline of directing.

TMA 441R : Screenwriting 3. (3:4:0)

WHEN TAUGHT: Winter, Contact Department; Summer, Contact Department

PREREQUISITE: TMA 291 & TMA 341R; or TMA 292 & TMA 341R; major status. By application only.

DESCRIPTION: Advanced narrative and/or nonfiction screenwriting principles. Emerging technology.

**Course Outcomes**

- To remain conversant with the tools of the screenwriter through lectures, readings, and student writings/readings, and to exercise these skills in the creation of a feature-length screenplay.

TMA 443R : Writer/Dramaturg/Actor Workshop. (3:6:1)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115 and instructor's consent.

DESCRIPTION: Collaborative workshop developing new stage and screenplays through exercises, discussion, and writing. Scripts selected competitively; public readings at end of course.

**Course Outcomes**

- Students will develop the ability to objectively explore the merits of a new script and to identify strengths and weakness in new scripts.
- Students will develop the ability to thoughtfully and accurately express their opinions in constrictive ways and to workshop this feedback appropriately.
- Students will develop the ability to evaluate and appropriately apply feedback on their new scripts and to effectively rewrite their new scripts.

TMA 451R : Playwriting 3. (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 351; Instructor's consent.

DESCRIPTION: Workshop course designed to assist more advanced students in furthering their playwriting skills by writing or rewriting a play.

**Course Outcomes**

- Students will establish and codify their own process of tapping inspirational sources for the content and subject matter of their plays by writing and refining a full length play.
- Students demonstrate their mastery of the elements and principles of theatrical storytelling and character development through reading the work of other playwrights, writing a full-length play, and participating in classroom discussions and lectures.
- Students will demonstrate their mastery of the elements of theatrical structures and character development through writing and revising a full length play, and participating in classroom discussions and lectures.
- Students will demonstrate the skills to accurately and thoughtfully analyze their own theatrical writing and the writing of others by successfully drafting a full-length play, and participating in classroom discussions and lectures.

TMA 455R : Theatre Tour. (3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: By audition only.

DESCRIPTION: Theatre for young audiences; touring experience.

**Course Outcomes**

- Students will expand talents and skills for performing through challenging literature, blocking, choreography, characterization, and emitional commitment.
- Students will be introduced to alternative aspects of production (through educational outreach programs, service opportunities, and theatre for young audiences).
- Students will explore children's literature and practices as well as synthesize performative and critical assessments.

TMA 457 : Media in the Contemporary Classroom. (3:4:4)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 276; or ENGL 276R

DESCRIPTION: Developing educational methods and techniques for using media in the specialized media classroom; study of educational models and theories related to historical and emerging media technologies.

**Course Outcomes**

- Examine media education theories and strategies of media education practice
- Implement media and media literacy strategies into theatre or English curricula
- Investigate the mediated world at large, considering personal media presence as well as the global media.
- Discuss and examine local and global media secondary programs.
- Develop personal pedagogical standards from which they create and teach a media infused curriculum for their future classroom
- Create a photo essay, and audio and video documentaries that demonstrate the principles of community storytelling

TMA 458 : Media Literacy Education. (3:3:1)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 102 & TMA 114

RECOMMENDED: TMA 291, 292.

DESCRIPTION: Media literacy principles and basic film production in the context of educating students and teachers in local K-12 public schools.

**Course Outcomes**

- Investigate the mediated world at large, considering personal media presence as well as the global media.
- Examine media education theories and strategies of media education practice.
- Discuss and examine local and global media outreach and after school programs.
- Develop personal pedagogical standards from which they create and teach a media curriculum.

- Create photo, audio, and video documentaries that demonstrate the principles of community storytelling
- Prepare to interact with elementary and secondary students and teachers who are currently using media in their classroom curricula.

TMA 460 : Porfolio. (2:ARR:ARR)

PREREQUISITE: TMA 115; Theatre Studies major or minor status.

DESCRIPTION: Hands-on training in professional resumes, cover letters, job searches, and portfolio techniques for person-to-person layout, digital presentation, personal website creation and other emerging practices.

**Course Outcomes**

There are no course outcomes available

TMA 461R : Stage Management 2. (.5-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: TMA 361; Theatre arts studies major or minor status. Concurrent enrollment in TMA 360 and 369. Instructor's consent.

DESCRIPTION: Stage management of BYU productions. Stage managers for departmental productions are enrolled in this course.

**Course Outcomes**

- Students will apply complex skills of stage management in pre-production, rehearsals, tech rehearsals, performance/calling a show, and post-production responsibilities within educational, community, and professional settings.
- Students, as stage managers, will collaborate with directors and creative teams as stage managers to create a fully mounted theatre production.
- Students will synthesize their stage management responsibilities into a portfolio.

TMA 462 : History of Costume. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Costume, clothing, and textiles as mediums for understanding stages and states of individuals, families, and societies; apparel diversity and cultural identity.

**Course Outcomes**

- Students will demonstrate effective research techniques as resource for the production of historic costumes.
- Students will examine and write about the social, economic and political forces that influence clothing style throughout history.
- Students will teach what they have learned and demonstrate how they can serve others through their applied research.

TMA 463 : Production Design. (2:2:2)

WHEN TAUGHT: Contact Department.

PREREQUISITE: TMA 363 or instructor's consent.

DESCRIPTION: Introduction to design for film and television. Techniques, basic design elements, analysis, concept boards, budgets, and visits to film locations.

**Course Outcomes**

- Students will create realized production designs for TMA student films or KBYU projects.
- Students will demonstrate a working knowledge of production design for film and television through class assignments, field trips, and guest visits.

TMA 465 : Sound Reinforcement. (2:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 365

DESCRIPTION: Sound reinforcement theory and practice.

**Course Outcomes**

There are no course outcomes available

TMA 467R : Makeup Projects. (.5-6:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Instructor's consent.

DESCRIPTION: Advanced projects in makeup application.

**Course Outcomes**

There are no course outcomes available

TMA 468R : Specialty Costumes. (2-6:Arr:Arr)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent only.

DESCRIPTION: Advanced skills in millinery, dyes, footwear, and allied project areas.

**Course Outcomes**

Students will demonstrate skills in costume construction on specialized topics.
- Students will apply hands-on costume skills to real-life performance challenges.
- Students will create professional presentations that document and represent the creative process with a final project that aims past the classroom to a professional audience.

: Specialty Costumes: Dyes, Paint, and Fabric.

**Course Outcomes**

: Specialty Costumes: Millinery and Mask.

**Course Outcomes**

: Jewelry, Armor, and Masks.

**Course Outcomes**

: Fabric Dyes and Paints.

**Course Outcomes**

: Millinery and Footwear.

**Course Outcomes**

: Clothing Understructures.

**Course Outcomes**

TMA 469 : Theatre Management. (3:4:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Basic philosophies of box office, front-of-house, and theatre marketing.

**Course Outcomes**

- Students will, recognize the key elements vital to the operation of organizations in various performing arts facilities such as scheduling, budgeting, and marketing.
- Students will demonstrate how to operate organizations in various performing arts facilities by creating budgets, marketing campaigns, and grant proposals.

TMA 473R : Writer/Director Workshop (Narrative). (.5-3:6:ARR)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: Media arts major status. By application only.

DESCRIPTION: Collaborative directing, videotaping, editing, and revising scenes from advanced student scripts.

**Course Outcomes**

- Incorporate authentic personal experiences, themes and insights into a capstone film project
- Employ skills of film directing to cinematically tell a story and utilize the interpersonal and logistical skills associated with this process

TMA 474R : Writer/Director Workshop (Nonfiction). (.5-3:9:ARR)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: Media arts major status. By application only.

DESCRIPTION: Collaborative development, revision, and polishing of nonfiction or multimedia projects.

**Course Outcomes**

- Students will improve their capacity as story tellers and filmmakers.
- Students will begin to conceptualize, write, develop, schedule, and budget an advanced non-fiction project.
- Students will present, discuss, analyze, and critique others work in the spirit of peer to peer collaboration
- Students will research a wide range of films and other texts that inform their non-fiction story, both conceptually and stylistically.

TMA 475R : Media Arts Capstone. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Media arts major status. By application only.

DESCRIPTION: Final collaborative project for media students. May be narrative, nonfiction, multimedia, writing, or critical studies format.

NOTE: Fee.

**Course Outcomes**

- Guide a film from pre-production, through production, to post-production
- Students will improve their capacity as story tellers and filmmakers
- Students will present, discuss, analyze, and critique others work in the spirit of peer to peer collaboration.
- Make practical production decisions

TMA 476 : Secondary Student Teaching. (12:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Theatre education major status. Completion of all course work or departmental approval; requires a major GPA of

2.85; at least a C- in TMA 377A, B, C, D.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will be able to understand and apply the Moral Dimensions of Teaching that are:Scholarship Enculturation for democracy Meaningful collaborationAccess to knowledge Academic excellenceNurturing pedagogy Social competence

TMA 477R : Issues in Media Arts. (3:5:0)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 291, 292; media arts major status.

DESCRIPTION: In-depth study of key media arts issues, within context of gospel principles.

**Course Outcomes**

- 1. Explore the ways this significant media arts issue developed over time.
- 2. Clarify definitions and practical functioning of significant concepts and paradigms.
- 3. Analyze key texts and their relationship to culture in relationship to key concerns.
- 4. Consider ethical and spiritual implcations of the issue.
- Collaboratively identify and share information on current relating to the specific issue.

TMA 479R : Advanced Design. (.5-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Instructor's consent.

DESCRIPTION: Advanced techniques in performance design.

**Course Outcomes**

No outcomes are available at this time.

: Advanced Design: Costumes.

**Course Outcomes**

: Advanced Design: Lighting.

**Course Outcomes**

: Advanced Design: Makeup.

**Course Outcomes**

: Advanced Design: Scenic.

**Course Outcomes**

: Advanced techniques in performance design for sound.

**Course Outcomes**

TMA 480R : Special Topics in Theatre Research. (3:4:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: TMA 395; or TMA 396

DESCRIPTION: Special topics in focused historical, theoretical, or critical areas of performance research.

**Course Outcomes**

- Students will gain in-depth practical experience in performance/research practices and methodologies not similarly treated elsewhere in the TMA curriculum.
- Students will become aware of and explore newly devloping ideas in theatre and performance studies.
- Students will experience how a professional scholar deals with various research-related concerns: archives, methodologies, current academic conversations, etc.
- Students will conduct original research under the guidance of an expert in the subject area.
- Students will become aware of the various ethical considerations that scholarship demands.

TMA 483 : Dramaturgy 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 380

DESCRIPTION: Develop further research and hands-on theatrical skills in four critical studies areas: literary management, production dramaturgy, new play development, educational outreach.

**Course Outcomes**

There are no course outcomes available

TMA 485R : Production Dramaturgy. (1-3:2:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TMA 380 and instructor's consent.

DESCRIPTION: Experience as lead dramaturg for main-stage productions; building casebooks and overseeing audience education

efforts. Rehearsal and production meeting attendance required.

**Course Outcomes**

- Students will generate research, conceptual, and textual support as needed and requested by the production team.
- Students will collaborate as a member of a production team and will collaborate with other dramaturgs in their production experiences.
- Students will process, document, and archive their production dramaturgy experience by creating a production casebook.

TMA 489R : Design for Production. (.5-6:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Practical experience working as performance designers, or related topics.

**Course Outcomes**

There are no course outcomes available

TMA 491 : Ethics, Aesthetics, and Theology. (1:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 322 and 324 and 325. BFA acting major status.

DESCRIPTION: Analyzing and considering interrelationships of ethical, aesthetic, and theological dimensions of creating and performing media arts and theatre texts.

**Course Outcomes**

- Students will examine, define, and clarify the individual process of ethical decision making.
- Students will develop improved moral reasoning skills and understand judgment processes for informed ethical decision making in the arts.
- Students will construct a personal ethical framework and make a commitment to ethical conduct as a professional in theatre and media arts and as a member of social communities.
- Students will compare and contrast examples of LDS representation in the arts and prepare to discuss their findings with industry professionals in an objective and informed way.

TMA 492R : Media Arts Genres. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Intensive analysis of a single major traditional media genre (i.e., western, musical, sitcom, or melodrama) with consideration of contextual, subtextual, and textual issues.

**Course Outcomes**

- to listen to a ton of lectures, read a ton of stories, and see a ton of films relating to a given genre. We will also learn about some of the social and historical factors that have informed narratives within that genre, as well as some of their many and evolving styles and conventions.
- Explore a specific genre as a microcosm of larger aesthetic and social development of popular cultural artifacts.
- Identify schoalrly material related to genre study.
- Consider the relationship of text, subtext, and context in genre film.
- Analyze the significance of conventions and themes both diachronically and synchronically.

TMA 494 : Transcendence: Religion and Film. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 291; or TMA 292; media arts major or minor status.

DESCRIPTION: Historical, stylistic, and thematic survey of approaches to religious and spiritual subject matter in film.

**Course Outcomes**

- consider the history and nature of transcendence in cinema, it's operation in particular films, and the permutations of relationships between transcendence/spirituality and film.
- explore and further articulate their personal paradigm of transcendence and film especially in its operation in specific cinematic texts
- develop "experimental criticism" skills (as identified by C.S. Lewis), examining a text's impact on spectators and its relationship to the intent of its creators.
- establish familiarity with the some of the scholarly literature on religion/values and film.

TMA 496R : Academic Internship. (.5-9:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Theatre students: TMA 115; by application only. Media students: TMA 112 and 114 and 185/105; by application only.

DESCRIPTION: Off-campus experience or internship in theatre or media arts.

**Course Outcomes**

- Students will improve their capacity as storytellers and filmmakers by observing and assisting in professional settings outside of BYU
- Collaborate effectively with other professionals in the creation of a film, television series, or other media production.

: Academic Internship: Media.

**Course Outcomes**

: Academic Internship: Theatre.

**Course Outcomes**

TMA 497 : Media as a Mirror of Our Times. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Interdisciplinary approach to media texts as aesthetic and historical documents expressing a people, place, and time.

**Course Outcomes**

- Student will explore media text as cultural and historical documents reflecting social values and anxieties.Students will utilizeInterdisciplinaryapproaches to analyze media texts aesthetically as determined by culture. Close reading of a variety of text will allow students to develop a methodology to understand the role of film text and subtext as well as context.

TMA 498R : Special Topics in Media Arts. (3:3:3)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Consideration of compelling issues in media arts practice, theory, history, and criticism.

**Course Outcomes**

- In-depth textual, contextual, and subtextual analyses of a compelling topic in media arts
- Paradigmatic exploration of emerging media arts issues in practice, theory and history.
- Thoughtful consideration of aesthetic and historical implications of special media arts topics
- Consideration of representative texts of the media arts special topic.

## 500-Level Graduate Courses (available to advanced undergraduates)

TMA 515R : Special Projects 3. (1-6:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Theatre and media arts students: by application.

DESCRIPTION: Advanced special projects in theatre or media arts.

**Course Outcomes**

- Because of the individual nature of the internship course students work with their advisor to list at least three objectives they hope to achieve that are in line with the program level learning outcomes.

: Special Projects 3: Media.

**Course Outcomes**

: Special Projects 3: Theatre.

**Course Outcomes**

TMA 536R : Directing Workshop. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TMA 436; Theatre arts studies major status. Instructor's consent.

DESCRIPTION: Advanced experience in production: directing.

**Course Outcomes**

- Students will further strengthen their relationship with the Holy Spirit through preproduction work, rehearsals, and performances.
- Students will further enlarge the intellectual range of their education by developing skills, breadth, and depth in the discipline of directing.
- Students will further build and strengthen their characters as they take full responsibility for a fully mounted performance.
- Students will further test and refine their abilities to collaborate and communicate in creating theatrical performances.

TMA 551R : Playwriting 4. (3:4:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: TMA 451 or instructor's consent.

DESCRIPTION: Workshop course designed to assist more advanced students in furthering their playwriting skills by writing or rewriting a play.

**Course Outcomes**

- Students will establish and codify their own process of tapping inspirational sources for the content and subject matter of their plays by writing a full length adaptation of an existing text.
- Students demonstrate their mastery of the elements and principles of theatrical storytelling and character development through reading the work of other playwrights, writing full length adaptation of an existing text, and participating in classroom discussions and lectures.
- Students will demonstrate their mastery of the elements of theatrical structures and character development through full length adaptation of an existing text, and participating in classroom discussions and lectures.

- Students will demonstrate the skills to accurately and thoughtfully analyze their own theatrical writing and the writing of others by full length adaptation of an existing text, and participating in classroom discussions and lectures.

TMA 561R : Stage Management Project. (1-6:Arr:Arr)

WHEN TAUGHT: Contact Department.

PREREQUISITE: TMA 461R. Theatre arts studies major or minor status. Instructor's consent.

DESCRIPTION: Hands-on training for student stage managers through assigned realized productions, including supervision through full positions on stage and media productions. Department-arranged assignments.

**Course Outcomes**

- Students will apply complex skills of stage management in pre-production, rehearsals, tech rehearsals, performance/calling a show, and post-production responsibilities within educational, community, and professional settings.
- Students, as stage managers, will collaborate with directors and creative teams as stage managers to create a fully mounted and challenging theatre production.
- Students will synthesize their stage management responsibilities into a portfolio.

TMA 599R : Academic Internship. (1-9:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Theatre students: TMA 115; by application only. Media students: TMA 112 and 114 and 185/105; by application only. TMA graduate student: by application only.

DESCRIPTION: Off-campus experience or internship in theatre or media arts.

**Course Outcomes**

- Because of the individual nature of the internship course students work with their advisor to list at least three (3) objectives they hope to achieve that are in line with the program level learning outcomes.

: Academic Internship: Media.

**Course Outcomes**

: Academic Internship: Theatre.

**Course Outcomes**

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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- BA in Theatre Arts Education K–12
- BA in Theatre Arts Studies
- BFA in Acting

**Minors**

- Media Arts Studies
- Theatre Arts Studies

**Course Information**

- Theatre and Media Arts (TMA) Courses

**Faculty**

# BA in Media Arts Studies (51 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this program.*

The media arts studies program produces students with a strong liberal arts foundation that can be used effectively in a variety of film-related careers or graduate studies. Graduates are generalists with skills and proficiencies that can be used in multiple venues including emerging media environments. Students master knowledge of film culture, history, and theory; develop general and specialized skills sets; and utilize processes that integrate professional practices, generate creative applications to new situations, and support collaboration in multiple settings. Core curriculum of critical studies develops analytical skills and creates a foundation for application and experimentation; a range of electives allows additional emphasis in critical studies, fiction or non-fiction production, or other specialized areas.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following pre-media arts course with a B grade or better:

TMA 102 : Introduction to Film. (3:4:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Analytical studies for understanding and appreciating media forms and messages, as well as basic history, theory, and aesthetics. Lab required.

**Course Outcomes**

- Students will become active, intelligent film viewers
- Students will be exposed to the practical elements of film
- Students will learn about a wide range of stories and stylistic strategies utilized by film artists and institutions
- Students will become familiar with new and helpful ways of receiving films. They will be able to evaluate and analyze films in a variety of contexts.

2. Be admitted to the program by application. (See the department office, D-581 HFAC.)

3. Complete the following foundation courses:

TMA 105 : Using Basic Media Tools. (1:1:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Media arts major or minor status or animation major status; concurrent enrollment in TMA 185.

DESCRIPTION: Introductory course to familiarize students with basics in camera, lighting, and sound fundamentals.

**Course Outcomes**

- Students will become familiar with new and helpful ways of receiving films. They will be able to evaluate and analyze films in a variety of contexts.
- Students will begin to conceptualize, write, shoot, and edit fiction and non-fiction stories.
- Students will present, discuss, analyze, and critique others work in the spirit of peer to peer collaboration.

TMA 112 : Collaboration, Research, and Visualization. (3:3:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 102; Acceptance into media arts program.

DESCRIPTION: Overview and practical applications of principles of collaboration, research, and visualization as essential elements of appreciation and production of new media and media arts projects.

**Course Outcomes**

- -->Students will identify story resources
- Students will experiment with the ways that those stories might work together
- Think about the ways they might communicate those stories visually and aurally to audiences
- Practice processes of conceptualization, creation, and dissemination of story ideas

TMA 114 : Reading and Constructing Narratives. (3:3:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Media Arts major or minor status.
DESCRIPTION: Analyzing basic narrative principles; conceptualizing and writing narratives for theatre and media.

**Course Outcomes**

- The objective of this class is to explore a range of story types that you should all know about. You have different career aspirations, but practitioners and scholars alike will want to be able to read, comprehend, and adapt/implement this array of narrative methods.
- To equip students with a set of critical tools that will aid them in their studio work
- To establish a solid foundation for students as they prepare to take higher-level Critical Studies courses —namely, Dramatic Literature (TMA 395 & 396) and Contemporary Performance Practices (TMA 401)
- To provide students a stronger understanding of how the world around them is constructed and how they might better participate in, resist, and/or affect that world.
- Graduates will distinguish themselves through leadership, inspiration, and integrity in professional experience.

TMA 185 : Basic Media Production. (3:4:3)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Media arts major/minor status or animation major status; concurrent enrollment in TMA 105.
DESCRIPTION: Introduction to basics of film and video production. Includes lecture and practical lab experiences with audio and video.

**Course Outcomes**

- Students will improve their capacity as story tellers and filmmakers.
- Students will begin to conceptualize, write, shoot, and edit fiction and non-fiction stories.
- Students will engage with texts about storytelling and production processes
- Students will present, discuss, analyze, and critique others work in the spirit of peer to peer collaboration

4. Complete the following media arts core courses:

TMA 291 : Media Arts History 1. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: TMA 112 & TMA 114
DESCRIPTION: Survey of social, aesthetic, business, and technical dimensions of film and media from 1895 to 1945.

**Course Outcomes**

- familiarize students with the history of world cinema from 1895 to 1946 as informing and informed by culture, social history, emerging technologies and industry adaptations, and trends in visual art

TMA 292 : Media Arts History 2. (3:3:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: TMA 112 & TMA 114
DESCRIPTION: Survey of social, aesthetic, business, and technical dimensions of film and media from 1946 to present.

**Course Outcomes**

- to familiarize students with the history of post-WWII world cinema as informing and informed by culture, social history, emerging technologies and industry adaptations, and trends in visual art

TMA 293 : History of Documentary and Nonfiction Film. (3:ARR:0)
WHEN TAUGHT: Winter; Spring
PREREQUISITE: TMA 112 & TMA 114
DESCRIPTION: Introduction to and contextualization of documentary film from its inception to present.

**Course Outcomes**

- To watch a lot of non-fiction films. And enjoy them *perhaps immensely). Meanwhile: to consider the idea of the nonfiction film from its beginning to the present day; to explore a range of approaches, styles, and individuals associated with the documentary idea; to discuss social and ethical issues that emerge around documentary film making; finally to consider how our own lives (as film makers, film critics, and normal people) are informed and shaped by documentary sensibilities. (or ought to be)

TMA 295 : History of the Moving Image. (3:3:0)
WHEN TAUGHT: Fall; Winter, Contact Department; Spring
PREREQUISITE: TMA 112 & TMA 114
DESCRIPTION: Continuities and changes in the moving image from 1895 to the present, focusing on implications of emerging and converging media for spectatorship, social and individual identity construction, and potential sharing of spirituality.

**Course Outcomes**

- • Examine moving images and their operations as spirituality, art, technology, social force, and economics
- • Explore spectator/user involvement in concrete aspects of the development of the moving image, from

1895 to the present
- • Thoughtfully consider the roles of contemporary media in shaping and revealing individual and social identities
- • Collaboratively identify and share information on current practices involving media interactivity and its impacts upon the “user”

TMA 391 : Introduction to Media Arts Theory. (3:6:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: TMA 291; or TMA 292

DESCRIPTION: Identifying and analyzing contemporary film and media theories, with application to specific media texts.

**Course Outcomes**

- articulate and develop your personal framework of how films make meaning and implement those values in his/her own filmmaking. film viewing and film analysis
- using canonical film theory paradigms and vocabulary, understand and apply multiple ways spectators construct meanings while viewing films
- competently analyze key film theories from 1915 to the present and apply them to specific film texts

5. Complete one of the following advanced critical studies courses:

TMA 458 : Media Literacy Education. (3:3:1)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 102 & TMA 114

RECOMMENDED: TMA 291, 292.

DESCRIPTION: Media literacy principles and basic film production in the context of educating students and teachers in local K-12 public schools.

**Course Outcomes**

- Investigate the mediated world at large, considering personal media presence as well as the global media.
- Examine media education theories and strategies of media education practice.
- Discuss and examine local and global media outreach and after school programs.
- Develop personal pedagogical standards from which they create and teach a media curriculum.
- Create photo, audio, and video documentaries that demonstrate the principles of community storytelling
- Prepare to interact with elementary and secondary students and teachers who are currently using media in their classroom curricula.

TMA 477R : Issues in Media Arts. (3:5:0)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 291, 292; media arts major status.

DESCRIPTION: In-depth study of key media arts issues, within context of gospel principles.

**Course Outcomes**

- 1. Explore the ways this significant media arts issue developed over time.
- 2. Clarify definitions and practical functioning of significant concepts and paradigms.
- 3. Analyze key texts and their relationship to culture in relationship to key concerns.
- 4. Consider ethical and spiritual implcations of the issue.
- Collaboratively identify and share information on current relating to the specific issue.

TMA 492R : Media Arts Genres. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Intensive analysis of a single major traditional media genre (i.e., western, musical, sitcom, or melodrama) with consideration of contextual, subtextual, and textual issues.

**Course Outcomes**

- to listen to a ton of lectures, read a ton of stories, and see a ton of films relating to a given genre. We will also learn about some of the social and historical factors that have informed narratives within that genre, as well as some of their many and evolving styles and conventions.
- Explore a specific genre as a microcosm of larger aesthetic and social development of popular cultural artifacts.
- Identify schoalrly material related to genre study.
- Consider the relationship of text, subtext, and context in genre film.
- Analyze the significance of conventions and themes both diachronically and synchronically.

TMA 494 : Transcendence: Religion and Film. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 291; or TMA 292; media arts major or minor status.

DESCRIPTION: Historical, stylistic, and thematic survey of approaches to religious and spiritual subject matter in film.

**Course Outcomes**

- consider the history and nature of transcendence in cinema, it's operation in particular films, and the permutations of relationships between transcendence/spirituality and film.
- explore and further articulate their personal paradigm of transcendence and film especially in its

operation in specific cinematic texts
- develop "experimental criticism" skills (as identified by C.S. Lewis), examining a text's impact on spectators and its relationship to the intent of its creators.
- establish familiarity with the some of the scholarly literature on religion/values and film.

TMA 497 : Media as a Mirror of Our Times. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Interdisciplinary approach to media texts as aesthetic and historical documents expressing a people, place, and time.

**Course Outcomes**

- Student will explore media text as cultural and historical documents reflecting social values and anxieties.Students will utilizeInterdisciplinaryapproaches to analyze media texts aesthetically as determined by culture. Close reading of a variety of text will allow students to develop a methodology to understand the role of film text and subtext as well as context.

TMA 498R : Special Topics in Media Arts. (3:3:3)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Consideration of compelling issues in media arts practice, theory, history, and criticism.

**Course Outcomes**

- In-depth textual, contextual, and subtextual analyses of a compelling topic in media arts
- Paradigmatic exploration of emerging media arts issues in practice, theory and history.
- Thoughtful consideration of aesthetic and historical implications of special media arts topics
- Consideration of representative texts of the media arts special topic.

6. Complete a minimum of 20 credit hours (14 must be upper-division) from faculty advisor-approved courses in an area of study. These areas of study must be approved in writing by the student's faculty advisor before enrollment occurs. Please contact the department for possible study areas. Up to eight hours of 370R/384R practica can be used to fill this requirement.

*Hours include courses that may fulfill university core requirements.

## Show all Theatre and Media Arts (TMA) Courses

**College of Fine Arts and Communications Home**

**Theatre and Media Arts Department Home**

**Majors**

- BA in Media Arts Studies
- BA in Theatre Arts Education K–12
- BA in Theatre Arts Studies
- BFA in Acting

**Minors**

- Media Arts Studies
- Theatre Arts Studies

**Course Information**

- Theatre and Media Arts (TMA) Courses

**Faculty**

# BA in Theatre Arts Education K–12 (83 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

The theatre arts education K–12 degree program is designed to prepare students to become creative teachers who can meet the educational needs of elementary and secondary school theatre students. The skills the program emphasizes include, but are not limited to, interpersonal communication, social, life, acting, directing, writing, historical/analytical, and design/production skills. In addition to developing highly skilled educators, the program is designed to develop strong directing and production skills in each prospective teacher.

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. A teaching minor is not required for licensure. However, it is strongly recommended.

3. Complete the following pre-theatre courses with a B grade or better:

TMA 101 : Introduction to the Theatre. (3:3:1)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Reading, viewing, analyzing, writing about, and interacting with contemporary plays and performances to explore both theatre fundamentals and ways theatre addresses questions and concerns of our time. Lab required.

**Course Outcomes**

- Students will demonstrate a deeper appreciation for each of the participating aspects of theatrical production by researching, collaborating, visualizing, and mounting an original play.
- Students will demonstrate the tools to critically observe and read theatre within its historical and contemporary contexts through reading, writing, viewing, analyzing, discussing, and actively participating.
- Students will render a minimum 10 hours of service to a live theatre project during the semester. The service can be in the form of acting, stage-managing, writing, dramaturgy, or working technical on a project.

or

TMA 102 : Introduction to Film. (3:4:2)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Analytical studies for understanding and appreciating media forms and messages, as well as basic history, theory, and aesthetics. Lab required.

**Course Outcomes**

- Students will become active, intelligent film viewers
- Students will be exposed to the practical elements of film
- Students will learn about a wide range of stories and stylistic strategies utilized by film artists and institutions
- Students will become familiar with new and helpful ways of receiving films. They will be able to evaluate and analyze films in a variety of contexts.

TMA 160 : Theatre Production 1. (1:2:2)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Introduction to technical support for realized production; production team techniques; production concept; realized production analysis.

**Course Outcomes**

- Students will demonstrate an understanding of foundational production theories through oral response.
- Students will analyze the effectiveness of elements of production based on a creative teams' concept, production theories, and design elements.

- Students will receive their hands-on production experiences (TMA 260 and TMA 360).

**Note:** TMA 102 is strongly recommended to enhance media literacy.

4. Complete the following and be admitted to the licensure program by application during TMA 276 (see the department office, D-581 HFAC.)

TMA 276 : Exploration of Teaching Theatre. (3:6:3)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 101 & TMA 160; or TMA 102 & TMA 160; Theatre education major status. FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

- Understand the theoretical and practical nature of education;
- Evaluate a variety of learning styles;
- Objectively begin to understand their personal teaching style;
- Gain practical teaching experience;
- Acquire confidence in their teaching talents;
- Learn to develop specific lesson plans and educational units;
- Create a professional education portfolio;
- Learn about teaching resources and information.

**Note:** FBI fingerprint and background clearance must be completed before enrollment in TMA 276.

5. Complete the following foundation courses:

TMA 115 : Introduction to Performance Studies. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Theatre arts studies major or minor status; or BFA acting major or acting pre-major status; or theatre education major status.

DESCRIPTION: Textual analysis of traditional plays. Introduction to performance studies. Ritual, play, performativity, performing, performance processes, and global and intercultural performance.

**Course Outcomes**

There are no course outcomes available

TMA 123 : Acting Fundamentals. (2:4:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamental acting skills: exercises in perception, objective/action, thought processes, scoring of scripts. Lab required.

**Course Outcomes**

- Develop a gospel-centered sense of empathy and compassion that will serve as a foundation for the actor on stage and screen, as well as a foundation for living a more Christian life. Acting Fundamentals Students will demonstrate a knowledge of and an ability to integrate fundamental acting principles.
- Students will apply professional work habits of dependability, promptness, cooperation, a sense of ensemble, and the ability to make independent choices.
- Develop practical acting analysis skills via studio work including objectives, tactics, obstacles, beats, given circumstances.
- Develop critcial observation skills through attendance at theatrical performances, and the reading of selected dramatic texts.

TMA 236 : Directing Fundamentals. (2:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: TMA 115 for theatre arts studies majors or minors, or BFA acting majors. Theatre education major or minor status or instructor's consent.

DESCRIPTION: Fundamental elements of stage directing, including observation, collaboration, imagination, casting, working with actors, camera, spaces, words, images, rehearsals, and final product. Lab required.

**Course Outcomes**

- Students will demonstrate storytelling skills through identification of dramatic structures and genres, careful interpretation, and script analysis, both oral and written.
- Students will practice production work towards creating imaginative design, composition, and staging.
- Students will develop a process for working with actors, designers, and dramaturgs in a collaborative way in order to tell compelling stories.
- Students will employ artistic decisions that are informed by principles of human interaction, the spirit of truth, and the light of Christ.

6. Complete the following theatre core courses:

TMA 201 : Dramatic Performance: Antiquity to Renaissance. (3:3:0)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Civilization from Greek antiquity through Renaissance, primarily from perspective of dramatic

literature and performance. Ways in which performance functions within particular socioeconomic, political, religious, and aesthetic perspectives.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate a general working knowledge of major historical periods, philosophical trends, and performance movements and will draw connections between society and performance, through writing and class discussion.
- Students will analyze great works of literature through multiple perspectives—society, culture, politics, economics, gender roles, religion—to better understand the ways in which dramatic performance functioned in particular times and places.
- Students will appraise 1) how we represent the world, others, and ourselves and 2) the consequences of these representations for our families, our communities, and ourselves.

TMA 202 : Dramatic Performance: Renaissance to the Present. (3:3:0)

WHEN TAUGHT: Winter; Summer

DESCRIPTION: Civilization from Renaissance through present, primarily from perspective of dramatic literature and performance. Ways in which performance functions within particular socioeconomic, political, religious, and aesthetic perspectives.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate a general working knowledge of major historical periods, philosophical trends, and performance movements and will draw connections between society and performance, through writing and class discussion.
- Students will analyze great works of literature through multiple perspectives—society, culture, politics, economics, gender roles, religion—to better understand the ways in which dramatic performance functioned in particular times and places.
- Students will appraise 1) how we represent the world, others, and ourselves and 2) the consequences of these representations for our families, our communities, and ourselves.

TMA 260R : Theatre Production 2. (1-3:0:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TMA 160 and instructor's consent.

DESCRIPTION: Practical experience in the scene shop, costume shop, and lighting lab. Hands-on training for further production experience.

**Course Outcomes**

- Students will participate in a hands-on experience in a technical area such as wardrobe, lighting, sound, or as a member of the backstage crew for a fully realized production.

: Theatre Production 2: Costumes.

**Course Outcomes**

: Theatre Production 2: Make-up/Props/Lighting.

**Course Outcomes**

: Theatre Production 2: Theatre Education.

**Course Outcomes**

: Theatre Production 2: Scene Shop.

**Course Outcomes**

TMA 301 : Contemporary Performance Practices. (2:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 115; Theatre arts studies major status.

DESCRIPTION: Advanced studies in performance theory and practice.

**Course Outcomes**

There are no course outcomes available

TMA 360R : Theatre Production 3. (1-3:0:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TMA 160; and instructor's consent.

DESCRIPTION: Advanced practical experience in specialized shops or backstage experience on realized productions.

**Course Outcomes**

- Students will participate in a hands-on experience in a technical area such as wardrobe, lighting, sound, or as a member of the backstage crew for a fully realized production.
- Students will evaluate their hands-on experience in writing.

: Theatre Production 3: Costume/Makeup.

**Course Outcomes**

: Theatre Production 3: Scenery/Props.

**Course Outcomes**

: Theatre Production 3: Lights/Sound.

**Course Outcomes**

: Theatre Production 3: Stage Management.

**Course Outcomes**

7. Complete two of the following:

TMA 395 : Dramatic Literature 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre arts studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through Western literary theories, emphasizing performance.

**Course Outcomes**

- Students will synthesize linguistic theory and the social theories and great works of dramatic literature through reading, writing, discussion, film viewing.
- Students will create socially conscious, ideologically-grounded performances that respond both to their world views and contemporary issues in critical theory.
- Students will create cogent, compelling, and mechanically writing for the Humanities in a variety of different mediums—informal responses, production reviews, persuasive essays, and critical analyses.

TMA 396 : Dramatic Literature 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre arts studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through global literary theories, emphasizing performance.

**Course Outcomes**

- Students will synthesize linguistic theory and the social theories and great works of dramatic literature through reading, writing, discussion, film viewing.
- Students will create socially conscious, ideologically-grounded performances that respond both to their world views and contemporary issues in critical theory.
- Students will create cogent, compelling, and mechanically writing for the Humanities in a variety of different mediums—informal responses, production reviews, persuasive essays, and critical analyses.

TMA 397 : Dramatic Literature 3. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre Arts Studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through Western literary theories, emphasizing performance.

**Course Outcomes**

There are no course outcomes available

8. Complete the following major courses:

TMA 121 : Voice and Diction. (2:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BFA MDT or theatre education major status; or instructor's consent.

DESCRIPTION: Skills involved in producing an effective voice; International Phonetic Alphabet. Lab required.

**Course Outcomes**

- Students will practice voice production techniques, including Fitzmaurice and Linklater methods, identifying a “personal voice”, integrating voice work, acting technique, emotional dexterity, use of impulses , and self-discovery in performance
- Students will identify and articulate key characteristics of the International Phonetic Alphabet and the Standard American Stage Dialect and integrate the Standard American Stage Dialect into acting performance.
- Students will self-evaluate individual progress and performance, practice effective and supportive vocal coaching and peer evaluation, and apply professional work habits.

TMA 127 : Beginning Stage Combat. (1:2:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BFA acting, acting pre-major, or theatre education major status; or instructor's consent.

DESCRIPTION: Basic hand-to-hand stage combat instruction. Introduction to tumbling and falls.

**Course Outcomes**

- Students will describe the historical development of weapons.
- Students will practice physical dexterity and concentration skills.
- Students will recognize and use basic stage combat vocabulary.
- Students will integrate stage combat choreography into text and scene work.
- Students will practice appropriate safety procedures.

TMA 252 : Puppetry. (2:4:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Theatre education major status or instructor's consent.

DESCRIPTION: Theories, techniques, and experience constructing and operating puppets for use in performance, recreational, and educational settings.

**Course Outcomes**

- Students will learn to design, build and manipulate the following types of puppets:MarionetteWannabe PuppetFound Object/Recycled PuppetBig Mouth (Muppet)Parade Puppet
- Students will learn to use puppet strategies and skills in traditional and non-traditional environments includingSchoolsChurchesArts/Community CentersBoys/Girls ClubsEtc
- Use puppets to explore social and ethical issues within a targeted community.

TMA 257 : Storytelling. (2:4:1)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: Theatre education major status or instructor's consent.

DESCRIPTION: Theories, techniques, and practice in the art of constructing and telling stories for use in performance, recreational, and educational settings.

**Course Outcomes**

- Students will develop unique individual skills and styles in storytelling, demonstrating ability to create imagery, use vocal animation and characterization, and produce effective story sequences, supported by skilled delivery (body, voice, use of space).
- Students will survey and respond to a variety of storytelling styles by observing and writing about live, video and audio performances.
- Students will develop teaching strategies and coaching styles designed to support storytellers in targeted communities such as schools, businesses, the entertainment industry, churches, family, etc.
- Students will foster supportive relationships by connecting to national and local storytellers and organizations.

TMA 266 : Principles of Stage Craft. (2:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 115 and 160; or instructor's consent.

DESCRIPTION: Introduction to basic stage craft techniques: scenic tools and materials; construction, rigging and handling of scenery pieces; basic scenery painting techniques; properties construction and acquisition; related stage safety and maintenance.

**Course Outcomes**

- Students will demonstrate a foundational knowledge of basic scenery construction techniques.
- Students will participate in realized scenery construction projects.

TMA 267 : Principles of Makeup. (2:4:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to basic makeup application for stage and screen: corrective, glamour and age; stylized approaches; putty construction; crepe hair; wig application techniques.

**Course Outcomes**

- Students will demonstrate basic flat makeup skills through projects in corrective, glamour, and age.
- Students will create special makeup projects using putty and crepe hair.
- Students will perform basic wig applications.
- Students will apply previous makeup skills for a stylized project and a complete character, including makeup and hair.

TMA 336 : Directing Principles and Practices. (3:4:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: TMA 236; Theatre arts studies majors status. Instructor's consent.

DESCRIPTION: Theories and processes of taking a scene from script to production. Lab required.

**Course Outcomes**

- Students will develop their own method of directing through examining and employing a wide variety of prominent directors' processes.
- Students will enlarge the ability to communicate through theatre by taking scenes from the text to performance through interpretation, analysis, composition, and pre-production work.
- Students will practice the collaborative nature of theatre production by working with actors, designers, dramaturgs, and classmates in order to tell compelling stories.
- Students will make artistic decisions that are informed by principles of human interaction, the spirit of truth, and the light of Christ.

TMA 361 : Stage Management 1. (2:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Theatre arts studies major or minor status; or theatre education major status: TMA 276. Or instructor's consent.

DESCRIPTION: Principles and objectives of stage management. Assistant stage managers for departmental productions will be selected from students enrolled in this course.

**Course Outcomes**

- Students will identify the basics of stage management at an introductory level.
- Students will perform the responsibilities of an assistant stage manager in pre-production, rehearsals, tech rehearsals, performance/calling a show, and post-production responsibilities within educational, community, and professional settings.

TMA 368 : Scenic Art. (2:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115 or instructor's consent. Theatre arts studies major or minor status, or theatre education major status.

DESCRIPTION: Basic approaches to painting and finishing scenic elements. Priming, lay-in, texturing, and effects. Possible work painting on departmental productions.

**Course Outcomes**

- Students will demonstrate knowledge of the basic techniques used in scenic painting.
- Students will employ scenic painting techniques in theoretical and realized projects, including the use of textures, graining, marbleizing, washes, bricks, stone, drapery, distressing, as well as other methods used by scenic artists.

TMA 375 : Theory and Practice of Teaching Drama in Elementary Classrooms. (2:2:2)

WHEN TAUGHT: Fall

DESCRIPTION: Theory and methods of teaching drama to young people, grades K-6. Emphasis on creative drama, process drama and contemporary trends in drama pedagogy at the elementary level.

**Course Outcomes**

- Successful students in this course will be able to use various dramatic activities to effectively teach drama and non-drama curriculum for grades K-5.
- Successful students in this course will be able to create and perform collaborative theatre presentations, lead creative drama activities and utilize process drama with confidence and skill.
- Successful students in this course will be able to identify and implement 21st Century Learning Skills in their drama-based curriculum.

TMA 377A : Theatre Methods and Instruction: Design. (2:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 276; Theatre education major or minor status. FBI fingerprint and background clearance.

DESCRIPTION: Developing meaningful and engaging instruction for secondary students in theatre; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Students will build an understanding of the structure and creative processes involved in teaching technical theatre and designing a theatre production.
- Students will observe and practice teaching technical theatre in a high school setting.
- Students will learn to create and develop specific lesson plans and educational units in technical theatre.
- Students will identify and evaluate a variety of technical theatre resources including the Internet.
- Students will gain confidence in their technical abilities.

TMA 377B : Theatre Methods and Instruction: Secondary Curriculum. (2:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 276 & TMA 377A & TMA 377C; TMA 260R (theatre education section). Theatre education major or minor status. FBI fingerprint and background clearance.

DESCRIPTION: Developing meaningful and engaging instruction for secondary students in theatre; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Demonstrate competency in theatre content and the pedagogical presentation of theatre concepts.
- Understand basic literacy principles and apply them to theatre content.
- Design and deliver instruction to help young learners develop proficiency in theatre content and critical thinking.
- Design instruction to help young learners develop independent and cooperative life long learning skills.
- Create a nurturing and motivating learning environment that helps diverse learners succeed.
- Plan lessons, units and courses based on the understanding of theatre content and theatre standards, as well as pedagogical strategies.
- Reflect on their personal competence and the effects of their own instructional choices and seeks opportunities to improve.
- Create and use assessments to evaluate learners as well as the effectiveness of their own instruction.

TMA 377C : Theatre Methods and Instruction: Applied Theatre. (2:2:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Practicing contemporary theatre-in-education (TIE) methods to be employed in practical secondary education settings.

**Course Outcomes**

- Successful students in this course will be able to facilitate the devising process for Theatre in Education (TIE) and Theatre of the Oppressed (TO) experiences.
- Successful students in this course will be able to create and facilitate Applied Theatre performances and workshops.

TMA 377D : Theatre Methods and Instruction: Elementary Curriculum. (2:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 375; Theatre Education major status. FBI fingerprint and background clearance.

DESCRIPTION: Practicing contemporary elementary education methods students will later employ in practical education settings.

**Course Outcomes**

There are no course outcomes available

TMA 436 : Theatre Directing Practicum. (3:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 336. Theatre arts studies major status. Instructor's consent.

DESCRIPTION: Directing projects for class critique and public presentation.

**Course Outcomes**

- Strengthen their relationship with the Holy Spirit through preproduction work, rehearsals, and performances.
- Test and refine their abilities to collaborate and communicate in creating theatrical performances.
- Build and strengthen their characters as they take full responsibility for a fully mounted performance.
- Enlarge the intellectual range of their education by developing skills, breadth, and depth in the discipline of directing.

TMA 457 : Media in the Contemporary Classroom. (3:4:4)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 276; or ENGL 276R

DESCRIPTION: Developing educational methods and techniques for using media in the specialized media classroom; study of educational models and theories related to historical and emerging media technologies.

**Course Outcomes**

- Examine media education theories and strategies of media education practice
- Implement media and media literacy strategies into theatre or English curricula
- Investigate the mediated world at large, considering personal media presence as well as the global media.
- Discuss and examine local and global media secondary programs.
- Develop personal pedagogical standards from which they create and teach a media infused curriculum for their future classroom
- Create a photo essay, and audio and video documentaries that demonstrate the principles of community storytelling

9. Complete the Professional Education Component:
    - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.

- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.

DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

- Complete 12 hours of one of the following:

SC ED 496R : Academic Internship: Secondary Education. (12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will demonstrate that they can teach, manage, and assess content area knowledge and skills in the 7-12 classroom.
- Foster relationships with school colleagues, parents, and the larger community.

: Academic Internship: Social Sciences.

**Course Outcomes**

: Academic Internship: English.

**Course Outcomes**

: Academic Internship: Mathematics.

**Course Outcomes**

: Academic Internship: Biological Sciences.

**Course Outcomes**

: Academic Internship: Physical Sciences.

**Course Outcomes**

TMA 476 : Secondary Student Teaching. (12:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Theatre education major status. Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in TMA 377A, B, C, D.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will be able to understand and apply the Moral Dimensions of Teaching that are:Scholarship Enculturation for democracy Meaningful collaborationAccess to knowledge Academic excellenceNurturing pedagogy Social competence

*Hours include courses that may fulfill university core requirements.

## Show all Theatre and Media Arts (TMA) Courses

**College of Fine Arts and Communications Home**

**Theatre and Media Arts Department Home**

**Majors**

- BA in Media Arts Studies
- BA in Theatre Arts Education K–12
- BA in Theatre Arts Studies
- BFA in Acting

**Minors**

- Media Arts Studies
- Theatre Arts Studies

**Course Information**

- Theatre and Media Arts (TMA) Courses

**Faculty**

# BA in Theatre Arts Studies (50 hours*)

Show All Course Descriptions
Hide All Course Descriptions

The theatre arts studies major is an open enrollment program that provides a strong liberal arts foundation that can be used effectively in a variety of performance-related careers or graduate studies. The major provides practical training, critical thinking skills, and the development of professional ethics across the various performance disciplines. Students may focus studies in areas of interest — critical studies and dramaturgy, design and technology, directing and stage management, playwriting, or theatre for young audiences — but graduates are generalists with skills and proficiencies that can be used in multiple production venues and media environments.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following prerequisite courses:

TMA 101 : Introduction to the Theatre. (3:3:1)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Reading, viewing, analyzing, writing about, and interacting with contemporary plays and performances to explore both theatre fundamentals and ways theatre addresses questions and concerns of our time. Lab required.

**Course Outcomes**

- Students will demonstrate a deeper appreciation for each of the participating aspects of theatrical production by researching, collaborating, visualizing, and mounting an original play.
- Students will demonstrate the tools to critically observe and read theatre within its historical and contemporary contexts through reading, writing, viewing, analyzing, discussing, and actively participating.
- Students will render a minimum 10 hours of service to a live theatre project during the semester. The service can be in the form of acting, stage-managing, writing, dramaturgy, or working technical on a project.

TMA 102 : Introduction to Film. (3:4:2)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Analytical studies for understanding and appreciating media forms and messages, as well as basic history, theory, and aesthetics. Lab required.

**Course Outcomes**

- Students will become active, intelligent film viewers
- Students will be exposed to the practical elements of film
- Students will learn about a wide range of stories and stylistic strategies utilized by film artists and institutions
- Students will become familiar with new and helpful ways of receiving films. They will be able to evaluate and analyze films in a variety of contexts.

TMA 160 : Theatre Production 1. (1:2:2)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Introduction to technical support for realized production; production team techniques; production concept; realized production analysis.

**Course Outcomes**

- Students will demonstrate an understanding of foundational production theories through oral response.
- Students will analyze the effectiveness of elements of production based on a creative teams' concept, production theories, and design elements.
- Students will receive their hands-on production experiences (TMA 260 and TMA 360).

2. Complete and submit declaration form for the theatre arts studies major to the department office (D-581 HFAC).
3. Complete the following foundation courses:

TMA 115 : Introduction to Performance Studies. (3:3:1)

WHEN Fall; Winter

TAUGHT:
PREREQUISITE: Theatre arts studies major or minor status; or BFA acting major or acting pre-major status; or theatre education major status.
DESCRIPTION: Textual analysis of traditional plays. Introduction to performance studies. Ritual, play, performativity, performing, performance processes, and global and intercultural performance.

**Course Outcomes**

There are no course outcomes available

TMA 123 : Acting Fundamentals. (2:4:1)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Fundamental acting skills: exercises in perception, objective/action, thought processes, scoring of scripts. Lab required.

**Course Outcomes**

- Develop a gospel-centered sense of empathy and compassion that will serve as a foundation for the actor on stage and screen, as well as a foundation for living a more Christian life. Acting Fundamentals Students will demonstrate a knowledge of and an ability to integrate fundamental acting principles.
- Students will apply professional work habits of dependability, promptness, cooperation, a sense of ensemble, and the ability to make independent choices.
- Develop practical acting analysis skills via studio work including objectives, tactics, obstacles, beats, given circumstances.
- Develop critcial observation skills through attendance at theatrical performances, and the reading of selected dramatic texts.

TMA 236 : Directing Fundamentals. (2:4:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: TMA 115 for theatre arts studies majors or minors, or BFA acting majors. Theatre education major or minor status or instructor's consent.
DESCRIPTION: Fundamental elements of stage directing, including observation, collaboration, imagination, casting, working with actors, camera, spaces, words, images, rehearsals, and final product. Lab required.

**Course Outcomes**

- Students will demonstrate storytelling skills through identification of dramatic structures and genres, careful interpretation, and script analysis, both oral and written.
- Students will practice production work towards creating imaginative design, composition, and staging.
- Students will develop a process for working with actors, designers, and dramaturgs in a collaborative way in order to tell compelling stories.
- Students will employ artistic decisions that are informed by principles of human interaction, the spirit of truth, and the light of Christ.

4. Complete the following theatre core courses:

TMA 201 : Dramatic Performance: Antiquity to Renaissance. (3:3:0)
WHEN TAUGHT: Fall; Spring
DESCRIPTION: Civilization from Greek antiquity through Renaissance, primarily from perspective of dramatic literature and performance. Ways in which performance functions within particular socioeconomic, political, religious, and aesthetic perspectives.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate a general working knowledge of major historical periods, philosophical trends, and performance movements and will draw connections between society and performance, through writing and class discussion.
- Students will analyze great works of literature through multiple perspectives—society, culture, politics, economics, gender roles, religion—to better understand the ways in which dramatic performance functioned in particular times and places.
- Students will appraise 1) how we represent the world, others, and ourselves and 2) the consequences of these representations for our families, our communities, and ourselves.

TMA 202 : Dramatic Performance: Renaissance to the Present. (3:3:0)
WHEN TAUGHT: Winter; Summer
DESCRIPTION: Civilization from Renaissance through present, primarily from perspective of dramatic literature and performance. Ways in which performance functions within particular socioeconomic, political, religious, and aesthetic perspectives.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate a general working knowledge of major historical periods, philosophical trends, and performance movements and will draw connections between society and performance, through writing and class discussion.
- Students will analyze great works of literature through multiple perspectives—society, culture, politics, economics, gender roles, religion—to better understand the ways in which dramatic performance functioned in particular times and places.
- Students will appraise 1) how we represent the world, others, and ourselves and 2) the consequences of these representations for our families, our communities, and ourselves.

TMA 260R : Theatre Production 2. (1-3:0:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TMA 160 and instructor's consent.

DESCRIPTION: Practical experience in the scene shop, costume shop, and lighting lab. Hands-on training for further production experience.

**Course Outcomes**

- Students will participate in a hands-on experience in a technical area such as wardrobe, lighting, sound, or as a member of the backstage crew for a fully realized production.

: Theatre Production 2: Costumes.

**Course Outcomes**

: Theatre Production 2: Make-up/Props/Lighting.

**Course Outcomes**

: Theatre Production 2: Theatre Education.

**Course Outcomes**

: Theatre Production 2: Scene Shop.

**Course Outcomes**

TMA 301 : Contemporary Performance Practices. (2:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 115; Theatre arts studies major status.

DESCRIPTION: Advanced studies in performance theory and practice.

**Course Outcomes**

There are no course outcomes available

TMA 360R : Theatre Production 3. (1-3:0:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TMA 160; and instructor's consent.

DESCRIPTION: Advanced practical experience in specialized shops or backstage experience on realized productions.

**Course Outcomes**

- Students will participate in a hands-on experience in a technical area such as wardrobe, lighting, sound, or as a member of the backstage crew for a fully realized production.
- Students will evaluate their hands-on experience in writing.

: Theatre Production 3: Costume/Makeup.

**Course Outcomes**

: Theatre Production 3: Scenery/Props.

**Course Outcomes**

: Theatre Production 3: Lights/Sound.

**Course Outcomes**

: Theatre Production 3: Stage Management.

**Course Outcomes**

5. Complete two of the following:

TMA 395 : Dramatic Literature 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre arts studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through Western literary theories, emphasizing performance.

**Course Outcomes**

- Students will synthesize linguistic theory and the social theories and great works of dramatic literature through reading, writing, discussion, film viewing.
- Students will create socially conscious, ideologically-grounded performances that respond both to their world views and contemporary issues in critical theory.
- Students will create cogent, compelling, and mechanically writing for the Humanities in a variety of different mediums—informal responses, production reviews, persuasive essays, and critical analyses.

TMA 396 : Dramatic Literature 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre arts studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through global literary theories, emphasizing performance.

**Course Outcomes**

- Students will synthesize linguistic theory and the social theories and great works of dramatic literature through reading, writing, discussion, film viewing.
- Students will create socially conscious, ideologically-grounded performances that respond both to their world views and contemporary issues in critical theory.
- Students will create cogent, compelling, and mechanically writing for the Humanities in a variety of different mediums—informal responses, production reviews, persuasive essays, and critical analyses.

TMA 397 : Dramatic Literature 3. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre Arts Studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through Western literary theories, emphasizing performance.

**Course Outcomes**

There are no course outcomes available

6. Complete 20 hours (12 must be upper-division) in consultation with the faculty mentor. These individually tailored programs will allow the student maximum flexibility while guaranteeing quality control.

*Hours include courses that may fulfill university core requirements.

## Show all Theatre and Media Arts (TMA) Courses

**College of Fine Arts and Communications Home**

**Theatre and Media Arts Department Home**

**Majors**

- BA in Media Arts Studies
- BA in Theatre Arts Education K–12
- BA in Theatre Arts Studies
- BFA in Acting

**Minors**

- Media Arts Studies
- Theatre Arts Studies

**Course Information**

- Theatre and Media Arts (TMA) Courses

**Faculty**

# BFA in Acting (79.5–80.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval through proficiency auditions at the end of fall and winter semesters. Please see the college advisement center or your assigned faculty advisor for information regarding requirements for admission to this program.*

The BFA acting program was developed for students who are committed to acting as a career. It is focused to better prepare them to compete professionally and/or for admission to advanced acting conservatory programs or graduate work.

## Program Requirements | View MAP | View Program Outcomes

1. Successfully pass a preliminary audition and a final acceptance audition. These auditions are held at the end of each fall and winter semester.

2. Complete the following theatre courses with a B grade or better:

TMA 101 : Introduction to the Theatre. (3:3:1)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Reading, viewing, analyzing, writing about, and interacting with contemporary plays and performances to explore both theatre fundamentals and ways theatre addresses questions and concerns of our time. Lab required.

**Course Outcomes**

- Students will demonstrate a deeper appreciation for each of the participating aspects of theatrical production by researching, collaborating, visualizing, and mounting an original play.
- Students will demonstrate the tools to critically observe and read theatre within its historical and contemporary contexts through reading, writing, viewing, analyzing, discussing, and actively participating.
- Students will render a minimum 10 hours of service to a live theatre project during the semester. The service can be in the form of acting, stage-managing, writing, dramaturgy, or working technical on a project.

TMA 102 : Introduction to Film. (3:4:2)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Analytical studies for understanding and appreciating media forms and messages, as well as basic history, theory, and aesthetics. Lab required.

**Course Outcomes**

- Students will become active, intelligent film viewers
- Students will be exposed to the practical elements of film
- Students will learn about a wide range of stories and stylistic strategies utilized by film artists and institutions
- Students will become familiar with new and helpful ways of receiving films. They will be able to evaluate and analyze films in a variety of contexts.

TMA 160 : Theatre Production 1. (1:2:2)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Introduction to technical support for realized production; production team techniques; production concept; realized production analysis.

**Course Outcomes**

- Students will demonstrate an understanding of foundational production theories through oral response.
- Students will analyze the effectiveness of elements of production based on a creative teams' concept, production theories, and design elements.
- Students will receive their hands-on production experiences (TMA 260 and TMA 360).

3. Complete the following foundation courses:

TMA 115 : Introduction to Performance Studies. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Theatre arts studies major or minor status; or BFA acting major or acting pre-major status; or theatre education major status.

DESCRIPTION: Textual analysis of traditional plays. Introduction to performance studies. Ritual, play, performativity, performing, performance processes, and global and intercultural performance.

**Course Outcomes**

There are no course outcomes available

TMA 128 : Acting 1: BFA or Pre-BFA. (3:6:1)

WHEN TAUGHT: Fall

PREREQUISITE: BFA MDT or acting pre-major status; or instructor's consent.

DESCRIPTION: Accelerated fundamental acting skills: exercises in perception, objective/action, thought processes, scoring of scripts. Lab required.

NOTE: Designed specifically for acting pre-major students and first-year music dance theatre students.

**Course Outcomes**

There are no course outcomes available

TMA 236 : Directing Fundamentals. (2:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: TMA 115 for theatre arts studies majors or minors, or BFA acting majors. Theatre education major or minor status or instructor's consent.

DESCRIPTION: Fundamental elements of stage directing, including observation, collaboration, imagination, casting, working with actors, camera, spaces, words, images, rehearsals, and final product. Lab required.

**Course Outcomes**

- Students will demonstrate storytelling skills through identification of dramatic structures and genres, careful interpretation, and script analysis, both oral and written.
- Students will practice production work towards creating imaginative design, composition, and staging.
- Students will develop a process for working with actors, designers, and dramaturgs in a collaborative way in order to tell compelling stories.
- Students will employ artistic decisions that are informed by principles of human interaction, the spirit of truth, and the light of Christ.

4. Complete the following core courses:

TMA 201 : Dramatic Performance: Antiquity to Renaissance. (3:3:0)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Civilization from Greek antiquity through Renaissance, primarily from perspective of dramatic literature and performance. Ways in which performance functions within particular socioeconomic, political, religious, and aesthetic perspectives.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate a general working knowledge of major historical periods, philosophical trends, and performance movements and will draw connections between society and performance, through writing and class discussion.
- Students will analyze great works of literature through multiple perspectives—society, culture, politics, economics, gender roles, religion—to better understand the ways in which dramatic performance functioned in particular times and places.
- Students will appraise 1) how we represent the world, others, and ourselves and 2) the consequences of these representations for our families, our communities, and ourselves.

TMA 202 : Dramatic Performance: Renaissance to the Present. (3:3:0)

WHEN TAUGHT: Winter; Summer

DESCRIPTION: Civilization from Renaissance through present, primarily from perspective of dramatic literature and performance. Ways in which performance functions within particular socioeconomic, political, religious, and aesthetic perspectives.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate a general working knowledge of major historical periods, philosophical trends, and performance movements and will draw connections between society and performance, through writing and class discussion.
- Students will analyze great works of literature through multiple perspectives—society, culture, politics, economics, gender roles, religion—to better understand the ways in which dramatic performance functioned in particular times and places.
- Students will appraise 1) how we represent the world, others, and ourselves and 2) the consequences of these representations for our families, our communities, and ourselves.

TMA 260R : Theatre Production 2. (1-3:0:Arr)

WHEN Fall; Winter; Spring; Summer

TAUGHT:
PREREQUISITE: TMA 160 and instructor's consent.
DESCRIPTION: Practical experience in the scene shop, costume shop, and lighting lab. Hands-on training for further production experience.

**Course Outcomes**

- Students will participate in a hands-on experience in a technical area such as wardrobe, lighting, sound, or as a member of the backstage crew for a fully realized production.

: Theatre Production 2: Costumes.

**Course Outcomes**

: Theatre Production 2: Make-up/Props/Lighting.

**Course Outcomes**

: Theatre Production 2: Theatre Education.

**Course Outcomes**

: Theatre Production 2: Scene Shop.

**Course Outcomes**

TMA 360R : Theatre Production 3. (1-3:0:Arr)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: TMA 160; and instructor's consent.
DESCRIPTION: Advanced practical experience in specialized shops or backstage experience on realized productions.

**Course Outcomes**

- Students will participate in a hands-on experience in a technical area such as wardrobe, lighting, sound, or as a member of the backstage crew for a fully realized production.
- Students will evaluate their hands-on experience in writing.

: Theatre Production 3: Costume/Makeup.

**Course Outcomes**

: Theatre Production 3: Scenery/Props.

**Course Outcomes**

: Theatre Production 3: Lights/Sound.

**Course Outcomes**

: Theatre Production 3: Stage Management.

**Course Outcomes**

5. Complete the following major courses:
*Acting:*

TMA 223 : Acting Improvisation. (2:4:0)
WHEN TAUGHT: Fall
PREREQUISITE: TMA 124; or TMA 228; BFA acting or BFA MDT or acting pre-major status. By audition only.
DESCRIPTION: Discovery of emotion, thought process, and impulse through improvisation.

**Course Outcomes**

- Students will assess improvised performances.
- Students will analyze scripted texts for objectives, tactics, obstacles, and relationships and apply that analysis to improvised performances.
- Students will demonstrate their acting ability and the ability to suppress reasoned acting choices and embrace their immediate impulses via improvisational exercises and scene work.
- Students will identify and explore different ways of using their body to express emotion and characterization.

TMA 224 : Acting for Film and TV. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: TMA 124; or TMA 228; BFA acting major or acting pre-major status. By audition only.
DESCRIPTION: On-camera techniques for features, sitcoms, industrials, and commercials.

**Course Outcomes**

- Students will analyze a script with an eye toward camera acting.
- Students will practice acting for various genres of electronic media, demonstrating competency in various acting techniques and the ability to take direction.

- Students will evaluate their individual strengths and weaknesses and modify their acting practices based upon that evaluation.
- Students will demonstrate familiarity with film language and tools of the trade in a variety of professional situations, including auditioning.

TMA 228 : Acting 2. (3:6:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: TMA 123; or TMA 128; BFA acting or BFA MDT or acting pre-major status. By audition only.

DESCRIPTION: Integrating acting skills; building a character through exercises and scene work.

**Course Outcomes**

There are no course outcomes available

TMA 229 : Musical Scene Study. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 228 & MUSIC 161 & DANCE 140; BFA acting or BFA MDT major status. By audition only.

DESCRIPTION: In-depth study of two genres of musical theatre; text analysis, research, written assignments.

**Course Outcomes**

- Acquire the following knowledge:Recognize the need for all actors to be able to work in a musical production.Recognize the basic construction of a musical.Be familiar with the vocal and dance expectations placed on a performer in a musical.Understand the collaborative process involved in mounting a musical.Understand the demands placed on the performer in a ‘golden age’ and contemporary musical.
- Acquire the following skills:Text analysis skills that allow the actor to maximize information provided in brief librettosAbility to add depth and history to characters that are not multi-layered as writtenAbility to recognize and play the subtext in brief librettosAbility to bring honesty to extended realism/dated text often found in musical librettos.Ability to service the stereotypes found in musical theatre without pandering to themAbility to submerge quickly into the imaginary world of short scenes often found in musicalsAbility to act IN and ON the text and music in a musicalAbility to make choices that capture the “essence” of an acting scene in a musical as readily as the music and dance doAbility to work quickly with little rehearsal of the “book scenes” of a musicalAbility to adapt one’s “concentration mix” when acting/singing/dancing in a musical.
- Synthesize the following behavioral modifications:Develop professional wok habits including dependability, punctuality, cooperation and dedication.Further develop sensory organs that allow one to see, hear, smell, taste and touch more fullyFurther develop the actors’ innate sense of following an impulse, objective, honesty, and working through a partner

TMA 324 : Acting Classics. (3:6:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 222 & TMA 228; BFA acting major status. By audition only.

DESCRIPTION: Acting skills helpful in classical literature, emphasizing Shakespearean scansion and text analysis.

**Course Outcomes**

- Students will show proficiency with scansion and folio text analysis for Shakespearean text.
- Students will apply fundamental acting principles and vocal techniques to the performance of assigned scenes and monologues from classical texts.
- Students will demonstrate their ability to analyze a play from an actor's point of view and choose objectives, actions, and obstacles congruent with the historical text.
- Students will practice positive work habits of an actor, i.e. dependability, punctuality, cooperation, dedication, consideration of fellow actors, and ensemble work.

TMA 424 : Advanced Acting. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 324. BFA acting major status. By audition only.

DESCRIPTION: Scene studies in extended realism. Absurdism, American classics, Shaw, Chekhov, etc.

**Course Outcomes**

- Students will analyze plays and characters from an actor's point of view, and will choose objectives, actions, and obstacles congruent with the historical text of modern classic texts.
- Students will employ honest communication and listening skills and demonstrate an ability to make choices that challenge individual emotional range.
- Students will continue practice the positive work habits of an actor, i.e. dependability, punctuality, cooperation, dedication, consideration of fellow actors, and ensemble work.

TMA 427 : Auditions. (3:6:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BFA acting or MDT major status. BFA acting majors: TMA 229 and 325 and 422 and 424. BFA MDT majors: TMA 229 and 422 and Dance 240. By audition only.

DESCRIPTION: Auditions, cold reading, resumes, and the business end of acting, music, and dance for the professional performer.

**Course Outcomes**

- Students will construct a personal ethical framework and a commitment to ethical conduct as it applies to auditioning in the performance industry.
- Students will identify, recognize, and apply effective cold reading, improvisation, prepared auditions and other auditioning skills.
- Students will apply improved acting skills, voice work, objective, use of impulses, and self-discovery to performance practice in general.
- Students will self-evaluate individual progress and performance, practice effective and supportive peer coaching and peer evaluation techniques, and apply professional work habits of dependability, promptness, cooperation, preparation, and the ability to make independent choices.

*Voice:*

MUSIC 161 : Voice Technique. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance by audition to the School of Music.

DESCRIPTION: Class instruction in voice technique.

**Course Outcomes**

- Through the understanding and use of proper vocal technique, students will musically perform traditional and contemporary Musical Theatre, as well as “pop” pieces, implementing many vocal colors and styles.
- By studying the basic anatomy involved in vocal production, Students will differentiate between those mechanical processes, which will build healthy production and those, which will lead to vocal problems.
- Students will demonstrate knowledge of vocal technique outlined in the text through taking a series of quizzes.
- Students will memorize and perform repertoire that is representative of the various vocal styles used in Musical Theatre literature.
- Students will expand sight-reading skills by participating in oral drills, enhancing the ability to study and learn musical scores.
- Through class devotionals, group discussion and personal reflection (journal writing) each student will begin to synthesize his/her growing skills with his/her moral, spiritual and ethical values.
- By supporting the growth of each member of the class, each student will develop a sense of community and sharing in the process of magnifying his/her own talent, thus downplaying the intensely competitive element of the performing business.

TMA 122 : Voice Production and Phonetics 1. (2:3:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: BFA acting or acting pre-major status; or instructor's consent.

DESCRIPTION: Foundational exercises to aid in freeing tensions, habits/patterns, and finding the natural state of the voice. Lab required. Introduction to the use of Standard American Stage Dialect with International Phonetic Alphabet. Identification of speech/articulation problems.

**Course Outcomes**

- Have a greater awareness of their own bodies address individual problems which can inhibit sound through specific exercises
- Begin to deconstruct areas of physical and emotional tension and apply restructuring breathing techniques to text
- Gain greater self-awareness and acceptance of their “holistic” self without judgment
- Increase emotional vulnerability in their acting
- Increase breath capacity for power and support in monologue work
- Develop a larger concept of spirituality which includes use of their bodies and voices awell as their spirits; emulate gospel principles in their art as well as in their lives

TMA 222 : Voice Production and Phonetics 2. (2:3:1)

WHEN TAUGHT: Winter; Summer Contact Department

PREREQUISITE: TMA 115; BFA acting or acting pre-major status. By audition only.

DESCRIPTION: Advanced exercises to aid in freeing tensions, habits/patterns, and finding the natural state of the voice. Lab required. Continued study and mastery of Standard American Stage Dialect with International Phonetic Alphabet. Identification of speech/articulation problems.

**Course Outcomes**

There are no course outcomes available

TMA 322 : Classical Voice. (2:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: BFA acting or MDT major status. BFA acting majors: TMA 222 and 228. BFA MDT majors: TMA 121 and 228.

DESCRIPTION: Speech techniques (word stress, inflection, pitch, pace, etc.) applied in the classical play.

**Course Outcomes**

- Students will produce work at a consistently competitive level of expertise.
- Students will demonstrate mastery of Standard American Speech dialect.
- Students will demonstrate mastery of the performance techniques of word stress, inflection and pitch, projection and heroic builds in more challenging monologue work.

TMA 422 : Dialects. (2:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: BFA acting or MDT major status. BFA acting majors: TMA 124 and 222. BFA MDT majors: TMA 121 and 124. By audition only.

DESCRIPTION: Major stage dialects.

**Course Outcomes**

- Students will engage in a process of dialect study for each dialect studied in the course.
- Students will identify and articulate key characteristics of the International Phonetic Alphabet and differentiate key changes in the International Phonetic Alphabet pertaining to each dialect studied.
- Students will integrate dialect, voice, and performance skills.
- Students will peer-evaluate acting and dialect skills, self-evaluate individual progress and performance, apply professional work habits of dependability, promptness, cooperation, preparation, and the ability to make independent choices.

*Movement:*

DANCE 140 : Contemporary Dance, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Students will demonstrate and articulate an understanding of the elements of dance (energy, space, and time).
- Students will demonstrate beginning technical ability in the areas of:·flexibility· strength and endurance· control of parallel and turn out positions
- Students will demonstrate creative problem solving and interpersonal skills through collaborative improvisation and composition experiences
- Students will articulate an awareness and appreciation of dance as an art form.
- Students will articulate knowledge of basic modern/contemporary dance history

or

DANCE 240R : Contemporary Dance, Technique and Theory 1. (1.5:0:4.5)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Fundamental dance skills and basic theories.

**Course Outcomes**

There are no course outcomes available

TMA 125 : Yoga and Alexander Technique. (1:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: BFA acting or acting pre-major status; or instructor's consent.

DESCRIPTION: Techniques of relaxation, breath, focus, and posture to enhance actor's body and voice as a whole integrated tool in performance.

**Course Outcomes**

- Students will have a greater awareness of their own body.
- Students will demonstrate focused control over their own minds and bodies.
- Students will practice various Yoga positions, which creates greater breath capacity, flexibility, strength and relaxation.
- Students will demonstration a sense of balance and centering.

TMA 127 : Beginning Stage Combat. (1:2:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BFA acting, acting pre-major, or theatre education major status; or instructor's consent.

DESCRIPTION: Basic hand-to-hand stage combat instruction. Introduction to tumbling and falls.

**Course Outcomes**

- Students will describe the historical development of weapons.
- Students will practice physical dexterity and concentration skills.
- Students will recognize and use basic stage combat vocabulary.
- Students will integrate stage combat choreography into text and scene work.
- Students will practice appropriate safety procedures.

TMA 225 : Neutral Mask. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 125 & TMA 128 & TMA 228; By audition only.

DESCRIPTION: Use of masks in teaching specificity of movement, communication, and emotion.

**Course Outcomes**

- Students will utilize their bodies to communicate thought process, relationship, and emotion.
- Students will employ laban techniques in order to break old acting habits and acquire a larger palate for physical and emotional choices.
- Students will apply techniques of mask by creating a fully realized character.

TMA 325 : Stage Combat. (2:4:2)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 125 & TMA 127 & TMA 225; BFA acting major status.

DESCRIPTION: Skills of safe hand-to-hand combat, including use of rapier, dagger, and broadsword, for stage and screen.

**Course Outcomes**

- Students will use SAFD techniques to safely and believably perform in a theatrical production using various weapons for period stage plays.
- Students will demonstrate improved individual physical coordination.
- Students will use various technical terms from a glossary of SAFD Lexicon.
- Students will model correct fighting techniques for rapier, rapier and dagger, and broadsword.
- Students will demonstrate a deeper awareness of body and its impact on the storytelling process in scene work.

*Support skills:*

TMA 267 : Principles of Makeup. (2:4:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to basic makeup application for stage and screen: corrective, glamour and age; stylized approaches; putty construction; crepe hair; wig application techniques.

**Course Outcomes**

- Students will demonstrate basic flat makeup skills through projects in corrective, glamour, and age.
- Students will create special makeup projects using putty and crepe hair.
- Students will perform basic wig applications.
- Students will apply previous makeup skills for a stylized project and a complete character, including makeup and hair.

*Performance:*

TMA 399R : Academic Internship. (.5-9:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Theatre students: TMA 115 and application. Media students: TMA 112 and 114 and 185/105 and application.

DESCRIPTION: Off-campus experience or internship in theatre or media arts.

**Course Outcomes**

- Because of the individual nature of the internship course, students work with their advisor to list at least three (3) objectives they hope to achieve that are in line with the program level learning outcomes.

: Academic Internship: Media.

**Course Outcomes**

: Academic Internship: Theatre.

**Course Outcomes**

or

TMA 496R : Academic Internship. (.5-9:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Theatre students: TMA 115; by application only. Media students: TMA 112 and 114 and 185/105; by application only.

DESCRIPTION: Off-campus experience or internship in theatre or media arts.

**Course Outcomes**

- Students will improve their capacity as storytellers and filmmakers by observing and assisting in professional settings outside of BYU
- Collaborate effectively with other professionals in the creation of a film, television series, or other media production.

: Academic Internship: Media.

**Course Outcomes**

: Academic Internship: Theatre.

**Course Outcomes**

(1 hour minimum)

TMA 410 : Acting Capstone. (2-3:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BFA acting major status. By audition only.

DESCRIPTION: Participation in a final acting project on the BYU main-stage season.

**Course Outcomes**

- Students will prepare a role in a BFA Senior Project synthesizing and showcasing the cumulative knowledge and skill attaind in the BFA program.
- Students will practice positive work habits, i.e. dependability, punctuality, cooperation, dedication, consideration of fellow actors, and ensemble work.
- Students will develop a gospel-centered sense of empathy and compassion that will serve as a foundation for the actor on stage and screen, as well as a foundation for living a more Christian life.

(3 hours minimum)

6. Complete the following:

TMA 421 : The Business: Marketing Yourself as a Performer. (1:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 229; BFA acting or BFA MDT major status. Or instructor's consent.

DESCRIPTION: Business aspects of the entertainment industry, including telephone interviews with entertainment industry personnel. Required research project.

**Course Outcomes**

- Students leave the course with a positive/proactive attitude towards the business aspects of their career.
- Students leave the course with a basic knowledge of the helpful resources available to them for finding employment as an actor and/or continuing their training in the field

TMA 491 : Ethics, Aesthetics, and Theology. (1:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 322 and 324 and 325. BFA acting major status.

DESCRIPTION: Analyzing and considering interrelationships of ethical, aesthetic, and theological dimensions of creating and performing media arts and theatre texts.

**Course Outcomes**

- Students will examine, define, and clarify the individual process of ethical decision making.
- Students will develop improved moral reasoning skills and understand judgment processes for informed ethical decision making in the arts.
- Students will construct a personal ethical framework and make a commitment to ethical conduct as a professional in theatre and media arts and as a member of social communities.
- Students will compare and contrast examples of LDS representation in the arts and prepare to discuss their findings with industry professionals in an objective and informed way.

7. Complete 12 hours from the following or other approved courses:

MUSIC 259 : Psychology of Performance. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Psychological skills for performers. Topics include audition preparation, conquering stage fright, preventing overuse injury, attention control, creativity. Skills applicable to any performance situation.

**Course Outcomes**

- Students completing this course will be able to:1. Have the skills to manage anxiety through the implementation of relaxation training.2. Use mental visualization to enhance their performance and their performance preparation.3. Use the 5 stages of the performance process to support future performance.4. Create an optimal performance mindset.5. Approach a performance with confidence.6. Break through what is limiting their self expression.7. Step up, risk and enjoy performing.

TMA 220R : Workshop 1: Acting. (.5-3:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: By audition only.

DESCRIPTION: Experience in production: acting.

**Course Outcomes**

- Students will prepare a role in a mainstage production synthesizing and showcasing the research, creative process, and collaboration of the rehearsal process.
- Students will develop a gospel-centered sense of empathy and compassion that will serve as a foundation for the actor on stage and screen, as well as a foundation for living a more Christian life.
- Students will apply professional work habits of dependability, promptness, cooperation, preparation, and the ability to make independent choices.

TMA 241 : Screenwriting 1. (3:4:0)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department; Summer, Contact Department

PREREQUISITE: TMA 291 or 292 or concurrent enrollment.

DESCRIPTION: Basic narrative and nonfiction (documentary, educational, industrial, multimedia) screenwriting principles through reading, viewing, testing, and completing writing assignments.

**Course Outcomes**

- Draw on your own experiences to develop a unique point of view; observe your world to find stories to tell

- Understand and practice the basic artistic principles of screenwriting, including use of character, structure, images, meaning, theme, etc.
- Learn practices of professionalscreenwriting, including formatting, economy of description, etc.
- Give constructive feedback on others' stories; learn to receive constructive feedback on your own work

TMA 251 : Playwriting 1. (3:4:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall
PREREQUISITE: TMA 115 or instructor's consent.
DESCRIPTION: Basic playwriting principles through reading, completing writing assignments, testing, and writing the first draft of a one-act play.

**Course Outcomes**

There are no course outcomes available

TMA 321 : Voice Over. (2:2:0)

WHEN TAUGHT: Fall
DESCRIPTION: Studio procedures and protocol, skills involved in producing effective reading choices, creation and cataloging voice over characters for commercial and animation voice overs.
NOTE: For acting, advertising, and animation majors, and anyone interested in learning voice over techniques.

**Course Outcomes**

- Students will demonstrate the ability to recognize, create, perform with, and talk about moment-to-moment awareness and authenticity.
- Student will evaluate the voice-acting work of their peers.
- Students will demonstrate fluency in studio protocol and terminology.

TMA 323R : Kennedy Center American College Theatre Festival. (1:0:Arr)

PREREQUISITE: By application only.
DESCRIPTION: Coaching students who will participate in the Kennedy Center American College Theatre Festival.

**Course Outcomes**

- Because of the specific nature of the festival course, students work witht heir advisor to list at least three (3) objectives they hope to achieve that are in line with the program-level learning outcomes.

TMA 329 : Theatre and Film Acting Conservatory. (3:6:ARR)

WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: TMA 122 & TMA 224; BFA acting major status. By audition only.
DESCRIPTION: Extensive work on a theatre or film project through semester, culminating in performance of play or preview of film/video.

**Course Outcomes**

- Students will analyze a script.
- Students will perform a role in a full-length play production.
- Students will demonstrate the ability to work beyond their comfort zone in terms of emotional risks and personal acting habits.
- Students will collaborate with other actors to develop a trusting ensemble.

TMA 336 : Directing Principles and Practices. (3:4:1)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: TMA 236; Theatre arts studies majors status. Instructor's consent.
DESCRIPTION: Theories and processes of taking a scene from script to production. Lab required.

**Course Outcomes**

- Students will develop their own method of directing through examining and employing a wide variety of prominent directors' processes.
- Students will enlarge the ability to communicate through theatre by taking scenes from the text to performance through interpretation, analysis, composition, and pre-production work.
- Students will practice the collaborative nature of theatre production by working with actors, designers, dramaturgs, and classmates in order to tell compelling stories.
- Students will make artistic decisions that are informed by principles of human interaction, the spirit of truth, and the light of Christ.

TMA 341R : Screenwriting 2. (3:3:0)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department
PREREQUISITE: TMA 114 & TMA 241; major status. By application only.
DESCRIPTION: Intermediate conceptualization, screenwriting, and development for narrative or nonnarrative projects.

**Course Outcomes**

There are no course outcomes available

TMA 351 : Playwriting 2. (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 251; or instructor's consent.

DESCRIPTION: Workshop course designed to assist more advanced students in furthering their playwriting skills by writing the first draft of a full-length play.

**Course Outcomes**

- Students will begin to establish their own process of writing and tapping inspirational sources for content and subject matter by writing and refining 2 one-act plays.
- Students will begin to master the elements and principles of theatrical storytelling and character development through reading the work of other playwrights, writing one-act plays, and participating in classroom discussions and lectures.
- Students will apply appropriate elements of theatrical structures and character development through writing and revising one-act plays, and participating in classroom discussions and lectures.
- Students will demonstrate the skills to accurately and thoughtfully analyze their own theatrical writing and the writing of others by successfully drafting their one-act plays, and participating in classroom discussions and lectures.

TMA 367 : Makeup Design. (3:4:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 259 & TMA 267; or instructor consent.

DESCRIPTION: Comprehensive course in makeup design for stage and screen: prosthetics; advanced makeup effects; makeup theory; script research; collaboration techniques; preparation for work as assistant and/or full designer positions in departmental productions.

**Course Outcomes**

- Students will apply script analysis and the use of a director's concept in the creation of an effective makeup design for a production.
- Students will demonstrate collaborative communication, both orally in a production team and artistically through the makeup and hair renderings, as preparation for co-design and full costume design assignments for the Department of Theatre & Media Arts.
- Students will demonstrate professional rendering and computer-aided graphic skills in makeup, hair and prosthetic design and construction.
- Students will produce effective visual materials for personal portfolios and demonstrate an ability to constructively critique other designers' portfolios.

TMA 395 : Dramatic Literature 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre arts studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through Western literary theories, emphasizing performance.

**Course Outcomes**

- Students will synthesize linguistic theory and the social theories and great works of dramatic literature through reading, writing, discussion, film viewing.
- Students will create socially conscious, ideologically-grounded performances that respond both to their world views and contemporary issues in critical theory.
- Students will create cogent, compelling, and mechanically writing for the Humanities in a variety of different mediums—informal responses, production reviews, persuasive essays, and critical analyses.

TMA 396 : Dramatic Literature 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre arts studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through global literary theories, emphasizing performance.

**Course Outcomes**

- Students will synthesize linguistic theory and the social theories and great works of dramatic literature through reading, writing, discussion, film viewing.
- Students will create socially conscious, ideologically-grounded performances that respond both to their world views and contemporary issues in critical theory.
- Students will create cogent, compelling, and mechanically writing for the Humanities in a variety of different mediums—informal responses, production reviews, persuasive essays, and critical analyses.

TMA 420R : Performance Workshop 2. (.5-3:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: By audition only.

DESCRIPTION: Advanced experience in production: acting.

**Course Outcomes**

- Students will develop a gospel-centered sense of empathy and compassion that will serve as a foundation for the actor on stage and screen, as well as a foundation for living a more Christian life.
- Students will prepare a role in a mainstage production syntehesizing and showcasing the research, creative process, and collaboration of the rehearsal process.
- Students will apply professional work habits of dependability, promptness, cooperation, preparation, and the ability to make independent choices.

TMA 425 : Character Mask. (2:4:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: BFA acting major status. By audition only.

DESCRIPTION: Use of the body as a primary tool for character and script interpretation.

**Course Outcomes**

- Students will apply created characterizations to performance texts.
- Students will apply the Suzuki method, physicalizing a character "from the outside in."

TMA 429 : Performance: Recital. (3:2:4)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: TMA 229 and 422 and 424. BFA acting major status. By audition only.

DESCRIPTION: Thirty- to forty-five minute performance of cuttings from varied genres.

**Course Outcomes**

- Students will select and prepare four scenes and four monologues that will be performed for an invited audience at the end of the semester.
- Students will practice positive work habits of an actor, i.e. dependability, punctuality, cooperation, dedication, consideration of fellow actors, and ensemble work.
- Students will identify and expand their capabilities as a performer in order to gain flexibility and contrast of voice, movement, energies, dialect, and characterizations in performance.

TMA 436 : Theatre Directing Practicum. (3:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 336. Theatre arts studies major status. Instructor's consent.

DESCRIPTION: Directing projects for class critique and public presentation.

**Course Outcomes**

- Strengthen their relationship with the Holy Spirit through preproduction work, rehearsals, and performances.
- Test and refine their abilities to collaborate and communicate in creating theatrical performances.
- Build and strengthen their characters as they take full responsibility for a fully mounted performance.
- Enlarge the intellectual range of their education by developing skills, breadth, and depth in the discipline of directing.

TMA 443R : Writer/Dramaturg/Actor Workshop. (3:6:1)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115 and instructor's consent.

DESCRIPTION: Collaborative workshop developing new stage and screenplays through exercises, discussion, and writing. Scripts selected competitively; public readings at end of course.

**Course Outcomes**

- Students will develop the ability to objectively explore the merits of a new script and to identify strengths and weakness in new scripts.
- Students will develop the ability to thoughtfully and accurately express their opinions in constrictive ways and to workshop this feedback appropriately.
- Students will develop the ability to evaluate and appropriately apply feedback on their new scripts and to effectively rewrite their new scripts.

TMA 469 : Theatre Management. (3:4:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Basic philosophies of box office, front-of-house, and theatre marketing.

**Course Outcomes**

- Students will, recognize the key elements vital to the operation of organizations in various performing arts facilities such as scheduling, budgeting, and marketing.
- Students will demonstrate how to operate organizations in various performing arts facilities by creating budgets, marketing campaigns, and grant proposals.

*Hours include courses that may fulfill university core requirements.

## Show all Theatre and Media Arts (TMA) Courses

**College of Fine Arts and Communications Home**

**Theatre and Media Arts Department Home**

**Majors**

- BA in Media Arts Studies
- BA in Theatre Arts Education K–12
- BA in Theatre Arts Studies
- BFA in Acting

**Minors**

- Media Arts Studies
- Theatre Arts Studies

**Course Information**

- Theatre and Media Arts (TMA) Courses

**Faculty**

# Minor in Media Arts Studies (23 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this minor.*

## Program Requirements | View MAP

1. Complete the following with a B grade or better:

TMA 102 : Introduction to Film. (3:4:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Analytical studies for understanding and appreciating media forms and messages, as well as basic history, theory, and aesthetics. Lab required.

**Course Outcomes**

- Students will become active, intelligent film viewers
- Students will be exposed to the practical elements of film
- Students will learn about a wide range of stories and stylistic strategies utilized by film artists and institutions
- Students will become familiar with new and helpful ways of receiving films. They will be able to evaluate and analyze films in a variety of contexts.

2. Be admitted to the minor program by application (see the department office, D-581 HFAC.)

3. Upon acceptance into the minor program, complete the following:

TMA 105 : Using Basic Media Tools. (1:1:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Media arts major or minor status or animation major status; concurrent enrollment in TMA 185.

DESCRIPTION: Introductory course to familiarize students with basics in camera, lighting, and sound fundamentals.

**Course Outcomes**

- Students will become familiar with new and helpful ways of receiving films. They will be able to evaluate and analyze films in a variety of contexts.
- Students will begin to conceptualize, write, shoot, and edit fiction and non-fiction stories.
- Students will present, discuss, analyze, and critique others work in the spirit of peer to peer collaboration.

TMA 112 : Collaboration, Research, and Visualization. (3:3:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 102; Acceptance into media arts program.

DESCRIPTION: Overview and practical applications of principles of collaboration, research, and visualization as essential elements of appreciation and production of new media and media arts projects.

**Course Outcomes**

- -->Students will identify story resources
- Students will experiment with the ways that those stories might work together
- Think about the ways they might communicate those stories visually and aurally to audiences
- Practice processes of conceptualization, creation, and dissemination of story ideas

TMA 114 : Reading and Constructing Narratives. (3:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Media Arts major or minor status.

DESCRIPTION: Analyzing basic narrative principles; conceptualizing and writing narratives for theatre and media.

**Course Outcomes**

- The objective of this class is to explore a range of story types that you should all know about. You have different career aspirations, but practitioners and scholars alike will want to be able to read,

comprehend, and adapt/implement this array of narrative methods.
- To equip students with a set of critical tools that will aid them in their studio work
- To establish a solid foundation for students as they prepare to take higher-level Critical Studies courses —namely, Dramatic Literature (TMA 395 & 396) and Contemporary Performance Practices (TMA 401)
- To provide students a stronger understanding of how the world around them is constructed and how they might better participate in, resist, and/or affect that world.
- Graduates will distinguish themselves through leadership, inspiration, and integrity in professional experience.

TMA 185 : Basic Media Production. (3:4:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Media arts major/minor status or animation major status; concurrent enrollment in TMA 105.

DESCRIPTION: Introduction to basics of film and video production. Includes lecture and practical lab experiences with audio and video.

**Course Outcomes**

- Students will improve their capacity as story tellers and filmmakers.
- Students will begin to conceptualize, write, shoot, and edit fiction and non-fiction stories.
- Students will engage with texts about storytelling and production processes
- Students will present, discuss, analyze, and critique others work in the spirit of peer to peer collaboration

4. Complete one course from the following:

TMA 291 : Media Arts History 1. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: TMA 112 & TMA 114

DESCRIPTION: Survey of social, aesthetic, business, and technical dimensions of film and media from 1895 to 1945.

**Course Outcomes**

- familiarize students with the history of world cinema from 1895 to 1946 as informing and informed by culture, social history, emerging technologies and industry adaptations, and trends in visual art

TMA 292 : Media Arts History 2. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: TMA 112 & TMA 114

DESCRIPTION: Survey of social, aesthetic, business, and technical dimensions of film and media from 1946 to present.

**Course Outcomes**

- to familiarize students with the history of post-WWII world cinema as informing and informed by culture, social history, emerging technologies and industry adaptations, and trends in visual art

TMA 293 : History of Documentary and Nonfiction Film. (3:ARR:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: TMA 112 & TMA 114

DESCRIPTION: Introduction to and contextualization of documentary film from its inception to present.

**Course Outcomes**

- To watch a lot of non-fiction films. And enjoy them *perhaps immensely). Meanwhile: to consider the idea of the nonfiction film from its beginning to the present day; to explore a range of approaches, styles, and individuals associated with the documentary idea; to discuss social and ethical issues that emerge around documentary film making; finally to consider how our own lives (as film makers, film critics, and normal people) are informed and shaped by documentary sensibilities. (or ought to be)

5. Complete three hours from the following advanced critical studies courses:

TMA 458 : Media Literacy Education. (3:3:1)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 102 & TMA 114

RECOMMENDED: TMA 291, 292.

DESCRIPTION: Media literacy principles and basic film production in the context of educating students and teachers in local K-12 public schools.

**Course Outcomes**

- Investigate the mediated world at large, considering personal media presence as well as the global media.
- Examine media education theories and strategies of media education practice.
- Discuss and examine local and global media outreach and after school programs.
- Develop personal pedagogical standards from which they create and teach a media curriculum.
- Create photo, audio, and video documentaries that demonstrate the principles of community storytelling
- Prepare to interact with elementary and secondary students and teachers who are currently using media in their classroom curricula.

TMA 477R : Issues in Media Arts. (3:5:0)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 291, 292; media arts major status.

DESCRIPTION: In-depth study of key media arts issues, within context of gospel principles.

**Course Outcomes**

- 1. Explore the ways this significant media arts issue developed over time.
- 2. Clarify definitions and practical functioning of significant concepts and paradigms.
- 3. Analyze key texts and their relationship to culture in relationship to key concerns.
- 4. Consider ethical and spiritual implcations of the issue.
- Collaboratively identify and share information on current relating to the specific issue.

TMA 492R : Media Arts Genres. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Intensive analysis of a single major traditional media genre (i.e., western, musical, sitcom, or melodrama) with consideration of contextual, subtextual, and textual issues.

**Course Outcomes**

- to listen to a ton of lectures, read a ton of stories, and see a ton of films relating to a given genre. We will also learn about some of the social and historical factors that have informed narratives within that genre, as well as some of their many and evolving styles and conventions.
- Explore a specific genre as a microcosm of larger aesthetic and social development of popular cultural artifacts.
- Identify schoalrly material related to genre study.
- Consider the relationship of text, subtext, and context in genre film.
- Analyze the significance of conventions and themes both diachronically and synchronically.

TMA 494 : Transcendence: Religion and Film. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 291; or TMA 292; media arts major or minor status.

DESCRIPTION: Historical, stylistic, and thematic survey of approaches to religious and spiritual subject matter in film.

**Course Outcomes**

- consider the history and nature of transcendence in cinema, it's operation in particular films, and the permutations of relationships between transcendence/spirituality and film.
- explore and further articulate their personal paradigm of transcendence and film especially in its operation in specific cinematic texts
- develop "experimental criticism" skills (as identified by C.S. Lewis), examining a text's impact on spectators and its relationship to the intent of its creators.
- establish familiarity with the some of the scholarly literature on religion/values and film.

TMA 497 : Media as a Mirror of Our Times. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Interdisciplinary approach to media texts as aesthetic and historical documents expressing a people, place, and time.

**Course Outcomes**

- Student will explore media text as cultural and historical documents reflecting social values and anxieties.Students will utilizeInterdisciplinaryapproaches to analyze media texts aesthetically as determined by culture. Close reading of a variety of text will allow students to develop a methodology to understand the role of film text and subtext as well as context.

TMA 498R : Special Topics in Media Arts. (3:3:3)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Consideration of compelling issues in media arts practice, theory, history, and criticism.

**Course Outcomes**

- In-depth textual, contextual, and subtextual analyses of a compelling topic in media arts
- Paradigmatic exploration of emerging media arts issues in practice, theory and history.
- Thoughtful consideration of aesthetic and historical implications of special media arts topics
- Consideration of representative texts of the media arts special topic.

6. Complete four hours of electives from the following:

TMA 277 : New Media Conceptualization. (3:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: Majors/minors: TMA 293, 295. Non-majors: no prerequisites.

DESCRIPTION: Concepts and techniques for creating new media production.

**Course Outcomes**

- Understand history, theory, principles of new media storytelling

- Develop a new media story. focus story to a specific audience
- incorporate lds themes into story in a way that is authentic and accessible to a modern audience

TMA 293 : History of Documentary and Nonfiction Film. (3:ARR:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: TMA 112 & TMA 114

DESCRIPTION: Introduction to and contextualization of documentary film from its inception to present.

**Course Outcomes**

- To watch a lot of non-fiction films. And enjoy them *perhaps immensely). Meanwhile: to consider the idea of the nonfiction film from its beginning to the present day; to explore a range of approaches, styles, and individuals associated with the documentary idea; to discuss social and ethical issues that emerge around documentary film making; finally to consider how our own lives (as film makers, film critics, and normal people) are informed and shaped by documentary sensibilities. (or ought to be)

TMA 295 : History of the Moving Image. (3:3:0)

WHEN TAUGHT: Fall; Winter, Contact Department; Spring

PREREQUISITE: TMA 112 & TMA 114

DESCRIPTION: Continuities and changes in the moving image from 1895 to the present, focusing on implications of emerging and converging media for spectatorship, social and individual identity construction, and potential sharing of spirituality.

**Course Outcomes**

- • Examine moving images and their operations as spirituality, art, technology, social force, and economics
- • Explore spectator/user involvement in concrete aspects of the development of the moving image, from 1895 to the present
- • Thoughtfully consider the roles of contemporary media in shaping and revealing individual and social identities
- • Collaboratively identify and share information on current practices involving media interactivity and its impacts upon the “user”

TMA 370R : Practicum: Television. (1-6:Arr:1)

DESCRIPTION: Practicum in advanced mentored television productions offered as needed for student projects.

**Course Outcomes**

No outcomes are available at this time.

TMA 384R : Practicum: Cinematic Skills. (1-6:ARR:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Advanced cinematic skills.

**Course Outcomes**

- These courses teach specific cinematic skills regarding Cinematography, Sound, Editing, Visual and Practical Effects, Lighting, Post-Production and more. Students will learn how to use these tools, in collaboration with other students, to prepare to be competitive in the film industry.

TMA 387 : Production Management: Advanced. (3:3:1)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 187; media arts major status; media arts foundation courses.

DESCRIPTION: Overview of techniques for managing large arts projects, involving individual and team projects.

**Course Outcomes**

There are no course outcomes available

TMA 391 : Introduction to Media Arts Theory. (3:6:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: TMA 291; or TMA 292

DESCRIPTION: Identifying and analyzing contemporary film and media theories, with application to specific media texts.

**Course Outcomes**

- articulate and develop your personal framework of how films make meaning and implement those values in his/her own filmmaking. film viewing and film analysis
- using canonical film theory paradigms and vocabulary, understand and apply multiple ways spectators construct meanings while viewing films
- competently analyze key film theories from 1915 to the present and apply them to specific film texts

TMA 392 : Children's Media. (3:3:0)

WHEN TAUGHT: Winter, Contact Department

DESCRIPTION: Historical and theoretical survey of media for and about children and the literature that informs it; discussions and strategies relating to production, reception, pedagogy, and parenting.

**Course Outcomes**

- To survey the history of children's media, its various forebears (children's literature particularly) and components (film, television, interactive mult-media), and to consider some of the theoretical and practical implications of same; to study both texts and authors, signal moments and broad movements; to attend not only to conventional issues relating to production and criticism, but to also give special consideration to audience: reception, phenomenology, appropriation and the likening of outside material to one's own life and circumstances; to identify techniques by which teachers, parents and children together can make media an abiding part of an abundant relationship.

TMA 458 : Media Literacy Education. (3:3:1)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 102 & TMA 114

RECOMMENDED: TMA 291, 292.

DESCRIPTION: Media literacy principles and basic film production in the context of educating students and teachers in local K-12 public schools.

**Course Outcomes**

- Investigate the mediated world at large, considering personal media presence as well as the global media.
- Examine media education theories and strategies of media education practice.
- Discuss and examine local and global media outreach and after school programs.
- Develop personal pedagogical standards from which they create and teach a media curriculum.
- Create photo, audio, and video documentaries that demonstrate the principles of community storytelling
- Prepare to interact with elementary and secondary students and teachers who are currently using media in their classroom curricula.

TMA 477R : Issues in Media Arts. (3:5:0)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 291, 292; media arts major status.

DESCRIPTION: In-depth study of key media arts issues, within context of gospel principles.

**Course Outcomes**

- 1. Explore the ways this significant media arts issue developed over time.
- 2. Clarify definitions and practical functioning of significant concepts and paradigms.
- 3. Analyze key texts and their relationship to culture in relationship to key concerns.
- 4. Consider ethical and spiritual implcations of the issue.
- Collaboratively identify and share information on current relating to the specific issue.

TMA 492R : Media Arts Genres. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Intensive analysis of a single major traditional media genre (i.e., western, musical, sitcom, or melodrama) with consideration of contextual, subtextual, and textual issues.

**Course Outcomes**

- to listen to a ton of lectures, read a ton of stories, and see a ton of films relating to a given genre. We will also learn about some of the social and historical factors that have informed narratives within that genre, as well as some of their many and evolving styles and conventions.
- Explore a specific genre as a microcosm of larger aesthetic and social development of popular cultural artifacts.
- Identify schoalrly material related to genre study.
- Consider the relationship of text, subtext, and context in genre film.
- Analyze the significance of conventions and themes both diachronically and synchronically.

TMA 494 : Transcendence: Religion and Film. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 291; or TMA 292; media arts major or minor status.

DESCRIPTION: Historical, stylistic, and thematic survey of approaches to religious and spiritual subject matter in film.

**Course Outcomes**

- consider the history and nature of transcendence in cinema, it's operation in particular films, and the permutations of relationships between transcendence/spirituality and film.
- explore and further articulate their personal paradigm of transcendence and film especially in its operation in specific cinematic texts
- develop "experimental criticism" skills (as identified by C.S. Lewis), examining a text's impact on spectators and its relationship to the intent of its creators.
- establish familiarity with the some of the scholarly literature on religion/values and film.

TMA 497 : Media as a Mirror of Our Times. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Interdisciplinary approach to media texts as aesthetic and historical documents expressing a people, place, and time.

**Course Outcomes**

- Student will explore media text as cultural and historical documents reflecting social values and anxieties.Students will utilizeInterdisciplinaryapproaches to analyze media texts aesthetically as determined by culture. Close reading of a variety of text will allow students to develop a methodology to understand the role of film text and subtext as well as context.

TMA 498R : Special Topics in Media Arts. (3:3:3)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Consideration of compelling issues in media arts practice, theory, history, and criticism.

**Course Outcomes**

- In-depth textual, contextual, and subtextual analyses of a compelling topic in media arts
- Paradigmatic exploration of emerging media arts issues in practice, theory and history.
- Thoughtful consideration of aesthetic and historical implications of special media arts topics
- Consideration of representative texts of the media arts special topic.

**Note:** Courses without an R in the course number may not be used to fulfill this requirement if taken to fill requirements in item 4 or 5 above.

*Hours include courses that may fulfill university core requirements.

## Show all Theatre and Media Arts (TMA) Courses

**College of Fine Arts and Communications Home**

**Theatre and Media Arts Department Home**

**Majors**

- BA in Media Arts Studies
- BA in Theatre Arts Education K–12
- BA in Theatre Arts Studies
- BFA in Acting

**Minors**

- Media Arts Studies
- Theatre Arts Studies

**Course Information**

- Theatre and Media Arts (TMA) Courses

**Faculty**

# Minor in Theatre Arts Studies (19–20 hours*)

Show All Course Descriptions
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## Program Requirements | View MAP

1. Complete the following prerequisite courses:

TMA 101 : Introduction to the Theatre. (3:3:1)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Reading, viewing, analyzing, writing about, and interacting with contemporary plays and performances to explore both theatre fundamentals and ways theatre addresses questions and concerns of our time. Lab required.

**Course Outcomes**

- Students will demonstrate a deeper appreciation for each of the participating aspects of theatrical production by researching, collaborating, visualizing, and mounting an original play.
- Students will demonstrate the tools to critically observe and read theatre within its historical and contemporary contexts through reading, writing, viewing, analyzing, discussing, and actively participating.
- Students will render a minimum 10 hours of service to a live theatre project during the semester. The service can be in the form of acting, stage-managing, writing, dramaturgy, or working technical on a project.

TMA 160 : Theatre Production 1. (1:2:2)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Introduction to technical support for realized production; production team techniques; production concept; realized production analysis.

**Course Outcomes**

- Students will demonstrate an understanding of foundational production theories through oral response.
- Students will analyze the effectiveness of elements of production based on a creative teams' concept, production theories, and design elements.
- Students will receive their hands-on production experiences (TMA 260 and TMA 360).

2. Complete and submit declaration form for the theatre arts studies minor to the department office (D-581 HFAC).

3. Complete the following core courses:

TMA 115 : Introduction to Performance Studies. (3:3:1)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Theatre arts studies major or minor status; or BFA acting major or acting pre-major status; or theatre education major status.
DESCRIPTION: Textual analysis of traditional plays. Introduction to performance studies. Ritual, play, performativity, performing, performance processes, and global and intercultural performance.

**Course Outcomes**

There are no course outcomes available

TMA 201 : Dramatic Performance: Antiquity to Renaissance. (3:3:0)

WHEN TAUGHT: Fall; Spring
DESCRIPTION: Civilization from Greek antiquity through Renaissance, primarily from perspective of dramatic literature and performance. Ways in which performance functions within particular socioeconomic, political, religious, and aesthetic perspectives.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate a general working knowledge of major historical periods, philosophical trends, and performance movements and will draw connections between society and performance, through writing and class discussion.

- Students will analyze great works of literature through multiple perspectives—society, culture, politics, economics, gender roles, religion—to better understand the ways in which dramatic performance functioned in particular times and places.
- Students will appraise 1) how we represent the world, others, and ourselves and 2) the consequences of these representations for our families, our communities, and ourselves.

TMA 202 : Dramatic Performance: Renaissance to the Present. (3:3:0)

WHEN TAUGHT: Winter; Summer

DESCRIPTION: Civilization from Renaissance through present, primarily from perspective of dramatic literature and performance. Ways in which performance functions within particular socioeconomic, political, religious, and aesthetic perspectives.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate a general working knowledge of major historical periods, philosophical trends, and performance movements and will draw connections between society and performance, through writing and class discussion.
- Students will analyze great works of literature through multiple perspectives—society, culture, politics, economics, gender roles, religion—to better understand the ways in which dramatic performance functioned in particular times and places.
- Students will appraise 1) how we represent the world, others, and ourselves and 2) the consequences of these representations for our families, our communities, and ourselves.

4. Complete one course from the following:

TMA 123 : Acting Fundamentals. (2:4:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamental acting skills: exercises in perception, objective/action, thought processes, scoring of scripts. Lab required.

**Course Outcomes**

- Develop a gospel-centered sense of empathy and compassion that will serve as a foundation for the actor on stage and screen, as well as a foundation for living a more Christian life. Acting Fundamentals Students will demonstrate a knowledge of and an ability to integrate fundamental acting principles.
- Students will apply professional work habits of dependability, promptness, cooperation, a sense of ensemble, and the ability to make independent choices.
- Develop practical acting analysis skills via studio work including objectives, tactics, obstacles, beats, given circumstances.
- Develop critcial observation skills through attendance at theatrical performances, and the reading of selected dramatic texts.

TMA 236 : Directing Fundamentals. (2:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: TMA 115 for theatre arts studies majors or minors, or BFA acting majors. Theatre education major or minor status or instructor's consent.

DESCRIPTION: Fundamental elements of stage directing, including observation, collaboration, imagination, casting, working with actors, camera, spaces, words, images, rehearsals, and final product. Lab required.

**Course Outcomes**

- Students will demonstrate storytelling skills through identification of dramatic structures and genres, careful interpretation, and script analysis, both oral and written.
- Students will practice production work towards creating imaginative design, composition, and staging.
- Students will develop a process for working with actors, designers, and dramaturgs in a collaborative way in order to tell compelling stories.
- Students will employ artistic decisions that are informed by principles of human interaction, the spirit of truth, and the light of Christ.

TMA 251 : Playwriting 1. (3:4:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115 or instructor's consent.

DESCRIPTION: Basic playwriting principles through reading, completing writing assignments, testing, and writing the first draft of a one-act play.

**Course Outcomes**

There are no course outcomes available

TMA 352 : Drama in the Elementary Classroom. (2:4:Arr)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Theatre education major status: TMA 101 or 102; TMA 276. Or early childhood education or elementary education major status. Or instructor's consent.

DESCRIPTION: Varied teaching methodologies for application of drama within the pre-K--6 classroom. Dual emphasis on Utah state elementary drama standards as well as integration with core curricula.

**Course Outcomes**

There are no course outcomes available

TMA 380 : Dramaturgy 1. (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115; or instructor's consent.

DESCRIPTION: Research and apply hands-on theatrical skills in four critical studies areas: literary management, production dramaturgy, new play development, educational outreach.

**Course Outcomes**

There are no course outcomes available

5. Complete one course from the following:

TMA 260R : Theatre Production 2. (1-3:0:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TMA 160 and instructor's consent.

DESCRIPTION: Practical experience in the scene shop, costume shop, and lighting lab. Hands-on training for further production experience.

**Course Outcomes**

- Students will participate in a hands-on experience in a technical area such as wardrobe, lighting, sound, or as a member of the backstage crew for a fully realized production.

: Theatre Production 2: Costumes.

**Course Outcomes**

: Theatre Production 2: Make-up/Props/Lighting.

**Course Outcomes**

: Theatre Production 2: Theatre Education.

**Course Outcomes**

: Theatre Production 2: Scene Shop.

**Course Outcomes**

TMA 360R : Theatre Production 3. (1-3:0:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TMA 160; and instructor's consent.

DESCRIPTION: Advanced practical experience in specialized shops or backstage experience on realized productions.

**Course Outcomes**

- Students will participate in a hands-on experience in a technical area such as wardrobe, lighting, sound, or as a member of the backstage crew for a fully realized production.
- Students will evaluate their hands-on experience in writing.

: Theatre Production 3: Costume/Makeup.

**Course Outcomes**

: Theatre Production 3: Scenery/Props.

**Course Outcomes**

: Theatre Production 3: Lights/Sound.

**Course Outcomes**

: Theatre Production 3: Stage Management.

**Course Outcomes**

6. Complete one course from the following:

TMA 395 : Dramatic Literature 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre arts studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through Western literary theories, emphasizing performance.

**Course Outcomes**

- Students will synthesize linguistic theory and the social theories and great works of dramatic literature through reading, writing, discussion, film viewing.
- Students will create socially conscious, ideologically-grounded performances that respond both to their world views and contemporary issues in critical theory.
- Students will create cogent, compelling, and mechanically writing for the Humanities in a variety of different mediums—informal responses, production reviews, persuasive essays, and critical analyses.

TMA 396 : Dramatic Literature 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre arts studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through global literary theories, emphasizing performance.

**Course Outcomes**

- Students will synthesize linguistic theory and the social theories and great works of dramatic literature through reading, writing, discussion, film viewing.
- Students will create socially conscious, ideologically-grounded performances that respond both to their world views and contemporary issues in critical theory.
- Students will create cogent, compelling, and mechanically writing for the Humanities in a variety of different mediums—informal responses, production reviews, persuasive essays, and critical analyses.

*Hours include courses that may fulfill university core requirements.

## Show all Theatre and Media Arts (TMA) Courses

**College of Fine Arts and Communications Home**

**Theatre and Media Arts Department Home**

**Majors**

- BA in Media Arts Studies
- BA in Theatre Arts Education K–12
- BA in Theatre Arts Studies
- BFA in Acting

**Minors**

- Media Arts Studies
- Theatre Arts Studies

**Course Information**

- Theatre and Media Arts (TMA) Courses

**Faculty**

# Theatre and Media Arts Faculty

Show All
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## Professors

Farahnakian, Mary
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Professor
**DEGREES:** BA, University of Tehran, Iran, 1971
PhD, Brigham Young University, 1977

Heiner, Barta Lee
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1971
MFA, American Conservatory Theatre, 1977

Larsen, Darl
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Professor
**DEGREES:** BA, University of California, Santa Barbara, 1990
MA, Brigham Young University, 1993
PhD, Northern Illinois University, 2000

Nelson, George D.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MFA, University of Washington, 1979

Scanlon, Rory Rahn
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1980
MFA, University of Illinois, Urbana-Champaign, 1984

Sorensen, Rodger D.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1972
MA, Brigham Young University, 1974
PhD, University of Texas, Dallas, 1999

Threlfall, Timothy Allan
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Professor
**DEGREES:** BFA, University of Idaho, 1983
MFA, University of Washington, 1987

## Associate Professors

Duncan, Dean W.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1987
MA, University of Southern California, 1991
PhD, Glasgow University, 1999

Jensen, Amy Petersen

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1998
PhD, University of Illinois, Urbana-Champaign, 2004

Jones, Megan Sanborn

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1995
MA, Brigham Young University, 1997
PhD, University of Minnesota, Twin Cities, 2004

Morgan, David E.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1985
MFA, National Theatre Conservatory, 1990

## Teaching Professor

Russell, Thomas Blair

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Teaching Professor
**DEGREES:** BA, Brigham Young University, 1988

## Associate Teaching Professors

Loosli, Kelly T.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1996

Parkin, Jeff

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Associate Teaching Professor
**DEGREES:** BFA, University of Southern California, 1990
MFA, University of Southern California, 1991

## Assistant Professors

Breinholt, Stephanie Ann Foster

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1994
MFA, Brigham Young University, 1999

Hollingshaus, Wade James

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, University of Washington, 2001
PhD, University of Minnesota, 2008

Kraczek, Michael S.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1999
MFA, Yale University, 2010

Livingstone, Lindsay A.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2003
MA, University of California, Los Angeles, 2004
PhD, The Graduate Center, the City University of New York, 2013

Swenson, Sharon L.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Professor
**DEGREES:** BA, University of Utah, 1968
MA, University of Utah, 1974
PhD, University of Utah, 1993

Thevenin, Benjamin

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2006
MA, Florida State University, 2008
PhD, University of Colorado, Boulder, 2012

## Assistant Teaching Professors

Ashworth, Julia D.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Teaching Professor
**DEGREES:** BA, Brigham Young University, 1996
MA, New York University, 2002

Barber, Brad

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Theatre and Media Arts
**RANK:** Assistant Teaching Professor
**DEGREES:** BA, Brigham Young University, 2001
MFA, University of Southern California, 2005

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# Visual Arts

Linda Reynolds, Chair
E-509 HFAC, (801) 422-7321

College of Fine Arts and Communications Advisement Center
D-444 HFAC, (801) 422-3777

## Admission to Degree Program

Admission to the Department of Visual Arts is obtained by department application after completion of the prerequisite core and a portfolio review. For further details, please refer to visualarts.byu.edu. Students will have two opportunities to apply to their program of choice—one in March and one in November. (This does not apply to the art history major, which is open enrollment.) Please see General Information below for more details, or contact the college advisement center (1-801-422-3777).

## The Discipline

The Department of Visual Arts serves five main purposes: (1) to prepare competent professionals in various fields of the plastic and graphic arts; (2) to prepare qualified designers to solve problems inherent in two- and three-dimensional applications; (3) to train historians who can critically appraise works of art; (4) to prepare art educators for teaching the visual arts at the elementary and secondary levels; and (5) to generally develop individuals' aesthetic sense by helping them experience art.

## Career Opportunities

The art education degree certifies the student as an art specialist in public or private institutions, grades K–12. Other opportunities for the certified art specialist are in foreign school systems, recreation programs, art museum education programs, and galleries. Students qualify for positions in artist-in-the-schools programs and arts councils and as art consultants/coordinators. The degree also provides a foundation for graduate study leading to advanced degrees.

Most opportunities for careers related to art history exist in teaching at the junior college and university levels. The art history major traditionally prepares students for related graduate study, but it also provides excellent training for many art- and humanities-related careers and provides a solid foundation for entering several professional graduate programs.

The art history major is valuable for those going into any aspect of museum work, including art conservation/restoration, curatorial work, museum research, and museum youth education programs. It is also a useful and often key undergraduate major for careers in art law, architecture, historical restoration, art galleries, auction houses, and art resource/research library studies. Local, state, and federal agencies offer career possibilities related to arts and humanities councils. Combined with one of several other majors, an art history minor helps prepare the student for any number of careers.

Studio art majors are prepared to compete as freelance, self-employed artists, working through galleries, exhibitions, and museums to promote and sell their work. The MFA degree also prepares artists to teach on a college or a university level. Other career opportunities include printmaking, illustration, production crafts, teaching, gallery and museum work, computer art applications, and other related careers.

Design majors are fully prepared for careers in each of the respective disciplines—

- Graphic design: Advertising agencies, design studios, in-house design organizations, freelance in mediums such as books, posters, signage, billboards, commercials, corporate identity systems, and logos.
- Illustration: In-house or freelance illustration focusing on book jacket, editorial, corporate, or institutional work; advertising, children's books, concept design, character development, narrative traditions, and computer applications, among others.
- Photography: Portraiture; commercial illustration; advertising; fashion; architectural photography; photo-journalism; editorial, stock, industrial, fine art, educational, medical, and travel photography; photographic conservation, marketing and manufacturing, and finishing.
- Animation majors are prepared to work in various disciplines that include feature animation studios, visual and special effect studios, entertainment, computer games, and scientific data visualization.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- Earn a minimum of 120 credit hours
- Have a cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in Art Education (K-12)** (Program Outcomes)
**BA in Art History and Curatorial Studies** (Program Outcomes)
**BA in Visual Arts**
- **Graphic Design Emphasis** (Program Outcomes)
- **Illustration Emphasis** (Program Outcomes)
- **Photography Emphasis** (Program Outcomes)
- **Studio Arts Emphasis** (Program Outcomes)

**BFA in Animation** (Program Outcomes)
**BFA in Graphic Design** (Program Outcomes)
**BFA in Illustration** (Program Outcomes)
**BFA in Photography** (Program Outcomes)
**BFA in Studio Arts** (Program Outcomes)

**Minor in Advertising Design**
**Minor in Art Education**
**Minor in Art History and Curatorial Studies**
**Minor in Visual Arts**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MA in Art Education
MA in Art History and Curatorial Studies
MFA in Studio Art

For more information see the BYU 2014–2015 Graduate Catalog.

## General Information

### Prerequisite Core

All prospective 2D studio 3D studio, art education, graphic design, illustration, and photography students must complete the freshman core program before applying to the Department of Visual Arts. The freshman core will consist of the following open-enrollment courses: VA 111, 114, 115.

Prospective animation students must complete the following courses before applying to a degree program in the department: CSAnm 150, VAAnm 131, and VAAnm 160.

Art history is an open-enrollment program.

### Talent Awards

All students, pre-majors and accepted majors, may apply for talent awards by completing the application found online at http://visualarts.byu.edu/. The deadline for talent award applications is February 1st of every year.

### Application Procedures for Freshmen

High school students expecting to be admitted to BYU in Fall semester may apply for the talent award and can be accepted only once a year (February 1st). If accepted to the Visual Arts program through the talent award, then the student would be expected to enroll in the core that first Fall semester and complete the pre-requisite classes.

### Sophomore-Through-Senior BFA Degree Program Enrollment

Permission to enroll for sophomore-through-senior-level BFA degree program courses is granted to students upon satisfactory development of skills and creative abilities demonstrated in a portfolio of drawings and designs completed during the preceding year. Faculty from each major will assess portfolios of work submitted by students wishing to advance in their respective fields of study. Students invited to continue are permitted to enroll in specified courses at the next academic level.

### Transfer Students

Transfer students in art disciplines must meet with the appropriate area coordinator. Transfer students in design disciplines are required to participate in a portfolio review; the deadline is March 15 for Fall semester, Spring and Summer terms, and November 15 for Winter semester. Contact the area coordinator.

**Note:** Students not accepted into BFA degree programs may elect to enroll in one of the bachelor of arts programs in visual arts. Students may apply to the BFA program no more than twice.

### Degree Program Coordinators / Advisors

Coordinators are appointed to counsel students in each of the eight majors/emphases. Coordinators will advise students about program objectives, course content and sequence, career goals, and other matters pertaining to their major field of study.

### Department Probationary Status

Students can be placed on probationary status for the following:

1. Inadequate academic performance.
2. Unprofessional attitude and lack of commitment.
3. BYU Honor Code violations.

## Licensure Option

The BA and BFA are professional degrees. This non-degree licensure option is only available to the following Visual Arts majors:

| Emphases in the BA in Visual Arts | BFA degrees |
|---|---|
| Graphic Design | Animation |
| Illustration | Graphic Design |
| Photography | Illustration |
| Studio Arts | Photography |
| | Studio Arts |

Please review the art education major requirements or contact the college advisement center. **Note: This is not a second major.**

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# BA in Art Education (K–12)
# (80 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirements for admission to this major.*

Application deadlines: March 30 and November 30.

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following core courses:

VA 111 : Freshman Seminar. (1.5:2:2)
WHEN TAUGHT: Fall
DESCRIPTION: Conceptual and philosophical preparation for visual arts majors. Lecture and guided discussion seminar with weekly labs. Nature and value of visual arts and visual culture.

**Course Outcomes**
No outcomes are available at this time.

VA 114 : Drawing. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Observational and conceptual drawing using a variety of media and methods.

**Course Outcomes**
No outcomes are available at this time.

VA 115 : Two-Dimensional Design. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Formal and conceptual elements of design, color, and composition, using a variety of media.

**Course Outcomes**
No outcomes are available at this time.

3. Obtain acceptance into the Art Education BA program.

4. Complete the following additional first-year foundation courses:

VAPHO 116 : Introduction to Photography and Digital Workflow. (3:4:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic camera techniques and digital capture, developing entry-level skills in digital imaging workflow, developing skills with industry-related software and working methods. Lighting two-dimensional work for portfolio documentation.

**Course Outcomes**
No outcomes are available at this time.

VASTU 133 : Three-Dimensional Design. (1.5:6:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Three-dimensional concepts, theories, and issues using a variety of media and processes. Readings, writings, and participation in course work exhibitions required.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

**And** complete one course from the following:

VAANM 131 : Figure Drawing for Animators. (3:6:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Figure study in animation using a variety of media and methods. Readings, writing, and participation in course work exhibition required.

**Course Outcomes**
No outcomes are available at this time.

VAILL 131 : Figure Drawing for Illustrators. (3:6:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Figure study for illustrators using a variety of media and methods. Readings, writings, and participation in course work exhibitions required.

**Course Outcomes**
No outcomes are available at this time.

VASTU 210 : New Genre. (3:6.0:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Developing an artistic voice while exploring new genres of art making including installation, digital, time-based, performance, sound, and technology-based work.

**Course Outcomes**
No outcomes are available at this time.

VASTU 220 : Introduction to Drawing and Figure Drawing. (3:2:4)
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Perceptive and inventive drawing and fundamental study of the figure using a variety of media and methods.

**Course Outcomes**
No outcomes are available at this time.

5. Complete six hours from the following second-year foundation courses:

VASTU 215 : Painting Fundamentals. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Fundamentals in oil painting and aqueous media.

**Course Outcomes**
No outcomes are available at this time.

VASTU 216 : Ceramics Fundamentals. (1.5:2:4)
PREREQUISITE: Visual arts core.
DESCRIPTION: Foundation ceramics.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 217 : Sculpture Fundamentals. (1.5:2:4)
PREREQUISITE: Visual arts core.
DESCRIPTION: Foundation sculpture.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 225 : Printmaking Fundamentals. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Introduction to the basic materials, techniques, history, and aesthetics of intaglio, lithography, and other printmaking processes.

**Course Outcomes**
No outcomes are available at this time.

6. Complete nine hours of 300- and 400-level art studio courses.
7. Complete one course from the following:

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**
There are no course outcomes available

VAEDU 380 : Museum Art Education. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ArtHC 111 or 201; ArtHC 202 or Hum 201 or 202.
DESCRIPTION: The museum as a learning environment; current exhibitions; learning and teaching strategies for collaboration with museum and classroom educator.

**Course Outcomes**
No outcomes are available at this time.

8. Complete the following art education course:

VAEDU 276 : Introduction to Art Education and Exploration of Teaching. (1-5:4:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111 & VA 114 & VA 115; or TMA 112 & TMA 114 & TMA 185; FBI fingerprinting and background clearance. Art education major or minor status or acceptance as licensure candidate.
DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.
NOTE: This course requires 45 hours of class observation and teaching in K-12 classrooms. These visits generally take place on Fridays.

**Course Outcomes**
No outcomes are available at this time.

**Note:** FBI fingerprint and background clearance must be completed before enrolling in VAEdu 276.

9. Complete the following:

VAEDU 339 : Computer Application in Art Education. (3:3:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: VAEDU 276
DESCRIPTION: Basic program applications for developing instructional materials in art education.

**Course Outcomes**
No outcomes are available at this time.

VAEDU 377 : Art History and Visual Culture Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: VAEDU 276

DESCRIPTION: Theoretical foundations and practical applications for teaching art history, visual culture, and community-based art.

**Course Outcomes**

No outcomes are available at this time.

VAEDU 378 : Practicum in Art Education and Classroom Management. (2:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAEDU 276; VAEdu 377 or 450 or 478 or concurrent enrollment.

DESCRIPTION: Implementing meaningful and engaging instruction for K-12 students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance; classroom management.

NOTE: This course requires 15 hours of observation and teaching in K-12 classrooms. Visits are generally scheduled on Fridays.

**Course Outcomes**

No outcomes are available at this time.

VAEDU 397 : Issues in Contemporary Art, Aesthetics, and Criticism. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of issues in contemporary art, aesthetics, and art criticism.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

No outcomes are available at this time.

VAEDU 450 : Advanced Studio Teaching Methods for Art Educators. (3:6:0)

WHEN TAUGHT: Fall

PREREQUISITE: VAEDU 276

DESCRIPTION: Exploring contemporary art and how to connect artistic practice to pedagogical methods for K-12 classrooms. Includes both art making and curriculum design.

**Course Outcomes**

No outcomes are available at this time.

VAEDU 478 : Art Curriculum Theory and Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAEDU 276; A minimum C- grade in VAEdu 377 and 397.

DESCRIPTION: Curriculum theory, development, and assessment in art education.

**Course Outcomes**

No outcomes are available at this time.

10. Complete the following additional licensure requirements:

ARTHC 201 : World Civilization to 1500. (3:3:0)

DESCRIPTION: Survey of Western civilization emphasizing the visual arts from ancient Greece to the Gothic period.

**Course Outcomes**

There are no course outcomes available

ARTHC 202 : World Civilization Since 1500. (3:3:0)

DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

SFL 210 : Human Development. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Growth and development of the child from conception through adolescence; influences of family, peers, and schools.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Comprehend the dynamic and complex interaction among the domains of human development (e.g., biological, cognitive, emotional, social, etc.)Critically apply information learned in class to your own life.Provide knowledge and skills that will benefit the lives of the children for whom you will have stewardship in this life.Acquire a broad base of knowledge of human development.Be conversant with the major human development theories as well as their strengths and weaknesses.
- Improve your writing and critical thinking skills.
- Understand the research methodology utilized in the study of human development.

SC ED 350 : Adolescent Development in an Education Context. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Adolescent development and its implications for integrated school culture, curriculum design, instructional practices, and assessment.

**Course Outcomes**

- The students will demonstrate how the stages of development impact instructional practices.
- The students will understand the social, physical, and cognitive developmental stages of adolescence in relation to the tasks of automony, identity and intimacy.
- The students will demonstrate how the stages of development impact classroom environments and management.

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

11. Complete an interview with advisor.
12. Complete a teaching assistant experience.
13. Complete 12 hours from one of the following:

SC ED 476R : Secondary Student-Teaching. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will put into practice the theories they have learned in content and pedagogy courses including planning lessons, assessing students of all abilities and cultural backgrounds, using a variety of instructional strategies, and collaborating with other teachers and with the community.

: Secondary Student Teaching - Art.

**Course Outcomes**

: Secondary Student Teaching - Foreign Language. (12:ARR:ARR)

**Course Outcomes**

: Secondary Student Teaching - French.

**Course Outcomes**

: Secondary Student Teaching - Mathematics.

**Course Outcomes**

: Secondary Student Teaching - Physical Science.

**Course Outcomes**

: Secondary Student Teaching - Social Science.

**Course Outcomes**

: Secondary Student Teaching - Spanish.

**Course Outcomes**

SC ED 496R : Academic Internship: Secondary Education. (12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will demonstrate that they can teach, manage, and assess content area knowledge and skills in the 7-12 classroom.
- Foster relationships with school colleagues, parents, and the larger community.

: Academic Internship: Social Sciences.

**Course Outcomes**

: Academic Internship: English.

**Course Outcomes**

: Academic Internship: Mathematics.

**Course Outcomes**

: Academic Internship: Biological Sciences.

**Course Outcomes**

: Academic Internship: Physical Sciences.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

## Show all Art History and Curatorial Studies (ArtHC) Courses

## Show all Visual Arts Core (VA) Courses

## Show all Visual Arts Education (VAEdu) Courses

## Show all Visual Arts Studio (VAStu) Courses

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# BA in Art History and Curatorial Studies (51-52 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following:

ARTHC 201 : World Civilization to 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from ancient Greece to the Gothic period.

**Course Outcomes**
There are no course outcomes available

ARTHC 202 : World Civilization Since 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

ARTHC 300 : Theory, Methodology, and Historiography of Art History. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Historical foundations of the discipline; key theories and approaches informing current art historical practice.

**Course Outcomes**
There are no course outcomes available

VASTU 200 : Studio Techniques for Art History. (3:2:4)
DESCRIPTION: Introduction to art techniques, materials, and practices directed toward art history majors.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

2. Ancient art: Complete one course from the following:

ARTHC 304 : Greek Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: History and appreciation of Greek art, with consideration of formative cultures.

**Course Outcomes**
There are no course outcomes available

ARTHC 306 : Roman Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art and architecture of the Etruscans and Romans.

**Course Outcomes**
There are no course outcomes available

3. Medieval art: Complete one course from the following:

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)
WHEN TAUGHT: Fall

PREREQUISITE: ARTHC 201
DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**
There are no course outcomes available

ARTHC 316 : Art of the Medieval West. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art in western Europe from 400 AD to 1400.

**Course Outcomes**
There are no course outcomes available

4. Renaissance art: Complete one course from the following:

ARTHC 320 : Italian Renaissance. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Art and architecture in Italy from 1200 to 1580.

**Course Outcomes**
There are no course outcomes available

ARTHC 325 : Northern Renaissance Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Fifteenth- and sixteenth-century art in northern Europe.

**Course Outcomes**
There are no course outcomes available

5. Baroque art: Complete one course from the following:

ARTHC 330 : Southern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: History of baroque painting, sculpture, and architecture in Italy, Spain, and France.

**Course Outcomes**
There are no course outcomes available

ARTHC 335 : Northern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Baroque painting in Flanders and Holland.

**Course Outcomes**
There are no course outcomes available

6. Nineteenth-century art: Complete one course from the following:

ARTHC 337 : Eighteenth-Century European Art and Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: An advanced survey of the culture and context of the production of art, architecture, and garden design in the European 18th century.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 340 : Nineteenth-Century European Art. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Nineteenth-century art in Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 345 : American Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: American painting and sculpture from colonial through modern times.

**Course Outcomes**
There are no course outcomes available

ARTHC 365 : American Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Major figures, monuments, and movements in American architecture from colonial period through "Gilded Age."

**Course Outcomes**
No outcomes are available at this time.

7. Modern art: Complete one course from the following:

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 367 : Modern Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical review of roots and evolution of modern architecture.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 379 : History of Photography. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: The general history of the photographic medium from its inception to the present day. The evolution of the medium, its various uses, primary figures, basic technologies, and artistic trends.

**Course Outcomes**
There are no course outcomes available

8. Non-Western art: Complete one course from the following:

ARTHC 380 : Northern Mesoamerican Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of Mexico from antiquity to present.

**Course Outcomes**
There are no course outcomes available

ARTHC 382 : Southern Mesoamerican Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of southern Mexico and central America from antiquity to present.

**Course Outcomes**
There are no course outcomes available

JAPAN 345 : Traditional Japanese Culture. (3:3:0)
WHEN TAUGHT: Winter; Spring Contact Department

DESCRIPTION: General survey emphasizing aesthetics, religion, and value systems. All readings in English.

**Course Outcomes**

- Students will be able to speak and write about such features of culture as language, literature, thought, religion, aesthetics, art and music. A writing sample will be included in the individual student portfolio.

9. Complete one course from the following:

ARTHC 595R : Foreign Language Readings for Art Historians. (3:3:0)

WHEN TAUGHT: Spring; Summer

DESCRIPTION: Special instruction in reading French or German scholarly texts.

**Course Outcomes**

No outcomes are available at this time.

FREN 201 : Intermediate French, Part 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Fren 102 or equivalent.

DESCRIPTION: Reading, writing, conversation, vocabulary building, and review of grammar.

**Course Outcomes**

- Improve your ability to use French in real-life situations and for real-life purposes.
- Create elaborated utterances and group them into paragraphs and narratives.
- Broaden vocabulary for both reception (listening and reading comprehension) and production (speaking and writing).
- Review and increase understanding of basic language structures.
- Discuss in French selected current events and various francophone regions of the world and some of their cultural practices.

(Prerequisites: Fren 101, 102; or equivalents)

GERM 201 : Second-Year German. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C grade or better in Germ 102 or equivalent.

DESCRIPTION: Reading, writing, grammar, culture, listening, and speaking.

**Course Outcomes**

There are no course outcomes available

(Prerequisites: Germ 101, 102; or equivalents)

10. Complete one of the following tracks:

*Academic Track*

a. Complete three hours from one of the following capstone courses:

ARTHC 498 : Senior Thesis/Capstone Experiences. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ARTHC 300; senior standing.

DESCRIPTION: Capstone project including a professional quality research paper and a public presentation of this paper. Participation in at least one intensive learning environment beyond the classroom, i.e., a BYU Art History Study Abroad program; an art museum, auction house or gallery internship; or two art history field trips.

NOTE: Internships at major art institutions usually require an internship at a regional or university art museum as a prerequisite.

**Course Outcomes**

There are no course outcomes available

ARTHC 499R : Honors Thesis. (.5-6:0:0)

**Course Outcomes**

No outcomes are available at this time.

b. Complete four courses from any of the following upper-division core courses not already taken:

ARTHC 301 : Women in Art. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: History of women artists, critics, and patrons, along with women in representation in Western art. Consideration of theories and methodologies of feminist art history.

**Course Outcomes**

There are no course outcomes available

ARTHC 304 : Greek Art. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ARTHC 201
DESCRIPTION: History and appreciation of Greek art, with consideration of formative cultures.

**Course Outcomes**
There are no course outcomes available

ARTHC 306 : Roman Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art and architecture of the Etruscans and Romans.

**Course Outcomes**
There are no course outcomes available

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**
There are no course outcomes available

ARTHC 316 : Art of the Medieval West. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art in western Europe from 400 AD to 1400.

**Course Outcomes**
There are no course outcomes available

ARTHC 320 : Italian Renaissance. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Art and architecture in Italy from 1200 to 1580.

**Course Outcomes**
There are no course outcomes available

ARTHC 325 : Northern Renaissance Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Fifteenth- and sixteenth-century art in northern Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 329 : Renaissance and Baroque Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: History of architecture in Italy, Spain, France, Germany, Austria, and England, 1400?1700.

**Course Outcomes**
There are no course outcomes available

ARTHC 330 : Southern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: History of baroque painting, sculpture, and architecture in Italy, Spain, and France.

**Course Outcomes**
There are no course outcomes available

ARTHC 335 : Northern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Baroque painting in Flanders and Holland.

**Course Outcomes**
There are no course outcomes available

ARTHC 340 : Nineteenth-Century European Art. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Nineteenth-century art in Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 345 : American Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: American painting and sculpture from colonial through modern times.

**Course Outcomes**
There are no course outcomes available

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 360 : Introduction to Museum and Curatorial Studies. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Duties of museum professionals while applying museum theory to the practical development of a museum exhibit.

**Course Outcomes**
There are no course outcomes available

ARTHC 365 : American Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Major figures, monuments, and movements in American architecture from colonial period through "Gilded Age."

**Course Outcomes**
No outcomes are available at this time.

ARTHC 367 : Modern Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical review of roots and evolution of modern architecture.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 375 : Japanese Art and Architecture. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Japanese art and architecture from its neolithic origins through the dawn of the modern age. Literary, social, and religious contexts considered.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 379 : History of Photography. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: The general history of the photographic medium from its inception to the present day. The evolution of the medium, its various uses, primary figures, basic technologies, and artistic trends.

**Course Outcomes**
There are no course outcomes available

ARTHC 380 : Northern Mesoamerican Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of Mexico from antiquity to present.

**Course Outcomes**
There are no course outcomes available

ARTHC 382 : Southern Mesoamerican Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of southern Mexico and central America from antiquity to present.

**Course Outcomes**
There are no course outcomes available

ARTHC 490R : Special Topics and Readings in Art History. (1-6:ARR:ARR)
DESCRIPTION: Topics of specific student interest, centered on strengths of visiting faculty, BYU Study Abroad Program, or other significant art history projects.

**Course Outcomes**
There are no course outcomes available

ARTHC 492R : Special Art History Studies On Site. (1-6:0:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Considering works of art and monuments of significance in major collections throughout the world and in original locations, emphasizing cultural context and site specificity.

**Course Outcomes**
There are no course outcomes available

ARTHC 496R : Academic Internship: Museum Internship. (3:0:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: ARTHC 300; 9 hours minimum upper-division art history courses, project approval.
DESCRIPTION: On-the-job experience.

**Course Outcomes**
There are no course outcomes available

: BYU Museum of Art Internship.

**Course Outcomes**

: Off-Campus Museum/Auction House Internship.

**Course Outcomes**

*Professional Track*

a. Complete the following capstone course:
ARTHC 497 : Art History Business Capstone. (3:3.0:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 300; Senior standing.
RECOMMENDED: ArtHC 350, ArtHC 355.
DESCRIPTION: Professional fields associated with Art History. Topics include the museum, the commercial gallery, conservation and technical art history, art law, ethics, connoisseurship, government organizations, art organizations and auction houses, and challenges and opportunities within the field. Requires at least one intensive learning experience beyond the classroom.

**Course Outcomes**
There are no course outcomes available

b. Complete the following three courses:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 201 : Financial Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Acc 200 or equivalent.
DESCRIPTION: Financial statement analysis, financial planning, sources of financing, working capital management, risk and return, and valuation.

**Course Outcomes**

There are no course outcomes available

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

c. Complete one course from any of the following upper-division core courses not already taken:

ARTHC 301 : Women in Art. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: History of women artists, critics, and patrons, along with women in representation in Western art. Consideration of theories and methodologies of feminist art history.

**Course Outcomes**

There are no course outcomes available

ARTHC 304 : Greek Art. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: History and appreciation of Greek art, with consideration of formative cultures.

**Course Outcomes**

There are no course outcomes available

ARTHC 306 : Roman Art. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art and architecture of the Etruscans and Romans.

**Course Outcomes**

There are no course outcomes available

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**
There are no course outcomes available

ARTHC 316 : Art of the Medieval West. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art in western Europe from 400 AD to 1400.

**Course Outcomes**
There are no course outcomes available

ARTHC 320 : Italian Renaissance. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Art and architecture in Italy from 1200 to 1580.

**Course Outcomes**
There are no course outcomes available

ARTHC 325 : Northern Renaissance Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Fifteenth- and sixteenth-century art in northern Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 329 : Renaissance and Baroque Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: History of architecture in Italy, Spain, France, Germany, Austria, and England, 1400?1700.

**Course Outcomes**
There are no course outcomes available

ARTHC 330 : Southern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: History of baroque painting, sculpture, and architecture in Italy, Spain, and France.

**Course Outcomes**
There are no course outcomes available

ARTHC 335 : Northern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Baroque painting in Flanders and Holland.

**Course Outcomes**
There are no course outcomes available

ARTHC 340 : Nineteenth-Century European Art. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Nineteenth-century art in Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 345 : American Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: American painting and sculpture from colonial through modern times.

**Course Outcomes**
There are no course outcomes available

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 360 : Introduction to Museum and Curatorial Studies. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Duties of museum professionals while applying museum theory to the practical development of a museum exhibit.

**Course Outcomes**
There are no course outcomes available

ARTHC 365 : American Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Major figures, monuments, and movements in American architecture from colonial period through "Gilded Age."

**Course Outcomes**
No outcomes are available at this time.

ARTHC 367 : Modern Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical review of roots and evolution of modern architecture.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 375 : Japanese Art and Architecture. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Japanese art and architecture from its neolithic origins through the dawn of the modern age. Literary, social, and religious contexts considered.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 379 : History of Photography. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: The general history of the photographic medium from its inception to the present day. The evolution of the medium, its various uses, primary figures, basic technologies, and artistic trends.

**Course Outcomes**
There are no course outcomes available

ARTHC 380 : Northern Mesoamerican Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of Mexico from antiquity to present.

**Course Outcomes**
There are no course outcomes available

ARTHC 382 : Southern Mesoamerican Art. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of southern Mexico and central America from antiquity to present.

**Course Outcomes**
There are no course outcomes available

ARTHC 490R : Special Topics and Readings in Art History. (1-6:ARR:ARR)
DESCRIPTION: Topics of specific student interest, centered on strengths of visiting faculty, BYU Study Abroad Program, or other significant art history projects.

**Course Outcomes**
There are no course outcomes available

ARTHC 492R : Special Art History Studies On Site. (1-6:0:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Considering works of art and monuments of significance in major collections throughout the world and in original locations, emphasizing cultural context and site specificity.

**Course Outcomes**
There are no course outcomes available

ARTHC 496R : Academic Internship: Museum Internship. (3:0:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: ARTHC 300; 9 hours minimum upper-division art history courses, project approval.
DESCRIPTION: On-the-job experience.

**Course Outcomes**
There are no course outcomes available

: BYU Museum of Art Internship.

**Course Outcomes**

: Off-Campus Museum/Auction House Internship.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

## Show all Art History and Curatorial Studies (ArtHC) Courses

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# BA in Visual Arts: Graphic Design Emphasis (47.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirement for admission to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following core courses:

VA 111 : Freshman Seminar. (1.5:2:2)
WHEN TAUGHT: Fall
DESCRIPTION: Conceptual and philosophical preparation for visual arts majors. Lecture and guided discussion seminar with weekly labs. Nature and value of visual arts and visual culture.

**Course Outcomes**
No outcomes are available at this time.

VA 114 : Drawing. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Observational and conceptual drawing using a variety of media and methods.

**Course Outcomes**
No outcomes are available at this time.

VA 115 : Two-Dimensional Design. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Formal and conceptual elements of design, color, and composition, using a variety of media.

**Course Outcomes**
No outcomes are available at this time.

2. Obtain acceptance into the graphic design BA program.

3. Complete a minimum of three hours from the following:

VAILL 131 : Figure Drawing for Illustrators. (3:6:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Figure study for illustrators using a variety of media and methods. Readings, writings, and participation in course work exhibitions required.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 116 : Introduction to Photography and Digital Workflow. (3:4:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic camera techniques and digital capture, developing entry-level skills in digital imaging workflow, developing skills with industry-related software and working methods. Lighting two-dimensional work for portfolio documentation.

**Course Outcomes**
No outcomes are available at this time.

VASTU 133 : Three-Dimensional Design. (1.5:6:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Three-dimensional concepts, theories, and issues using a variety of media and processes. Readings, writings, and participation in course work exhibitions required.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

4. Complete the following:

ARTHC 201 : World Civilization to 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from ancient Greece to the Gothic period.

**Course Outcomes**
There are no course outcomes available

ARTHC 202 : World Civilization Since 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

5. Complete six hours from the following history electives:

ARTHC 304 : Greek Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: History and appreciation of Greek art, with consideration of formative cultures.

**Course Outcomes**
There are no course outcomes available

ARTHC 306 : Roman Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art and architecture of the Etruscans and Romans.

**Course Outcomes**
There are no course outcomes available

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**
There are no course outcomes available

ARTHC 316 : Art of the Medieval West. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art in western Europe from 400 AD to 1400.

**Course Outcomes**
There are no course outcomes available

ARTHC 320 : Italian Renaissance. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Art and architecture in Italy from 1200 to 1580.

**Course Outcomes**
There are no course outcomes available

ARTHC 325 : Northern Renaissance Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Fifteenth- and sixteenth-century art in northern Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 329 : Renaissance and Baroque Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: History of architecture in Italy, Spain, France, Germany, Austria, and England, 1400?1700.

**Course Outcomes**
There are no course outcomes available

ARTHC 330 : Southern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: History of baroque painting, sculpture, and architecture in Italy, Spain, and France.

**Course Outcomes**
There are no course outcomes available

ARTHC 335 : Northern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Baroque painting in Flanders and Holland.

**Course Outcomes**
There are no course outcomes available

ARTHC 340 : Nineteenth-Century European Art. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Nineteenth-century art in Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 345 : American Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: American painting and sculpture from colonial through modern times.

**Course Outcomes**
There are no course outcomes available

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 360 : Introduction to Museum and Curatorial Studies. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Duties of museum professionals while applying museum theory to the practical development of a museum exhibit.

**Course Outcomes**

There are no course outcomes available

ARTHC 365 : American Architecture. (3:3:0)

PREREQUISITE: ARTHC 202

DESCRIPTION: Major figures, monuments, and movements in American architecture from colonial period through "Gilded Age."

**Course Outcomes**

No outcomes are available at this time.

ARTHC 367 : Modern Architecture. (3:3:0)

PREREQUISITE: ARTHC 202

DESCRIPTION: Critical review of roots and evolution of modern architecture.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 375 : Japanese Art and Architecture. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Japanese art and architecture from its neolithic origins through the dawn of the modern age. Literary, social, and religious contexts considered.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 380 : Northern Mesoamerican Art. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Survey of art and architecture of Mexico from antiquity to present.

**Course Outcomes**

There are no course outcomes available

ARTHC 382 : Southern Mesoamerican Art. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Survey of art and architecture of southern Mexico and central America from antiquity to present.

**Course Outcomes**

There are no course outcomes available

SFL 328 : History of Interior Design and Architecture 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: History of interior design, architecture, and furnishings from ancient Egypt to beaux arts movement. French, English, and American design.

**Course Outcomes**

- Identify important motifs, interior, and exterior architectural styles from each of the historical periods covered in class.Identify furniture, designers, and minor/decorative arts from each of the historical periods covered in class.Understand the relationship of the design periods to history and culture.

SFL 329 : History of Interior Design and Architecture 2. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Furniture, interior design, and architecture from Industrial Revolution to present.

**Course Outcomes**

- Students will identify the popular types of housing styles of 1900-2011. Students will explain how each style was influenced by political and economic factors
- Students will identify the architects that had an impact on the various periods of architecture.
- Students will analyze how the various styles of architecture were influenced by society and culture.

VAGD 349 : History of Graphic Design. (3:3:0)

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of visual communication.

**Course Outcomes**

No outcomes are available at this time.

VAILL 355 : History of American Illustration 1 (1860-1930). (3:4:0)
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of illustration in visual communication, emphasizing the birth of publishing and "Golden Age" of American illustration, 1860-1930.

**Course Outcomes**
No outcomes are available at this time.

VAILL 356 : History of American Illustration 2 (1930-Present). (3:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of American illustration in visual communication, emphasizing from 1930 to the present.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 379 : History of Photography. (3:2:4)
DESCRIPTION: Origin and development of photographic aesthetics.

**Course Outcomes**
No outcomes are available at this time.

VASTU 326 : Current Art Practice. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Visual arts acceptance.
DESCRIPTION: Current issues in art.

**Course Outcomes**
No outcomes are available at this time.

6. Complete the following:

VAGD 210 : Introduction to Media Design. (3:1:3)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Introduction to the process and methodology of creating graphic design across multiple media types. An introduction to designing interactive experiences, interfaces for digital applications, and communicating by applying motion to design.

**Course Outcomes**
No outcomes are available at this time.

VAGD 243 : Basic Typography. (3:1:3)
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Studio course which familiarizes the student with the history, terminology, elements and principles of effective typographic design. The course explores the role typography plays in visual communication.

**Course Outcomes**
No outcomes are available at this time.

VAGD 245 : Introduction to Graphic Design. (3:1:3)
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Introductory course that explores visual communication through the study of form, visual principles, theoretical and visual experimentation, concept development, and creative thinking. Students examine the connection between visual form, context, and the creation of meaning.

**Course Outcomes**
No outcomes are available at this time.

7. Complete 16 hours from the following emphasis electives:

VADES 496R : Academic Internship: Professional Internship. (.5-6:ARR:ARR)
PREREQUISITE: Department and faculty advisor's consent.
DESCRIPTION: Work experience in professional design studio evaluated by supervisor.

**Course Outcomes**
No outcomes are available at this time.

VAGD 248R : Letterpress Studio. (3:3:0)
WHEN Fall; Winter

TAUGHT:
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Letterpress Studio addresses letterpress history, type, terminology, format, tools, and the materials of letterpress printing.

**Course Outcomes**

No outcomes are available at this time.

VAGD 310 : Advanced Computer Application Graphic Design. (3:1:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Studio course instructing students in the art, science, and technology of designing interactive experiences and interfaces for digital applications.

**Course Outcomes**

No outcomes are available at this time.

VAGD 341 : Packaging Design. (3:2:4)

PREREQUISITE: BFA acceptance.
DESCRIPTION: Packaging and its function in the marketplace; current packaging technology and aesthetics.

**Course Outcomes**

No outcomes are available at this time.

VAGD 346 : Practicum in Graphic Design. (3:2:4)

WHEN TAUGHT: Spring; Summer
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Market applications, portfolio preparation, and other aspects of graphic design. Individual portfolio projects designed to develop graphic design skills.

**Course Outcomes**

No outcomes are available at this time.

VAGD 348 : Type as Image. (3:2:4)

PREREQUISITE: BFA acceptance.
DESCRIPTION: Developing unique and expressive letterforms, especially the modification of letters to create new abstract or pictorial images.

**Course Outcomes**

No outcomes are available at this time.

VAGD 410R : Computer Applications Studio for Graphic Designers. (3:1:3)

WHEN TAUGHT: Winter
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Studio course instructing students in the art of design and communication with motion. Graphic design principles and narrative concepts employed to create short motion design projects.

**Course Outcomes**

No outcomes are available at this time.

VAGD 488 : Business Practices for Graphic Designers. (2:2:0)

WHEN TAUGHT: Fall
PREREQUISITE: BFA acceptance.
DESCRIPTION: Business aspects of the graphic design profession.

**Course Outcomes**

No outcomes are available at this time.

VAGD 498R : Directed Studies in Graphic Design. (1-6:ARR:ARR)

WHEN TAUGHT: Contact Department.
PREREQUISITE: BFA advisor's consent.
DESCRIPTION: Credit for work experience in graphic design.

**Course Outcomes**

No outcomes are available at this time.

VAILL 251 : Illustration 1. (3:6:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Visual arts core.
DESCRIPTION: Overview of styles, techniques, methods, and materials. Illustrative concepts and problem solving.

**Course Outcomes**
No outcomes are available at this time.

VASTU 330 : Bookbinding. (3:4:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Traditional approaches to hand bookbinding.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

Recommended history courses:

VAGD 349 : History of Graphic Design. (3:3:0)
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of visual communication.

**Course Outcomes**
No outcomes are available at this time.

and one additional course from:
ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**
There are no course outcomes available

SFL 328 : History of Interior Design and Architecture 1. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: History of interior design, architecture, and furnishings from ancient Egypt to beaux arts movement. French, English, and American design.

**Course Outcomes**
- Identify important motifs, interior, and exterior architectural styles from each of the historical periods covered in class.Identify furniture, designers, and minor/decorative arts from each of the historical periods covered in class.Understand the relationship of the design periods to history and culture.

SFL 329 : History of Interior Design and Architecture 2. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Furniture, interior design, and architecture from Industrial Revolution to present.

**Course Outcomes**
- Students will identify the popular types of housing styles of 1900-2011. Students will explain how each style was influenced by political and economic factors
- Students will identify the architects that had an impact on the various periods of architecture.
- Students will analyze how the various styles of architecture were influenced by society and culture.

VAILL 355 : History of American Illustration 1 (1860-1930). (3:4:0)
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of illustration in visual communication, emphasizing the birth of publishing and "Golden Age" of American illustration, 1860-1930.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 379 : History of Photography. (3:2:4)

DESCRIPTION: Origin and development of photographic aesthetics.

**Course Outcomes**

No outcomes are available at this time.

*Hours include courses that may fulfill university core requirements.

## Show all Art History and Curatorial Studies (ArtHC) Courses

## Show all Visual Arts Core (VA) Courses

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# BA in Visual Arts: Illustration Emphasis (47.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirement for admission to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following core courses:

VA 111 : Freshman Seminar. (1.5:2:2)
WHEN TAUGHT: Fall
DESCRIPTION: Conceptual and philosophical preparation for visual arts majors. Lecture and guided discussion seminar with weekly labs. Nature and value of visual arts and visual culture.

**Course Outcomes**
No outcomes are available at this time.

VA 114 : Drawing. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Observational and conceptual drawing using a variety of media and methods.

**Course Outcomes**
No outcomes are available at this time.

VA 115 : Two-Dimensional Design. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Formal and conceptual elements of design, color, and composition, using a variety of media.

**Course Outcomes**
No outcomes are available at this time.

2. Obtain acceptance into the illustration BA program.

3. Complete one course from the following:

VAILL 131 : Figure Drawing for Illustrators. (3:6:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Figure study for illustrators using a variety of media and methods. Readings, writings, and participation in course work exhibitions required.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 116 : Introduction to Photography and Digital Workflow. (3:4:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic camera techniques and digital capture, developing entry-level skills in digital imaging workflow, developing skills with industry-related software and working methods. Lighting two-dimensional work for portfolio documentation.

**Course Outcomes**
No outcomes are available at this time.

4. Complete the following:

ARTHC 201 : World Civilization to 1500. (3:3:0)

DESCRIPTION: Survey of Western civilization emphasizing the visual arts from ancient Greece to the Gothic period.

**Course Outcomes**

There are no course outcomes available

ARTHC 202 : World Civilization Since 1500. (3:3:0)

DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

5. Complete one course from the following:

VAILL 355 : History of American Illustration 1 (1860-1930). (3:4:0)

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of illustration in visual communication, emphasizing the birth of publishing and "Golden Age" of American illustration, 1860-1930.

**Course Outcomes**

No outcomes are available at this time.

VAILL 356 : History of American Illustration 2 (1930-Present). (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of American illustration in visual communication, emphasizing from 1930 to the present.

**Course Outcomes**

No outcomes are available at this time.

6. Complete one course from the following history electives:

ARTHC 304 : Greek Art. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ARTHC 201

DESCRIPTION: History and appreciation of Greek art, with consideration of formative cultures.

**Course Outcomes**

There are no course outcomes available

ARTHC 306 : Roman Art. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ARTHC 201

DESCRIPTION: Art and architecture of the Etruscans and Romans.

**Course Outcomes**

There are no course outcomes available

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ARTHC 201

DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**

There are no course outcomes available

ARTHC 316 : Art of the Medieval West. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ARTHC 201

DESCRIPTION: Art in western Europe from 400 AD to 1400.

**Course Outcomes**

There are no course outcomes available

ARTHC 320 : Italian Renaissance. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ARTHC 202

DESCRIPTION: Art and architecture in Italy from 1200 to 1580.

**Course Outcomes**
There are no course outcomes available

ARTHC 325 : Northern Renaissance Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Fifteenth- and sixteenth-century art in northern Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 329 : Renaissance and Baroque Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: History of architecture in Italy, Spain, France, Germany, Austria, and England, 1400?1700.

**Course Outcomes**
There are no course outcomes available

ARTHC 330 : Southern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: History of baroque painting, sculpture, and architecture in Italy, Spain, and France.

**Course Outcomes**
There are no course outcomes available

ARTHC 335 : Northern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Baroque painting in Flanders and Holland.

**Course Outcomes**
There are no course outcomes available

ARTHC 340 : Nineteenth-Century European Art. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Nineteenth-century art in Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 345 : American Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: American painting and sculpture from colonial through modern times.

**Course Outcomes**
There are no course outcomes available

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**

There are no course outcomes available

ARTHC 360 : Introduction to Museum and Curatorial Studies. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Duties of museum professionals while applying museum theory to the practical development of a museum exhibit.

**Course Outcomes**

There are no course outcomes available

ARTHC 365 : American Architecture. (3:3:0)

PREREQUISITE: ARTHC 202

DESCRIPTION: Major figures, monuments, and movements in American architecture from colonial period through "Gilded Age."

**Course Outcomes**

No outcomes are available at this time.

ARTHC 367 : Modern Architecture. (3:3:0)

PREREQUISITE: ARTHC 202

DESCRIPTION: Critical review of roots and evolution of modern architecture.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 375 : Japanese Art and Architecture. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Japanese art and architecture from its neolithic origins through the dawn of the modern age. Literary, social, and religious contexts considered.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 380 : Northern Mesoamerican Art. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Survey of art and architecture of Mexico from antiquity to present.

**Course Outcomes**

There are no course outcomes available

ARTHC 382 : Southern Mesoamerican Art. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Survey of art and architecture of southern Mexico and central America from antiquity to present.

**Course Outcomes**

There are no course outcomes available

SFL 328 : History of Interior Design and Architecture 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: History of interior design, architecture, and furnishings from ancient Egypt to beaux arts movement. French, English, and American design.

**Course Outcomes**

- Identify important motifs, interior, and exterior architectural styles from each of the historical periods covered in class.Identify furniture, designers, and minor/decorative arts from each of the historical periods covered in class.Understand the relationship of the design periods to history and culture.

SFL 329 : History of Interior Design and Architecture 2. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Furniture, interior design, and architecture from Industrial Revolution to present.

**Course Outcomes**

- Students will identify the popular types of housing styles of 1900-2011. Students will explain how each style was influenced by political and economic factors
- Students will identify the architects that had an impact on the various periods of architecture.
- Students will analyze how the various styles of architecture were influenced by society and culture.

VAGD 349 : History of Graphic Design. (3:3:0)
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of visual communication.

**Course Outcomes**
No outcomes are available at this time.

VAILL 355 : History of American Illustration 1 (1860-1930). (3:4:0)
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of illustration in visual communication, emphasizing the birth of publishing and "Golden Age" of American illustration, 1860-1930.

**Course Outcomes**
No outcomes are available at this time.

VAILL 356 : History of American Illustration 2 (1930-Present). (3:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of American illustration in visual communication, emphasizing from 1930 to the present.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 379 : History of Photography. (3:2:4)
DESCRIPTION: Origin and development of photographic aesthetics.

**Course Outcomes**
No outcomes are available at this time.

VASTU 326 : Current Art Practice. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Visual arts acceptance.
DESCRIPTION: Current issues in art.

**Course Outcomes**
No outcomes are available at this time.

7. Complete the following:

VAILL 210 : Introduction to Digital Illustration. (2:4:0)
WHEN TAUGHT: Winter; Spring
PREREQUISITE: Visual arts core.
DESCRIPTION: Introduction to computer software programs specific to illustration.

**Course Outcomes**
No outcomes are available at this time.

VAILL 250 : Intermediate Life Drawing. (3:6:0)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: VAILL 131; or VAANM 131
DESCRIPTION: Drawing the classic figure from gesture to finished rendering, emphasizing structure, anatomy, form, and medium.

**Course Outcomes**
No outcomes are available at this time.

VAILL 251 : Illustration 1. (3:6:0)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Visual arts core.
DESCRIPTION: Overview of styles, techniques, methods, and materials. Illustrative concepts and problem solving.

**Course Outcomes**
No outcomes are available at this time.

VAILL 350R : Advanced Life Drawing. (3:2:4)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: VAILL 250; or VAANM 250R; BA acceptance.

DESCRIPTION: Drawing the figure in modern or historical costume; developing drawing skills, especially relating to the draped figure.

**Course Outcomes**

No outcomes are available at this time.

VAILL 351 : Illustration 2. (3:2:4)

PREREQUISITE: Visual Arts acceptance.

DESCRIPTION: Narrative illustration problems emphasizing academic study of the human figure using various media.

**Course Outcomes**

No outcomes are available at this time.

8. Complete eleven hours from the following emphasis electives:

VAANM 250R : Gesture Drawing for Animators. (3:6:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAANM 131

DESCRIPTION: Drawing humans and animals in motion.

**Course Outcomes**

No outcomes are available at this time.

VAILL 310 : Intermediate Digital Illustration. (3:6:0)

WHEN TAUGHT: Fall

PREREQUISITE: VAILL 210

DESCRIPTION: Intermediate problems in digital media.

**Course Outcomes**

No outcomes are available at this time.

VAILL 350R : Advanced Life Drawing. (3:2:4)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: VAILL 250; or VAANM 250R; BA acceptance.

DESCRIPTION: Drawing the figure in modern or historical costume; developing drawing skills, especially relating to the draped figure.

**Course Outcomes**

No outcomes are available at this time.

VAILL 352 : Illustration 3. (3:2:4)

PREREQUISITE: Visual Arts acceptance.

DESCRIPTION: Conceptual illustration problems and market applications, using various media.

**Course Outcomes**

No outcomes are available at this time.

VAILL 357 : Sketchbook. (3:2:4)

WHEN TAUGHT: Winter

PREREQUISITE: VAILL 250; or VAANM 250R

DESCRIPTION: Using a sketchbook in visual thinking process: exploring ideas, recording visual experience, and developing fundamental drawing skills.

**Course Outcomes**

No outcomes are available at this time.

VAILL 358 : Character Design for Illustrators. (3:6:0)

WHEN TAUGHT: Fall

PREREQUISITE: VAILL 251; or VAANM 265

DESCRIPTION: Concepts and projects dealing with the interpretation and stylization of human and animal characters applied to children's markets, caricature, animation, and humorous illustration.

**Course Outcomes**

No outcomes are available at this time.

VAILL 410 : Advanced Digital Illustration. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: VAILL 310; or VAANM 365R

DESCRIPTION: Advanced problems in digital media and markets.

**Course Outcomes**

No outcomes are available at this time.

VAILL 450R : Painting the Human Head. (3:2:4)

PREREQUISITE: VAILL 350R

DESCRIPTION: Painting from a live model; unique aspects of portraiture and colors of the human face.

**Course Outcomes**

No outcomes are available at this time.

VAILL 488 : Professional Practices for Illustrators. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: BFA acceptance.

DESCRIPTION: Business aspects of the illustration profession.

**Course Outcomes**

No outcomes are available at this time.

Recommended history courses:

VAILL 355 : History of American Illustration 1 (1860-1930). (3:4:0)

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of illustration in visual communication, emphasizing the birth of publishing and "Golden Age" of American illustration, 1860-1930.

**Course Outcomes**

No outcomes are available at this time.

and one additional course from:

ARTHC 350 : Modern Art. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ARTHC 202

DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**

There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ARTHC 202

DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**

There are no course outcomes available

SFL 328 : History of Interior Design and Architecture 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: History of interior design, architecture, and furnishings from ancient Egypt to beaux arts movement. French, English, and American design.

**Course Outcomes**

- Identify important motifs, interior, and exterior architectural styles from each of the historical periods covered in class.Identify furniture, designers, and minor/decorative arts from each of the historical periods covered in class.Understand the relationship of the design periods to history and culture.

SFL 329 : History of Interior Design and Architecture 2. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Furniture, interior design, and architecture from Industrial Revolution to present.

**Course Outcomes**

- Students will identify the popular types of housing styles of 1900-2011. Students will explain how each style was influenced by political and economic factors
- Students will identify the architects that had an impact on the various periods of architecture.
- Students will analyze how the various styles of architecture were influenced by society and culture.

VAILL 356 : History of American Illustration 2 (1930-Present). (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of American illustration in visual communication, emphasizing from 1930 to the present.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 379 : History of Photography. (3:2:4)

DESCRIPTION: Origin and development of photographic aesthetics.

**Course Outcomes**

No outcomes are available at this time.

*Hours include courses that may fulfill university core requirements.

## Show all Art History and Curatorial Studies (ArtHC) Courses

## Show all Visual Arts Core (VA) Courses

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# BA in Visual Arts: Photography Emphasis (47.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirement for admission to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following core courses:

VA 111 : Freshman Seminar. (1.5:2:2)
WHEN TAUGHT: Fall
DESCRIPTION: Conceptual and philosophical preparation for visual arts majors. Lecture and guided discussion seminar with weekly labs. Nature and value of visual arts and visual culture.

**Course Outcomes**
No outcomes are available at this time.

VA 114 : Drawing. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Observational and conceptual drawing using a variety of media and methods.

**Course Outcomes**
No outcomes are available at this time.

VA 115 : Two-Dimensional Design. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Formal and conceptual elements of design, color, and composition, using a variety of media.

**Course Outcomes**
No outcomes are available at this time.

2. Obtain acceptance into the photography BA program.

3. Complete the following:

VAPHO 116 : Introduction to Photography and Digital Workflow. (3:4:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic camera techniques and digital capture, developing entry-level skills in digital imaging workflow, developing skills with industry-related software and working methods. Lighting two-dimensional work for portfolio documentation.

**Course Outcomes**
No outcomes are available at this time.

4. Complete the following:

ARTHC 201 : World Civilization to 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from ancient Greece to the Gothic period.

**Course Outcomes**
There are no course outcomes available

ARTHC 202 : World Civilization Since 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

5. Complete six hours from the following history electives:

ARTHC 304 : Greek Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: History and appreciation of Greek art, with consideration of formative cultures.

**Course Outcomes**
There are no course outcomes available

ARTHC 306 : Roman Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art and architecture of the Etruscans and Romans.

**Course Outcomes**
There are no course outcomes available

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**
There are no course outcomes available

ARTHC 316 : Art of the Medieval West. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art in western Europe from 400 AD to 1400.

**Course Outcomes**
There are no course outcomes available

ARTHC 320 : Italian Renaissance. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Art and architecture in Italy from 1200 to 1580.

**Course Outcomes**
There are no course outcomes available

ARTHC 325 : Northern Renaissance Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Fifteenth- and sixteenth-century art in northern Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 329 : Renaissance and Baroque Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: History of architecture in Italy, Spain, France, Germany, Austria, and England, 1400?1700.

**Course Outcomes**
There are no course outcomes available

ARTHC 330 : Southern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: History of baroque painting, sculpture, and architecture in Italy, Spain, and France.

**Course Outcomes**
There are no course outcomes available

ARTHC 335 : Northern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Baroque painting in Flanders and Holland.

**Course Outcomes**
There are no course outcomes available

ARTHC 340 : Nineteenth-Century European Art. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Nineteenth-century art in Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 345 : American Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: American painting and sculpture from colonial through modern times.

**Course Outcomes**
There are no course outcomes available

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 360 : Introduction to Museum and Curatorial Studies. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Duties of museum professionals while applying museum theory to the practical development of a museum exhibit.

**Course Outcomes**
There are no course outcomes available

ARTHC 365 : American Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Major figures, monuments, and movements in American architecture from colonial period through "Gilded Age."

**Course Outcomes**
No outcomes are available at this time.

ARTHC 367 : Modern Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical review of roots and evolution of modern architecture.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 375 : Japanese Art and Architecture. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Japanese art and architecture from its neolithic origins through the dawn of the modern age. Literary, social, and religious contexts considered.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 380 : Northern Mesoamerican Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of Mexico from antiquity to present.

**Course Outcomes**
There are no course outcomes available

ARTHC 382 : Southern Mesoamerican Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of southern Mexico and central America from antiquity to present.

**Course Outcomes**
There are no course outcomes available

SFL 328 : History of Interior Design and Architecture 1. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: History of interior design, architecture, and furnishings from ancient Egypt to beaux arts movement. French, English, and American design.

**Course Outcomes**
- Identify important motifs, interior, and exterior architectural styles from each of the historical periods covered in class.Identify furniture, designers, and minor/decorative arts from each of the historical periods covered in class.Understand the relationship of the design periods to history and culture.

SFL 329 : History of Interior Design and Architecture 2. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Furniture, interior design, and architecture from Industrial Revolution to present.

**Course Outcomes**
- Students will identify the popular types of housing styles of 1900-2011. Students will explain how each style was influenced by political and economic factors
- Students will identify the architects that had an impact on the various periods of architecture.
- Students will analyze how the various styles of architecture were influenced by society and culture.

VAGD 349 : History of Graphic Design. (3:3:0)
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of visual communication.

**Course Outcomes**
No outcomes are available at this time.

VAILL 355 : History of American Illustration 1 (1860-1930). (3:4:0)
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of illustration in visual communication, emphasizing the birth of publishing and "Golden Age" of American illustration, 1860-1930.

**Course Outcomes**
No outcomes are available at this time.

VAILL 356 : History of American Illustration 2 (1930-Present). (3:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of American illustration in visual communication, emphasizing from 1930 to the present.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 379 : History of Photography. (3:2:4)
DESCRIPTION: Origin and development of photographic aesthetics.

**Course Outcomes**

No outcomes are available at this time.

VASTU 326 : Current Art Practice. (3:6:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Visual arts acceptance.

DESCRIPTION: Current issues in art.

**Course Outcomes**

No outcomes are available at this time.

6. Complete the following:

VAPHO 120 : Introduction to Digital Imaging. (3:6:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAPHO 116; BA major status.

DESCRIPTION: Photography-based digital imaging, including film scanning, digital capture, color management, Photoshop instruction, fine art and commercial print output, and archiving.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 170 : Introduction to Black and White Photography. (3:2:4)

PREREQUISITE: Acceptance into visual arts program.

DESCRIPTION: Basic camera and darkroom techniques emphasizing black and white film processing and printmaking.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 272 : Introduction to Color Photography. (3:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAPHO 116 & VAPHO 120

DESCRIPTION: Color aesthetics, theory, and systems in traditional and digital capture and printmaking.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 275 : Classical Portrait Photography. (3:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAPHO 116 & VAPHO 120

DESCRIPTION: Studio and environmental portraiture as well as traditional approaches to portrait photography, including wedding/bridal. Lab required.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 478 : Fine Art Photography. (3:2:4)

PREREQUISITE: VAPHO 272; VAPho 377R.

DESCRIPTION: Fine art approaches to photography; conceptual, social, and aesthetic values; modern and postmodern values.

**Course Outcomes**

No outcomes are available at this time.

7. Complete six hours from the following emphasis electives:

TMA 315R : Special Projects 2. (.5-3:Arr:Arr)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Theatre and media arts major status. By application only.

DESCRIPTION: Intermediate projects in theatre or media arts.

**Course Outcomes**

- Because of the individual nature of the internship course students work with their advisor to list at least three objectives they hope to achieve that are in line with the program level learning outcomes.

: Special Projects 2: Media.

**Course Outcomes**

: Special Projects 2: Theatre.

**Course Outcomes**

: Special Projects 2: Assistant Stage Managers.

**Course Outcomes**

: Special Projects 2: Young Company Teaching Artists.

**Course Outcomes**

(the digital technologies section for 3 credit hours)

VAPHO 273 : Advanced Photography. (3:2:4)
PREREQUISITE: VAPHO 170
DESCRIPTION: Camera and darkroom techniques using the zone system for exposure and development control of large format negatives and prints.
NOTE: Lab required.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 377R : Exploring Alternative Photography Processes. (3:2:4)
PREREQUISITE: VAPHO 273
DESCRIPTION: Photography as an exploratory, sensitizing process.
NOTE: Lab required.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 477R : Nature Photography. (3:2:4)
WHEN TAUGHT: Spring; Summer
PREREQUISITE: Instructor's consent.
DESCRIPTION: Techniques of professional nature and landscape photography.

**Course Outcomes**
No outcomes are available at this time.

VASTU 133 : Three-Dimensional Design. (1.5:6:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Three-dimensional concepts, theories, and issues using a variety of media and processes. Readings, writings, and participation in course work exhibitions required.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 353 : Time-Based Art. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 114 & VA 115 & VASTU 210
DESCRIPTION: Exploring sound-based, video and performance art practices.

**Course Outcomes**
No outcomes are available at this time.

8. Complete four hours from the following supporting courses:

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**
There are no course outcomes available

COMMS 365 : Photojournalism. (3:2:Arr)
WHEN TAUGHT: Fall Contact Department; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: Instructor's consent.
DESCRIPTION: Shooting, processing, selecting, and preparing images for use in various news platforms.

**Course Outcomes**
There are no course outcomes available

VASTU 133 : Three-Dimensional Design. (1.5:6:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Three-dimensional concepts, theories, and issues using a variety of media and processes. Readings, writings, and participation in course work exhibitions required.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 225 : Printmaking Fundamentals. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Introduction to the basic materials, techniques, history, and aesthetics of intaglio, lithography, and other printmaking processes.

**Course Outcomes**
No outcomes are available at this time.

VASTU 330 : Bookbinding. (3:4:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Traditional approaches to hand bookbinding.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

Or other courses in filmmaking, business, website production, HTML, etc. as approved by faculty.

Recommended history courses:

VAPHO 379 : History of Photography. (3:2:4)
DESCRIPTION: Origin and development of photographic aesthetics.

**Course Outcomes**
No outcomes are available at this time.

and one additional course from:

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**
There are no course outcomes available

SFL 328 : History of Interior Design and Architecture 1. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: History of interior design, architecture, and furnishings from ancient Egypt to beaux arts movement. French, English, and American design.

**Course Outcomes**
- Identify important motifs, interior, and exterior architectural styles from each of the historical periods covered in class.Identify furniture, designers, and minor/decorative arts from each of the historical periods covered in class.Understand the relationship of the design periods to history and culture.

SFL 329 : History of Interior Design and Architecture 2. (3:3:0)
WHEN TAUGHT: Fall

DESCRIPTION: Furniture, interior design, and architecture from Industrial Revolution to present.

**Course Outcomes**

- Students will identify the popular types of housing styles of 1900-2011. Students will explain how each style was influenced by political and economic factors
- Students will identify the architects that had an impact on the various periods of architecture.
- Students will analyze how the various styles of architecture were influenced by society and culture.

VAGD 349 : History of Graphic Design. (3:3:0)

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of visual communication.

**Course Outcomes**

No outcomes are available at this time.

VAILL 355 : History of American Illustration 1 (1860-1930). (3:4:0)

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of illustration in visual communication, emphasizing the birth of publishing and "Golden Age" of American illustration, 1860-1930.

**Course Outcomes**

No outcomes are available at this time.

*Hours include courses that may fulfill university core requirements.

## Show all Art History and Curatorial Studies (ArtHC) Courses

## Show all Visual Arts Core (VA) Courses

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# BA in Visual Arts: Studio Arts Emphasis (49 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirement for admission to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following core courses:

   VA 111 : Freshman Seminar. (1.5:2:2)
   WHEN TAUGHT: Fall
   DESCRIPTION: Conceptual and philosophical preparation for visual arts majors. Lecture and guided discussion seminar with weekly labs. Nature and value of visual arts and visual culture.

   **Course Outcomes**
   No outcomes are available at this time.

   VA 114 : Drawing. (3:2:4)
   WHEN TAUGHT: Fall; Winter
   PREREQUISITE: Pre-visual arts status.
   DESCRIPTION: Observational and conceptual drawing using a variety of media and methods.

   **Course Outcomes**
   No outcomes are available at this time.

   VA 115 : Two-Dimensional Design. (3:2:4)
   WHEN TAUGHT: Fall; Winter
   PREREQUISITE: Pre-visual arts status.
   DESCRIPTION: Formal and conceptual elements of design, color, and composition, using a variety of media.

   **Course Outcomes**
   No outcomes are available at this time.

2. Obtain acceptance into the studio arts BA program.

3. Complete the following:

   VASTU 133 : Three-Dimensional Design. (1.5:6:0)
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: Three-dimensional concepts, theories, and issues using a variety of media and processes. Readings, writings, and participation in course work exhibitions required.
   NOTE: Fee.

   **Course Outcomes**
   No outcomes are available at this time.

4. Complete 12 hours from the following:

   VASTU 210 : New Genre. (3:6.0:0)
   WHEN TAUGHT: Fall; Winter
   PREREQUISITE: VA 111 & VA 114 & VA 115
   DESCRIPTION: Developing an artistic voice while exploring new genres of art making including installation, digital, time-based, performance, sound, and technology-based work.

   **Course Outcomes**
   No outcomes are available at this time.

VASTU 215 : Painting Fundamentals. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Fundamentals in oil painting and aqueous media.

**Course Outcomes**
No outcomes are available at this time.

VASTU 216 : Ceramics Fundamentals. (1.5:2:4)
PREREQUISITE: Visual arts core.
DESCRIPTION: Foundation ceramics.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 217 : Sculpture Fundamentals. (1.5:2:4)
PREREQUISITE: Visual arts core.
DESCRIPTION: Foundation sculpture.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 220 : Introduction to Drawing and Figure Drawing. (3:2:4)
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Perceptive and inventive drawing and fundamental study of the figure using a variety of media and methods.

**Course Outcomes**
No outcomes are available at this time.

VASTU 225 : Printmaking Fundamentals. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Introduction to the basic materials, techniques, history, and aesthetics of intaglio, lithography, and other printmaking processes.

**Course Outcomes**
No outcomes are available at this time.

5. Complete the following:

ARTHC 201 : World Civilization to 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from ancient Greece to the Gothic period.

**Course Outcomes**
There are no course outcomes available

ARTHC 202 : World Civilization Since 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

6. Complete six hours from the following history electives:

ARTHC 304 : Greek Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: History and appreciation of Greek art, with consideration of formative cultures.

**Course Outcomes**
There are no course outcomes available

ARTHC 306 : Roman Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201

DESCRIPTION: Art and architecture of the Etruscans and Romans.

**Course Outcomes**
There are no course outcomes available

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**
There are no course outcomes available

ARTHC 316 : Art of the Medieval West. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art in western Europe from 400 AD to 1400.

**Course Outcomes**
There are no course outcomes available

ARTHC 320 : Italian Renaissance. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Art and architecture in Italy from 1200 to 1580.

**Course Outcomes**
There are no course outcomes available

ARTHC 325 : Northern Renaissance Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Fifteenth- and sixteenth-century art in northern Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 329 : Renaissance and Baroque Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: History of architecture in Italy, Spain, France, Germany, Austria, and England, 1400?1700.

**Course Outcomes**
There are no course outcomes available

ARTHC 330 : Southern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: History of baroque painting, sculpture, and architecture in Italy, Spain, and France.

**Course Outcomes**
There are no course outcomes available

ARTHC 335 : Northern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Baroque painting in Flanders and Holland.

**Course Outcomes**
There are no course outcomes available

ARTHC 340 : Nineteenth-Century European Art. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Nineteenth-century art in Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 345 : American Art. (3:3:0)
WHEN TAUGHT: Fall

PREREQUISITE: ARTHC 202
DESCRIPTION: American painting and sculpture from colonial through modern times.

**Course Outcomes**
There are no course outcomes available

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 360 : Introduction to Museum and Curatorial Studies. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Duties of museum professionals while applying museum theory to the practical development of a museum exhibit.

**Course Outcomes**
There are no course outcomes available

ARTHC 365 : American Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Major figures, monuments, and movements in American architecture from colonial period through "Gilded Age."

**Course Outcomes**
No outcomes are available at this time.

ARTHC 367 : Modern Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical review of roots and evolution of modern architecture.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 375 : Japanese Art and Architecture. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Japanese art and architecture from its neolithic origins through the dawn of the modern age. Literary, social, and religious contexts considered.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 380 : Northern Mesoamerican Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of Mexico from antiquity to present.

**Course Outcomes**
There are no course outcomes available

ARTHC 382 : Southern Mesoamerican Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of southern Mexico and central America from antiquity to present.

**Course Outcomes**
There are no course outcomes available

VASTU 326 : Current Art Practice. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Visual arts acceptance.
DESCRIPTION: Current issues in art.

**Course Outcomes**
No outcomes are available at this time.

7. Complete 9 hours of 300- or 400-level VAStu courses.
8. Complete three hours (3 enrollments) of the following:
   VASTU 395R : Studio Seminar. (1:2:0)
   WHEN TAUGHT: Fall; Winter
   PREREQUISITE: VA 111
   DESCRIPTION: Selected contemporary issues involving visiting artists, guest lecturers, video documentaries, discussions, and program information.

   **Course Outcomes**
   No outcomes are available at this time.
9. Complete the following:
   VASTU 340 : Application of Creative and Critical Thinking. (3:3:0)
   WHEN TAUGHT: Fall
   PREREQUISITE: Acceptance into Visual Arts.
   DESCRIPTION: The business of being an artist, exploring career options, alternative applications, interdisciplinary/trans-disciplinary opportunities, and requisite preparation for each option.

   **Course Outcomes**
   No outcomes are available at this time.
10. Complete the following during the final semester:
    VASTU 490 : BA Exit Portfolio. (1:1:0)
    WHEN TAUGHT: Fall; Winter
    PREREQUISITE: Visual arts major status.
    DESCRIPTION: Preparation and submission of all required materials for BA exit portfolio. Perparation for continued art practice after graduation.

    **Course Outcomes**
    No outcomes are available at this time.

Recommended history courses:

VASTU 326 : Current Art Practice. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Visual arts acceptance.
DESCRIPTION: Current issues in art.

**Course Outcomes**
No outcomes are available at this time.

and one additional course from:
ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**

There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

## Show all Art History and Curatorial Studies (ArtHC) Courses

## Show all Visual Arts Core (VA) Courses

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
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- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# BFA in Animation (68–71 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirements for admission to this major.*

The BFA in animation is an interdisciplinary degree offered by the College of Fine Arts and Communications through the cooperative involvement of the Department of Theatre and Media Arts and the Department of Visual Arts and the College of Physical and Mathematical Sciences' Computer Science Department.

Application deadline: June 8 after completing CSAnm 150, VAAnm 131, and VAAnm 160.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following premajor courses:

CSANM 150 : Introduction to Three-Dimensional Computer Graphics. (1.5:1.5:1.5)

WHEN TAUGHT: Spring

DESCRIPTION: Fundamentals of modeling, texturing, lighting, and rendering used in exploring principles and elements of three-dimensional design.

**Course Outcomes**

There are no course outcomes available

VAANM 131 : Figure Drawing for Animators. (3:6:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Figure study in animation using a variety of media and methods. Readings, writing, and participation in course work exhibition required.

**Course Outcomes**

No outcomes are available at this time.

VAANM 160 : Introduction to Two-Dimensional Animation Skills. (1.5:4:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Foundational principles and techniques for animation, storyboarding, design, and a variety of two-dimensional animation skill sets.

**Course Outcomes**

No outcomes are available at this time.

2. Obtain acceptance into the animation BFA program.
3. Pass portfolio review during the sophomore year.
4. Complete the following foundation courses:

CSANM 250 : Intermediate Three-Dimensional Computer Graphics. (2:4:0)

WHEN TAUGHT: Fall

DESCRIPTION: Fundaments of building three-dimensional computer models and setting up model rigs for mobility.

NOTE: Course changed to CSAnm 250 beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 252 : Introduction to Three-Dimensional Animation. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: CSANM 250

DESCRIPTION: Foundational principles and techniques of three-dimensional animation, including timing and

pacing, character setup, and dynamics.
NOTE: Course changed to CSAnm 252 beginning Fall 2012.

**Course Outcomes**
There are no course outcomes available

CSANM 258 : Scripting for Animation. (3:3:3)
WHEN TAUGHT: Spring
DESCRIPTION: Developing basic scripting skills to procedurally build intricate systems of models, rigs, and animation. Students learn how to reduce manual hours and efficiently create simple to complex effects.
NOTE: Course changed to CSAnm 258 beginning Fall 2014.

**Course Outcomes**
There are no course outcomes available

CSANM 350 : Character Animation in 3D. (3:3:3)
WHEN TAUGHT: Fall
PREREQUISITE: CSANM 252
DESCRIPTION: Three-dimensional character animation applying traditional animation principles.
NOTE: Course changed to CSAnm 350 beginning Fall 2012.

**Course Outcomes**
There are no course outcomes available

CSANM 354 : Shader Programming. (3:3:3)
WHEN TAUGHT: Fall
DESCRIPTION: Shading and rendering techniques for the attainment of desired visual effects: use of shading languages for the realization of both photorealistic and non-photorealistic imaging.
NOTE: Course changed to CSAnm 354 beginning Fall 2012.

**Course Outcomes**
There are no course outcomes available

CSANM 450R : Advanced Senior Film Production 1. (3:3:3)
WHEN TAUGHT: Fall
DESCRIPTION: In-depth experiences creating computer animations and visual effects. Senior film front-end development and introduction to full animation production.
NOTE: Course changed to CSAnm 450 beginning Fall 2012.

**Course Outcomes**
There are no course outcomes available

TMA 102 : Introduction to Film. (3:4:2)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Analytical studies for understanding and appreciating media forms and messages, as well as basic history, theory, and aesthetics. Lab required.

**Course Outcomes**
- Students will become active, intelligent film viewers
- Students will be exposed to the practical elements of film
- Students will learn about a wide range of stories and stylistic strategies utilized by film artists and institutions
- Students will become familiar with new and helpful ways of receiving films. They will be able to evaluate and analyze films in a variety of contexts.

VAANM 250R : Gesture Drawing for Animators. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VAANM 131
DESCRIPTION: Drawing humans and animals in motion.

**Course Outcomes**
No outcomes are available at this time.

VAANM 260 : Basic Storyboarding. (3:4:0)
WHEN TAUGHT: Fall
PREREQUISITE: VAANM 131 & VAANM 160
DESCRIPTION: Introduction to visual storytelling.

**Course Outcomes**

No outcomes are available at this time.

VAANM 262 : Two-Dimensional Animation. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: VAANM 131 & VAANM 160

DESCRIPTION: Fundamental principles of two-dimensional animation: timing, acting, performance, overlapping action, volumes, etc. This is a traditional two-dimensional drawing course.

**Course Outcomes**

No outcomes are available at this time.

VAANM 265 : Drawing for Animation. (3:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAANM 131 & VAANM 160

DESCRIPTION: Fundamental skills of animation artists, namely design, composition, staging, value, color, etc.

**Course Outcomes**

No outcomes are available at this time.

VAANM 360R : Advanced Storyboarding. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: VAANM 250R & VAANM 260 & VAANM 265

DESCRIPTION: Exploring the professional practices of storyboard artists in advertising, film, TV, and animation through individual and group projects.

**Course Outcomes**

No outcomes are available at this time.

VAANM 363R : Two-Dimensional Animation Production. (1.5:3:3)

PREREQUISITE: VAANM 250R & VAANM 260 & VAANM 262

DESCRIPTION: Develop basic knowledge of two-dimensional animation; emphasizing acting and performance of individual projects.

**Course Outcomes**

No outcomes are available at this time.

VAANM 460 : Business and Ethics in Animation. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Acceptance to animation program.

DESCRIPTION: Learning the practical and ethical side to the entertainment industry through readings and discussions as preparation for expectations as artists, leaders, and members of the Church.

**Course Outcomes**

No outcomes are available at this time.

5. Complete one course from the following:

CSANM 452R : Advanced Senior Film Production 2. (3:3:3)

WHEN TAUGHT: Winter

DESCRIPTION: Portfolio development based on advanced animation/design projects. Senior film production and post production.

NOTE: Course changed to CSAnm 452R beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 497R : BFA Final Project. (1-3:Arr:Arr)

PREREQUISITE: BFA advisor's consent.

DESCRIPTION: Advanced individual project with minimum guidance, showing high degree of competence within chosen major.

NOTE: Course changed to CSAnm 497R beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

VAANM 497R : BFA Independent Film Production. (1-3:ARR:ARR)

WHEN Fall; Winter; Spring; Summer

TAUGHT:
DESCRIPTION: Advanced individual animation project with minimum guidance, showing a high degree of competence.

**Course Outcomes**

No outcomes are available at this time.

6. Complete the following:

ARTHC 201 : World Civilization to 1500. (3:3:0)

DESCRIPTION: Survey of Western civilization emphasizing the visual arts from ancient Greece to the Gothic period.

**Course Outcomes**

There are no course outcomes available

ARTHC 202 : World Civilization Since 1500. (3:3:0)

DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

TMA 294 : History of Animation. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 102

DESCRIPTION: Origins and developments of animation internationally to the present, focusing on aesthetic, technical, political, and economic aspects of the medium.

**Course Outcomes**

- Students will learn the historical importance of the formation of the animation industry including visionary individuals that shaped the films we see today.

7. Complete one course from the following:

TMA 291 : Media Arts History 1. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: TMA 112 & TMA 114

DESCRIPTION: Survey of social, aesthetic, business, and technical dimensions of film and media from 1895 to 1945.

**Course Outcomes**

- familiarize students with the history of world cinema from 1895 to 1946 as informing and informed by culture, social history, emerging technologies and industry adaptations, and trends in visual art

TMA 292 : Media Arts History 2. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: TMA 112 & TMA 114

DESCRIPTION: Survey of social, aesthetic, business, and technical dimensions of film and media from 1946 to present.

**Course Outcomes**

- to familiarize students with the history of post-WWII world cinema as informing and informed by culture, social history, emerging technologies and industry adaptations, and trends in visual art

VAILL 355 : History of American Illustration 1 (1860-1930). (3:4:0)

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of illustration in visual communication, emphasizing the birth of publishing and "Golden Age" of American illustration, 1860-1930.

**Course Outcomes**

No outcomes are available at this time.

VAILL 356 : History of American Illustration 2 (1930-Present). (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of American illustration in visual communication, emphasizing from 1930 to the present.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 379 : History of Photography. (3:2:4)

DESCRIPTION: Origin and development of photographic aesthetics.

**Course Outcomes**

No outcomes are available at this time.

8. Complete three courses from the following:

CSANM 351R : Lighting for Three-Dimensional Graphics. (3:3:3)

WHEN TAUGHT: Winter

DESCRIPTION: Developing lighting and color, and the compiling of the various elements for final images for use in three-dimensional applications.

NOTE: Course changed to CSAnm 351R beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 454 : Advanced Shading. (3:3:3)

WHEN TAUGHT: Fall

DESCRIPTION: Advanced shading, rendering, and lighting methods for creating virtual scenes that emphasize story and innovatively meet an art director's vision through traditional and procedural methods.

NOTE: Course changed to CSAnm 454 beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 458 : Three-Dimensional Visual Effects. (3:3:3)

DESCRIPTION: Exploring procedural and three-dimensional animation methods to create realistic special effects. Applying a large spectrum of animation principles to integrate their effects aesthetically and convincingly into a live action or animated environment.

NOTE: Course changed to CSAnm 458 beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 459R : Advanced Animation Technology. (1.5:1.5:1.5)

WHEN TAUGHT: Winter

DESCRIPTION: Meeting a variety of complex visual production demands by combining technical ingenuity with artistic creativity. Crafting directable tools with artistic flexibility and using them to create visuals for the production's story.

NOTE: Course changed to CSAnm 459R beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

TMA 123 : Acting Fundamentals. (2:4:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamental acting skills: exercises in perception, objective/action, thought processes, scoring of scripts. Lab required.

**Course Outcomes**

- Develop a gospel-centered sense of empathy and compassion that will serve as a foundation for the actor on stage and screen, as well as a foundation for living a more Christian life. Acting Fundamentals Students will demonstrate a knowledge of and an ability to integrate fundamental acting principles.
- Students will apply professional work habits of dependability, promptness, cooperation, a sense of ensemble, and the ability to make independent choices.
- Develop practical acting analysis skills via studio work including objectives, tactics, obstacles, beats, given circumstances.
- Develop critcial observation skills through attendance at theatrical performances, and the reading of selected dramatic texts.

TMA 185 : Basic Media Production. (3:4:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Media arts major/minor status or animation major status; concurrent enrollment in TMA 105.

DESCRIPTION: Introduction to basics of film and video production. Includes lecture and practical lab experiences with audio and video.

**Course Outcomes**

- Students will improve their capacity as story tellers and filmmakers.

- Students will begin to conceptualize, write, shoot, and edit fiction and non-fiction stories.
- Students will engage with texts about storytelling and production processes
- Students will present, discuss, analyze, and critique others work in the spirit of peer to peer collaboration

TMA 241 : Screenwriting 1. (3:4:0)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department; Summer, Contact Department

PREREQUISITE: TMA 291 or 292 or concurrent enrollment.

DESCRIPTION: Basic narrative and nonfiction (documentary, educational, industrial, multimedia) screenwriting principles through reading, viewing, testing, and completing writing assignments.

**Course Outcomes**

- Draw on your own experiences to develop a unique point of view; observe your world to find stories to tell
- Understand and practice the basic artistic principles of screenwriting, including use of character, structure, images, meaning, theme, etc.
- Learn practices of professionalscreenwriting, including formatting, economy of description, etc.
- Give constructive feedback on others' stories; learn to receive constructive feedback on your own work

TMA 257 : Storytelling. (2:4:1)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: Theatre education major status or instructor's consent.

DESCRIPTION: Theories, techniques, and practice in the art of constructing and telling stories for use in performance, recreational, and educational settings.

**Course Outcomes**

- Students will develop unique individual skills and styles in storytelling, demonstrating ability to create imagery, use vocal animation and characterization, and produce effective story sequences, supported by skilled delivery (body, voice, use of space).
- Students will survey and respond to a variety of storytelling styles by observing and writing about live, video and audio performances.
- Students will develop teaching strategies and coaching styles designed to support storytellers in targeted communities such as schools, businesses, the entertainment industry, churches, family, etc.
- Students will foster supportive relationships by connecting to national and local storytellers and organizations.

TMA 475R : Media Arts Capstone. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Media arts major status. By application only.

DESCRIPTION: Final collaborative project for media students. May be narrative, nonfiction, multimedia, writing, or critical studies format.

NOTE: Fee.

**Course Outcomes**

- Guide a film from pre-production, through production, to post-production
- Students will improve their capacity as story tellers and filmmakers
- Students will present, discuss, analyze, and critique others work in the spirit of peer to peer collaboration.
- Make practical production decisions

VAANM 263 : Writing for Animation. (3:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: VAANM 160 & STANM 150; or VAANM 160 & CSANM 150; Acceptance into animation program.

DESCRIPTION: Fundamental principles of writing, creation, and telling of short animations.

**Course Outcomes**

No outcomes are available at this time.

VAANM 361R : Visual Development and Character Design. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: VAANM 250R & VAANM 265

DESCRIPTION: Design characters, props, and environments for various uses in animation and print.

**Course Outcomes**

No outcomes are available at this time.

VAANM 362R : Two-Dimensional Character Animation. (3:6.0:0.0)

WHEN TAUGHT: Winter

PREREQUISITE: VAANM 131 & VAANM 160 & VAANM 262

DESCRIPTION: Character animation and performance animation.

**Course Outcomes**

No outcomes are available at this time.

VAANM 365R : Digital Painting. (3:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: VAANM 250R & VAANM 265 & VAANM 361R

DESCRIPTION: Tools and techniques of digital painting for concept design in the entertainment industry.

**Course Outcomes**

No outcomes are available at this time.

VAANM 494R : Special Problems in Animation. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Individual study in animation of special interest.

**Course Outcomes**

No outcomes are available at this time.

VAANM 497R : BFA Independent Film Production. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Advanced individual animation project with minimum guidance, showing a high degree of competence.

**Course Outcomes**

No outcomes are available at this time.

VAANM 498R : Directed Studies in Animation. (1-6:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: BFA advisor's consent.

DESCRIPTION: Credit for work experience in animation.

**Course Outcomes**

No outcomes are available at this time.

VAILL 350R : Advanced Life Drawing. (3:2:4)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: VAILL 250; or VAANM 250R; BA acceptance.

DESCRIPTION: Drawing the figure in modern or historical costume; developing drawing skills, especially relating to the draped figure.

**Course Outcomes**

No outcomes are available at this time.

VAILL 453 : Illustration 4. (3:2:4)

PREREQUISITE: VAILL 351 & VAILL 352; BFA acceptance.

DESCRIPTION: Advanced assignments in illustration. Various instructors with unique skills and market experience.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 170 : Introduction to Black and White Photography. (3:2:4)

PREREQUISITE: Acceptance into visual arts program.

DESCRIPTION: Basic camera and darkroom techniques emphasizing black and white film processing and printmaking.

**Course Outcomes**

No outcomes are available at this time.

VASTU 104 : Introduction to Sculpture for Non-Majors. (3:4:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic sculpture processes and concepts, including lecture, demonstrations, lab time, slide lectures, some art historical material.

NOTE: Fee. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

No outcomes are available at this time.

Show all Visual Arts Animation (VAAnm) Courses

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# BFA in Graphic Design (73–76 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirements for admission to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following core requirements:

VA 111 : Freshman Seminar. (1.5:2:2)
WHEN TAUGHT: Fall
DESCRIPTION: Conceptual and philosophical preparation for visual arts majors. Lecture and guided discussion seminar with weekly labs. Nature and value of visual arts and visual culture.

**Course Outcomes**
No outcomes are available at this time.

VA 114 : Drawing. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Observational and conceptual drawing using a variety of media and methods.

**Course Outcomes**
No outcomes are available at this time.

VA 115 : Two-Dimensional Design. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Formal and conceptual elements of design, color, and composition, using a variety of media.

**Course Outcomes**
No outcomes are available at this time.

2. Obtain acceptance into the graphic design BA program.

3. Complete the following additional core requirements:

VAILL 131 : Figure Drawing for Illustrators. (3:6:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Figure study for illustrators using a variety of media and methods. Readings, writings, and participation in course work exhibitions required.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 116 : Introduction to Photography and Digital Workflow. (3:4:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic camera techniques and digital capture, developing entry-level skills in digital imaging workflow, developing skills with industry-related software and working methods. Lighting two-dimensional work for portfolio documentation.

**Course Outcomes**
No outcomes are available at this time.

VASTU 133 : Three-Dimensional Design. (1.5:6:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Three-dimensional concepts, theories, and issues using a variety of media and processes. Readings, writings, and participation in course work exhibitions required.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

4. Complete the following:

VAGD 210 : Introduction to Media Design. (3:1:3)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Introduction to the process and methodology of creating graphic design across multiple media types. An introduction to designing interactive experiences, interfaces for digital applications, and communicating by applying motion to design.

**Course Outcomes**
No outcomes are available at this time.

VAGD 243 : Basic Typography. (3:1:3)
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Studio course which familiarizes the student with the history, terminology, elements and principles of effective typographic design. The course explores the role typography plays in visual communication.

**Course Outcomes**
No outcomes are available at this time.

VAGD 245 : Introduction to Graphic Design. (3:1:3)
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Introductory course that explores visual communication through the study of form, visual principles, theoretical and visual experimentation, concept development, and creative thinking. Students examine the connection between visual form, context, and the creation of meaning.

**Course Outcomes**
No outcomes are available at this time.

5. Obtain acceptance into the graphic design BFA program.

6. Complete the following:

VAGD 310 : Advanced Computer Application Graphic Design. (3:1:3)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Studio course instructing students in the art, science, and technology of designing interactive experiences and interfaces for digital applications.

**Course Outcomes**
No outcomes are available at this time.

VAGD 340 : Corporate Identity Design. (3:2:4)
PREREQUISITE: VAGD 243; BFA acceptance
DESCRIPTION: Current philosophy in corporate identification and trademark design. Design trademarks, logotypes, and identity programs.

**Course Outcomes**
No outcomes are available at this time.

VAGD 341 : Packaging Design. (3:2:4)
PREREQUISITE: BFA acceptance.
DESCRIPTION: Packaging and its function in the marketplace; current packaging technology and aesthetics.

**Course Outcomes**
No outcomes are available at this time.

VAGD 342 : Advertising Design. (3:2:4)
PREREQUISITE: BFA acceptance.
DESCRIPTION: Particular demands of the advertising world: marketing strategy, editorial and visual concepts, etc. Design ads, collateral materials, campaigns.

**Course Outcomes**
No outcomes are available at this time.

VAGD 343 : Publication Design. (3:2:4)
PREREQUISITE: BFA acceptance.
DESCRIPTION: Book and magazine publishing and their special editorial, design, and manufacturing requirements.

**Course Outcomes**
No outcomes are available at this time.

VAGD 441 : Senior Graphic Design Studio 1. (3:2:4)
PREREQUISITE: BFA acceptance.
DESCRIPTION: Opportunity for senior class members to work as a group in solving design problems for real clients on major projects.

**Course Outcomes**
No outcomes are available at this time.

VAGD 442 : Senior Graphic Design Studio 2. (3:2:4)
PREREQUISITE: VAGD 441
DESCRIPTION: Continuation of VAGD 441.

**Course Outcomes**
No outcomes are available at this time.

VAGD 443 : Special Problems in Graphic Design 1. (3:2:4)
PREREQUISITE: BFA acceptance.
DESCRIPTION: Advanced assignments in graphic design; individual portfolio development.

**Course Outcomes**
No outcomes are available at this time.

VAGD 444 : Special Problems in Graphic Design 2. (3:2:4)
PREREQUISITE: BFA acceptance.
DESCRIPTION: Continuation of VAGD 443.

**Course Outcomes**
No outcomes are available at this time.

VAGD 488 : Business Practices for Graphic Designers. (2:2:0)
WHEN TAUGHT: Fall
PREREQUISITE: BFA acceptance.
DESCRIPTION: Business aspects of the graphic design profession.

**Course Outcomes**
No outcomes are available at this time.

7. Complete five hours of the following:
VAGD 497R : BFA Graphic Design Final Project. (1-3:ARR:ARR)
WHEN TAUGHT: Contact Department.
PREREQUISITE: BFA advisor's consent.
DESCRIPTION: Advanced individual project in graphic design with minimum guidance, showing a high degree of competence.

**Course Outcomes**
No outcomes are available at this time.

8. Complete the following history requirement:
VAGD 349 : History of Graphic Design. (3:3:0)
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of visual communication.

**Course Outcomes**
No outcomes are available at this time.

9. Complete one course from the following history requirements:
ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202

DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**

There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ARTHC 202

DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**

There are no course outcomes available

SFL 328 : History of Interior Design and Architecture 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: History of interior design, architecture, and furnishings from ancient Egypt to beaux arts movement. French, English, and American design.

**Course Outcomes**

- Identify important motifs, interior, and exterior architectural styles from each of the historical periods covered in class.Identify furniture, designers, and minor/decorative arts from each of the historical periods covered in class.Understand the relationship of the design periods to history and culture.

SFL 329 : History of Interior Design and Architecture 2. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Furniture, interior design, and architecture from Industrial Revolution to present.

**Course Outcomes**

- Students will identify the popular types of housing styles of 1900-2011. Students will explain how each style was influenced by political and economic factors
- Students will identify the architects that had an impact on the various periods of architecture.
- Students will analyze how the various styles of architecture were influenced by society and culture.

VAILL 355 : History of American Illustration 1 (1860-1930). (3:4:0)

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of illustration in visual communication, emphasizing the birth of publishing and "Golden Age" of American illustration, 1860-1930.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 379 : History of Photography. (3:2:4)

DESCRIPTION: Origin and development of photographic aesthetics.

**Course Outcomes**

No outcomes are available at this time.

10. Complete four of the following supporting courses:

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

COMMS 230 : Introduction to Advertising. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

DESCRIPTION: Principles of advertising; critical evaluation of its role and value in American society. Experience in writing and creating ads for all media.

**Course Outcomes**

There are no course outcomes available

VADES 496R : Academic Internship: Professional Internship. (.5-6:ARR:ARR)

PREREQUISITE: Department and faculty advisor's consent.

DESCRIPTION: Work experience in professional design studio evaluated by supervisor.

**Course Outcomes**
No outcomes are available at this time.

VAGD 348 : Type as Image. (3:2:4)
PREREQUISITE: BFA acceptance.
DESCRIPTION: Developing unique and expressive letterforms, especially the modification of letters to create new abstract or pictorial images.

**Course Outcomes**
No outcomes are available at this time.

VAGD 410R : Computer Applications Studio for Graphic Designers. (3:1:3)
WHEN TAUGHT: Winter
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Studio course instructing students in the art of design and communication with motion. Graphic design principles and narrative concepts employed to create short motion design projects.

**Course Outcomes**
No outcomes are available at this time.

VAGD 498R : Directed Studies in Graphic Design. (1-6:ARR:ARR)
WHEN TAUGHT: Contact Department.
PREREQUISITE: BFA advisor's consent.
DESCRIPTION: Credit for work experience in graphic design.

**Course Outcomes**
No outcomes are available at this time.

VAILL 251 : Illustration 1. (3:6:0)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Visual arts core.
DESCRIPTION: Overview of styles, techniques, methods, and materials. Illustrative concepts and problem solving.

**Course Outcomes**
No outcomes are available at this time.

VAILL 351 : Illustration 2. (3:2:4)
PREREQUISITE: Visual Arts acceptance.
DESCRIPTION: Narrative illustration problems emphasizing academic study of the human figure using various media.

**Course Outcomes**
No outcomes are available at this time.

VAILL 352 : Illustration 3. (3:2:4)
PREREQUISITE: Visual Arts acceptance.
DESCRIPTION: Conceptual illustration problems and market applications, using various media.

**Course Outcomes**
No outcomes are available at this time.

VASTU 330 : Bookbinding. (3:4:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Traditional approaches to hand bookbinding.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

## Show all Art History and Curatorial Studies (ArtHC) Courses

## Show all Visual Arts Core (VA) Courses

## Show all Visual Arts Graphic Design (VAGD) Courses

Show all Visual Arts Illustration (VAIll) Courses

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# BFA in Illustration (71-72 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirements for admission to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following core requirements:

VA 111 : Freshman Seminar. (1.5:2:2)
WHEN TAUGHT: Fall
DESCRIPTION: Conceptual and philosophical preparation for visual arts majors. Lecture and guided discussion seminar with weekly labs. Nature and value of visual arts and visual culture.

**Course Outcomes**
No outcomes are available at this time.

VA 114 : Drawing. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Observational and conceptual drawing using a variety of media and methods.

**Course Outcomes**
No outcomes are available at this time.

VA 115 : Two-Dimensional Design. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Formal and conceptual elements of design, color, and composition, using a variety of media.

**Course Outcomes**
No outcomes are available at this time.

VAILL 131 : Figure Drawing for Illustrators. (3:6:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Figure study for illustrators using a variety of media and methods. Readings, writings, and participation in course work exhibitions required.

**Course Outcomes**
No outcomes are available at this time.

2. Obtain acceptance into the illustration BA program.

3. Complete the following:

VAGD 243 : Basic Typography. (3:1:3)
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Studio course which familiarizes the student with the history, terminology, elements and principles of effective typographic design. The course explores the role typography plays in visual communication.

**Course Outcomes**
No outcomes are available at this time.

VAILL 210 : Introduction to Digital Illustration. (2:4:0)
WHEN TAUGHT: Winter; Spring
PREREQUISITE: Visual arts core.
DESCRIPTION: Introduction to computer software programs specific to illustration.

**Course Outcomes**

No outcomes are available at this time.

VAILL 250 : Intermediate Life Drawing. (3:6:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: VAILL 131; or VAANM 131

DESCRIPTION: Drawing the classic figure from gesture to finished rendering, emphasizing structure, anatomy, form, and medium.

**Course Outcomes**

No outcomes are available at this time.

VAILL 251 : Illustration 1. (3:6:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Visual arts core.

DESCRIPTION: Overview of styles, techniques, methods, and materials. Illustrative concepts and problem solving.

**Course Outcomes**

No outcomes are available at this time.

4. Obtain acceptance into the BFA program.
5. Complete the following:

VAILL 310 : Intermediate Digital Illustration. (3:6:0)

WHEN TAUGHT: Fall

PREREQUISITE: VAILL 210

DESCRIPTION: Intermediate problems in digital media.

**Course Outcomes**

No outcomes are available at this time.

VAILL 350R : Advanced Life Drawing. (3:2:4)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: VAILL 250; or VAANM 250R; BA acceptance.

DESCRIPTION: Drawing the figure in modern or historical costume; developing drawing skills, especially relating to the draped figure.

**Course Outcomes**

No outcomes are available at this time.

VAILL 351 : Illustration 2. (3:2:4)

PREREQUISITE: Visual Arts acceptance.

DESCRIPTION: Narrative illustration problems emphasizing academic study of the human figure using various media.

**Course Outcomes**

No outcomes are available at this time.

VAILL 353 : Narrative Illustration. (3:2:4)

RECOMMENDED: VAIll 350R.

DESCRIPTION: Narrative problem solving patterns. Use of character, mood, and environment to tell a story or develop conceptual ideas. Study of media, aesthetic principles, and classic story models.

**Course Outcomes**

No outcomes are available at this time.

VAILL 453 : Illustration 4. (3:2:4)

PREREQUISITE: VAILL 351 & VAILL 352; BFA acceptance.

DESCRIPTION: Advanced assignments in illustration. Various instructors with unique skills and market experience.

**Course Outcomes**

No outcomes are available at this time.

VAILL 454 : Illustration 5. (3:2:4)

PREREQUISITE: VAILL 351 & VAILL 352; BFA acceptance.

DESCRIPTION: Continuation of VAIII 453. Advanced assignments in illustration and media.

**Course Outcomes**
No outcomes are available at this time.

VAILL 497R : BFA Illustration Final Project. (1-3:ARR:ARR)
WHEN TAUGHT: Contact Department.
PREREQUISITE: BFA advisor's consent.
DESCRIPTION: Advanced individual project in illustration with miminum guidance, showing a high degree of competence.

**Course Outcomes**
No outcomes are available at this time.

1 hour: Research Paper

VAILL 497R : BFA Illustration Final Project. (1-3:ARR:ARR)
WHEN TAUGHT: Contact Department.
PREREQUISITE: BFA advisor's consent.
DESCRIPTION: Advanced individual project in illustration with miminum guidance, showing a high degree of competence.

**Course Outcomes**
No outcomes are available at this time.

3 hours: Artwork

6. Complete one course from the following:

VAILL 355 : History of American Illustration 1 (1860-1930). (3:4:0)
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of illustration in visual communication, emphasizing the birth of publishing and "Golden Age" of American illustration, 1860-1930.

**Course Outcomes**
No outcomes are available at this time.

VAILL 356 : History of American Illustration 2 (1930-Present). (3:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of American illustration in visual communication, emphasizing from 1930 to the present.

**Course Outcomes**
No outcomes are available at this time.

7. Complete one course from the following history requirements:

ARTHC 304 : Greek Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: History and appreciation of Greek art, with consideration of formative cultures.

**Course Outcomes**
There are no course outcomes available

ARTHC 306 : Roman Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art and architecture of the Etruscans and Romans.

**Course Outcomes**
There are no course outcomes available

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**
There are no course outcomes available

ARTHC 316 : Art of the Medieval West. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art in western Europe from 400 AD to 1400.

**Course Outcomes**
There are no course outcomes available

ARTHC 320 : Italian Renaissance. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Art and architecture in Italy from 1200 to 1580.

**Course Outcomes**
There are no course outcomes available

ARTHC 325 : Northern Renaissance Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Fifteenth- and sixteenth-century art in northern Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 329 : Renaissance and Baroque Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: History of architecture in Italy, Spain, France, Germany, Austria, and England, 1400?1700.

**Course Outcomes**
There are no course outcomes available

ARTHC 330 : Southern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: History of baroque painting, sculpture, and architecture in Italy, Spain, and France.

**Course Outcomes**
There are no course outcomes available

ARTHC 335 : Northern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Baroque painting in Flanders and Holland.

**Course Outcomes**
There are no course outcomes available

ARTHC 340 : Nineteenth-Century European Art. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Nineteenth-century art in Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 345 : American Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: American painting and sculpture from colonial through modern times.

**Course Outcomes**
There are no course outcomes available

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**

There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**

There are no course outcomes available

ARTHC 360 : Introduction to Museum and Curatorial Studies. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Duties of museum professionals while applying museum theory to the practical development of a museum exhibit.

**Course Outcomes**

There are no course outcomes available

ARTHC 365 : American Architecture. (3:3:0)

PREREQUISITE: ARTHC 202
DESCRIPTION: Major figures, monuments, and movements in American architecture from colonial period through "Gilded Age."

**Course Outcomes**

No outcomes are available at this time.

ARTHC 367 : Modern Architecture. (3:3:0)

PREREQUISITE: ARTHC 202
DESCRIPTION: Critical review of roots and evolution of modern architecture.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 375 : Japanese Art and Architecture. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Japanese art and architecture from its neolithic origins through the dawn of the modern age. Literary, social, and religious contexts considered.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 380 : Northern Mesoamerican Art. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of Mexico from antiquity to present.

**Course Outcomes**

There are no course outcomes available

ARTHC 382 : Southern Mesoamerican Art. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of southern Mexico and central America from antiquity to present.

**Course Outcomes**

There are no course outcomes available

SFL 328 : History of Interior Design and Architecture 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: History of interior design, architecture, and furnishings from ancient Egypt to beaux arts movement. French, English, and American design.

**Course Outcomes**

- Identify important motifs, interior, and exterior architectural styles from each of the historical periods

covered in class.Identify furniture, designers, and minor/decorative arts from each of the historical periods covered in class.Understand the relationship of the design periods to history and culture.

SFL 329 : History of Interior Design and Architecture 2. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Furniture, interior design, and architecture from Industrial Revolution to present.

**Course Outcomes**
- Students will identify the popular types of housing styles of 1900-2011. Students will explain how each style was influenced by political and economic factors
- Students will identify the architects that had an impact on the various periods of architecture.
- Students will analyze how the various styles of architecture were influenced by society and culture.

TMA 294 : History of Animation. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: TMA 102
DESCRIPTION: Origins and developments of animation internationally to the present, focusing on aesthetic, technical, political, and economic aspects of the medium.

**Course Outcomes**
- Students will learn the historical importance of the formation of the animation industry including visionary individuals that shaped the films we see today.

VAGD 349 : History of Graphic Design. (3:3:0)
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of visual communication.

**Course Outcomes**
No outcomes are available at this time.

VAILL 355 : History of American Illustration 1 (1860-1930). (3:4:0)
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of illustration in visual communication, emphasizing the birth of publishing and "Golden Age" of American illustration, 1860-1930.

**Course Outcomes**
No outcomes are available at this time.

VAILL 356 : History of American Illustration 2 (1930-Present). (3:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of American illustration in visual communication, emphasizing from 1930 to the present.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 379 : History of Photography. (3:2:4)
DESCRIPTION: Origin and development of photographic aesthetics.

**Course Outcomes**
No outcomes are available at this time.

VASTU 326 : Current Art Practice. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Visual arts acceptance.
DESCRIPTION: Current issues in art.

**Course Outcomes**
No outcomes are available at this time.

8. Complete one of the following tracks:

*Illustration Track*

a. Complete the following courses:
VAILL 352 : Illustration 3. (3:2:4)
PREREQUISITE: Visual Arts acceptance.
DESCRIPTION: Conceptual illustration problems and market applications, using various media.

**Course Outcomes**

No outcomes are available at this time.

VAILL 450R : Painting the Human Head. (3:2:4)
PREREQUISITE: VAILL 350R
DESCRIPTION: Painting from a live model; unique aspects of portraiture and colors of the human face.

**Course Outcomes**
No outcomes are available at this time.

VAILL 451 : Senior Illustration Studio 1. (3:2:4)
PREREQUISITE: VAILL 351 & VAILL 352; BFA acceptance.
DESCRIPTION: Individual portfolio development.

**Course Outcomes**
No outcomes are available at this time.

VAILL 452 : Senior Illustration Studio 2. (3:2:4)
PREREQUISITE: VAILL 451
DESCRIPTION: Flexible in nature, featuring various instructors with unique individual skills. Team taught. Advanced assignments in illustration; individual portfolio preparation.

**Course Outcomes**
No outcomes are available at this time.

VAILL 488 : Professional Practices for Illustrators. (2:2:0)
WHEN TAUGHT: Fall
PREREQUISITE: BFA acceptance.
DESCRIPTION: Business aspects of the illustration profession.

**Course Outcomes**
No outcomes are available at this time.

*Concept Design Track*

a. Complete the following courses:

VAANM 360R : Advanced Storyboarding. (3:3:3)
WHEN TAUGHT: Winter
PREREQUISITE: VAANM 250R & VAANM 260 & VAANM 265
DESCRIPTION: Exploring the professional practices of storyboard artists in advertising, film, TV, and animation through individual and group projects.

**Course Outcomes**
No outcomes are available at this time.

VAILL 358 : Character Design for Illustrators. (3:6:0)
WHEN TAUGHT: Fall
PREREQUISITE: VAILL 251; or VAANM 265
DESCRIPTION: Concepts and projects dealing with the interpretation and stylization of human and animal characters applied to children's markets, caricature, animation, and humorous illustration.

**Course Outcomes**
No outcomes are available at this time.

VAILL 410 : Advanced Digital Illustration. (3:6:0)
WHEN TAUGHT: Winter
PREREQUISITE: VAILL 310; or VAANM 365R
DESCRIPTION: Advanced problems in digital media and markets.

**Course Outcomes**
No outcomes are available at this time.

VAILL 457 : Concept Design. (3:3:3)
WHEN TAUGHT: Fall
RECOMMENDED: VAIll 310, VAIll 350R, VAIll 351.
DESCRIPTION: Application of illustration methods and creative process to solve visual problems for entertainment production design. Faculty-led teams work within given parameters to research, visualize, and render original compositions, characters, environments, creatures, vehicles and props.

**Course Outcomes**
No outcomes are available at this time.

VAILL 458 : Advanced Concept Design. (3:3:3)
WHEN TAUGHT: Winter
PREREQUISITE: VAILL 457; or VAANM 361R
RECOMMENDED: VAIll 358, VAIll 410, VAIll 453.
DESCRIPTION: Synthesis of advanced principles and methodologies in illustration to solve complex visual problems of production design. Students work within stated narrative and aesthetic perimeters to develop original ideas from research to production-ready concept artwork.

**Course Outcomes**
No outcomes are available at this time.

9. Complete 7.5 credit hours from the following supporting courses:

VAANM 250R : Gesture Drawing for Animators. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VAANM 131
DESCRIPTION: Drawing humans and animals in motion.

**Course Outcomes**
No outcomes are available at this time.

VADES 496R : Academic Internship: Professional Internship. (.5-6:ARR:ARR)
PREREQUISITE: Department and faculty advisor's consent.
DESCRIPTION: Work experience in professional design studio evaluated by supervisor.

**Course Outcomes**
No outcomes are available at this time.

VAILL 350R : Advanced Life Drawing. (3:2:4)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: VAILL 250; or VAANM 250R; BA acceptance.
DESCRIPTION: Drawing the figure in modern or historical costume; developing drawing skills, especially relating to the draped figure.

**Course Outcomes**
No outcomes are available at this time.

VAILL 357 : Sketchbook. (3:2:4)
WHEN TAUGHT: Winter
PREREQUISITE: VAILL 250; or VAANM 250R
DESCRIPTION: Using a sketchbook in visual thinking process: exploring ideas, recording visual experience, and developing fundamental drawing skills.

**Course Outcomes**
No outcomes are available at this time.

VAILL 358 : Character Design for Illustrators. (3:6:0)
WHEN TAUGHT: Fall
PREREQUISITE: VAILL 251; or VAANM 265
DESCRIPTION: Concepts and projects dealing with the interpretation and stylization of human and animal characters applied to children's markets, caricature, animation, and humorous illustration.

**Course Outcomes**
No outcomes are available at this time.

VAILL 410 : Advanced Digital Illustration. (3:6:0)
WHEN TAUGHT: Winter
PREREQUISITE: VAILL 310; or VAANM 365R
DESCRIPTION: Advanced problems in digital media and markets.

**Course Outcomes**
No outcomes are available at this time.

VAILL 450R : Painting the Human Head. (3:2:4)
PREREQUISITE: VAILL 350R
DESCRIPTION: Painting from a live model; unique aspects of portraiture and colors of the human face.

**Course Outcomes**
No outcomes are available at this time.

VAILL 488 : Professional Practices for Illustrators. (2:2:0)
WHEN TAUGHT: Fall
PREREQUISITE: BFA acceptance.
DESCRIPTION: Business aspects of the illustration profession.

**Course Outcomes**
No outcomes are available at this time.

VAILL 494R : Special Problems in Illustration. (1-3:ARR:ARR)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Instructor's consent.
DESCRIPTION: Individual study in illustration of special interest.

**Course Outcomes**
No outcomes are available at this time.

VAILL 498R : Directed Studies in Illustration. (1-6:ARR:ARR)
WHEN TAUGHT: Contact Department.
PREREQUISITE: BFA advisor's consent.
DESCRIPTION: Credit for work experience in illustration.

**Course Outcomes**
No outcomes are available at this time.

VASTU 225 : Printmaking Fundamentals. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Introduction to the basic materials, techniques, history, and aesthetics of intaglio, lithography, and other printmaking processes.

**Course Outcomes**
No outcomes are available at this time.

VASTU 324 : Materials of Painting. (1.5:6:0)
PREREQUISITE: VASTU 215; Acceptance into Visual Arts.
DESCRIPTION: Introduction to the techniques and history of producing painting materials, exploring traditional supports, grounds, mediums, and paint production. Most of the course will be spent making painting materials.

**Course Outcomes**
No outcomes are available at this time.

VASTU 325 : Art Preparation and Presentation. (1.5:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Introduction to the basic techniques, history, and aesthetics of art preparation and presentation, including the preparation of supports, frames, and other exhibition materials.

**Course Outcomes**
No outcomes are available at this time.

VASTU 328R : Figure Painting. (3:2:4)
PREREQUISITE: VASTU 215 & VASTU 322R & VASTU 327
DESCRIPTION: Fundamentals of figure painting.

**Course Outcomes**
No outcomes are available at this time.

VASTU 330 : Bookbinding. (3:4:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Traditional approaches to hand bookbinding.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 333 : Painting-Mixed Media. (3:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VASTU 215

DESCRIPTION: Exploring multiple aqueous media and painting mediums and processes as they related to problem solving, idea development, and art-making.

**Course Outcomes**

No outcomes are available at this time.

VASTU 356R : Figure Sculpture. (3:2:4)

DESCRIPTION: Modeling the human figure in clay.

NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

## Show all Visual Arts Core (VA) Courses

## Show all Visual Arts Graphic Design (VAGD) Courses

## Show all Visual Arts Illustration (VAIll) Courses

## Show all Visual Arts Studio (VAStu) Courses

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
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- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# BFA in Photography (65.5 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirements for admission to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following core requirements:

VA 111 : Freshman Seminar. (1.5:2:2)
WHEN TAUGHT: Fall
DESCRIPTION: Conceptual and philosophical preparation for visual arts majors. Lecture and guided discussion seminar with weekly labs. Nature and value of visual arts and visual culture.

**Course Outcomes**
No outcomes are available at this time.

VA 114 : Drawing. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Observational and conceptual drawing using a variety of media and methods.

**Course Outcomes**
No outcomes are available at this time.

VA 115 : Two-Dimensional Design. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Formal and conceptual elements of design, color, and composition, using a variety of media.

**Course Outcomes**
No outcomes are available at this time.

2. Obtain acceptance to the Photography BA program.

3. Complete the following additional core requirements:

VAPHO 116 : Introduction to Photography and Digital Workflow. (3:4:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic camera techniques and digital capture, developing entry-level skills in digital imaging workflow, developing skills with industry-related software and working methods. Lighting two-dimensional work for portfolio documentation.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 120 : Introduction to Digital Imaging. (3:6:2)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VAPHO 116; BA major status.
DESCRIPTION: Photography-based digital imaging, including film scanning, digital capture, color management, Photoshop instruction, fine art and commercial print output, and archiving.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 272 : Introduction to Color Photography. (3:2:4)
WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAPHO 116 & VAPHO 120
DESCRIPTION: Color aesthetics, theory, and systems in traditional and digital capture and printmaking.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 275 : Classical Portrait Photography. (3:2:4)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: VAPHO 116 & VAPHO 120
DESCRIPTION: Studio and environmental portraiture as well as traditional approaches to portrait photography, including wedding/bridal. Lab required.

**Course Outcomes**

No outcomes are available at this time.

4. Obtain acceptance into the photography BFA program.
5. Complete nine hours from the following:

TMA 315R : Special Projects 2. (.5-3:Arr:Arr)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Theatre and media arts major status. By application only.
DESCRIPTION: Intermediate projects in theatre or media arts.

**Course Outcomes**

- Because of the individual nature of the internship course students work with their advisor to list at least three objectives they hope to achieve that are in line with the program level learning outcomes.

: Special Projects 2: Media.

**Course Outcomes**

: Special Projects 2: Theatre.

**Course Outcomes**

: Special Projects 2: Assistant Stage Managers.

**Course Outcomes**

: Special Projects 2: Young Company Teaching Artists.

**Course Outcomes**

TMA 384R : Practicum: Cinematic Skills. (1-6:ARR:1)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Advanced cinematic skills.

**Course Outcomes**

- These courses teach specific cinematic skills regarding Cinematography, Sound, Editing, Visual and Practical Effects, Lighting, Post-Production and more. Students will learn how to use these tools, in collaboration with other students, to prepare to be competitive in the film industry.

VAPHO 170 : Introduction to Black and White Photography. (3:2:4)

PREREQUISITE: Acceptance into visual arts program.
DESCRIPTION: Basic camera and darkroom techniques emphasizing black and white film processing and printmaking.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 273 : Advanced Photography. (3:2:4)

PREREQUISITE: VAPHO 170
DESCRIPTION: Camera and darkroom techniques using the zone system for exposure and development control of large format negatives and prints.
NOTE: Lab required.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 377R : Exploring Alternative Photography Processes. (3:2:4)

PREREQUISITE: VAPHO 273
DESCRIPTION: Photography as an exploratory, sensitizing process.
NOTE: Lab required.

**Course Outcomes**
No outcomes are available at this time.

VASTU 353 : Time-Based Art. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 114 & VA 115 & VASTU 210
DESCRIPTION: Exploring sound-based, video and performance art practices.

**Course Outcomes**
No outcomes are available at this time.

6. Complete the following:

VAPHO 310 : Advanced Computer Application Photography. (2:4:0)
WHEN TAUGHT: Fall
PREREQUISITE: VAPHO 272 & VAPHO 275
DESCRIPTION: Specific photography computer applications, including workflow, color management, and personal project work.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 372 : Still Life Photography. (3:2:4)
PREREQUISITE: BFA acceptance.
DESCRIPTION: Camera and studio techniques to produce illustrations for advertising layout and other media.
NOTE: Lab required.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 376 : Editorial Photography. (3:2:4)
WHEN TAUGHT: Winter
PREREQUISITE: Acceptance to BFA photograhy program.
DESCRIPTION: Use of photography in magazines, newspapers, annual reports, etc. Creating and publishing picture stories.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 475 : Advanced Location Photography. (3:2:4)
WHEN TAUGHT: Fall
PREREQUISITE: BFA acceptance.
DESCRIPTION: Lighting and photographing architecture, products, people, and concepts in environmental settings for the editorial, corporate, industrial, and advertising industry.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 478 : Fine Art Photography. (3:2:4)
PREREQUISITE: VAPHO 272; VAPho 377R.
DESCRIPTION: Fine art approaches to photography; conceptual, social, and aesthetic values; modern and postmodern values.

**Course Outcomes**
No outcomes are available at this time.

VAPHO 488 : Professional Practices for Photographers. (2:2:0)
WHEN TAUGHT: Fall
PREREQUISITE: BFA acceptance.
DESCRIPTION: Business aspects of the photographer's profession.

**Course Outcomes**
No outcomes are available at this time.

7. Complete five hours of the following:

VAPHO 497R : BFA Photography Final Project. (1-3:ARR:ARR)
PREREQUISITE: BFA advisor's consent.
DESCRIPTION: Advanced individual project in photography showing a high degree of competence.

**Course Outcomes**

No outcomes are available at this time.

8. Complete the following history requirement:

VAPHO 379 : History of Photography. (3:2:4)

DESCRIPTION: Origin and development of photographic aesthetics.

**Course Outcomes**

No outcomes are available at this time.

9. Complete one course from the following history requirements:

ARTHC 350 : Modern Art. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ARTHC 202

DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**

There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ARTHC 202

DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**

There are no course outcomes available

SFL 328 : History of Interior Design and Architecture 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: History of interior design, architecture, and furnishings from ancient Egypt to beaux arts movement. French, English, and American design.

**Course Outcomes**

- Identify important motifs, interior, and exterior architectural styles from each of the historical periods covered in class.Identify furniture, designers, and minor/decorative arts from each of the historical periods covered in class.Understand the relationship of the design periods to history and culture.

SFL 329 : History of Interior Design and Architecture 2. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Furniture, interior design, and architecture from Industrial Revolution to present.

**Course Outcomes**

- Students will identify the popular types of housing styles of 1900-2011. Students will explain how each style was influenced by political and economic factors
- Students will identify the architects that had an impact on the various periods of architecture.
- Students will analyze how the various styles of architecture were influenced by society and culture.

VAGD 349 : History of Graphic Design. (3:3:0)

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of visual communication.

**Course Outcomes**

No outcomes are available at this time.

VAILL 355 : History of American Illustration 1 (1860-1930). (3:4:0)

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of illustration in visual communication, emphasizing the birth of publishing and "Golden Age" of American illustration, 1860-1930.

**Course Outcomes**

No outcomes are available at this time.

VAILL 356 : History of American Illustration 2 (1930-Present). (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of American illustration in visual communication, emphasizing from 1930 to the present.

**Course Outcomes**

No outcomes are available at this time.

10. Complete two hours from the following:

VADES 496R : Academic Internship: Professional Internship. (.5-6:ARR:ARR)

PREREQUISITE: Department and faculty advisor's consent.

DESCRIPTION: Work experience in professional design studio evaluated by supervisor.

**Course Outcomes**

No outcomes are available at this time.

11. Complete eight hours from the following supporting courses:

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**

There are no course outcomes available

COMMS 230 : Introduction to Advertising. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

DESCRIPTION: Principles of advertising; critical evaluation of its role and value in American society. Experience in writing and creating ads for all media.

**Course Outcomes**

There are no course outcomes available

COMMS 365 : Photojournalism. (3:2:Arr)

WHEN TAUGHT: Fall Contact Department; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Instructor's consent.

DESCRIPTION: Shooting, processing, selecting, and preparing images for use in various news platforms.

**Course Outcomes**

There are no course outcomes available

COMMS 398R : Projects in Communications. (.5-4:Arr:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Junior standing and sequence coordinator's consent. Project approval required before registration.

DESCRIPTION: Projects in communication studies.

**Course Outcomes**

There are no course outcomes available

TMA 102 : Introduction to Film. (3:4:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Analytical studies for understanding and appreciating media forms and messages, as well as basic history, theory, and aesthetics. Lab required.

**Course Outcomes**

- Students will become active, intelligent film viewers
- Students will be exposed to the practical elements of film
- Students will learn about a wide range of stories and stylistic strategies utilized by film artists and institutions
- Students will become familiar with new and helpful ways of receiving films. They will be able to evaluate and analyze films in a variety of contexts.

VAGD 245 : Introduction to Graphic Design. (3:1:3)

PREREQUISITE: Acceptance into Visual Arts.

DESCRIPTION: Introductory course that explores visual communication through the study of form, visual principles, theoretical and visual experimentation, concept development, and creative thinking. Students examine the connection between visual form, context, and the creation of meaning.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 410R : Computer Applications Studio for Photographers. (2:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAPHO 310

DESCRIPTION: Individual photography project using high-end hardware and software.

**Course Outcomes**

No outcomes are available at this time.

VASTU 225 : Printmaking Fundamentals. (3:6:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VA 111 & VA 114 & VA 115

DESCRIPTION: Introduction to the basic materials, techniques, history, and aesthetics of intaglio, lithography, and other printmaking processes.

**Course Outcomes**

No outcomes are available at this time.

VASTU 330 : Bookbinding. (3:4:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Traditional approaches to hand bookbinding.

NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 351 : Printmaking: Lithography. (1.5:2:4)

WHEN TAUGHT: Contact Department.

PREREQUISITE: VASTU 225

DESCRIPTION: Lithography printmaking, based on traditional and contemporary techniques.

NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

## Show all Visual Arts Core (VA) Courses

## Show all Visual Arts Graphic Design (VAGD) Courses

## Show all Visual Arts Illustration (VAIll) Courses

## Show all Visual Arts Photography (VAPho) Courses

## Show all Visual Arts Studio (VAStu) Courses

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# BFA in Studio Arts (67.5 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirements for admission to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following core requirements:

VA 111 : Freshman Seminar. (1.5:2:2)
WHEN TAUGHT: Fall
DESCRIPTION: Conceptual and philosophical preparation for visual arts majors. Lecture and guided discussion seminar with weekly labs. Nature and value of visual arts and visual culture.

**Course Outcomes**
No outcomes are available at this time.

VA 114 : Drawing. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Observational and conceptual drawing using a variety of media and methods.

**Course Outcomes**
No outcomes are available at this time.

VA 115 : Two-Dimensional Design. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Formal and conceptual elements of design, color, and composition, using a variety of media.

**Course Outcomes**
No outcomes are available at this time.

2. Be admitted to the BA program.

3. Complete the following:

VASTU 133 : Three-Dimensional Design. (1.5:6:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Three-dimensional concepts, theories, and issues using a variety of media and processes. Readings, writings, and participation in course work exhibitions required.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 210 : New Genre. (3:6.0:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Developing an artistic voice while exploring new genres of art making including installation, digital, time-based, performance, sound, and technology-based work.

**Course Outcomes**
No outcomes are available at this time.

VASTU 215 : Painting Fundamentals. (3:2:4)
WHEN TAUGHT: Fall; Winter

PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Fundamentals in oil painting and aqueous media.

**Course Outcomes**
No outcomes are available at this time.

VASTU 216 : Ceramics Fundamentals. (1.5:2:4)
PREREQUISITE: Visual arts core.
DESCRIPTION: Foundation ceramics.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 217 : Sculpture Fundamentals. (1.5:2:4)
PREREQUISITE: Visual arts core.
DESCRIPTION: Foundation sculpture.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 220 : Introduction to Drawing and Figure Drawing. (3:2:4)
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Perceptive and inventive drawing and fundamental study of the figure using a variety of media and methods.

**Course Outcomes**
No outcomes are available at this time.

VASTU 225 : Printmaking Fundamentals. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Introduction to the basic materials, techniques, history, and aesthetics of intaglio, lithography, and other printmaking processes.

**Course Outcomes**
No outcomes are available at this time.

4. Be admitted to the BFA program.
5. Complete a minimum of four hours of the following:
   VASTU 480R : Advanced Studio. (1-3:Arr:Arr)
   PREREQUISITE: At least two 300-level VAStu studio courses, one of which is in the area of the proposed project.
   DESCRIPTION: Individual development of art issues in advanced studio environment. Writing a proposal accompanied by a readings list.

   **Course Outcomes**
   No outcomes are available at this time.

6. Complete a minimum of 19.5 hours from the following:
   VASTU 310 : Installation. (3:3:0)
   WHEN TAUGHT: Fall; Winter
   PREREQUISITE: VA 114 & VA 115 & VASTU 210
   DESCRIPTION: Developing an artistic voice while exploring various installation art practices.

   **Course Outcomes**
   No outcomes are available at this time.

   VASTU 321 : Drawing. (3:2:4)
   PREREQUISITE: Visual arts core.
   DESCRIPTION: Drawing as a graphic form of self-expression, emphasizing personal statement in response to various experiences and concepts.

   **Course Outcomes**
   No outcomes are available at this time.

   VASTU 322R : Figure Drawing. (3:2:4)
   PREREQUISITE: Visual Arts core.

DESCRIPTION: Drawing from the human figure, emphasizing structure and anatomy.

**Course Outcomes**

No outcomes are available at this time.

VASTU 324 : Materials of Painting. (1.5:6:0)

PREREQUISITE: VASTU 215; Acceptance into Visual Arts.

DESCRIPTION: Introduction to the techniques and history of producing painting materials, exploring traditional supports, grounds, mediums, and paint production. Most of the course will be spent making painting materials.

**Course Outcomes**

No outcomes are available at this time.

VASTU 325 : Art Preparation and Presentation. (1.5:6:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance into Visual Arts.

DESCRIPTION: Introduction to the basic techniques, history, and aesthetics of art preparation and presentation, including the preparation of supports, frames, and other exhibition materials.

**Course Outcomes**

No outcomes are available at this time.

VASTU 327 : Painting. (3:2:4)

PREREQUISITE: VASTU 215

DESCRIPTION: Fundamental concepts and techniques of oil painting.

**Course Outcomes**

No outcomes are available at this time.

VASTU 328R : Figure Painting. (3:2:4)

PREREQUISITE: VASTU 215 & VASTU 322R & VASTU 327

DESCRIPTION: Fundamentals of figure painting.

**Course Outcomes**

No outcomes are available at this time.

VASTU 332 : Book Arts. (1.5:6:0)

PREREQUISITE: Acceptance into Visual Arts.

DESCRIPTION: Exploring the construction of non-traditional book forms, using both traditional and non-traditional bookmaking materials.

**Course Outcomes**

No outcomes are available at this time.

VASTU 333 : Painting-Mixed Media. (3:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VASTU 215

DESCRIPTION: Exploring multiple aqueous media and painting mediums and processes as they related to problem solving, idea development, and art-making.

**Course Outcomes**

No outcomes are available at this time.

VASTU 350 : Printmaking: Intaglio. (1.5:2:4)

WHEN TAUGHT: Contact Department.

PREREQUISITE: VASTU 225

DESCRIPTION: Intaglio printmaking, based on traditional and contemporary techniques.

NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 351 : Printmaking: Lithography. (1.5:2:4)

WHEN TAUGHT: Contact Department.

PREREQUISITE: VASTU 225

DESCRIPTION: Lithography printmaking, based on traditional and contemporary techniques.

NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 353 : Time-Based Art. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 114 & VA 115 & VASTU 210
DESCRIPTION: Exploring sound-based, video and performance art practices.

**Course Outcomes**
No outcomes are available at this time.

VASTU 354 : Spatial Relationships in Sculpture. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VASTU 133 & VASTU 217
RECOMMENDED: VAStu 356.
DESCRIPTION: Investigation of spatial relatiionships in installation art, earth works, sculptural performance, and new genres.

**Course Outcomes**
No outcomes are available at this time.

VASTU 356R : Figure Sculpture. (3:2:4)
DESCRIPTION: Modeling the human figure in clay.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 358 : Sculpture. (3:2:4)
PREREQUISITE: VASTU 217
DESCRIPTION: Traditional and nontraditional approaches to sculpture.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 359R : Ceramics. (3:2:4)
PREREQUISITE: VASTU 216
DESCRIPTION: Designing, throwing, hand forming, decorating, glazing, and firing techniques.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 394R : Special Problems in Art. (.5-3:0:0)
PREREQUISITE: Instructor's consent.

**Course Outcomes**
No outcomes are available at this time.

VASTU 480R : Advanced Studio. (1-3:Arr:Arr)
PREREQUISITE: At least two 300-level VAStu studio courses, one of which is in the area of the proposed project.
DESCRIPTION: Individual development of art issues in advanced studio environment. Writing a proposal accompanied by a readings list.

**Course Outcomes**
No outcomes are available at this time.

VASTU 496R : Academic Internship: Professional Internship. (.5-6:0:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Visual arts major status.

**Course Outcomes**
No outcomes are available at this time.

7. Complete four hours of the following:
VASTU 395R : Studio Seminar. (1:2:0)
WHEN Fall; Winter

TAUGHT:
PREREQUISITE: VA 111
DESCRIPTION: Selected contemporary issues involving visiting artists, guest lecturers, video documentaries, discussions, and program information.

**Course Outcomes**
No outcomes are available at this time.

8. Complete the following:

VASTU 340 : Application of Creative and Critical Thinking. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: The business of being an artist, exploring career options, alternative applications, interdisciplinary/trans-disciplinary opportunities, and requisite preparation for each option.

**Course Outcomes**
No outcomes are available at this time.

VASTU 497 : BFA Final Project and Exit Portfolio. (1:0:0)
PREREQUISITE: Studio BFA major status.
DESCRIPTION: Final exhibition and project report; completed travel requirement account; submit all required materials for BFA exit portfolio.

**Course Outcomes**
No outcomes are available at this time.

9. Complete the following art history and criticism requirements:

ARTHC 201 : World Civilization to 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from ancient Greece to the Gothic period.

**Course Outcomes**
There are no course outcomes available

ARTHC 202 : World Civilization Since 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

VASTU 326 : Current Art Practice. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Visual arts acceptance.
DESCRIPTION: Current issues in art.

**Course Outcomes**
No outcomes are available at this time.

**And** complete one course from the following:

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**
There are no course outcomes available

**Show all Art History and Curatorial Studies (ArtHC) Courses**

**Show all Visual Arts Core (VA) Courses**

**Show all Visual Arts Studio (VAStu) Courses**

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# Minor in Advertising Design (18 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is intended for advertising majors seeking a background in design.*

## Program Requirements | View MAP

Complete the following:

VAGD 210 : Introduction to Media Design. (3:1:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Acceptance into Visual Arts.

DESCRIPTION: Introduction to the process and methodology of creating graphic design across multiple media types. An introduction to designing interactive experiences, interfaces for digital applications, and communicating by applying motion to design.

**Course Outcomes**

No outcomes are available at this time.

VAGD 243 : Basic Typography. (3:1:3)

PREREQUISITE: Acceptance into Visual Arts.

DESCRIPTION: Studio course which familiarizes the student with the history, terminology, elements and principles of effective typographic design. The course explores the role typography plays in visual communication.

**Course Outcomes**

No outcomes are available at this time.

VAGD 245 : Introduction to Graphic Design. (3:1:3)

PREREQUISITE: Acceptance into Visual Arts.

DESCRIPTION: Introductory course that explores visual communication through the study of form, visual principles, theoretical and visual experimentation, concept development, and creative thinking. Students examine the connection between visual form, context, and the creation of meaning.

**Course Outcomes**

No outcomes are available at this time.

VAGD 310 : Advanced Computer Application Graphic Design. (3:1:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Acceptance into Visual Arts.

DESCRIPTION: Studio course instructing students in the art, science, and technology of designing interactive experiences and interfaces for digital applications.

**Course Outcomes**

No outcomes are available at this time.

VAGD 342 : Advertising Design. (3:2:4)

PREREQUISITE: BFA acceptance.

DESCRIPTION: Particular demands of the advertising world: marketing strategy, editorial and visual concepts, etc. Design ads, collateral materials, campaigns.

**Course Outcomes**

No outcomes are available at this time.

VASTU 101 : Introduction to Art and Drawing for Non-Majors. (3:2:4)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Readings, aesthetic topics, basic drawing techniques and concepts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

No outcomes are available at this time.

## Show all Visual Arts Graphic Design (VAGD) Courses

## Show all Visual Arts Studio (VAStu) Courses

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# Minor in Art Education (24.5 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirements for admission to this minor.*

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements | View MAP

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following core requirements:

VA 114 : Drawing. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Observational and conceptual drawing using a variety of media and methods.

**Course Outcomes**
No outcomes are available at this time.

VA 115 : Two-Dimensional Design. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Formal and conceptual elements of design, color, and composition, using a variety of media.

**Course Outcomes**
No outcomes are available at this time.

3. Complete the following:

VASTU 215 : Painting Fundamentals. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Fundamentals in oil painting and aqueous media.

**Course Outcomes**
No outcomes are available at this time.

4. Complete one course from the following:

VASTU 216 : Ceramics Fundamentals. (1.5:2:4)
PREREQUISITE: Visual arts core.
DESCRIPTION: Foundation ceramics.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 217 : Sculpture Fundamentals. (1.5:2:4)
PREREQUISITE: Visual arts core.
DESCRIPTION: Foundation sculpture.
NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

5. Complete one course from the following:

ARTHC 201 : World Civilization to 1500. (3:3:0)

DESCRIPTION: Survey of Western civilization emphasizing the visual arts from ancient Greece to the Gothic period.

**Course Outcomes**

There are no course outcomes available

ARTHC 202 : World Civilization Since 1500. (3:3:0)

DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

ARTHC 350 : Modern Art. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ARTHC 202

DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**

There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ARTHC 202

DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**

There are no course outcomes available

6. Complete the following:

VAEDU 276 : Introduction to Art Education and Exploration of Teaching. (1-5:4:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VA 111 & VA 114 & VA 115; or TMA 112 & TMA 114 & TMA 185; FBI fingerprinting and background clearance. Art education major or minor status or acceptance as licensure candidate.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

NOTE: This course requires 45 hours of class observation and teaching in K-12 classrooms. These visits generally take place on Fridays.

**Course Outcomes**

No outcomes are available at this time.

VAEDU 377 : Art History and Visual Culture Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: VAEDU 276

DESCRIPTION: Theoretical foundations and practical applications for teaching art history, visual culture, and community-based art.

**Course Outcomes**

No outcomes are available at this time.

VAEDU 397 : Issues in Contemporary Art, Aesthetics, and Criticism. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of issues in contemporary art, aesthetics, and art criticism.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

No outcomes are available at this time.

## Show all Art History and Curatorial Studies (ArtHC) Courses

## Show all Visual Arts Core (VA) Courses

**Show all Visual Arts Education (VAEdu) Courses**

**Show all Visual Arts Studio (VAStu) Courses**

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# Minor in Art History and Curatorial Studies (18 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Complete 18 elective hours from the following:

ARTHC 201 : World Civilization to 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from ancient Greece to the Gothic period.

**Course Outcomes**
There are no course outcomes available

ARTHC 202 : World Civilization Since 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

ARTHC 300 : Theory, Methodology, and Historiography of Art History. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Historical foundations of the discipline; key theories and approaches informing current art historical practice.

**Course Outcomes**
There are no course outcomes available

ARTHC 301 : Women in Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: History of women artists, critics, and patrons, along with women in representation in Western art. Consideration of theories and methodologies of feminist art history.

**Course Outcomes**
There are no course outcomes available

ARTHC 304 : Greek Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: History and appreciation of Greek art, with consideration of formative cultures.

**Course Outcomes**
There are no course outcomes available

ARTHC 306 : Roman Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art and architecture of the Etruscans and Romans.

**Course Outcomes**
There are no course outcomes available

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**

There are no course outcomes available

ARTHC 316 : Art of the Medieval West. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art in western Europe from 400 AD to 1400.

**Course Outcomes**

There are no course outcomes available

ARTHC 320 : Italian Renaissance. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Art and architecture in Italy from 1200 to 1580.

**Course Outcomes**

There are no course outcomes available

ARTHC 325 : Northern Renaissance Art. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Fifteenth- and sixteenth-century art in northern Europe.

**Course Outcomes**

There are no course outcomes available

ARTHC 329 : Renaissance and Baroque Architecture. (3:3:0)

PREREQUISITE: ARTHC 202
DESCRIPTION: History of architecture in Italy, Spain, France, Germany, Austria, and England, 1400?1700.

**Course Outcomes**

There are no course outcomes available

ARTHC 330 : Southern Baroque Art. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: History of baroque painting, sculpture, and architecture in Italy, Spain, and France.

**Course Outcomes**

There are no course outcomes available

ARTHC 335 : Northern Baroque Art. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Baroque painting in Flanders and Holland.

**Course Outcomes**

There are no course outcomes available

ARTHC 337 : Eighteenth-Century European Art and Architecture. (3:3:0)

PREREQUISITE: ARTHC 202
DESCRIPTION: An advanced survey of the culture and context of the production of art, architecture, and garden design in the European 18th century.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 340 : Nineteenth-Century European Art. (3:3:0)

PREREQUISITE: ARTHC 202
DESCRIPTION: Nineteenth-century art in Europe.

**Course Outcomes**

There are no course outcomes available

ARTHC 345 : American Art. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: American painting and sculpture from colonial through modern times.

**Course Outcomes**

There are no course outcomes available

ARTHC 350 : Modern Art. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**

There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**

There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**

There are no course outcomes available

ARTHC 365 : American Architecture. (3:3:0)

PREREQUISITE: ARTHC 202
DESCRIPTION: Major figures, monuments, and movements in American architecture from colonial period through "Gilded Age."

**Course Outcomes**

No outcomes are available at this time.

ARTHC 367 : Modern Architecture. (3:3:0)

PREREQUISITE: ARTHC 202
DESCRIPTION: Critical review of roots and evolution of modern architecture.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 379 : History of Photography. (3:3:0)

PREREQUISITE: ARTHC 202
DESCRIPTION: The general history of the photographic medium from its inception to the present day. The evolution of the medium, its various uses, primary figures, basic technologies, and artistic trends.

**Course Outcomes**

There are no course outcomes available

ARTHC 380 : Northern Mesoamerican Art. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of Mexico from antiquity to present.

**Course Outcomes**

There are no course outcomes available

ARTHC 382 : Southern Mesoamerican Art. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of southern Mexico and central America from antiquity to present.

**Course Outcomes**

There are no course outcomes available

ARTHC 490R : Special Topics and Readings in Art History. (1-6:ARR:ARR)

DESCRIPTION: Topics of specific student interest, centered on strengths of visiting faculty, BYU Study Abroad Program, or other significant art history projects.

**Course Outcomes**

There are no course outcomes available

ARTHC 492R : Special Art History Studies On Site. (1-6:0:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Considering works of art and monuments of significance in major collections throughout the world and in original locations, emphasizing cultural context and site specificity.

**Course Outcomes**

There are no course outcomes available

**Note:** No substitutions permitted.

*Hours include courses that may fulfill university core requirements.

## Show all Art History and Curatorial Studies (ArtHC) Courses

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# Minor in Visual Arts (19.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Complete the following:

VA 111 : Freshman Seminar. (1.5:2:2)
WHEN TAUGHT: Fall
DESCRIPTION: Conceptual and philosophical preparation for visual arts majors. Lecture and guided discussion seminar with weekly labs. Nature and value of visual arts and visual culture.

**Course Outcomes**
No outcomes are available at this time.

VA 114 : Drawing. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Observational and conceptual drawing using a variety of media and methods.

**Course Outcomes**
No outcomes are available at this time.

VA 115 : Two-Dimensional Design. (3:2:4)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Pre-visual arts status.
DESCRIPTION: Formal and conceptual elements of design, color, and composition, using a variety of media.

**Course Outcomes**
No outcomes are available at this time.

2. Complete six hours from the following:

VAANM 160 : Introduction to Two-Dimensional Animation Skills. (1.5:4:0)
WHEN TAUGHT: Fall; Winter; Summer
DESCRIPTION: Foundational principles and techniques for animation, storyboarding, design, and a variety of two-dimensional animation skill sets.

**Course Outcomes**
No outcomes are available at this time.

VAGD 210 : Introduction to Media Design. (3:1:3)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Introduction to the process and methodology of creating graphic design across multiple media types. An introduction to designing interactive experiences, interfaces for digital applications, and communicating by applying motion to design.

**Course Outcomes**
No outcomes are available at this time.

VAGD 245 : Introduction to Graphic Design. (3:1:3)
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Introductory course that explores visual communication through the study of form, visual principles, theoretical and visual experimentation, concept development, and creative thinking. Students examine the connection between visual form, context, and the creation of meaning.

**Course Outcomes**

No outcomes are available at this time.

VAILL 131 : Figure Drawing for Illustrators. (3:6:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Figure study for illustrators using a variety of media and methods. Readings, writings, and participation in course work exhibitions required.

**Course Outcomes**

No outcomes are available at this time.

VAILL 251 : Illustration 1. (3:6:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Visual arts core.

DESCRIPTION: Overview of styles, techniques, methods, and materials. Illustrative concepts and problem solving.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 116 : Introduction to Photography and Digital Workflow. (3:4:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic camera techniques and digital capture, developing entry-level skills in digital imaging workflow, developing skills with industry-related software and working methods. Lighting two-dimensional work for portfolio documentation.

**Course Outcomes**

No outcomes are available at this time.

VASTU 133 : Three-Dimensional Design. (1.5:6:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Three-dimensional concepts, theories, and issues using a variety of media and processes. Readings, writings, and participation in course work exhibitions required.

NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 210 : New Genre. (3:6.0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VA 111 & VA 114 & VA 115

DESCRIPTION: Developing an artistic voice while exploring new genres of art making including installation, digital, time-based, performance, sound, and technology-based work.

**Course Outcomes**

No outcomes are available at this time.

VASTU 215 : Painting Fundamentals. (3:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VA 111 & VA 114 & VA 115

DESCRIPTION: Fundamentals in oil painting and aqueous media.

**Course Outcomes**

No outcomes are available at this time.

VASTU 216 : Ceramics Fundamentals. (1.5:2:4)

PREREQUISITE: Visual arts core.

DESCRIPTION: Foundation ceramics.

NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 217 : Sculpture Fundamentals. (1.5:2:4)

PREREQUISITE: Visual arts core.

DESCRIPTION: Foundation sculpture.

NOTE: Fee.

**Course Outcomes**
No outcomes are available at this time.

VASTU 220 : Introduction to Drawing and Figure Drawing. (3:2:4)
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Perceptive and inventive drawing and fundamental study of the figure using a variety of media and methods.

**Course Outcomes**
No outcomes are available at this time.

VASTU 225 : Printmaking Fundamentals. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Introduction to the basic materials, techniques, history, and aesthetics of intaglio, lithography, and other printmaking processes.

**Course Outcomes**
No outcomes are available at this time.

3. Complete one course from the following:
ARTHC 201 : World Civilization to 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from ancient Greece to the Gothic period.

**Course Outcomes**
There are no course outcomes available

ARTHC 202 : World Civilization Since 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

4. Complete 3 hours of art history from the following:
ARTHC 201 : World Civilization to 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from ancient Greece to the Gothic period.

**Course Outcomes**
There are no course outcomes available

ARTHC 202 : World Civilization Since 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

ARTHC 300 : Theory, Methodology, and Historiography of Art History. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Historical foundations of the discipline; key theories and approaches informing current art historical practice.

**Course Outcomes**
There are no course outcomes available

ARTHC 301 : Women in Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: History of women artists, critics, and patrons, along with women in representation in Western art. Consideration of theories and methodologies of feminist art history.

**Course Outcomes**
There are no course outcomes available

ARTHC 304 : Greek Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: History and appreciation of Greek art, with consideration of formative cultures.

**Course Outcomes**
There are no course outcomes available

ARTHC 306 : Roman Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art and architecture of the Etruscans and Romans.

**Course Outcomes**
There are no course outcomes available

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**
There are no course outcomes available

ARTHC 316 : Art of the Medieval West. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art in western Europe from 400 AD to 1400.

**Course Outcomes**
There are no course outcomes available

ARTHC 320 : Italian Renaissance. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Art and architecture in Italy from 1200 to 1580.

**Course Outcomes**
There are no course outcomes available

ARTHC 325 : Northern Renaissance Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Fifteenth- and sixteenth-century art in northern Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 330 : Southern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: History of baroque painting, sculpture, and architecture in Italy, Spain, and France.

**Course Outcomes**
There are no course outcomes available

ARTHC 335 : Northern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Baroque painting in Flanders and Holland.

**Course Outcomes**
There are no course outcomes available

ARTHC 337 : Eighteenth-Century European Art and Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: An advanced survey of the culture and context of the production of art, architecture, and garden design in the European 18th century.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 340 : Nineteenth-Century European Art. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Nineteenth-century art in Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 345 : American Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: American painting and sculpture from colonial through modern times.

**Course Outcomes**
There are no course outcomes available

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 365 : American Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Major figures, monuments, and movements in American architecture from colonial period through "Gilded Age."

**Course Outcomes**
No outcomes are available at this time.

ARTHC 367 : Modern Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical review of roots and evolution of modern architecture.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 379 : History of Photography. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: The general history of the photographic medium from its inception to the present day. The evolution of the medium, its various uses, primary figures, basic technologies, and artistic trends.

**Course Outcomes**
There are no course outcomes available

ARTHC 380 : Northern Mesoamerican Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of Mexico from antiquity to present.

**Course Outcomes**

There are no course outcomes available

ARTHC 490R : Special Topics and Readings in Art History. (1-6:ARR:ARR)

DESCRIPTION: Topics of specific student interest, centered on strengths of visiting faculty, BYU Study Abroad Program, or other significant art history projects.

**Course Outcomes**

There are no course outcomes available

ARTHC 492R : Special Art History Studies On Site. (1-6:0:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Considering works of art and monuments of significance in major collections throughout the world and in original locations, emphasizing cultural context and site specificity.

**Course Outcomes**

There are no course outcomes available

VAEDU 397 : Issues in Contemporary Art, Aesthetics, and Criticism. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of issues in contemporary art, aesthetics, and art criticism.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

No outcomes are available at this time.

*Hours include courses that may fulfill university core requirements.

## Show all Visual Arts Core (VA) Courses

## Show all Visual Arts Studio (VAStu) Courses

College of Fine Arts and Communications Home

Visual Arts Department Home

Majors

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

Minors

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

Course Information

- Art History and Curatorial Studies (ArtHC) Courses
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- Visual Arts Graphic Design (VAGD) Courses
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- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

Faculty

# Art History and Curatorial Studies (ArtHC)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

ARTHC 111 : Introduction to Art History. (3:3:0)
OFFERED: Honors also.
DESCRIPTION: Topical approach to art history and appreciation.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

ARTHC 201 : World Civilization to 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from ancient Greece to the Gothic period.

**Course Outcomes**
There are no course outcomes available

ARTHC 202 : World Civilization Since 1500. (3:3:0)
DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

ARTHC 203 : Survey of Oriental Art and Architecture. (3:3:0)
DESCRIPTION: Art and architecture of China, Korea, Japan, Southeast Asia, and India, considering social, religious, and environmental context of various cultures.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 211 : Survey of Western Art 1. (3:3:0)
OFFERED: Independent Study only.
DESCRIPTION: Art and architecture of the Western world from primitive through medieval.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 212 : Survey of Western Art 2. (3:3:0)
OFFERED: Independent Study only.
DESCRIPTION: Art and architecture of the Western world from Renaissance to contemporary.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

ARTHC 300 : Theory, Methodology, and Historiography of Art History. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Historical foundations of the discipline; key theories and approaches informing current art historical practice.

**Course Outcomes**
There are no course outcomes available

ARTHC 301 : Women in Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: History of women artists, critics, and patrons, along with women in representation in Western art. Consideration of theories and methodologies of feminist art history.

**Course Outcomes**
There are no course outcomes available

ARTHC 304 : Greek Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: History and appreciation of Greek art, with consideration of formative cultures.

**Course Outcomes**
There are no course outcomes available

ARTHC 306 : Roman Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art and architecture of the Etruscans and Romans.

**Course Outcomes**
There are no course outcomes available

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**
There are no course outcomes available

ARTHC 316 : Art of the Medieval West. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art in western Europe from 400 AD to 1400.

**Course Outcomes**
There are no course outcomes available

ARTHC 320 : Italian Renaissance. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Art and architecture in Italy from 1200 to 1580.

**Course Outcomes**
There are no course outcomes available

ARTHC 325 : Northern Renaissance Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Fifteenth- and sixteenth-century art in northern Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 329 : Renaissance and Baroque Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: History of architecture in Italy, Spain, France, Germany, Austria, and England, 1400?1700.

**Course Outcomes**
There are no course outcomes available

ARTHC 330 : Southern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: History of baroque painting, sculpture, and architecture in Italy, Spain, and France.

**Course Outcomes**
There are no course outcomes available

ARTHC 335 : Northern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Baroque painting in Flanders and Holland.

**Course Outcomes**
There are no course outcomes available

ARTHC 337 : Eighteenth-Century European Art and Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: An advanced survey of the culture and context of the production of art, architecture, and garden design in the European 18th century.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 340 : Nineteenth-Century European Art. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Nineteenth-century art in Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 345 : American Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: American painting and sculpture from colonial through modern times.

**Course Outcomes**
There are no course outcomes available

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 360 : Introduction to Museum and Curatorial Studies. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Duties of museum professionals while applying museum theory to the practical development of a museum exhibit.

**Course Outcomes**
There are no course outcomes available

ARTHC 365 : American Architecture. (3:3:0)

PREREQUISITE: ARTHC 202

DESCRIPTION: Major figures, monuments, and movements in American architecture from colonial period through "Gilded Age."

**Course Outcomes**

No outcomes are available at this time.

ARTHC 367 : Modern Architecture. (3:3:0)

PREREQUISITE: ARTHC 202

DESCRIPTION: Critical review of roots and evolution of modern architecture.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 375 : Japanese Art and Architecture. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Japanese art and architecture from its neolithic origins through the dawn of the modern age. Literary, social, and religious contexts considered.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 379 : History of Photography. (3:3:0)

PREREQUISITE: ARTHC 202

DESCRIPTION: The general history of the photographic medium from its inception to the present day. The evolution of the medium, its various uses, primary figures, basic technologies, and artistic trends.

**Course Outcomes**

There are no course outcomes available

ARTHC 380 : Northern Mesoamerican Art. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Survey of art and architecture of Mexico from antiquity to present.

**Course Outcomes**

There are no course outcomes available

ARTHC 382 : Southern Mesoamerican Art. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Survey of art and architecture of southern Mexico and central America from antiquity to present.

**Course Outcomes**

There are no course outcomes available

**400-Level Courses**

ARTHC 490R : Special Topics and Readings in Art History. (1-6:ARR:ARR)

DESCRIPTION: Topics of specific student interest, centered on strengths of visiting faculty, BYU Study Abroad Program, or other significant art history projects.

**Course Outcomes**

There are no course outcomes available

ARTHC 492R : Special Art History Studies On Site. (1-6:0:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Considering works of art and monuments of significance in major collections throughout the world and in original locations, emphasizing cultural context and site specificity.

**Course Outcomes**

There are no course outcomes available

ARTHC 496R : Academic Internship: Museum Internship. (3:0:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ARTHC 300; 9 hours minimum upper-division art history courses, project approval.

DESCRIPTION: On-the-job experience.

**Course Outcomes**

There are no course outcomes available

: BYU Museum of Art Internship.

**Course Outcomes**

: Off-Campus Museum/Auction House Internship.

**Course Outcomes**

ARTHC 497 : Art History Business Capstone. (3:3.0:0)

WHEN TAUGHT: Fall

PREREQUISITE: ARTHC 300; Senior standing.

RECOMMENDED: ArtHC 350, ArtHC 355.

DESCRIPTION: Professional fields associated with Art History. Topics include the museum, the commercial gallery, conservation and technical art history, art law, ethics, connoisseurship, government organizations, art organizations and auction houses, and challenges and opportunities within the field. Requires at least one intensive learning experience beyond the classroom.

**Course Outcomes**

There are no course outcomes available

ARTHC 498 : Senior Thesis/Capstone Experiences. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ARTHC 300; senior standing.

DESCRIPTION: Capstone project including a professional quality research paper and a public presentation of this paper. Participation in at least one intensive learning environment beyond the classroom, i.e., a BYU Art History Study Abroad program; an art museum, auction house or gallery internship; or two art history field trips.

NOTE: Internships at major art institutions usually require an internship at a regional or university art museum as a prerequisite.

**Course Outcomes**

There are no course outcomes available

ARTHC 499R : Honors Thesis. (.5-6:0:0)

**Course Outcomes**

No outcomes are available at this time.

## 500-Level Graduate Courses (available to advanced undergraduates)

ARTHC 500 : Art in Theory: Spectatorship. (3:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Graduate status.

DESCRIPTION: Review and critique of major theoretical approaches in art history, emphasizing the philosophical relationship between viewer and object.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 505 : Art in Theory: Language. (3:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Graduate status.

DESCRIPTION: Review and critique of major theoretical approaches in art history, emphasizing the recent interest in language and semiotics.

**Course Outcomes**

There are no course outcomes available

ARTHC 520R : Studies in Ancient Art. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Selected topics in Egyptian, Greek, and Roman art.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 530R : Studies in Medieval Art. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Selected topics in early Christian, Byzantine, Romanesque, and Gothic art.

**Course Outcomes**

There are no course outcomes available

ARTHC 540R : Studies in Renaissance Art. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Selected topics in Northern and Southern Renaissance art.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 550R : Studies in Baroque Art. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Selected topics in northern and southern baroque art.

**Course Outcomes**

There are no course outcomes available

ARTHC 560R : Studies in Eighteenth- and Nineteenth-Century Art. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Selected topics in eighteenth- and nineteenth-century art of Europe and America.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 570R : Studies in Modern and Contemporary Art. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Selected topics in modern and contemporary art of Europe and America.

**Course Outcomes**

There are no course outcomes available

ARTHC 580R : Studies in Architecture. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Selected topics in architecture of Europe and America.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 590R : Studies in Curatorship. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Selected topics in curation and the museum.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 595R : Foreign Language Readings for Art Historians. (3:3:0)

WHEN TAUGHT: Spring; Summer
DESCRIPTION: Special instruction in reading French or German scholarly texts.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 599R : Academic Internship. (1-8:0:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ArtHC graduate student status.
DESCRIPTION: Professional museum experience with a curatorial mentor.

**Course Outcomes**

There are no course outcomes available

## Graduate Courses

For 600-level courses, see the BYU 2014–2015 Graduate Catalog.

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BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

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**Faculty**

# Visual Arts Core (VA)

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Required of all majors in the visual arts (except art history), the visual arts core is a predisciplinary preparation that embraces knowledge and skills from each discipline and underlying principles common to all disciplines. The core is designed to serve students more efficiently by facilitating their progress through the visual arts programs and allowing flexibility in choosing their individual program direction. The core enables students to acquire a basic and broad understanding of the visual arts before engaging in the specific discipline's content and modes of inquiry.

## Undergraduate Courses

### 100-Level Courses

VA 111 : Freshman Seminar. (1.5:2:2)

WHEN TAUGHT: Fall

DESCRIPTION: Conceptual and philosophical preparation for visual arts majors. Lecture and guided discussion seminar with weekly labs. Nature and value of visual arts and visual culture.

**Course Outcomes**

No outcomes are available at this time.

VA 114 : Drawing. (3:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Pre-visual arts status.

DESCRIPTION: Observational and conceptual drawing using a variety of media and methods.

**Course Outcomes**

No outcomes are available at this time.

VA 115 : Two-Dimensional Design. (3:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Pre-visual arts status.

DESCRIPTION: Formal and conceptual elements of design, color, and composition, using a variety of media.

**Course Outcomes**

No outcomes are available at this time.

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**Faculty**

# Visual Arts Animation (VAAnm)

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## Undergraduate Courses

### 100-Level Courses

VAANM 131 : Figure Drawing for Animators. (3:6:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Figure study in animation using a variety of media and methods. Readings, writing, and participation in course work exhibition required.

**Course Outcomes**

No outcomes are available at this time.

VAANM 160 : Introduction to Two-Dimensional Animation Skills. (1.5:4:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Foundational principles and techniques for animation, storyboarding, design, and a variety of two-dimensional animation skill sets.

**Course Outcomes**

No outcomes are available at this time.

### 200-Level Courses

VAANM 250R : Gesture Drawing for Animators. (3:6:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAANM 131

DESCRIPTION: Drawing humans and animals in motion.

**Course Outcomes**

No outcomes are available at this time.

VAANM 260 : Basic Storyboarding. (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: VAANM 131 & VAANM 160

DESCRIPTION: Introduction to visual storytelling.

**Course Outcomes**

No outcomes are available at this time.

VAANM 262 : Two-Dimensional Animation. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: VAANM 131 & VAANM 160

DESCRIPTION: Fundamental principles of two-dimensional animation: timing, acting, performance, overlapping action, volumes, etc. This is a traditional two-dimensional drawing course.

**Course Outcomes**

No outcomes are available at this time.

VAANM 263 : Writing for Animation. (3:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: VAANM 160 & STANM 150; or VAANM 160 & CSANM 150; Acceptance into animation program.

DESCRIPTION: Fundamental principles of writing, creation, and telling of short animations.

**Course Outcomes**

No outcomes are available at this time.

VAANM 265 : Drawing for Animation. (3:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAANM 131 & VAANM 160

DESCRIPTION: Fundamental skills of animation artists, namely design, composition, staging, value, color, etc.

**Course Outcomes**

No outcomes are available at this time.

### 300-Level Courses

VAANM 360R : Advanced Storyboarding. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: VAANM 250R & VAANM 260 & VAANM 265

DESCRIPTION: Exploring the professional practices of storyboard artists in advertising, film, TV, and animation through individual and group projects.

**Course Outcomes**

No outcomes are available at this time.

VAANM 361R : Visual Development and Character Design. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: VAANM 250R & VAANM 265

DESCRIPTION: Design characters, props, and environments for various uses in animation and print.

**Course Outcomes**

No outcomes are available at this time.

VAANM 362R : Two-Dimensional Character Animation. (3:6.0:0.0)

WHEN TAUGHT: Winter

PREREQUISITE: VAANM 131 & VAANM 160 & VAANM 262

DESCRIPTION: Character animation and performance animation.

**Course Outcomes**

No outcomes are available at this time.

VAANM 363R : Two-Dimensional Animation Production. (1.5:3:3)

PREREQUISITE: VAANM 250R & VAANM 260 & VAANM 262

DESCRIPTION: Develop basic knowledge of two-dimensional animation; emphasizing acting and performance of individual projects.

**Course Outcomes**

No outcomes are available at this time.

VAANM 365R : Digital Painting. (3:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: VAANM 250R & VAANM 265 & VAANM 361R

DESCRIPTION: Tools and techniques of digital painting for concept design in the entertainment industry.

**Course Outcomes**

No outcomes are available at this time.

### 400-Level Courses

VAANM 411R : Animation Field Study. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: On-location study of animation.

**Course Outcomes**

No outcomes are available at this time.

VAANM 460 : Business and Ethics in Animation. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Acceptance to animation program.

DESCRIPTION: Learning the practical and ethical side to the entertainment industry through readings and discussions as preparation

for expectations as artists, leaders, and members of the Church.

**Course Outcomes**

No outcomes are available at this time.

VAANM 461R : Animation Studio 2. (3:6:0)

WHEN TAUGHT: Winter
PREREQUISITE: BFA acceptance.
DESCRIPTION: Individual advanced animation projects.

**Course Outcomes**

No outcomes are available at this time.

VAANM 468R : Special Effects. (1.5:3:3)

PREREQUISITE: VAANM 262 & VAANM 265 & STANM 350; or VAANM 262 & VAANM 265 & CSANM 350
DESCRIPTION: The principles of design, research, timing, and movement of effect animation in a traditional drawing format.

**Course Outcomes**

No outcomes are available at this time.

VAANM 494R : Special Problems in Animation. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Instructor's consent.
DESCRIPTION: Individual study in animation of special interest.

**Course Outcomes**

No outcomes are available at this time.

VAANM 497R : BFA Independent Film Production. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Advanced individual animation project with minimum guidance, showing a high degree of competence.

**Course Outcomes**

No outcomes are available at this time.

VAANM 498R : Directed Studies in Animation. (1-6:ARR:ARR)

WHEN TAUGHT: Contact Department.
PREREQUISITE: BFA advisor's consent.
DESCRIPTION: Credit for work experience in animation.

**Course Outcomes**

No outcomes are available at this time.

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**Faculty**

# Visual Arts Design (VADes)

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## Undergraduate Courses

### 400-Level Courses

VADES 411R : Field Study. (.5-3:ARR:ARR)

PREREQUISITE: Instructor's consent.

DESCRIPTION: On-location study of design.

**Course Outcomes**

No outcomes are available at this time.

VADES 496R : Academic Internship: Professional Internship. (.5-6:ARR:ARR)

PREREQUISITE: Department and faculty advisor's consent.

DESCRIPTION: Work experience in professional design studio evaluated by supervisor.

**Course Outcomes**

No outcomes are available at this time.

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- BA in Art Education (K–12)
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**Faculty**

# Visual Arts Education (VAEdu)

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## Undergraduate Courses

### 200-Level Courses

VAEDU 276 : Introduction to Art Education and Exploration of Teaching. (1-5:4:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VA 111 & VA 114 & VA 115; or TMA 112 & TMA 114 & TMA 185; FBI fingerprinting and background clearance. Art education major or minor status or acceptance as licensure candidate.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

NOTE: This course requires 45 hours of class observation and teaching in K-12 classrooms. These visits generally take place on Fridays.

**Course Outcomes**

No outcomes are available at this time.

### 300-Level Courses

VAEDU 326 : Art for Elementary Teachers. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Preservice preparation designed to help elementary classroom teachers understand the visual arts and develop skills necessary for implementing a discipline-based approach for art education.

**Course Outcomes**

No outcomes are available at this time.

VAEDU 339 : Computer Application in Art Education. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: VAEDU 276

DESCRIPTION: Basic program applications for developing instructional materials in art education.

**Course Outcomes**

No outcomes are available at this time.

VAEDU 377 : Art History and Visual Culture Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: VAEDU 276

DESCRIPTION: Theoretical foundations and practical applications for teaching art history, visual culture, and community-based art.

**Course Outcomes**

No outcomes are available at this time.

VAEDU 378 : Practicum in Art Education and Classroom Management. (2:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAEDU 276; VAEdu 377 or 450 or 478 or concurrent enrollment.

DESCRIPTION: Implementing meaningful and engaging instruction for K-12 students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance; classroom management.

NOTE: This course requires 15 hours of observation and teaching in K-12 classrooms. Visits are generally scheduled on Fridays.

**Course Outcomes**

No outcomes are available at this time.

VAEDU 380 : Museum Art Education. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ArtHC 111 or 201; ArtHC 202 or Hum 201 or 202.

DESCRIPTION: The museum as a learning environment; current exhibitions; learning and teaching strategies for collaboration with museum and classroom educator.

**Course Outcomes**

No outcomes are available at this time.

VAEDU 397 : Issues in Contemporary Art, Aesthetics, and Criticism. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of issues in contemporary art, aesthetics, and art criticism.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

No outcomes are available at this time.

#### 400-Level Courses

VAEDU 450 : Advanced Studio Teaching Methods for Art Educators. (3:6:0)

WHEN TAUGHT: Fall

PREREQUISITE: VAEDU 276

DESCRIPTION: Exploring contemporary art and how to connect artistic practice to pedagogical methods for K-12 classrooms. Includes both art making and curriculum design.

**Course Outcomes**

No outcomes are available at this time.

VAEDU 478 : Art Curriculum Theory and Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAEDU 276; A minimum C- grade in VAEdu 377 and 397.

DESCRIPTION: Curriculum theory, development, and assessment in art education.

**Course Outcomes**

No outcomes are available at this time.

## 500-Level Graduate Courses (available to advanced undergraduates)

VAEDU 578R : Art Education Studio. (3:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Graduate student status.

DESCRIPTION: MA courses in ceramics, drawing, figure drawing, oil painting, aqueous painting, printmaking, crafts, sculpture, digital art, and conceptual art media.

**Course Outcomes**

No outcomes are available at this time.

: MA Ceramics.

**Course Outcomes**

: MA Drawing.

**Course Outcomes**

: MA Figure Drawing.

**Course Outcomes**

: MA Oil Painting.

**Course Outcomes**

: MA Aqueous Painting.

**Course Outcomes**

: MA Printmaking.

**Course Outcomes**

: MA Sculpture.

**Course Outcomes**

: MA Crafts.

**Course Outcomes**

## Graduate Courses

For 600-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Faculty**

# Visual Arts Graphic Design (VAGD)

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## Undergraduate Courses

### 200-Level Courses

VAGD 210 : Introduction to Media Design. (3:1:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Acceptance into Visual Arts.

DESCRIPTION: Introduction to the process and methodology of creating graphic design across multiple media types. An introduction to designing interactive experiences, interfaces for digital applications, and communicating by applying motion to design.

**Course Outcomes**

No outcomes are available at this time.

VAGD 243 : Basic Typography. (3:1:3)

PREREQUISITE: Acceptance into Visual Arts.

DESCRIPTION: Studio course which familiarizes the student with the history, terminology, elements and principles of effective typographic design. The course explores the role typography plays in visual communication.

**Course Outcomes**

No outcomes are available at this time.

VAGD 245 : Introduction to Graphic Design. (3:1:3)

PREREQUISITE: Acceptance into Visual Arts.

DESCRIPTION: Introductory course that explores visual communication through the study of form, visual principles, theoretical and visual experimentation, concept development, and creative thinking. Students examine the connection between visual form, context, and the creation of meaning.

**Course Outcomes**

No outcomes are available at this time.

VAGD 248R : Letterpress Studio. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance into Visual Arts.

DESCRIPTION: Letterpress Studio addresses letterpress history, type, terminology, format, tools, and the materials of letterpress printing.

**Course Outcomes**

No outcomes are available at this time.

### 300-Level Courses

VAGD 310 : Advanced Computer Application Graphic Design. (3:1:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Acceptance into Visual Arts.

DESCRIPTION: Studio course instructing students in the art, science, and technology of designing interactive experiences and interfaces for digital applications.

**Course Outcomes**

No outcomes are available at this time.

VAGD 340 : Corporate Identity Design. (3:2:4)

PREREQUISITE: VAGD 243; BFA acceptance
DESCRIPTION: Current philosophy in corporate identification and trademark design. Design trademarks, logotypes, and identity programs.

**Course Outcomes**
No outcomes are available at this time.

VAGD 341 : Packaging Design. (3:2:4)
PREREQUISITE: BFA acceptance.
DESCRIPTION: Packaging and its function in the marketplace; current packaging technology and aesthetics.

**Course Outcomes**
No outcomes are available at this time.

VAGD 342 : Advertising Design. (3:2:4)
PREREQUISITE: BFA acceptance.
DESCRIPTION: Particular demands of the advertising world: marketing strategy, editorial and visual concepts, etc. Design ads, collateral materials, campaigns.

**Course Outcomes**
No outcomes are available at this time.

VAGD 343 : Publication Design. (3:2:4)
PREREQUISITE: BFA acceptance.
DESCRIPTION: Book and magazine publishing and their special editorial, design, and manufacturing requirements.

**Course Outcomes**
No outcomes are available at this time.

VAGD 346 : Practicum in Graphic Design. (3:2:4)
WHEN TAUGHT: Spring; Summer
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Market applications, portfolio preparation, and other aspects of graphic design. Individual portfolio projects designed to develop graphic design skills.

**Course Outcomes**
No outcomes are available at this time.

VAGD 348 : Type as Image. (3:2:4)
PREREQUISITE: BFA acceptance.
DESCRIPTION: Developing unique and expressive letterforms, especially the modification of letters to create new abstract or pictorial images.

**Course Outcomes**
No outcomes are available at this time.

VAGD 349 : History of Graphic Design. (3:3:0)
PREREQUISITE: Visual arts core.
DESCRIPTION: Survey of visual communication.

**Course Outcomes**
No outcomes are available at this time.

**400-Level Courses**

VAGD 410R : Computer Applications Studio for Graphic Designers. (3:1:3)
WHEN TAUGHT: Winter
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Studio course instructing students in the art of design and communication with motion. Graphic design principles and narrative concepts employed to create short motion design projects.

**Course Outcomes**
No outcomes are available at this time.

VAGD 411R : Graphic Design Field Study. (1-3:ARR:ARR)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Instructor's consent.
DESCRIPTION: On-location study of graphic design.

**Course Outcomes**

No outcomes are available at this time.

VAGD 441 : Senior Graphic Design Studio 1. (3:2:4)

PREREQUISITE: BFA acceptance.

DESCRIPTION: Opportunity for senior class members to work as a group in solving design problems for real clients on major projects.

**Course Outcomes**

No outcomes are available at this time.

VAGD 442 : Senior Graphic Design Studio 2. (3:2:4)

PREREQUISITE: VAGD 441

DESCRIPTION: Continuation of VAGD 441.

**Course Outcomes**

No outcomes are available at this time.

VAGD 443 : Special Problems in Graphic Design 1. (3:2:4)

PREREQUISITE: BFA acceptance.

DESCRIPTION: Advanced assignments in graphic design; individual portfolio development.

**Course Outcomes**

No outcomes are available at this time.

VAGD 444 : Special Problems in Graphic Design 2. (3:2:4)

PREREQUISITE: BFA acceptance.

DESCRIPTION: Continuation of VAGD 443.

**Course Outcomes**

No outcomes are available at this time.

VAGD 488 : Business Practices for Graphic Designers. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: BFA acceptance.

DESCRIPTION: Business aspects of the graphic design profession.

**Course Outcomes**

No outcomes are available at this time.

VAGD 494R : Special Problems in Graphic Design. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Individual study in graphic design of special interest.

**Course Outcomes**

No outcomes are available at this time.

VAGD 497R : BFA Graphic Design Final Project. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: BFA advisor's consent.

DESCRIPTION: Advanced individual project in graphic design with minimum guidance, showing a high degree of competence.

**Course Outcomes**

No outcomes are available at this time.

VAGD 498R : Directed Studies in Graphic Design. (1-6:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: BFA advisor's consent.

DESCRIPTION: Credit for work experience in graphic design.

**Course Outcomes**

No outcomes are available at this time.

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**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

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- Visual Arts Education (VAEdu) Courses
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- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# Visual Arts Illustration (VAIll)

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## Undergraduate Courses

### 100-Level Courses

VAILL 131 : Figure Drawing for Illustrators. (3:6:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Figure study for illustrators using a variety of media and methods. Readings, writings, and participation in course work exhibitions required.

**Course Outcomes**

No outcomes are available at this time.

### 200-Level Courses

VAILL 210 : Introduction to Digital Illustration. (2:4:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: Visual arts core.

DESCRIPTION: Introduction to computer software programs specific to illustration.

**Course Outcomes**

No outcomes are available at this time.

VAILL 250 : Intermediate Life Drawing. (3:6:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: VAILL 131; or VAANM 131

DESCRIPTION: Drawing the classic figure from gesture to finished rendering, emphasizing structure, anatomy, form, and medium.

**Course Outcomes**

No outcomes are available at this time.

VAILL 251 : Illustration 1. (3:6:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Visual arts core.

DESCRIPTION: Overview of styles, techniques, methods, and materials. Illustrative concepts and problem solving.

**Course Outcomes**

No outcomes are available at this time.

### 300-Level Courses

VAILL 310 : Intermediate Digital Illustration. (3:6:0)

WHEN TAUGHT: Fall

PREREQUISITE: VAILL 210

DESCRIPTION: Intermediate problems in digital media.

**Course Outcomes**

No outcomes are available at this time.

VAILL 350R : Advanced Life Drawing. (3:2:4)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: VAILL 250; or VAANM 250R; BA acceptance.

DESCRIPTION: Drawing the figure in modern or historical costume; developing drawing skills, especially relating to the draped

figure.

**Course Outcomes**

No outcomes are available at this time.

VAILL 351 : Illustration 2. (3:2:4)

PREREQUISITE: Visual Arts acceptance.

DESCRIPTION: Narrative illustration problems emphasizing academic study of the human figure using various media.

**Course Outcomes**

No outcomes are available at this time.

VAILL 352 : Illustration 3. (3:2:4)

PREREQUISITE: Visual Arts acceptance.

DESCRIPTION: Conceptual illustration problems and market applications, using various media.

**Course Outcomes**

No outcomes are available at this time.

VAILL 353 : Narrative Illustration. (3:2:4)

RECOMMENDED: VAIll 350R.

DESCRIPTION: Narrative problem solving patterns. Use of character, mood, and environment to tell a story or develop conceptual ideas. Study of media, aesthetic principles, and classic story models.

**Course Outcomes**

No outcomes are available at this time.

VAILL 355 : History of American Illustration 1 (1860-1930). (3:4:0)

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of illustration in visual communication, emphasizing the birth of publishing and "Golden Age" of American illustration, 1860-1930.

**Course Outcomes**

No outcomes are available at this time.

VAILL 356 : History of American Illustration 2 (1930-Present). (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: Visual arts core.

DESCRIPTION: Survey of American illustration in visual communication, emphasizing from 1930 to the present.

**Course Outcomes**

No outcomes are available at this time.

VAILL 357 : Sketchbook. (3:2:4)

WHEN TAUGHT: Winter

PREREQUISITE: VAILL 250; or VAANM 250R

DESCRIPTION: Using a sketchbook in visual thinking process: exploring ideas, recording visual experience, and developing fundamental drawing skills.

**Course Outcomes**

No outcomes are available at this time.

VAILL 358 : Character Design for Illustrators. (3:6:0)

WHEN TAUGHT: Fall

PREREQUISITE: VAILL 251; or VAANM 265

DESCRIPTION: Concepts and projects dealing with the interpretation and stylization of human and animal characters applied to children's markets, caricature, animation, and humorous illustration.

**Course Outcomes**

No outcomes are available at this time.

VAILL 359 : Practicum in Illustration. (3:6:0)

PREREQUISITE: VA 111 & VA 114 & VA 115; Sophomore courses.

DESCRIPTION: Market applications, portfolio preparation, advertising patterns, and other aspects of the illustration business. Individual portfolio projects designed to develop personal illustration skills.

**Course Outcomes**

No outcomes are available at this time.

**400-Level Courses**

VAILL 410 : Advanced Digital Illustration. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: VAILL 310; or VAANM 365R

DESCRIPTION: Advanced problems in digital media and markets.

**Course Outcomes**

No outcomes are available at this time.

VAILL 450R : Painting the Human Head. (3:2:4)

PREREQUISITE: VAILL 350R

DESCRIPTION: Painting from a live model; unique aspects of portraiture and colors of the human face.

**Course Outcomes**

No outcomes are available at this time.

VAILL 451 : Senior Illustration Studio 1. (3:2:4)

PREREQUISITE: VAILL 351 & VAILL 352; BFA acceptance.

DESCRIPTION: Individual portfolio development.

**Course Outcomes**

No outcomes are available at this time.

VAILL 452 : Senior Illustration Studio 2. (3:2:4)

PREREQUISITE: VAILL 451

DESCRIPTION: Flexible in nature, featuring various instructors with unique individual skills. Team taught. Advanced assignments in illustration; individual portfolio preparation.

**Course Outcomes**

No outcomes are available at this time.

VAILL 453 : Illustration 4. (3:2:4)

PREREQUISITE: VAILL 351 & VAILL 352; BFA acceptance.

DESCRIPTION: Advanced assignments in illustration. Various instructors with unique skills and market experience.

**Course Outcomes**

No outcomes are available at this time.

VAILL 454 : Illustration 5. (3:2:4)

PREREQUISITE: VAILL 351 & VAILL 352; BFA acceptance.

DESCRIPTION: Continuation of VAIll 453. Advanced assignments in illustration and media.

**Course Outcomes**

No outcomes are available at this time.

VAILL 457 : Concept Design. (3:3:3)

WHEN TAUGHT: Fall

RECOMMENDED: VAIll 310, VAIll 350R, VAIll 351.

DESCRIPTION: Application of illustration methods and creative process to solve visual problems for entertainment production design. Faculty-led teams work within given parameters to research, visualize, and render original compositions, characters, environments, creatures, vehicles and props.

**Course Outcomes**

No outcomes are available at this time.

VAILL 458 : Advanced Concept Design. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: VAILL 457; or VAANM 361R

RECOMMENDED: VAIll 358, VAIll 410, VAIll 453.

DESCRIPTION: Synthesis of advanced principles and methodologies in illustration to solve complex visual problems of production design. Students work within stated narrative and aesthetic perimeters to develop original ideas from research to production-ready concept artwork.

**Course Outcomes**

No outcomes are available at this time.

VAILL 488 : Professional Practices for Illustrators. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: BFA acceptance.

DESCRIPTION: Business aspects of the illustration profession.

**Course Outcomes**

No outcomes are available at this time.

VAILL 494R : Special Problems in Illustration. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Instructor's consent.
DESCRIPTION: Individual study in illustration of special interest.

**Course Outcomes**

No outcomes are available at this time.

VAILL 497R : BFA Illustration Final Project. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.
PREREQUISITE: BFA advisor's consent.
DESCRIPTION: Advanced individual project in illustration with miminum guidance, showing a high degree of competence.

**Course Outcomes**

No outcomes are available at this time.

VAILL 498R : Directed Studies in Illustration. (1-6:ARR:ARR)

WHEN TAUGHT: Contact Department.
PREREQUISITE: BFA advisor's consent.
DESCRIPTION: Credit for work experience in illustration.

**Course Outcomes**

No outcomes are available at this time.

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**Majors**

- BA in Art Education (K–12)
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BA in Visual Arts

Emphases:

- Graphic Design
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- BFA in Animation
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**Faculty**

# Visual Arts Photography (VAPho)

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## Undergraduate Courses

### 100-Level Courses

VAPHO 116 : Introduction to Photography and Digital Workflow. (3:4:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic camera techniques and digital capture, developing entry-level skills in digital imaging workflow, developing skills with industry-related software and working methods. Lighting two-dimensional work for portfolio documentation.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 120 : Introduction to Digital Imaging. (3:6:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAPHO 116; BA major status.

DESCRIPTION: Photography-based digital imaging, including film scanning, digital capture, color management, Photoshop instruction, fine art and commercial print output, and archiving.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 170 : Introduction to Black and White Photography. (3:2:4)

PREREQUISITE: Acceptance into visual arts program.

DESCRIPTION: Basic camera and darkroom techniques emphasizing black and white film processing and printmaking.

**Course Outcomes**

No outcomes are available at this time.

### 200-Level Courses

VAPHO 272 : Introduction to Color Photography. (3:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAPHO 116 & VAPHO 120

DESCRIPTION: Color aesthetics, theory, and systems in traditional and digital capture and printmaking.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 273 : Advanced Photography. (3:2:4)

PREREQUISITE: VAPHO 170

DESCRIPTION: Camera and darkroom techniques using the zone system for exposure and development control of large format negatives and prints.

NOTE: Lab required.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 275 : Classical Portrait Photography. (3:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VAPHO 116 & VAPHO 120

DESCRIPTION: Studio and environmental portraiture as well as traditional approaches to portrait photography, including wedding/bridal. Lab required.

**Course Outcomes**

No outcomes are available at this time.

### 300-Level Courses

VAPHO 310 : Advanced Computer Application Photography. (2:4:0)

WHEN TAUGHT: Fall
PREREQUISITE: VAPHO 272 & VAPHO 275
DESCRIPTION: Specific photography computer applications, including workflow, color management, and personal project work.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 372 : Still Life Photography. (3:2:4)

PREREQUISITE: BFA acceptance.
DESCRIPTION: Camera and studio techniques to produce illustrations for advertising layout and other media.
NOTE: Lab required.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 373 : Practicum in Photography. (3:2:4)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111 & VA 115 & VAPHO 170
DESCRIPTION: Professional portrait studio practices, including lighting, working with people, basic business practices; portfolio preparation, advertising, marketing, etc.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 376 : Editorial Photography. (3:2:4)

WHEN TAUGHT: Winter
PREREQUISITE: Acceptance to BFA photograhy program.
DESCRIPTION: Use of photography in magazines, newspapers, annual reports, etc. Creating and publishing picture stories.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 377R : Exploring Alternative Photography Processes. (3:2:4)

PREREQUISITE: VAPHO 273
DESCRIPTION: Photography as an exploratory, sensitizing process.
NOTE: Lab required.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 379 : History of Photography. (3:2:4)

DESCRIPTION: Origin and development of photographic aesthetics.

**Course Outcomes**

No outcomes are available at this time.

### 400-Level Courses

VAPHO 410R : Computer Applications Studio for Photographers. (2:4:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: VAPHO 310
DESCRIPTION: Individual photography project using high-end hardware and software.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 411R : Photographic Field Study. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Instructor's consent.
DESCRIPTION: On-location study of photography.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 475 : Advanced Location Photography. (3:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: BFA acceptance.

DESCRIPTION: Lighting and photographing architecture, products, people, and concepts in environmental settings for the editorial, corporate, industrial, and advertising industry.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 477R : Nature Photography. (3:2:4)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Techniques of professional nature and landscape photography.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 478 : Fine Art Photography. (3:2:4)

PREREQUISITE: VAPHO 272; VAPho 377R.

DESCRIPTION: Fine art approaches to photography; conceptual, social, and aesthetic values; modern and postmodern values.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 488 : Professional Practices for Photographers. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: BFA acceptance.

DESCRIPTION: Business aspects of the photographer's profession.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 494R : Special Problems in Photography. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Individual study in photography of special interest.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 497R : BFA Photography Final Project. (1-3:ARR:ARR)

PREREQUISITE: BFA advisor's consent.

DESCRIPTION: Advanced individual project in photography showing a high degree of competence.

**Course Outcomes**

No outcomes are available at this time.

VAPHO 498R : Directed Studies in Photography. (1-6:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: BFA advisor's consent.

DESCRIPTION: Credit fort work experience in photography.

**Course Outcomes**

No outcomes are available at this time.

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**Majors**

- BA in Art Education (K–12)
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BA in Visual Arts

Emphases:

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**Faculty**

# Visual Arts Studio (VAStu)

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## Undergraduate Courses

### 100-Level Courses

VASTU 101 : Introduction to Art and Drawing for Non-Majors. (3:2:4)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Readings, aesthetic topics, basic drawing techniques and concepts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
No outcomes are available at this time.

VASTU 104 : Introduction to Sculpture for Non-Majors. (3:4:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic sculpture processes and concepts, including lecture, demonstrations, lab time, slide lectures, some art historical material.
NOTE: Fee. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
No outcomes are available at this time.

VASTU 105 : Introduction to Ceramics for Non-Majors. (3:4:3)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Basic throwing, hand-building skills, vocabulary, and technique for non-art majors, including lecture, demonstrations, lab time, slide lectures, some art historical material.
NOTE: Fee. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
No outcomes are available at this time.

VASTU 110 : Painting for Non-Majors. (3:3.0:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction to painting.

**Course Outcomes**
No outcomes are available at this time.

VASTU 120 : Watercolor for Non-Majors. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction to aqueous media.

**Course Outcomes**
No outcomes are available at this time.

VASTU 122 : Printmaking for Non-Majors. (3:6:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: VASTU 101; or VA 114
DESCRIPTION: Introduction to the basic materials, techniques, process, history, and aesthetics of intaglio, lithography, and relief printmaking processes.

**Course Outcomes**
No outcomes are available at this time.

VASTU 133 : Three-Dimensional Design. (1.5:6:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Three-dimensional concepts, theories, and issues using a variety of media and processes. Readings, writings, and participation in course work exhibitions required.

NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 155 : Stained Glass. (3:6:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Methods and processes using leaded glass, copper, foil, and faceted glass.

NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

**200-Level Courses**

VASTU 200 : Studio Techniques for Art History. (3:2:4)

DESCRIPTION: Introduction to art techniques, materials, and practices directed toward art history majors.

NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 210 : New Genre. (3:6.0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VA 111 & VA 114 & VA 115

DESCRIPTION: Developing an artistic voice while exploring new genres of art making including installation, digital, time-based, performance, sound, and technology-based work.

**Course Outcomes**

No outcomes are available at this time.

VASTU 215 : Painting Fundamentals. (3:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: VA 111 & VA 114 & VA 115

DESCRIPTION: Fundamentals in oil painting and aqueous media.

**Course Outcomes**

No outcomes are available at this time.

VASTU 216 : Ceramics Fundamentals. (1.5:2:4)

PREREQUISITE: Visual arts core.

DESCRIPTION: Foundation ceramics.

NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 217 : Sculpture Fundamentals. (1.5:2:4)

PREREQUISITE: Visual arts core.

DESCRIPTION: Foundation sculpture.

NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 220 : Introduction to Drawing and Figure Drawing. (3:2:4)

PREREQUISITE: VA 111 & VA 114 & VA 115

DESCRIPTION: Perceptive and inventive drawing and fundamental study of the figure using a variety of media and methods.

**Course Outcomes**

No outcomes are available at this time.

VASTU 225 : Printmaking Fundamentals. (3:6:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111 & VA 114 & VA 115
DESCRIPTION: Introduction to the basic materials, techniques, history, and aesthetics of intaglio, lithography, and other printmaking processes.

**Course Outcomes**

No outcomes are available at this time.

### 300-Level Courses

VASTU 310 : Installation. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 114 & VA 115 & VASTU 210
DESCRIPTION: Developing an artistic voice while exploring various installation art practices.

**Course Outcomes**

No outcomes are available at this time.

VASTU 321 : Drawing. (3:2:4)
PREREQUISITE: Visual arts core.
DESCRIPTION: Drawing as a graphic form of self-expression, emphasizing personal statement in response to various experiences and concepts.

**Course Outcomes**

No outcomes are available at this time.

VASTU 322R : Figure Drawing. (3:2:4)
PREREQUISITE: Visual Arts core.
DESCRIPTION: Drawing from the human figure, emphasizing structure and anatomy.

**Course Outcomes**

No outcomes are available at this time.

VASTU 324 : Materials of Painting. (1.5:6:0)
PREREQUISITE: VASTU 215; Acceptance into Visual Arts.
DESCRIPTION: Introduction to the techniques and history of producing painting materials, exploring traditional supports, grounds, mediums, and paint production. Most of the course will be spent making painting materials.

**Course Outcomes**

No outcomes are available at this time.

VASTU 325 : Art Preparation and Presentation. (1.5:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Introduction to the basic techniques, history, and aesthetics of art preparation and presentation, including the preparation of supports, frames, and other exhibition materials.

**Course Outcomes**

No outcomes are available at this time.

VASTU 326 : Current Art Practice. (3:6:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Visual arts acceptance.
DESCRIPTION: Current issues in art.

**Course Outcomes**

No outcomes are available at this time.

VASTU 327 : Painting. (3:2:4)
PREREQUISITE: VASTU 215
DESCRIPTION: Fundamental concepts and techniques of oil painting.

**Course Outcomes**

No outcomes are available at this time.

VASTU 328R : Figure Painting. (3:2:4)
PREREQUISITE: VASTU 215 & VASTU 322R & VASTU 327
DESCRIPTION: Fundamentals of figure painting.

**Course Outcomes**

No outcomes are available at this time.

VASTU 330 : Bookbinding. (3:4:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Traditional approaches to hand bookbinding.
NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 332 : Book Arts. (1.5:6:0)

PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: Exploring the construction of non-traditional book forms, using both traditional and non-traditional bookmaking materials.

**Course Outcomes**

No outcomes are available at this time.

VASTU 333 : Painting-Mixed Media. (3:2:4)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: VASTU 215
DESCRIPTION: Exploring multiple aqueous media and painting mediums and processes as they related to problem solving, idea development, and art-making.

**Course Outcomes**

No outcomes are available at this time.

VASTU 340 : Application of Creative and Critical Thinking. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Acceptance into Visual Arts.
DESCRIPTION: The business of being an artist, exploring career options, alternative applications, interdisciplinary/trans-disciplinary opportunities, and requisite preparation for each option.

**Course Outcomes**

No outcomes are available at this time.

VASTU 350 : Printmaking: Intaglio. (1.5:2:4)

WHEN TAUGHT: Contact Department.
PREREQUISITE: VASTU 225
DESCRIPTION: Intaglio printmaking, based on traditional and contemporary techniques.
NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 351 : Printmaking: Lithography. (1.5:2:4)

WHEN TAUGHT: Contact Department.
PREREQUISITE: VASTU 225
DESCRIPTION: Lithography printmaking, based on traditional and contemporary techniques.
NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 353 : Time-Based Art. (3:6:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 114 & VA 115 & VASTU 210
DESCRIPTION: Exploring sound-based, video and performance art practices.

**Course Outcomes**

No outcomes are available at this time.

VASTU 354 : Spatial Relationships in Sculpture. (3:2:4)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: VASTU 133 & VASTU 217
RECOMMENDED: VAStu 356.
DESCRIPTION: Investigation of spatial relatiionships in installation art, earth works, sculptural performance, and new genres.

**Course Outcomes**

No outcomes are available at this time.

VASTU 356R : Figure Sculpture. (3:2:4)

DESCRIPTION: Modeling the human figure in clay.
NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 358 : Sculpture. (3:2:4)

PREREQUISITE: VASTU 217
DESCRIPTION: Traditional and nontraditional approaches to sculpture.
NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 359R : Ceramics. (3:2:4)

PREREQUISITE: VASTU 216
DESCRIPTION: Designing, throwing, hand forming, decorating, glazing, and firing techniques.
NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 394R : Special Problems in Art. (.5-3:0:0)

PREREQUISITE: Instructor's consent.

**Course Outcomes**

No outcomes are available at this time.

VASTU 395R : Studio Seminar. (1:2:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: VA 111
DESCRIPTION: Selected contemporary issues involving visiting artists, guest lecturers, video documentaries, discussions, and program information.

**Course Outcomes**

No outcomes are available at this time.

**400-Level Courses**

VASTU 456R : Sculpture Studio. (.5-9:ARR:ARR)

DESCRIPTION: Advanced study in sculpture: traditional and nontraditional approaches.
NOTE: Fee.

**Course Outcomes**

No outcomes are available at this time.

VASTU 480R : Advanced Studio. (1-3:Arr:Arr)

PREREQUISITE: At least two 300-level VAStu studio courses, one of which is in the area of the proposed project.
DESCRIPTION: Individual development of art issues in advanced studio environment. Writing a proposal accompanied by a readings list.

**Course Outcomes**

No outcomes are available at this time.

VASTU 490 : BA Exit Portfolio. (1:1:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Visual arts major status.
DESCRIPTION: Preparation and submission of all required materials for BA exit portfolio. Perparation for continued art practice after graduation.

**Course Outcomes**

No outcomes are available at this time.

VASTU 496R : Academic Internship: Professional Internship. (.5-6:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Visual arts major status.

**Course Outcomes**

No outcomes are available at this time.

VASTU 497 : BFA Final Project and Exit Portfolio. (1:0:0)

PREREQUISITE: Studio BFA major status.

DESCRIPTION: Final exhibition and project report; completed travel requirement account; submit all required materials for BFA exit portfolio.

**Course Outcomes**

No outcomes are available at this time.

## Graduate Courses

For 600-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Visual Arts Department Home**

**College of Fine Arts and Communications Home**

**Visual Arts Department Home**

**Majors**

- BA in Art Education (K–12)
- BA in Art History and Curatorial Studies

BA in Visual Arts

Emphases:

- Graphic Design
- Illustration
- Photography
- Studio Arts

- BFA in Animation
- BFA in Graphic Design
- BFA in Illustration
- BFA in Photography
- BFA in Studio Arts

**Minors**

- Advertising Design
- Art Education
- Art History and Curatorial Studies
- Visual Arts

**Course Information**

- Art History and Curatorial Studies (ArtHC) Courses
- Visual Arts Core (VA) Courses
- Visual Arts Animation (VAAnm) Courses
- Visual Arts Design (VADes) Courses
- Visual Arts Education (VAEdu) Courses
- Visual Arts Graphic Design (VAGD) Courses
- Visual Arts Illustration (VAIll) Courses
- Visual Arts Photography (VAPho) Courses
- Visual Arts Studio (VAStu) Courses

**Faculty**

# Visual Arts Faculty

Show All
Hide All

## Professors

Andersen, Bethanne P.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** BFA, Brigham Young University, 1976
MFA, Brigham Young University, 1979

Barrett, Robert T
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** BFA, University of Utah, 1973
MA, University of Iowa, 1975
MFA, University of Iowa, 1976

Barton, Garold C.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** BFA, Brigham Young University, 1989
MFA, Ohio State University, 1994

Graham, Mark Allen
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** BFA, University of Utah, 1978
MBA, New York University, 1986
PhD, Columbia University, 2001

Johnson, Mark J.
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1979
MA, University of Illinois, Urbana, 1983
MFA, Princeton University, 1984
PhD, Princeton University, 1986

Ostraff, Joseph Evan
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** BFA, Brigham Young University, 1982
MFA, University of Washington, 1984

Peacock, Martha Moffitt
**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1978
MA, Ohio State University, Columbus, 1985
PhD, Ohio State University, Columbus, 1989

Reynolds, Linda Ann

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Professor
**DEGREES:** AA, Ricks College, 1977
BA, Brigham Young University, 1981
MFA, University of Utah, 1993

## Associate Professors

Adams, Paul S.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1992
MFA, University of Utah, 1996

Barson, Brent

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1997
MFA, Art Center College of Design, 2003

Brinkerhoff, Val W.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1980
MFA, Utah State University, 1987

Christensen, Brian D.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1990
MFA, Washington University, 1993

Draper, Bryon Kay

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University—Hawaii, 1990
MFA, Brigham Young University, 1995

Everett, Peter H.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1996
MFA, Pratt Institute, 2000

Gillett, Eric A.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BFA, Brigham Young University, 1991
MFA, University of Utah, 2003

Jensen, Heather Belnap

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994
MA, Brigham Young University, 1997
PhD, University of Kansas, 2007

Pulfer, Adrian H.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor

**DEGREES:** BFA, Brigham Young University, 1988

Woodward, Ryan J.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Associate Professor
**DEGREES:** AA, Ricks College, 1995
BFA, Brigham Young University, 2003
MFA, The Academy of Art University, 2006

## Assistant Professors

Barney, Daniel Theron

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Assistant Professor
**DEGREES:** BFA, Brigham Young University, 1994
MA, Brigham Young University, 2004
PhD, University of Columbia, 2009

Buehler, Fidalis

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Assistant Professor
**DEGREES:** BFA, University of Hawaii, Manoa, 2004
MFA, Brigham Young University, 2007

Everett, Daniel

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Assistant Professor
**DEGREES:** BFA, Brigham Young University, 2006
MFA, School of the Art Institute of Chicago, 2009

Hogan, Cynthia

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Assistant Professor
**DEGREES:** AA, Reedley Community College, 1985
BA, California Institute of the Arts, 1988
MFA, Hollins University, 2011

Kunz, Justin

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Assistant Professor
**DEGREES:** BFA, Brigham Young University, 1999
MFA, Laguna College of Art and Design, 2011

Swensen, James R.

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, Brigham Young University, 2000
PhD, Arizona State University, 2009

Taylor, Sunny Belliston

**COLLEGE:** Fine Arts and Communications
**DEPARTMENT:** Visual Arts
**RANK:** Assistant Professor
**DEGREES:** BFA, Brigham Young University, 2005
MFA, Ohio State University, 2007

- Education
- Engineering and Technology
- Family, Home, and Social Sciences
- Fine Arts and Communications
- Humanities
- Law School
- Life Sciences
- Management
- Nursing
- Physical and Mathematical Sciences
- Religious Education
- Undergraduate Education

**Departments/Centers/Programs**

- American Studies Program
- Asian and Near Eastern Languages
- Digital Humanities and Technology Program
- English
- French and Italian
- German and Russian
- Humanities, Classics, and Comparative Literature
- Humanities College Courses
- Center for Language Studies
- Linguistics and English Language
- Philosophy
- Spanish and Portuguese
- Women's Studies Program

# College of Humanities

4002 JFSB
(801) 422-2775

**Dean**: John R. Rosenberg, Professor, Spanish
**Associate Dean:** Gregory Clark, Professor, English
**Associate Dean**: Ray T. Clifford, Professor, Linguistics
**Associate Dean**: Scott Sprenger, Professor, French

## What Are the Humanities?

The College of Humanities houses programs that study literature and language as well as philosophy, critical reading, and writing. Those programs share a concern with the processes and products of human expression. In doing so, they focus on a quest for fluency in what has been called "the human conversation"—the ongoing inquiry into what it means to be human.

Study in the humanities disciplines develops facility in languages and cultures as well as higher order cognitive abilities needed for interpretation, analytical thinking and reflection, criticism, and writing. Students can apply what they are learning prior to graduation and enrich their capacities for satisfying careers and productive lives as educated citizens after.

## Academic Departments and Programs

Departments

Asian and Near Eastern Languages
English
French and Italian
German and Russian
Humanities, Classics, and Comparative Literature
Linguistics and English Language
Philosophy
Spanish and Portuguese

Programs

American Studies
Digital Humanities and Technology
Women's Studies

## College Advisement Center

David Waddell, Assistant Dean
1175 JFSB
(801) 422-4789
Email: humanities-advisement@byu.edu
Website: http://humanities.byu.edu/advisement/

The advisement center supports students in achieving their academic and career goals by providing guidance and direction in academic and career exploration, progress toward timely graduation, and experiential learning through Humanities+ experiences. Those experiences include internships, faculty mentoring, secondary majors, minors, participation in clubs, and other professionally relevant experience.

## Center for Language Studies

Ray T. Clifford, Director
Agnes Welch, Program Manager
3086 JFSB
(801) 422-1201
Website: http://cls.byu.edu

The Center for Language Studies works with other College departments to help students from all of the University's academic disciplines acquire the advanced language and cultural skills they need for personal enrichment and for global careers. Particular emphasis is placed on:

- Teaching advanced language classes in low-enrollment languages spoken by returned missionaries.
- Testing language proficiency.
- Conducting language acquisition research.

# The Humanities Center

Matthew Wickman, Senior Fellow and Director
4103 JFSB
801-422-1664
Website: http://humanitiescenter.byu.edu

The Humanities Center is an institute of intensive learning and outreach that promotes the exchange of ideas within the humanities and across the arts and sciences. It aims to foster excellent research and teaching in the humanities, encourage discussion and collaboration across departments, colleges, and universities on matters of public as well as academic concern and enhance BYU's global reputation for scholarship, teaching, and public service.

**College of Humanities Home**

**American Studies Program Home**

**Major**

- BA in American Studies

**Course Information**

- American Studies Courses

**Western American Studies**

**Minor**

- Minor in Western American Studies

# American Studies Program

American Studies Office
4095 JFSB

Kristin Matthews, Coordinator
4160 JFSB, (801) 422-5295

College of Humanities Advisement Center
1175 JFSB, (801) 422-4789

## Admission to Program

The American Studies degree program is open enrollment.

## The Discipline

The American Studies major examines the sweep of American experience, society, culture, and civilization from a variety of viewpoints—literature, history, gender, humanities, regions, politics, ethnic groups, geography, art, economics, religion, and folklore—based in core courses designed to examine the American experience from a variety of standpoints. Majors are encouraged to develop particular skills in writing; literary criticism; historical research; and social, political, and economic analysis. The program provides not only rich interdisciplinary experience but also exposure to a variety of excellent scholars and teachers.

## Career Opportunities

On graduation, American Studies students are usually qualified to enter graduate and professional schools (for law, MBA, MPA, PhD), government or community service, or advanced graduate studies in the liberal arts, including American studies, American civilization, American culture, American history, and American literature.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in American Studies** (Program Outcomes)

**Minor in Western American Studies**

Students should see their college advisement center for help or information concerning the undergraduate programs.

**College of Humanities Home**

**American Studies Program Home**

**Major**

- BA in American Studies

**Course Information**

- American Studies Courses

**Western American Studies**

**Minor**

- Minor in Western American Studies

# BA in American Studies (51 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Students can complete the Advanced Written and Oral Communication requirement by taking Engl 311, 312, 314, 315, or 316 according to individual academic direction. Those interested in graduate work are urged to take the Hist 200, 490 option.
2. Majors should begin course work in the major by taking AmSt 303 fall semester of the sophomore or (at latest) junior year, followed by Am St 304.
3. Complete the following required courses:

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

IHUM 261 : Introduction to American Humanities 1: Colonial Era Through 1876. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Value systems reflected in the arts and ideas of the United States from the colonial era to 1876.

**Course Outcomes**
There are no course outcomes available

IHUM 262 : Introduction to American Humanities 2: 1877 to the Present. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Value systems reflected in the arts and ideas of the United States from 1877 to the present.

**Course Outcomes**
There are no course outcomes available

: Honors American Humanities 2: 1877 to the Present.

**Course Outcomes**

POLI 110 : American Government and Politics. (3:3:0)

OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Origin and development of federal Constitution; national, state, and local governments and politics.

**Course Outcomes**
There are no course outcomes available

4. Complete the following required American Studies core courses:

AM ST 303 : American Studies History and Theory. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: Offers a historical, theoretical, and practical overview of the discipline of American Studies.

**Course Outcomes**

There are no course outcomes available

AM ST 304 : American Studies Methodologies and Writing Practices. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: AM ST 303

DESCRIPTION: Offers students a practical grounding in American Studies methodologies and approaches to writing.

**Course Outcomes**

There are no course outcomes available

5. Complete ten courses (30 hours) from the following:

AM ST 300 : Literature and Cultures of the American West. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Literature and cultural representations of the American West and the frontier.

**Course Outcomes**

- Students will be able to cite major texts of western American literature and theory to support logical arguments about western literature and culture.
- Students will be able to place a variety of western literary texts within historical, religious, environmental, social, and literary contexts, considering the American West as a distinct US region and as an engine in the construction of broader American and international cultures.
- Students will be able to persuasively communicate their mastery of major historical and conceptual themes and issues that are distinctive to the study of the American West demonstrating competence with written conventions of the field.

AM ST 304 : American Studies Methodologies and Writing Practices. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: AM ST 303

DESCRIPTION: Offers students a practical grounding in American Studies methodologies and approaches to writing.

**Course Outcomes**

There are no course outcomes available

AM ST 360 : Film in American Culture. (3:3:0)

DESCRIPTION: Selected readings, lectures, and analysis of specific motion pictures as social documents, reflecting different facets of the American experience.

**Course Outcomes**

- Students will be able to define and analyze a selected group of American films using methods and perspectives drawn from American Studies and film studies, and by the end of the semester will be able to apply those methods and perspectives to a broader range of films.
- Students will be able to rigorously analyze thematically or chronologically selected films to gain insight into American culture and American experience.
- Students will formulate clearly and persuasively supported arguments using best practices in the study of film and American culture.

AM ST 390R : Topics in American Studies. (3:3:0)

DESCRIPTION: Multidisciplinary study of a carefully defined problem in American culture. Topics vary.

**Course Outcomes**

- Students will be able to employ disciplinary and interdisciplinary perspectives to address a key problem or question in American culture.
- Students will, in a variety of written assignments, rigorously analyze cultural and textual research sources.
- Students will be able to communicate persuasively in oral and written forms following the conventions of the field.

(twice only)

AM ST 392R : American Studies Lecture Series: Presentations on American Studies/Western American Studies. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduce research in American Studies and Western American Studies. Speakers from BYU and other institutions share their research. Students engage with lecturers by developing questions, then evaluate and write about ideas.

**Course Outcomes**

- Students will be introduced to the latest research in American Studies and Western American Studies by attending a weekly lecture series.
- Students will be able engage with the lecturers by asking questions and responding to teach lecture.
- Students will be able to evaluate and write clearly about the ideas presented in the lectures.

AM ST 399R : Academic Internship. (.5-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Program coordinator's consent.

DESCRIPTION: Examining the American experience from a variety of standpoints. Honing skills in writing; literary criticism; historical research; and social, political, and economic analysis.

**Course Outcomes**

- Using available resources, students will be able to work independently to arrange and complete an internship that will help them explore post-graduation career possibilities.
- Students will be able to analyze and act in accord with the conventions, texts, and/or artifacts of the field in which they arrange their internship; they will develop a fuller understanding of regional, national, and/or international modes of American experience.
- Students will improve their oral and written skills according to the best practices of the internship situation in which they are engaged, as evaluated by internship supervisors and coordinators.

(3 hours required)

ANTHR 317 : Native Peoples of North America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Indian groups at the time of the European arrival; social organization, beliefs, values, economy, and adaptation to environment.

**Course Outcomes**

- Through course assignments, students will gain an introductory knowledge of the major Native American cultures at the time of European contact including but not limited to social organization, belief systems, values, economies, and adaptations to environments.
- Through course assignments and hands-on access to the collections of the BYU Museum of Peoples and Cultures, students will gain a greater depth of knowledge concerning the diverse range of material culture represented by the indigenous peoples of North America.
- Through course assignments, students will increase their skill sets in critical thinking, research, analysis, and writing skills in the disciplines of anthropology and archaeology.

ANTHR 345 : American Culture. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Perspectives and methods for making sense of mainstream middle-class American society; American ways of being-in-the-world, of believing, behaving, and belonging; American cultural themes.

**Course Outcomes**

- Develop an enhanced understanding of what it means to be American.Learn how to use the stories Americans tell about themselves as portholes through which to peer into the ordinarily invisible world of American culture.Be able to describe the values, beliefs, and attitudes that shape and color how Americans perceive and act in the world, that inform American social and political life as well as individual psychology.Demonstrate theability to think soundly, to communicate effectively, and to write a clear and convincing memoir of a specific American experience that reveals a particular, readily identifiable aspect of American culture.

ANTHR 346 : Anthropology of Mormonism. (3:3:0)

DESCRIPTION: Intensive analysis of Mormon society and culture using a range of anthropological perspectives.

**Course Outcomes**

- Students will gain a knowledge of the development of Mormonism as a distinct religious and cultural force within American society as well as its impact in world-wide contexts. The emergence of Mormonism as a 'culture' and the evolution of its assumptions and unique cultural characteristics will also be emphasized. Students will gain practice in applying current anthropological theories to a culture familiar to the majority of participants, but perhaps never thought about by students through the disciplinary assumptions of anthropology.

ANTHR 390R : Special Topics in Regional Anthropology. (.5-3:ARR:0)

OFFERED: Offered when unique opportunities or needs arise.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Subjects related to a particular area or people.

**Course Outcomes**

- ANTHR 390R Provides students the opportunity to gain a more in-depth knowledge in a field specific region of archaeological or socio-cultural interest. The course offers the chance for visiting scholars with special expertise or regional interest to provide an intensive learning experience in anthropology for students interested in the field or the specific region.

ARTHC 345 : American Art. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ARTHC 202

DESCRIPTION: American painting and sculpture from colonial through modern times.

**Course Outcomes**

There are no course outcomes available

ARTHC 353 : American Art 1876-1950. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ARTHC 202

DESCRIPTION: Survey of American painting and sculpture from 1876-1950.

**Course Outcomes**

There are no course outcomes available

ARTHC 365 : American Architecture. (3:3:0)

PREREQUISITE: ARTHC 202

DESCRIPTION: Major figures, monuments, and movements in American architecture from colonial period through "Gilded Age."

**Course Outcomes**

No outcomes are available at this time.

COMMS 301 : Mass Media History and Philosophy. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Major or minor status.

DESCRIPTION: Historical and philosophical development of today's media. Approaches may include theories of media change, social responsibility, economic factors, and influential pioneers.

**Course Outcomes**

There are no course outcomes available

ECON 274 : American Economic History. (3:3:0)

PREREQUISITE: ECON 110

DESCRIPTION: Impact on households, firms, and government of America's transformation from a rural, agricultural colony to a major industrial nation.

**Course Outcomes**

There are no course outcomes available

ENGL 293 : American Literary History. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251; or concurrent enrollment.

DESCRIPTION: Development of ideas, movements, genres, and styles in American literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 336 : The American Novel. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 293 & ENGL 295; or ENGL 294 & ENGL 295; Engl 291. (Engl 292 may also be a prerequisite option.)

DESCRIPTION: Representative novels of the American tradition from the late eighteenth century to the present.

**Course Outcomes**

- Analyze selected American novels in order to create a foundation for the further study of literature.
- Explain the general formal and historical development of the American novel and define a coherent approach to the study of American novels.
- Form a research strategy appropriate to the study of American novels, independently locate relevant digital and print sources, and draw upon these sources to develop a focused and effective written argument about an American novel(s).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 337R : Advanced Studies in Genre. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Advanced studies in fiction, drama, poetry, or creative nonfiction.

**Course Outcomes**

- Read critically and analyze selected literary texts selected with a specific genre focus (poetry, drama, personal essay, etc.).
- Form a research strategy appropriate to the texts and genre studied in the course, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument about the texts studied.

- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 358R : Ethnic Literatures. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Study of literary texts representative of a thoughtfully focused dimension of a given ethnic group.

**Course Outcomes**
There are no course outcomes available

: Native American Literature.
**Course Outcomes**

: African American Literature.
**Course Outcomes**

: Asian American Literature.
**Course Outcomes**

: Latino/a American Literature.
**Course Outcomes**

: Jewish American Literature. (0::)
**Course Outcomes**

ENGL 360 : American Literature to 1800. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from the colonial and early national periods.

**Course Outcomes**
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the colonial and early national periods of American literature.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 361 : American Literature 1800 - 1865. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1800 to 1865.

**Course Outcomes**
There are no course outcomes available

ENGL 362 : American Literature 1865 - 1914. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1865 to 1914.

**Course Outcomes**
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1865 to 1914.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 363 : American Literature 1914 - 1960. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1914 to 1960.

**Course Outcomes**
- Read critically and analyze major and selected minor texts and literary trends from the period of 1914 to 1960.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and

formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 364 : Literature and Cultures of the American West. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Literature and cultural representations of the American West and the frontier.

**Course Outcomes**

- Read critically and analyze in the context of appropriate literary and cultural theories major and selected minor texts and associated with the American West.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the literature and cultures of the American West.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 365 : American Literature 1960 to Present. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1960 to the present.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1960 to the present.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 368 : Literature of the Latter-day Saints. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Fiction, poetry, drama, folklore, personal essay, and other literature emerging from the LDS experience and expressing various perspectives on it.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the material studied in the class.
- Identify, locate, read critically, and analyze major and selected minor texts and associated with the Latter-Day Saints.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 384R : Major Authors. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.

DESCRIPTION: Topics vary.

**Course Outcomes**

There are no course outcomes available

: Early British Authors.

**Course Outcomes**

: Later British Authors.

**Course Outcomes**

: American Authors.

**Course Outcomes**

ENGL 392 : American Folklore. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251

DESCRIPTION: American folk art and literature and the historical and cultural circumstances from which they developed.

**Course Outcomes**

- Document folklore using established formats and understand some methods of recording and archiving local traditions in order to "analyze rigorously" American texts and artifacts in context and in terms of how "the American experience has been, and continues to be, constructed and transmitted."
- Identify and remember 3 categories of folklore; 4 types of folk narrative; 8 folk groups.
- Relate worldview with the performance of traditions, comparing similarities and differences of groups with differing worldviews and obtaining a wider view of American history and diversity.
- Reason intelligently in oral and written discourse while allowing that traditions are meaningful to

participants in places and times different from your present circumstances.
- Work independently to connect folklore studies with other course work and life experiences and goals.
- Get excited about personal, group, and aesthetic dynamics in the performance of traditions and "question ethically" the choices and forces that help perpetuate or extinguish traditional practices, both locally and globally.

ENGL 395R : Studies in Literature. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Topics vary.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the material studied in the class.
- Identify, locate, read critically, and analyze major and selected minor texts and associated with the literature of the class theme.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

GEOG 250 : United States and Canada. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Analysis of the natural environment, historical development, cultural patterns, economic systems, and political structures of geographic regions.

**Course Outcomes**

There are no course outcomes available

HIST 317 : The Family and the Law in American History. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: HIST 217
DESCRIPTION: The interaction of families with law and government as illustrated in original American sources; individual family histories reconstructed in the broader perspective of history.

**Course Outcomes**

There are no course outcomes available

HIST 360 : American West to 1900. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: The American West as a place of great diversity. Topics include Native American societies, European colonization, explorations, the fur trade, overland migrations, Indian relations, mining, settlement, and the environment.

**Course Outcomes**

- Students will be able to explain and interpret major developments and historical terms in the history of the American West before 1900.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.

HIST 361 : The American West Since 1900. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Pivotal developments in the twentieth-century West, including urbanization, Sun Belt migration, political protest, labor history, Native American history, immigration, water policy, tourism, military-industrial complex, Hollywood.

**Course Outcomes**

- Students will be able to explain and interpret major developments and historical terms in the history of the American West since 1900.
- Students will be able to interpret primary documents and use evidence from those documents to support historical assertions and interpretive generalizations.
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.

HIST 362 : France and the Atlantic World to 1804. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
DESCRIPTION: French exploration and colonization; relations with native peoples; colonial societies in the Caribbean, Louisiana, the Mississippi Valley, and Canada; slavery and the Haitian Revolution; persistence of French territories and francophone populations.

**Course Outcomes**

- Students will be able to explain and assess the major events and processes related to the evolution of the French empire from the medieval period through the early nineteenth century

- Students will be able to interpret primary source documents related to the French, African, and Native American actors within French imperial history.
- Students will become familiar with the historiographical debates surrounding the French presence in the New World.

HIST 364 : Utah. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Contributions of Native Americans, explorers, mountain men, miners, government officials, Mormons, and other groups in the nineteenth century. Impact of national movements, various peoples, politics, economics, and social and cultural change in the twentieth century.

**Course Outcomes**

There are no course outcomes available

HIST 365 : American South. (3:3:0)

DESCRIPTION: Political, economic, and cultural history of the southern states from colonial times to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, cultural, religious, and intellectual developments in the history of the American South from European contact to the present
- Students will able to analyze an important historical question in the history of the South.
- Students will be able to research, analyze, and integrate primary and secondary sources into a coherent and well-written argument.
- Students will be able to isolate the theses and supporting arguments of secondary sources on the history of the South.
- Students will be able to analyze primary sources on the history of the South.

HIST 368 : Sport, Society, and American Culture. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Development of sports in American society, emphasizing ethnic and racial groups, social classes, gender, gambling, politics, and social mobility.

**Course Outcomes**

- Students will be able to explain the major social, cultural, and historical developments in American sport history.
- Students will be able to evaluate the relationship between sports and race, class, and gender issues in American history.
- Students will understand the major historiographical debates in American sport history.

HIST 370 : Colonial America. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Establishment, growth, and development of the American colonies to 1763.

**Course Outcomes**

- Students will demonstrate an understanding of the major events and issues in colonial American history and historiography.
- Students will be able to identify, evaluate and locate appropriate primary and secondary sources for colonial American history.
- Students will be able to create and support an argument based on a major issue in colonial American historiography, using primary and secondary sources.
- Students will be able to identify and critically respond to the argument of a historical monograph.

HIST 371 : Revolutionary America. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Causes and consequences of the American Revolution, the confederation era, and the framing of the Constitution.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in Revolutionary America.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 373 : Civil War Era, 1848-1877. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Causes of the war, major military events (leaders, campaigns, soldiers), war on the home fronts, why the South lost, Reconstruction, the legacy of the war.

**Course Outcomes**

- Students will be able to explain and analyze the main themes and developments of the Civil War and Reconstruction, as well as their roots and legacy.
- Students will be able to analyze and interpret primary source documents, both in writing and in class

discussions.
- History teaching majors will start to apply information and ideas from the course to future teaching.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 374 : U.S. History from 1890 to 1945. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: HIST 220 & HIST 221

DESCRIPTION: Political, economic, and social movements and ideas that trace rise of U.S. as a world power in first half of twentieth century.

**Course Outcomes**

- Students will be able to explain and interpret major developments and historical terms in the history of the United States between 1890 and 1945.
- Students will be able to interpret primary documents and use evidence from those documents to support historical assertions and interpretive generalizations
- Students will hone their ability to skillfully and honestly evaluate historical arguments in secondary sources.

HIST 375 : Joseph Smith in Mormon History and Historiography. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Exploring the life and thought of Joseph Smith and crucial moments in Mormon history through primary source documents and subsequent historiography.

**Course Outcomes**

- Students will be able to summarize and assess key aspects of the historiography of Joseph Smith.
- Students will be able to contextualize and explain primary source documents relating to Joseph Smith.
- Using their knowledge of both secondary and primary sources, students will be able to critique competing interpretations of Joseph Smith's life.
- Students will enhance their verbal communication skills through participation in class discussion.

HIST 376 : U.S. History from 1945 to 2000. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Movements and ideas that shaped society, politics, economy, and diplomacy of the United States from 1945 to 2000.

**Course Outcomes**

- Students will be able to explain and analyze the major political, social, diplomatic, economic, cultural, and constitutional developments in U.S. history from 1945 to the present.
- Students will be able to analyze, interpret, and debate the meanings and historical significance of primary source documents.
- Students will be able to produce an original, analytical, and primary source based historical essay examining a key issue, theme, or individual from U.S. history since 1945.

HIST 378 : American Family History. (3:3:0)

DESCRIPTION: History of American families from colonial period to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major intellectual, economic, religious, social, cultural, and political developments affecting changes in American families of various races, classes, and regions from 1607 to the present.
- Students will be able to analyze an important historical question in the history of American families
- Students will be able to research, analyze, and integrate primary and secondary sources into a coherent and well-written argument.
- Students will be able to isolate the theses and supporting arguments of secondary sources on the history of American families.

HIST 379 : U.S. Religious History to 1860. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Religious developments from colonial times to 1860.

**Course Outcomes**

There are no course outcomes available

HIST 380 : U.S. Religious History Since 1860. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Examines religious people, institutions, beliefs, and practices in U.S. history since the Civil War.

**Course Outcomes**

There are no course outcomes available

HIST 382 : Mormonism in the American Experience. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Social, economic, political, intellectual, and religious environment in which Mormonism flourished; contributions of Mormon men and women to American culture and history.

**Course Outcomes**

- Students will be able to summarize and assess key aspects of how Mormonism has been situated in the larger cultural and religious geography of America
- Students will learn how particular primary sources provide key building blocks in prominent interpretations of the place of Mormonism in American history
- Students will become acquainted with, and learn to assess the academic conversation concerning Mormonism
- Students will enhance their verbal communication skills through participation in class discussion.

HIST 383 : African-American History, 1865 to Present. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

RECOMMENDED: Hist 200, 220, 221.

DESCRIPTION: Social, economic, intellectual, political factors; struggle for racial equality; race and gender relationships; how changing ideas of race affect American life and politics.

**Course Outcomes**

- Students will be able to identify and analyze major themes in African-American History from emancipation and the rise of Jim Crow to the beginning of the 21st century. They will also be able to recognize the ways that shifting notions of race have shaped (and continue to shape) American life and politics.
- Students will be able to analyze, interpret, and evaluate primary sources
- Students will be able to interpret and debate the meanings and historical value of primary sources with their peers.
- Students will be able to analyze and create historical questions and place them in a historiographical context.
- Students will demonstrate proficiency in using historical methods of research and in integrating data into a coherent argument expressed through a clear, well-written style.
- Students will be able to use their training in African American history to serve their community.

HIST 384 : United States Women's History. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Survey course of women's experience in American culture and society from the Puritans to the present.

**Course Outcomes**

- Students will be able to explain and analyze the experiences of women in America from the colonial period to the present, the ways that ideas about gender have shaped American life, and significant issues and debates in U.S. Women's history.
- Students will be able to analyze, interpret, and evaluate primary sources.
- Students will be able to interpret and debate the meanings and historical value of primary sources with their peers.
- Students will be able to analyze and create historical questions and place them in a historiographical context.
- Students will demonstrate proficiency in using historical methods of research and in integrating data into a coherent argument expressed through a clear, well-written style.
- Students will be able to apply their understanding of American women's history to current issues and events.

HIST 385 : Latinos in the United States. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: The place of Latin Americans within the context of U.S. history. The growth and development of the largest Latino communities from pre-colonial times to present day and how Latinos may influence future policies within the U.S.

**Course Outcomes**

- Students will learn the history of Latinos in this country beginning with the circumstances which brought them to this country, the ways they have integrated or resisted integration, and the efforts they have made to claim their rights as citizens.
- Students will learn to interpret the documents and rhetoric of this community which will help them understand the intellectual, cultural and political thought of Latinos over the last 100 years.
- Students will learn the current state of Latino social and cultural integration in the Utah community.
- Students will learn to write a major essay on the history of Latinos in order to understand the literature as well as the primary sources available on this community.

HIST 386 : Nineteenth-Century American Indian History. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: History of various Indian tribes, their cultures, and their relationships with European nations and the United States, including military campaigns.

**Course Outcomes**

- Students will be understand and appreciate Indian history and cultures, employ historical research skills effectively, and apply appropriate methods and theories to the study of Indian history and contemporary Native American issues.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.

- Recognize important ideas of Indian and non-Indian cultural traditions and how LDS Native Americans have balanced their intellectual pursuits, their faith, and their culture.
- Learn to communicate effectively both orally and in writing about Native American topics
- Have meaningful interactions with Indian communities, individuals, and organizations to provide outreach and to help address contemporary challenges

HIST 387 : Twentieth-Century American Indian History. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Sociocultural factors that affect twentieth-century native Americans in both urban and reservation settings, including current challenges facing Indian communities.

**Course Outcomes**

- Students will be understand and appreciate Indian history and cultures, employ historical research skills effectively, and apply appropriate methods and theories to the study of Indian history and contemporary Native American issues.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations.
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.
- Recognize important ideas of Indian and non-Indian cultural traditions and how LDS Native Americans have balanced their intellectual pursuits, their faith, and their culture
- Learn to communicate effectively both orally and in writing about Native American topics.
- Have meaningful interactions with Indian communities, individuals, and organizations to provide outreach and to help address contemporary challenges.

HIST 388 : Indians in Colonial America. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: North American Indian culture, Indian/European interactions, demographic, social, political factors among Indians prior to contact with Europeans through colonization and the American Revolutionary War.

**Course Outcomes**

- Students will demonstrate an understanding of the major issues and events in colonial Native American historiography and their modern-day consequences.
- Students will be able to identify, evaluate and locate appropriate primary sources for colonial Native American history
- Students will be able to use primary sources to support an argument based on a major issue in colonial Native American historiography.
- Students will be able to identify and critically respond to the arguments of historical monographs.

HIST 390R : Special Topics in History. (.5-3:Arr:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Presented by visiting or regular faculty. Varied topics include oral history, demographics, psychohistory, Christianity in history, family history research, etc.

**Course Outcomes**

There are no course outcomes available

: Family History Research.

**Course Outcomes**

: Family History Research in Ireland. (.5-3:Arr:Arr)

**Course Outcomes**

: Family History Research in the Netherlands.

**Course Outcomes**

: Advanced Southern European Family History Research.

**Course Outcomes**

: Advanced British Family History Research.

**Course Outcomes**

: Native American Family History Research. (.5-3:Arr:Arr)

**Course Outcomes**

HIST 392 : U.S. Constitutional History. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Constitutional traditions and constitution making, federalism, and constitutional notions of political equity and social justice, from the colonial period to the present.

**Course Outcomes**

Students will be able to explain and analyze the major political, economic, social, and religious developments that led to the U.S. Constitution
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 393 : U.S. Foreign Relations. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: U.S. diplomatic history from the American revolution to the present; examines major themes and critical events within both domestic and international contexts.

**Course Outcomes**

- Students will be able to explain and analyze the major themes and problems in the making, implementation, and evolution of U.S. foreign relations from 1776 to the present.
- Students will be able to analyze, interpret, and debate the meanings and historical significance of primary source documents.
- Students will be able to produce an original, analytical, and primary source based historical essay examining a key issue, theme, or individual from the history of U.S. foreign relations.

HIST 394 : Scripture in American History. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Scriptural texts in U.S. history across various religious traditions and across time, with attention to questions of authority, translation, interpretation, and reception.

**Course Outcomes**

There are no course outcomes available

HIST 395 : Technology in America. (3:3:0)

DESCRIPTION: Benefits and liabilities of technological complexity.

**Course Outcomes**

- Students will be able to explain and analyze how machines have shaped American society from the age of exploration to the present.
- Students will be able to analyze and critique secondary sources in a coherent and well-written argument.
- Students will be able to isolate the theses and supporting arguments of secondary sources on the history of technology.

HIST 490 : Capstone Research Seminar. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: HIST 200

DESCRIPTION: Research seminar; critical, analytical, and writing skills in preparation of a senior thesis.

NOTE: Required of all history majors.

**Course Outcomes**

- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using primary and secondary sources
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid assertions;
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

IHUM 490R : Seminar in the Humanities. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: IHum 350 or concurrent enrollment.

RECOMMENDED: IHum 370.

DESCRIPTION: Interdisciplinary study of problems and major figures in the humanities. Topics vary.

**Course Outcomes**

There are no course outcomes available

MUSIC 204 : Introduction to Jazz. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Non-music major status.

DESCRIPTION: Fostering an understanding and appreciation of jazz music within the context of American history and culture.

NOTE: For non-music majors.

**Course Outcomes**

There are no course outcomes available

POLI 210 : Principles of American Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Poli 200.

DESCRIPTION: An introduction to the subfield of American politics for advanced students and majors. Basic concepts, theories, and methods of American politics and political science.

**Course Outcomes**

There are no course outcomes available

POLI 311 : State and Local Government and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Poli 110 or Poli 210.

DESCRIPTION: Relation of state and national governments, forms of state governments and politics, types of municipal governments and their operation.

**Course Outcomes**

There are no course outcomes available

POLI 313 : Interest Groups. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 110 or 210; Poli 200.

DESCRIPTION: Theories on formation and maintenance of interest groups; tactics of groups in legislative, executive, bureaucratic, and court settings; influence of groups on elections and public policy.

**Course Outcomes**

There are no course outcomes available

POLI 314 : The United States Presidency. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 110 or 210; Poli 200.

DESCRIPTION: Presidential power in the United States, focusing on major roles of the American presidency.

**Course Outcomes**

There are no course outcomes available

POLI 315 : Congress and the Legislative Process. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Poli 110 or 210; Poli 200.

DESCRIPTION: Election process; structure, organization, and procedures of legislative bodies; relations with pressure groups, the president, and executive branch.

**Course Outcomes**

There are no course outcomes available

POLI 316 : American Political Parties. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Electoral and policy-making roles of American political parties today and their future in American politics.

**Course Outcomes**

There are no course outcomes available

POLI 317 : Public Opinion and Voting Behavior. (3-4:3:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: POLI 200

RECOMMENDED: Poli 328.

DESCRIPTION: Relationship between attitudes, opinion, and voting behavior in American politics and institutions.

**Course Outcomes**

There are no course outcomes available

POLI 318 : Campaigns and Elections. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Analyzes electoral process in the United States, including history, significance in governance, campaign strategy, finance, media role, etc.

**Course Outcomes**

There are no course outcomes available

POLI 319R : Topics in American Government and Politics. (.5-3:3:0)

**Course Outcomes**

There are no course outcomes available

POLI 320 : American Politics Through Literature. (3:3:0)

DESCRIPTION: American politics through the novel and other literary works. Developing political concepts and themes that come from significant political novels.

**Course Outcomes**

No outcomes are available at this time.

POLI 321 : The Media in American Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: News media's role in processes of American politics, including electoral process, legislative process, and public policy-making.

**Course Outcomes**

There are no course outcomes available

POLI 336 : Government and Religion. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Christian-Hebraic concepts of state. American experience with church-state relations (First Amendment problems). Policy issues of concern to contemporary religions.

**Course Outcomes**

There are no course outcomes available

POLI 365 : Early American Political Thought: 1620-1865. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Core principles and seminal texts of American politics from Colonial times through the Lincoln administration.

**Course Outcomes**

No outcomes are available at this time.

POLI 366 : Modern American Political Thought: 1865-Present. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Core principles and seminal texts of American politics from Reconstruction to the present.

**Course Outcomes**

No outcomes are available at this time.

POLI 376 : U.S. Foreign Policy. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Formation, implementation, analysis, and criticism of themes in American foreign policy.

**Course Outcomes**

There are no course outcomes available

POLI 377 : National Security Affairs. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Foreign policy, defense strategy, and intelligence.

**Course Outcomes**

There are no course outcomes available

POLI 420 : Constitutional Law - American Federal System. (3:3:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

No outcomes are available at this time.

POLI 421 : Constitutional Law - Rights and Immunities. (3:3:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

There are no course outcomes available

REL C 341 : Joseph Smith and the Restoration, 1805-1845. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Life and ministry of the Prophet Joseph Smith, coming forth of the Book of Mormon, organization of the church, foundational revelations, building the Kirtland Temple, Missouri persecutions, establishment of Nauvoo, and events leading to the Martyrdom.

**Course Outcomes**

There are no course outcomes available

: Honors Joseph Smith and the Restoration, 1805-1845.

**Course Outcomes**

REL C 342 : Pioneers and Persecution, 1846-1899. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Exodus from Nauvoo, the experience of Mormon Pioneers crossing the plains, establishing Zion in the Great Basin, plural marriage and government persecution, the Manifesto, and events leading to Utah statehood.

**Course Outcomes**

There are no course outcomes available

: Honors Pioneers and Persecution, 1846-1899.

**Course Outcomes**

REL C 343 : The Global Church, 1900 to the Present. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: The Church in the twentieth and twenty-first centuries, international expansion, significant developments of Church programs and structure, the Church during wartime, the world-wide spread of temples.

**Course Outcomes**

There are no course outcomes available

: Honors The Global Church, 1900 to the Present.

**Course Outcomes**

REL C 353 : American Christianity and the Restored Gospel. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: History, doctrine, and practices of the major Christian faiths of America in light of the restored gospel.

**Course Outcomes**

There are no course outcomes available

SOC 323 : Racial and Minority-Group Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Social psychological and social structural analysis of racial and ethnic relations; prejudice, discrimination, responses, protests, current issues.

**Course Outcomes**

- Demonstrate how the continuing influence and changing meaning of ethnic heritage is bound up in contemporary western culture, both as experienced by others and in their own lives.
- Describe the role of childhood in the construction of moral adulthood, and identify the community consequences of connections and continuity in the life course, as opposed to alienation and boundedness.
- Identify sources of intellectual and personal balance and of communal and personal strength in dealing with problems of cultural identity and social diversity.
- Identify strengths and weaknesses in varying subcultures, including our own, to highlight sources of self deception, and to propose personal and community actions whereby our â woundsâ may be healed.
- Describe relationships between Americaâ s history of slavery, our own attitudes toward essential work and those who perform it, and existing racist and sexist attitudes.
- Offer proposals whereby the harmonizing of social opposites can be achieved.

Understand the consequences, positive and negative, of ethnic contact and interaction on social creativity and problem solving, and to identify consequences of such contact in their own lives.
- Identify historical examples of positive and negative ethnic contact, in terms of social innovation and creativity, and apply them to contemporary situations
- Describe the complexities of social change and social engineering, cite historical examples in which efforts at social improvement generated unanticipated and sometimes counterproductive effects, and anticipate such effects in their own efforts at personal and social improvement.
- Clarify the differences between race and ethnicity, and the effects of so categorizing our fellow humans.
- Portray the â crisisâ contemporary civilizations face in terms of the age-old tension between settled and tribal peoples, and propose actions to ameliorate the negative effects of detribalization and the continuing increase in social diversity.
- Have a working understanding of the nature and limitations of prevailing worldviews, especially modernism and postmodernism, and their relation to social morality. Students understand the present-day significance of the Holocaust and other instances of genocide in terms of their lessons for humanity. They can identify the advantages and limits of reason and rationality, and understand that rationality and ethics may point in opposite directions, with potentially disastrous consequences for minorities.
- Demonstrate a basic familiarity with the ethnic structure of American society, how it is changing, and its implications for the future.

SOC 327 : Sociology of the LDS Church and Its People. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: The LDS Church from a social science perspective, including the Church as a new religious movement; LDS culture; the institutionalization process.

**Course Outcomes**

- Students become “conversant with the substantive areas of sociology and the variety of theories and research methods associated with these substantive areas,” as they apply to the sociology of religion in general and the sociology of Latter-day Saint life in particular. They learn several of the “major controversies and debates, new developments, emerging issues, and current trends” as they impact the study and interpretation of Latter-day Saint life in the contemporary academic and intellectual world. Students also are helped “to critically assess the strengths and weaknesses of current sociological theories and research relating to substantive areas,” in this case Latter-day Saint life both historically and in the 20th and 21st centuries.
- Students have direct experience in comparative analysis both at the individual and group level, in interpersonal contexts as well as in vicarious and analytical experience, whereby they learn “the limitations of extrapolating from their own experience” and confront “how the life experience of others may differ from their own,” both within social categories (e.g., comparisons with the life experience of other Latter-day Saints) and across social boundaries (e.g., comparisons with members of other faiths or national populations). Students experience “how race, class, and/or gender intersect with other social categories,” in this instance, religious membership or national identities, “to create a variety of life experiences.” They also learn to “articulate the sources of social conflict and describe the relations of power in modern society” as they consider both the history of the often-hated minority that was the Latter-day Saints and the contemporary setting and participation of Latter-day Saint people in modern and postmodern society.
- Students consider the underlying assumptions and “basic ideas and arguments forming sociological inquiry” as they apply to the sociology of religious life, especially the experience of Mormon people and Mormondom generally. Conflict theory, functionalism, social psychological perspectives, demographic perspectives are all brought into play as they affect the study of Latter-day Saint culture. Special attention is paid to the differences between postmodern and modern theoretical perspectives as they impact definitions of “truth” and “reality” and as they apply to theorizing about and doing research on people's ideas of religion and transcendence.
- Diversity of research methodologies are illustrated; the “fit” of various approaches to the study of religious life are evaluated. This is not a methods course, but as issues of research methodology affect the confidence one can have in the findings of researchers who study Mormonism, issues of methodology are discussed and we learn to distinguish good from poor research.
- Because our focus is social science literature on Mormonism across more than a century, the emphasis on “current” is limited, but because many of our readings and several of the “classics” students review are current, we contribute in part to awareness of the current state of social science analysis of religion, and Mormonism in particular. Students demonstrate their knowledge of substantive areas as applicable to research on LDS populations in their critiques of “classic” sociological studies of Mormonism, ideally demonstrating both the strong points and weaknesses of high quality and/or high profile studies of Mormon thought, life, and people.
- Both the advantages and the disadvantages of sociological perspectives (the plural here is important; there are many social science perspectives, and to speak of the sociological perspective is a distortion) with respect to interpreting daily life and religious life are emphasized throughout the course. Dilemmas and challenges of trying to live an integrated spiritual and successful temporal existence within contemporary societies are stressed throughout the course. Throughout, we stress the importance to the religious life of systematic, honest, and sophisticated awareness of intellectual fads and foibles, changing trends and worldviews, varying standards and assumptions, patterns of globalization and secularization. More than many sociological courses, this one is devoted to the overall aim of BYU education to integrate spiritual and secular life goals and interest, to combine professional and career interests with a more specialized awareness of how religious organizations, beliefs, and institutions fit within and change along with the wider society, and the challenges associated with the sometime conflict of individual, family, organizational and societal interests.

**Note 1:** Engl 358R and 395R, as well as the humanities courses, must be topics in an American subject.

**Note 2:** Course substitutions may be made only with written, prior permission of the American Studies coordinator.

**Note 3:** Students may substitute up to six credit hours of approved internship credit for up to six hours of American Studies electives, including Washington, D.C. seminar credits.

6. Complete the following during the senior year before graduation:

AM ST 490 : Senior Capstone. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: AM ST 303 & AM ST 304; Senior status or program coordinator's consent.

DESCRIPTION: In-depth review of American Studies theories, methods, and criticism; content varies; requires original research and substantial writing of paper intended for publication.

**Course Outcomes**

- Through class discussions and writing activities, students will be able to demonstrate a fluency in the disciplinary trends of American Studies, an understanding of the field's inherent interdisciplinarity, and an ability to draw upon knowledge that they have acquired in courses taken in other disciplines.
- Students will be able to demonstrate high proficiency in reading critically and analyzing primary historical, secondary historical, theoretical, and critical texts. Students will exhibit this high proficiency through engaging in the methods central to the field of American Studies: textual analysis, archive building, institutional contextualization, and theorizing.
- Capstone participants will be able to formulate both their oral and written arguments coherently, support them clearly, and communicate them effectively to their audiences using correct conventions of language, style, and the best practices of the discipline.
- Students will be able to develop their own research project (formulate a sophisticated research question, independently conduct primary and secondary research, and employ the writing skills they have developed over the course of the major) in order to write an original 15–20 page research paper in the last third of the course.

*Hours include courses that may fulfill university core requirements.

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# American Studies (Am St)

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## Undergraduate Courses

### 300-Level Courses

AM ST 300 : Literature and Cultures of the American West. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Literature and cultural representations of the American West and the frontier.

**Course Outcomes**

- Students will be able to cite major texts of western American literature and theory to support logical arguments about western literature and culture.
- Students will be able to place a variety of western literary texts within historical, religious, environmental, social, and literary contexts, considering the American West as a distinct US region and as an engine in the construction of broader American and international cultures.
- Students will be able to persuasively communicate their mastery of major historical and conceptual themes and issues that are distinctive to the study of the American West demonstrating competence with written conventions of the field.

AM ST 303 : American Studies History and Theory. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Offers a historical, theoretical, and practical overview of the discipline of American Studies.

**Course Outcomes**

There are no course outcomes available

AM ST 304 : American Studies Methodologies and Writing Practices. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: AM ST 303

DESCRIPTION: Offers students a practical grounding in American Studies methodologies and approaches to writing.

**Course Outcomes**

There are no course outcomes available

AM ST 360 : Film in American Culture. (3:3:0)

DESCRIPTION: Selected readings, lectures, and analysis of specific motion pictures as social documents, reflecting different facets of the American experience.

**Course Outcomes**

- Students will be able to define and analyze a selected group of American films using methods and perspectives drawn from American Studies and film studies, and by the end of the semester will be able to apply those methods and perspectives to a broader range of films.
- Students will be able to rigorously analyze thematically or chronologically selected films to gain insight into American culture and American experience.
- Students will formulate clearly and persuasively supported arguments using best practices in the study of film and American culture.

AM ST 390R : Topics in American Studies. (3:3:0)

DESCRIPTION: Multidisciplinary study of a carefully defined problem in American culture. Topics vary.

**Course Outcomes**

- Students will be able to employ disciplinary and interdisciplinary perspectives to address a key problem or question in American culture.
- Students will, in a variety of written assignments, rigorously analyze cultural and textual research sources.
- Students will be able to communicate persuasively in oral and written forms following the conventions of the field.

AM ST 392R : American Studies Lecture Series: Presentations on American Studies/Western American Studies. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduce research in American Studies and Western American Studies. Speakers from BYU and other institutions share their research. Students engage with lecturers by developing questions, then evaluate and write about ideas.

**Course Outcomes**

- Students will be introduced to the latest research in American Studies and Western American Studies by attending a weekly lecture series.
- Students will be able engage with the lecturers by asking questions and responding to teach lecture.
- Students will be able to evaluate and write clearly about the ideas presented in the lectures.

AM ST 399R : Academic Internship. (.5-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Program coordinator's consent.

DESCRIPTION: Examining the American experience from a variety of standpoints. Honing skills in writing; literary criticism; historical research; and social, political, and economic analysis.

**Course Outcomes**

- Using available resources, students will be able to work independently to arrange and complete an internship that will help them explore post-graduation career possibilities.
- Students will be able to analyze and act in accord with the conventions, texts, and/or artifacts of the field in which they arrange their internship; they will develop a fuller understanding of regional, national, and/or international modes of American experience.
- Students will improve their oral and written skills according to the best practices of the internship situation in which they are engaged, as evaluated by internship supervisors and coordinators.

### 400-Level Courses

AM ST 490 : Senior Capstone. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: AM ST 303 & AM ST 304; Senior status or program coordinator's consent.

DESCRIPTION: In-depth review of American Studies theories, methods, and criticism; content varies; requires original research and substantial writing of paper intended for publication.

**Course Outcomes**

- Through class discussions and writing activities, students will be able to demonstrate a fluency in the disciplinary trends of American Studies, an understanding of the field's inherent interdisciplinarity, and an ability to draw upon knowledge that they have acquired in courses taken in other disciplines.
- Students will be able to demonstrate high proficiency in reading critically and analyzing primary historical, secondary historical, theoretical, and critical texts. Students will exhibit this high proficiency through engaging in the methods central to the field of American Studies: textual analysis, archive building, institutional contextualization, and theorizing.
- Capstone participants will be able to formulate both their oral and written arguments coherently, support them clearly, and communicate them effectively to their audiences using correct conventions of language, style, and the best practices of the discipline.
- Students will be able to develop their own research project (formulate a sophisticated research question, independently conduct primary and secondary research, and employ the writing skills they have developed over the course of the major) in order to write an original 15–20 page research paper in the last third of the course.

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# Western American Studies

## The Discipline

The Western American Studies minor builds upon the expertise of BYU faculty, applying the insights of several disciplines to achieve an overarching understanding of the region. The minor involves coursework in four areas: natural environment, human heritage, social environment, and arts and literature. The minor facilitates an interdisciplinary perspective. In the "real world," research often crosses disciplinary boundaries. For example, a team of experts from fields including the social sciences, history, geography, botany, range science, and zoology often work with a technical writer to create a policy statement. If all team members have a basic understanding of the other disciplines, it promotes better research and understanding. Students interested in issues relating to the West may find the cross-disciplinary approach helpful in their preparation for advanced studies or employment. Minors may also obtain credit for an approved internship. Through this minor, students interested in any region of the world can learn how to apply techniques from a variety of disciplines to regional studies.

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# Minor in Western American Studies (18 hours)

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## Program Requirements

1. Complete the following:

AM ST 300 : Literature and Cultures of the American West. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Literature and cultural representations of the American West and the frontier.

**Course Outcomes**

- Students will be able to cite major texts of western American literature and theory to support logical arguments about western literature and culture.
- Students will be able to place a variety of western literary texts within historical, religious, environmental, social, and literary contexts, considering the American West as a distinct US region and as an engine in the construction of broader American and international cultures.
- Students will be able to persuasively communicate their mastery of major historical and conceptual themes and issues that are distinctive to the study of the American West demonstrating competence with written conventions of the field.

2. Complete one course from three of the following four clusters:

*Natural Environment*

GEOL 101 : Introduction to Geology. (3:2:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Cultural focus on physical and environmental geology for nonscience majors; rocks and minerals. Field trips.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- 1. Understand the difference between minerals and rocks.2. Be able to identify common rocks and minerals.3. Know where and when the basic rock and mineral types form and how they are related to the hydrologic and tectonic systems.
- 1. Understand how the hydrologic system helps to shape the Earth and how the different sub-systems interact.2. Learn the reasons for climate change in both ancient and modern times.
- 1. Learn the basic evidences and ideas that support the Theory of Plate Tectonics.2. Understand how the plate tectonic system works, including the role of the different types of plate boundaries and the forces that help to drive the system.3. Learn how the plate tectonic system has helped to shape the Earth's surface.
- 1. Gain a greater insight into the enormous length of geologic time and the evidences that support this claim.2. Learn the different ways that scientists can determine geologic ages.
- Learn how and why the other planets and moons in our solar system are different from Earth.

PWS 150 : Environmental Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Conservation and management of natural resources concurrent with increasing socioeconomic and human population demands; factors such as soil, water, and air pollution, resources management, bioremediation, nutrient cycles, and global climate changes

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Gain a deep appreciation for the Lord's admonition to Adam and Eve regarding the Earth to dress it and keep it
- Engage others and participate in discussions about major environmental problems, movements, and solutions (e.g., desertification, invasive species, water pollution, green revolution, and renewable energy).
- Understand how “science” is conducted.
- Demonstrate a fundamental knowledge (i.e., scientific literacy) of the environment and current environmental problems facing us locally, regionally, and globally.
- Devise experiments with testable hypotheses based the scientific method—process of making observations and logically integrating those observations into a model of how the world works.
- Foster and promote environmental stewardship within your realm of influence and your community.

PWS 215 : Principles of Range Management. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Overview of rangeland resources and management principles, including rangeland classification, multiple use management, natural resource policy, and grazing management.

**Course Outcomes**

- Describe rangeland physical characteristics, types, physiology, and ecology
- To understand the principles of stewardship and how they apply to Rangelands
- To understand the importance of rangeland grazing, how it is managed, and nutrient needs of livestock and wildlife
- Describe multiple use management and its implications to wildlife and livestock
- To improve reading and writing skills relating to scientific research

PWS 225 : Principles of Wildlife and Fisheries Management. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: PWS 115.

DESCRIPTION: Basic principles of fish and wildlife management, their habitats, and their human users. Ecological concepts, population dynamics, nutrition, behavior, population assessment, management strategies, habitat sampling and management.

**Course Outcomes**

- Learning Outcome #1: Identify and articulate stewardship for the creation as a basis for professional judgment.This course not only provides an understanding of tools used by wildlife and fisheries managers to restore, revive, and maintain wildlife and fish populations, but also discusses our stewardship roles and responsibilities for those aspects of the creation.
- Learning Outcome #2: Identify wildland plants, soils, and wildlife species and understand how they function in the environment.This course introduces students to a number of wildlife and fish species, and basic ecological concepts as they relate to wildlife and fisheries. Students will understand the ecological roles, habitat needs, and interactions of fish and wildlife at various levels in an ecosystem
- Learning Outcome #3: Apply an understanding of ecological processes to wildlife management.This course includes an extensive overview of basic ecological processes and how to use them for fish and wildlife management.
- Learning Outcome #4: Demonstrate the ability to apply the scientific method and analytical thinking to ecological and management issues.In this course students will be rigorously taught the scientific method and given opportunities to demonstrate the understanding through fish and wildlife management problem solving. They will have writing assignments that provide opportunities for the synthesis and expression of the depth of their understanding. The term paper required in this course may be used for one of the “three written papers relating to stewardship ethics and management situations” that will be placed in the student’s portfolio required for graduation with a Wildlife and Wildlands Conservation BS degree.

*Human Heritage*

HIST 360 : American West to 1900. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: The American West as a place of great diversity. Topics include Native American societies, European colonization, explorations, the fur trade, overland migrations, Indian relations, mining, settlement, and the environment.

**Course Outcomes**

- Students will be able to explain and interpret major developments and historical terms in the history of the American West before 1900.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.

HIST 361 : The American West Since 1900. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Pivotal developments in the twentieth-century West, including urbanization, Sun Belt migration, political protest, labor history, Native American history, immigration, water policy, tourism, military-industrial complex, Hollywood.

**Course Outcomes**

- Students will be able to explain and interpret major developments and historical terms in the history of the American West since 1900.
- Students will be able to interpret primary documents and use evidence from those documents to support historical assertions and interpretive generalizations.
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.

*Social Environment*

ANTHR 345 : American Culture. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Perspectives and methods for making sense of mainstream middle-class American society;

American ways of being-in-the-world, of believing, behaving, and belonging; American cultural themes.

**Course Outcomes**

- Develop an enhanced understanding of what it means to be American.Learn how to use the stories Americans tell about themselves as portholes through which to peer into the ordinarily invisible world of American culture.Be able to describe the values, beliefs, and attitudes that shape and color how Americans perceive and act in the world, that inform American social and political life as well as individual psychology.Demonstrate theability to think soundly, to communicate effectively, and to write a clear and convincing memoir of a specific American experience that reveals a particular, readily identifiable aspect of American culture.

ANTHR 346 : Anthropology of Mormonism. (3:3:0)

DESCRIPTION: Intensive analysis of Mormon society and culture using a range of anthropological perspectives.

**Course Outcomes**

- Students will gain a knowledge of the development of Mormonism as a distinct religious and cultural force within American society as well as its impact in world-wide contexts. The emergence of Mormonism as a 'culture' and the evolution of its assumptions and unique cultural characteristics will also be emphasized. Students will gain practice in applying current anthropological theories to a culture familiar to the majority of participants, but perhaps never thought about by students through the disciplinary assumptions of anthropology.

ANTHR 350 : Archaeological Cultures of North America. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Cultural developments of North American Indians (Canada, U.S., and northern Mexico) before Columbus.

**Course Outcomes**

- Students will gain an introductory level comprehension of the diverse cultural developments of North American indigenous peoples as well as selected examples from Canada and Northern Mexico through the study of archaeological evidence and material culture.
- Students will gain a more in-depth comprehension of the diversity and complexity of data sets regarding archaeological evidence via material cultural remains by hands-on interactions with the collections of the Museum of Peoples and Cultures at BYU.
- Through course assignments, students will increase their skills in critical thinking, research, analysis, and writing. Emphasis will be placed on writing in the discipline.

ECON 274 : American Economic History. (3:3:0)

PREREQUISITE: ECON 110

DESCRIPTION: Impact on households, firms, and government of America's transformation from a rural, agricultural colony to a major industrial nation.

**Course Outcomes**

There are no course outcomes available

SOC 327 : Sociology of the LDS Church and Its People. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: The LDS Church from a social science perspective, including the Church as a new religious movement; LDS culture; the institutionalization process.

**Course Outcomes**

- Students become “conversant with the substantive areas of sociology and the variety of theories and research methods associated with these substantive areas,” as they apply to the sociology of religion in general and the sociology of Latter-day Saint life in particular. They learn several of the “major controversies and debates, new developments, emerging issues, and current trends” as they impact the study and interpretation of Latter-day Saint life in the contemporary academic and intellectual world. Students also are helped “to critically assess the strengths and weaknesses of current sociological theories and research relating to substantive areas,” in this case Latter-day Saint life both historically and in the 20th and 21st centuries.
- Students have direct experience in comparative analysis both at the individual and group level, in interpersonal contexts as well as in vicarious and analytical experience, whereby they learn “the limitations of extrapolating from their own experience” and confront “how the life experience of others may differ from their own,” both within social categories (e.g., comparisons with the life experience of other Latter-day Saints) and across social boundaries (e.g., comparisons with members of other faiths or national populations). Students experience “how race, class, and/or gender intersect with other social categories,” in this instance, religious membership or national identities, “to create a variety of life experiences.” They also learn to “articulate the sources of social conflict and describe the relations of power in modern society” as they consider both the history of the often-hated minority that was the Latter-day Saints and the contemporary setting and participation of Latter-day Saint people in modern and postmodern society.
- Students consider the underlying assumptions and “basic ideas and arguments forming sociological inquiry” as they apply to the sociology of religious life, especially the experience of Mormon people and Mormondom generally. Conflict theory, functionalism, social psychological perspectives, demographic perspectives are all brought into play as they affect the study of Latter-day Saint culture. Special attention is paid to the differences between postmodern and modern theoretical perspectives as they impact definitions of “truth” and “reality” and as they apply to theorizing about and doing research on people’s ideas of religion and transcendence.
- Diversity of research methodologies are illustrated; the “fit” of various approaches to the study of

religious life are evaluated. This is not a methods course, but as issues of research methodology affect the confidence one can have in the findings of researchers who study Mormonism, issues of methodology are discussed and we learn to distinguish good from poor research.
- Because our focus is social science literature on Mormonism across more than a century, the emphasis on "current" is limited, but because many of our readings and several of the "classics" students review are current, we contribute in part to awareness of the current state of social science analysis of religion, and Mormonism in particular. Students demonstrate their knowledge of substantive areas as applicable to research on LDS populations in their critiques of "classic" sociological studies of Mormonism, ideally demonstrating both the strong points and weaknesses of high quality and/or high profile studies of Mormon thought, life, and people.
- Both the advantages and the disadvantages of sociological perspectives (the plural here is important; there are many social science perspectives, and to speak of the sociological perspective is a distortion) with respect to interpreting daily life and religious life are emphasized throughout the course. Dilemmas and challenges of trying to live an integrated spiritual and successful temporal existence within contemporary societies are stressed throughout the course. Throughout, we stress the importance to the religious life of systematic, honest, and sophisticated awareness of intellectual fads and foibles, changing trends and worldviews, varying standards and assumptions, patterns of globalization and secularization. More than many sociological courses, this one is devoted to the overall aim of BYU education to integrate spiritual and secular life goals and interest, to combine professional and career interests with a more specialized awareness of how religious organizations, beliefs, and institutions fit within and change along with the wider society, and the challenges associated with the sometime conflict of individual, family, organizational and societal interests.

*Arts and Literature*

ENGL 364 : Literature and Cultures of the American West. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Literature and cultural representations of the American West and the frontier.

**Course Outcomes**

- Read critically and analyze in the context of appropriate literary and cultural theories major and selected minor texts and associated with the American West.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the literature and cultures of the American West.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 368 : Literature of the Latter-day Saints. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Fiction, poetry, drama, folklore, personal essay, and other literature emerging from the LDS experience and expressing various perspectives on it.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the material studied in the class.
- Identify, locate, read critically, and analyze major and selected minor texts and associated with the Latter-Day Saints.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 392 : American Folklore. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251

DESCRIPTION: American folk art and literature and the historical and cultural circumstances from which they developed.

**Course Outcomes**

- Document folklore using established formats and understand some methods of recording and archiving local traditions in order to "analyze rigorously" American texts and artifacts in context and in terms of how "the American experience has been, and continues to be, constructed and transmitted."
- Identify and remember 3 categories of folklore; 4 types of folk narrative; 8 folk groups.
- Relate worldview with the performance of traditions, comparing similarities and differences of groups with differing worldviews and obtaining a wider view of American history and diversity.
- Reason intelligently in oral and written discourse while allowing that traditions are meaningful to participants in places and times different from your present circumstances.
- Work independently to connect folklore studies with other course work and life experiences and goals.
- Get excited about personal, group, and aesthetic dynamics in the performance of traditions and "question ethically" the choices and forces that help perpetuate or extinguish traditional practices, both locally and globally.

SPAN 365 : Mexican-American Culture. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Contemporary culture (education, popular and fine arts, worldview, attitudes, etc.) of the Mexican-American in the U.S.

**Course Outcomes**

- Recognize and describe important cultural products, such as art, literature, architecture, and music, including important works and individuals, as pertaining to Mexican American culture.
- Describe important cultural institutions, including family and religion.
- Discuss important cultural practices, including customs, traditions, celebrations, festivals, etc
- Analyze recent cultural and social developments, including political, social, religious, and artistic events, placing them in historical context.
- Students should be able to recognize, compare, and evaluate the influence of their own cultural background on their attitudes, beliefs, and worldview, in relation to the Mexican- American world.

3. Complete additional elective courses to make a total of 18 hours. Electives may be chosen from the courses listed above that have not been used, from the additional courses listed below, or from topical courses on Western themes offered through academic departments or the Honors Program.

AM ST 390R : Topics in American Studies. (3:3:0)

DESCRIPTION: Multidisciplinary study of a carefully defined problem in American culture. Topics vary.

**Course Outcomes**

- Students will be able to employ disciplinary and interdisciplinary perspectives to address a key problem or question in American culture.
- Students will, in a variety of written assignments, rigorously analyze cultural and textual research sources.
- Students will be able to communicate persuasively in oral and written forms following the conventions of the field.

(western topics only)

AM ST 392R : American Studies Lecture Series: Presentations on American Studies/Western American Studies. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduce research in American Studies and Western American Studies. Speakers from BYU and other institutions share their research. Students engage with lecturers by developing questions, then evaluate and write about ideas.

**Course Outcomes**

- Students will be introduced to the latest research in American Studies and Western American Studies by attending a weekly lecture series.
- Students will be able engage with the lecturers by asking questions and responding to teach lecture.
- Students will be able to evaluate and write clearly about the ideas presented in the lectures.

AM ST 399R : Academic Internship. (.5-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Program coordinator's consent.

DESCRIPTION: Examining the American experience from a variety of standpoints. Honing skills in writing; literary criticism; historical research; and social, political, and economic analysis.

**Course Outcomes**

- Using available resources, students will be able to work independently to arrange and complete an internship that will help them explore post-graduation career possibilities.
- Students will be able to analyze and act in accord with the conventions, texts, and/or artifacts of the field in which they arrange their internship; they will develop a fuller understanding of regional, national, and/or international modes of American experience.
- Students will improve their oral and written skills according to the best practices of the internship situation in which they are engaged, as evaluated by internship supervisors and coordinators.

(up to 6 hours with director's approval)

ANTHR 317 : Native Peoples of North America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Indian groups at the time of the European arrival; social organization, beliefs, values, economy, and adaptation to environment.

**Course Outcomes**

- Through course assignments, students will gain an introductory knowledge of the major Native American cultures at the time of European contact including but not limited to social organization, belief systems, values, economies, and adaptations to environments.
- Through course assignments and hands-on access to the collections of the BYU Museum of Peoples and Cultures, students will gain a greater depth of knowledge concerning the diverse range of material culture represented by the indigenous peoples of North America.
- Through course assignments, students will increase their skill sets in critical thinking, research, analysis, and writing skills in the disciplines of anthropology and archaeology.

ANTHR 530 : Great Basin Archaeology. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Anthr 350 or equivalent.

DESCRIPTION: Overview of ethnography, history of research, and prehistory of the Great Basin culture area. Current issues in archaeological research emphasized.

**Course Outcomes**

- Students will gain archaeological and cultural knowledge of the major native peoples of the Great Basin Region from pre-history through European contact through a study of their archaeologial remains and ethnographic studies.
- Students will have hands-on experiences with the collections of the Museum of Peoples and Cultures that are representative of the cultures of the Great Basin Region.

ANTHR 535 : Southwest Seminar. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Anthr 350 or equivalent.

DESCRIPTION: Overview of ethnography and prehistory of American Southwest. Current issues in archaeological research emphasized.

**Course Outcomes**

There are no course outcomes available

ARTHC 345 : American Art. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ARTHC 202

DESCRIPTION: American painting and sculpture from colonial through modern times.

**Course Outcomes**

There are no course outcomes available

GEOG 245 : Geography of Utah. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

RECOMMENDED: Geog 101,120, 130.

DESCRIPTION: Exploring geography of Utah. Topics include land forms, climate, agricultural and recreational economics, historical migration, Mormon cultural landscape, ethnic patterns, and rural-urban contrasts.

**Course Outcomes**

There are no course outcomes available

GEOG 250 : United States and Canada. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Analysis of the natural environment, historical development, cultural patterns, economic systems, and political structures of geographic regions.

**Course Outcomes**

There are no course outcomes available

GEOG 306 : Public Land Conservation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Environmental and social geography of public lands; analyzing historical, planning, management, and ecological issues.

**Course Outcomes**

There are no course outcomes available

HIST 363 : The Spanish Frontier in North America. (3:3:0)

DESCRIPTION: Spanish exploration, occupation, and institutions of northern Mexico, the American southwest, and Florida, 1521-1821; Mexican period to 1848.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in the history of the Spanish and Mexican northern frontier in North America between approximately 1492 and 2011
- Students will be able to analyze and interpret primary source documents
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.

HIST 364 : Utah. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Contributions of Native Americans, explorers, mountain men, miners, government officials, Mormons, and other groups in the nineteenth century. Impact of national movements, various peoples, politics, economics, and social and cultural change in the twentieth century.

**Course Outcomes**

There are no course outcomes available

HIST 382 : Mormonism in the American Experience. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Social, economic, political, intellectual, and religious environment in which Mormonism flourished; contributions of Mormon men and women to American culture and history.

**Course Outcomes**

- Students will be able to summarize and assess key aspects of how Mormonism has been situated in the larger cultural and religious geography of America
- Students will learn how particular primary sources provide key building blocks in prominent interpretations of the place of Mormonism in American history
- Students will become acquainted with, and learn to assess the academic conversation concerning Mormonism
- Students will enhance their verbal communication skills through participation in class discussion.

HIST 385 : Latinos in the United States. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: The place of Latin Americans within the context of U.S. history. The growth and development of the largest Latino communities from pre-colonial times to present day and how Latinos may influence future policies within the U.S.

**Course Outcomes**

- Students will learn the history of Latinos in this country beginning with the circumstances which brought them to this country, the ways they have integrated or resisted integration, and the efforts they have made to claim their rights as citizens.
- Students will learn to interpret the documents and rhetoric of this community which will help them understand the intellectual, cultural and political thought of Latinos over the last 100 years.
- Students will learn the current state of Latino social and cultural integration in the Utah community.
- Students will learn to write a major essay on the history of Latinos in order to understand the literature as well as the primary sources available on this community.

HIST 386 : Nineteenth-Century American Indian History. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: History of various Indian tribes, their cultures, and their relationships with European nations and the United States, including military campaigns.

**Course Outcomes**

- Students will be understand and appreciate Indian history and cultures, employ historical research skills effectively, and apply appropriate methods and theories to the study of Indian history and contemporary Native American issues.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.
- Recognize important ideas of Indian and non-Indian cultural traditions and how LDS Native Americans have balanced their intellectual pursuits, their faith, and their culture.
- Learn to communicate effectively both orally and in writing about Native American topics
- Have meaningful interactions with Indian communities, individuals, and organizations to provide outreach and to help address contemporary challenges

HIST 387 : Twentieth-Century American Indian History. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Sociocultural factors that affect twentieth-century native Americans in both urban and reservation settings, including current challenges facing Indian communities.

**Course Outcomes**

- Students will be understand and appreciate Indian history and cultures, employ historical research skills effectively, and apply appropriate methods and theories to the study of Indian history and contemporary Native American issues.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations.
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.
- Recognize important ideas of Indian and non-Indian cultural traditions and how LDS Native Americans have balanced their intellectual pursuits, their faith, and their culture
- Learn to communicate effectively both orally and in writing about Native American topics.
- Have meaningful interactions with Indian communities, individuals, and organizations to provide outreach and to help address contemporary challenges.

POLI 311 : State and Local Government and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Poli 110 or Poli 210.

DESCRIPTION: Relation of state and national governments, forms of state governments and politics, types of municipal governments and their operation.

**Course Outcomes**

There are no course outcomes available

POLI 317 : Public Opinion and Voting Behavior. (3-4:3:Arr.)

WHEN TAUGHT: Contact Department.
PREREQUISITE: POLI 200
RECOMMENDED: Poli 328.
DESCRIPTION: Relationship between attitudes, opinion, and voting behavior in American politics and institutions.

**Course Outcomes**

There are no course outcomes available

PWS 375 : Environmental Policies and Laws. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Inception, current state, and future directions of seminal environmental policies and laws established in the US to improve environmental quality. Application of policies and laws in resource conservation and management, including a National Environmental Policy Act certification program.

**Course Outcomes**

- Demonstrate a fundamental understanding of the inception, current state, and future needs of the five seminal developments in environmental policy and law (i.e., Clean Air Act; Clean Water Act; National Environmental Policy Act; Comprehensive Environmental Response, Compensation, and Liability Act or Superfund; and the Endangered Species Act)
- Create your own conceptual framework for analyzing policy change in the United States and abroad, and understand the role of government, society, and economics in shaping this framework
- Understand the formal institutional setting in which policy is developed, the major participants involved, and the role of science in shaping policy
- Gain a basic understanding of how environmental laws (e.g., statutes, cases, and common laws) operate to regulate our interaction with the environment and one another
- Write more effectively and concisely

PWS 411 : Watershed Management. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: BIO 350; or PWS 350
DESCRIPTION: Processes and management of the hydrologic cycle of forests and rangelands.

**Course Outcomes**

- Students will understand the history and policy that drives water management in the western US.
- Students will understand ecological and hydrological processes and concepts and apply them to watershed management actions such as harvesting, grazing, and restoration.
- Students will be able to apply assessment and classification tools to watersheds and their components to determine how management actions affect hydrologic responses.

REL C 342 : Pioneers and Persecution, 1846-1899. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Exodus from Nauvoo, the experience of Mormon Pioneers crossing the plains, establishing Zion in the Great Basin, plural marriage and government persecution, the Manifesto, and events leading to Utah statehood.

**Course Outcomes**

There are no course outcomes available

: Honors Pioneers and Persecution, 1846-1899.

**Course Outcomes**

REL C 343 : The Global Church, 1900 to the Present. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: The Church in the twentieth and twenty-first centuries, international expansion, significant developments of Church programs and structure, the Church during wartime, the world-wide spread of temples.

**Course Outcomes**

There are no course outcomes available

: Honors The Global Church, 1900 to the Present.

**Course Outcomes**

SPAN 461 : Spanish-Speaking American (Mexican-American) Literature. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Even Yrs.; Spring Contact Department; Summer Contact Department
PREREQUISITE: SPAN 451

DESCRIPTION: Spanish-English literature of the Mexican-American within the United States.

**Course Outcomes**

- Demonstrate thorough understanding of the history of Mexican-American literary history.
- Develop advanced skills in research techniques and academic writing.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Mexican-American Literature.

*Hours include courses that may fulfill university core requirements.

## Show American Studies Courses

College of Humanities Home

Asian and Near Eastern Languages Department Home

Arabic

Major
- Arabic Language

Minors
- Arabic

Language Certificate
- Arabic

Course Information
- Arabic Courses

Chinese

Majors
- BA in Chinese

Minors
- Chinese
- Chinese Teaching

Language Certificate
- Chinese

Course Information
- Chinese—Mandarin Courses
- Chinese—Cantonese Courses

Hebrew

Minors
- Biblical Hebrew
- Modern Hebrew

Course Information
- Hebrew Courses

Japanese

Majors
- BA in Japanese

Minors
- Japanese
- Japanese Teaching

Language Certificate
- Japanese

Course Information
- Japanese Courses

Korean

Majors
- BA in Korean

Minors
- Korean

Language Certificate
- Korean

Course Information
- Korean Courses

# Asian and Near Eastern Languages

J. Scott Miller, Chair
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College of Humanities Advisement Center
1175 JFSB, (801) 422-4789

## Admission to Degree Program

All degree programs in the Department of Asian and Near Eastern Languages are open enrollment. Some special limitations apply for teaching minors.

## The Discipline

The many countries of Asia and the Near East are among the oldest civilizations in the world. The study of the languages and cultures of these nations gives students access to some of the richest and most varied traditions of thought, belief, and behavior to be found. A large percentage of the vast, essentially non-Christian segment of the world's population resides in these two zones: Asia—with its diverse heritage of belief in Hinduism, Buddhism, Taoism, Confucianism, and other systems of thought—continues to retain its "exotic" image for most Westerners, even though many nations in the region are at the forefront of contemporary politics and economics. The Near East, birthplace of Christianity, Judaism, and Islam, remains a little-understood, often stereotyped area of considerable economic, strategic, and religious importance today.

The languages of these regions are themselves generally difficult, with complex writing systems that require diligent study. But exposure to these languages and the cultures they express will enable students to look at the world from new perspectives and deepen their understanding of peoples whose history and practices are widely divergent from their own.

Courses in the department equip students with verbal and written facility in the languages of their chosen area, whereas linguistics courses offer an understanding of how the languages are structured and acquired. A study of the literature reveals old and sophisticated traditions no less important than that of English or any other major language.

Majors are available in Chinese, Japanese, and Korean, and a second major in Arabic. Students can obtain a minor in Arabic, Biblical Hebrew, and Modern Hebrew. Each discipline is briefly described below.

### Arabic (second major program)

Arabic study at BYU stresses facility in speaking a colloquial dialect and fluency in reading the press. The program is designed to supplement the Middle East Studies/Arabic major which prepares students for government-, agency-, and NGO-related work. The second major program, which is conceived as a supplement to the Middle East Studies/Arabic major, aims to push students' reading and speaking ability in the direction of the superior level.

### Chinese

The study of Chinese accesses the literature, thought, culture, and society of the world's largest population with the longest cultural continuum; moreover, since the civilizations of Japan, Korea, and Vietnam are founded on traditional Chinese Confucianism, a major in Chinese opens up much of the wider world of modern Asia. You will communicate in spoken and written Mandarin, gain skills in analyzing and appreciating both traditional and modern literature, acquire effective research strategies, and learn to write clearly and persuasively. All the personal enrichment and interpersonal understanding that results from a liberal arts education in the humanities is offered through the study of Chinese.

### Hebrew

The BYU Hebrew program offers courses and minor degrees in both Biblical Hebrew and Modern Hebrew. Biblical Hebrew students develop appreciation for the Hebrew Bible and competence to read prose and poetry. The program is designed to provide students with habits of study so that they may enjoy a life-long exploration of the Hebrew Bible. Students of Modern Hebrew gain access to the spoken language of the State of Israel and, through it, to Jews throughout the world. The Modern Hebrew program emphasizes the ability to speak and understand Modern Hebrew, to analyze Israeli literature and media, and to appreciate the cultural dynamics of the language.

### Japanese

The study of Japanese at the university level will provide students an opportunity to develop high level communication skills to acquire a greater understanding of Japan and its people. Additionally, students will be introduced to the rich cultural heritage of Japan in literature, thought, painting, music, and the other arts. The study of Japanese language and literature will introduce students to many of the major aspects of that heritage, while providing the kind of training in language and cultural skills that will prepare students to undertake careers in a wide variety of fields.

### Korean

Korean is a difficult language, and at BYU we emphasize reading and writing the language as well as speaking and listening. Basic course work emphasizes linguistic skill and the language's literary value and tradition.

# Career Opportunities

Students who major or minor in the languages and cultures of Asia and the Near East will find that, as will any other humanities-centered course of study, they have been well provided with tools to communicate both in the target language and in English and have broadened and deepened their knowledge of the region of their choice. Career options are many and varied for such students, but those who do not plan to continue on in the academic study of the language are strongly urged to consider a second major or a strong minor in a practical field that can be combined with their language skills. In the competitive world of today, language ability alone no longer provides the competitive advantage it once offered on the job market. Students are urged to consult the College of Humanities Advisement Center, Career Placement Services, and their academic advisors for the best ways to make use of their language as they begin to seek employment.

## Arabic

Graduates of our program find jobs in government agencies (the State Department, intelligence, the military), NGOs, and in international business. Many students use their Middle East Studies/Arabic major, or Arabic minor, as preparation for applying to MBA programs, law school, and medical or dental school.

## Chinese

Chinese majors have all of the advantages of the liberal arts graduate (who claims effective communication and interpersonal skills) with the added edge of knowing the language and culture behind a leading world economy. Therefore, graduates enter the work force in a wide variety of occupations, such as journalism, insurance, business, travel, investment, and government service. They not only are marketable as trained linguists, translators, and cultural advisors, but are vigorously recruited as personnel managers and business representatives by companies with overseas interests. Graduates are also highly competitive in applying to professional schools for medicine, dentistry, law, and business.

## Hebrew

Many students who minor in Biblical Hebrew major in Ancient Near Eastern Studies; some students continue on to earn Masters and Ph.D degrees. Eventually they are prepared to enter the academic field in a university setting, in seminary and institute programs of the Church Educational System, as independent researchers, or in related fields. Students who minor in Modern Hebrew will find the degree to be an asset if seeking jobs in government agencies (intelligence, State Department, military), international business, or the academic field.

## Japanese

In recent years, graduates from the Japanese major at BYU have gone on to law, engineering, computer, or MBA programs, while others have continued on to medical school. A few have pursued graduate work in a variety of academic fields at some of the most prestigious universities in the country. Others have gone directly to work in government service, in the military, and in American or Japanese business firms where their language ability and cultural background are in high demand. Some also pursue careers in translation or language teaching.

## Korean

Most of the jobs available for students with a Korean major are in government (NSA, CIA, FBI, etc.), but Korean majors also have all the advantages of a liberal arts degree. Many of our graduates go on to professional schools, law, business, or medicine. Korean is an excellent complement, either as a major or minor, to studies in prelaw, political science, accounting, English, international relations, and many other majors available on campus. Korean is an important language in the world of diplomacy and defense, as well as the world of international business. (Korea is the eighth largest trading partner of the U.S.) Our graduates have been hired by the U.S. government and by U.S., international, and Korean businesses. They work in technical areas as well, involving everything from computers to broadcasting to medicine.

# General Information

The Department of Asian and Near Eastern Languages strongly recommends that StDev 317, a 1-credit-hour course, be taken at the end of the sophomore year or the beginning of the junior year. Because liberal arts degrees provide preparation in a variety of useful fields rather than a single career track, this course is recommended to help liberal arts students focus on specific educational and occupational goals and to identify the career options or educational opportunities available to them. The course will introduce them to the resources needed for accessing information about graduate schools, internships, careers, and career development. Students will learn basic employment strategies, including the steps necessary for obtaining employment related to their own specialty.

# Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

# Undergraduate Programs and Degrees

**Arabic Language (2nd-Major Program)** (Program Outcomes)
**BA in Chinese** (Program Outcomes)
**BA in Japanese** (Program Outcomes)
**BA in Korean** (Program Outcomes)

**Minor in Arabic**
**Minor in Chinese**

**Minor in Chinese Teaching**
**Minor in Biblical Hebrew**
**Minor in Modern Hebrew**
**Minor in Japanese**
**Minor in Japanese Teaching**
**Minor in Korean**

**Certificate in Arabic**
**Certificate in Chinese**
**Certificate in Japanese**
**Certificate in Korean**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MA in Second Language Teaching (Arabic, Chinese, Japanese, or Korean)

For more information see the BYU 2014–2015 Graduate Catalog.

## General Information

### Language Credit by Examination

Credit by examination is available for many lower-division courses of the above-listed languages. Enrollment in an advanced class is prerequisite to taking the examination.

The following languages are not taught on a regular basis but may be offered if sufficient demand exists. Credit by examination is available for some of the Near Eastern languages listed below.

Akkadian
Aramaic
Egyptian
Persian (Farsi)
Syriac
Turkish
Ugaritic

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Arabic

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Korean

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Course Information
- Korean Courses

# BA in Arabic Language (a second-major program) (35–51 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete a primary major program.
2. Complete the following prerequisite courses (or equivalents):

ARAB 101 : First-Year Arabic. (4:5:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Basic skills of spoken and written Arabic.
NOTE: Suggested first class for students learning Arabic.

**Course Outcomes**

There are no course outcomes available

ARAB 102 : First-Year Arabic. (4:5:0)
WHEN TAUGHT: Winter; Spring; Summer
DESCRIPTION: Second-semester Arabic. Basic language skills, both spoken and written.

**Course Outcomes**

- Demonstrate expanding ability to socially interact with Arabs appropriately.
- Converse successfully with native speakers of Arabic about likes/dislikes, home/school, health, schedule, plans, and accomplish basic tasks such as shopping.
- Comprehend simple but longer written and audio/video texts on an expanded range of familiar topics.
- Write descriptive prose and narrate events occuring in the past, present and future.
- Demonstrate increasing ability to appropriately employ formal and vernacular Arabic.
- Significantly increase control of foundational structures (verb conjugations, complex sentence types).
- Employ expanded range of language learning and communication strategies (knowledge of root and pattern system, circumlocution).

ARAB 201 : Second-Year Arabic. (4:5:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Arab 102 or equivalent experience.
DESCRIPTION: Significantly expanding proficiency in Modern Standard Arabic and increasing conversational repertoire.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL intermediate low level. Show an elementary ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Read and understand simple written Standard Arabic texts at the ACTFL intermediate low level.
- Understand spoken conversations and dialogues in Standard and Colloquial Arabic at the ACTFL intermediate low level.
- Show a mastery of basic verb conjugations, idaafa, and other basic structures, with some familiarity with more advanced structures (passive, active and passive participles, relative clauses, diptotes and other vowelling issues).

ARAB 202 : Intermediate Arabic. (4:5:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: Arab 201 or equivalent experience.
DESCRIPTION: Continuation of Arab 201.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL intermediate mid level. Show a developing ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Read and understand simple written Standard Arabic texts at the ACTFL intermediate mid level. Show a developing ability to understand front page news articles on familiar topics.
- Understand spoken conversations and dialogues in Standard and Colloquial Arabic at the ACTFL intermediate mid level.
- Write short essays, journal entries and notes at the ACTFL novice high level.

Show a mastery of verb conjugations (including defective verbs), passive, and other basic structures, and a developing familiarity with advanced Arabic grammatical constructions like cognate accusative, false idaafa, tamyiiz, and haal. Demonstrate an ability to vowel simple texts accurately, and a developing ability to vowel more complicated texts.
- Vocabulary MasteryDemonstrate a mastery of basic Arabic vocabulary, both colloquial and standard (2500 words).

3. Complete the following:

IHUM 242 : Introduction to the Humanities of the Islamic World. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Major arts of Islamic cultures in their historical, religious, and philosophical settings.

**Course Outcomes**

There are no course outcomes available

4. Complete the following (normally as part of a BYU Semester Abroad program):

ARAB 211R : Second-Year Conversation. (2:2:0)

OFFERED: Study Abroad only.

WHEN TAUGHT: Fall

PREREQUISITE: Arab 202.

DESCRIPTION: Intermediate spoken Arabic.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL beginning hi level. Show an ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Demonstrate a mastery of the vocabulary used to describe, narrate and express basic daily functions and interactions

ARAB 300 : Advanced Modern Standard Arabic. (4:5:0)

OFFERED: Study Abroad only.

WHEN TAUGHT: Fall

PREREQUISITE: ARAB 202

DESCRIPTION: Advanced work in reading, writing, listening, speaking.

**Course Outcomes**

- Read and understand written Standard Arabic texts at the ACTFL Advanced Lo level. Demonstrate an ability to read and comprehend front page news articles fluently with little recourse to a dictionary.
- Write short essays, journal entries and notes at the ACTFL intermediate mid level.

ARAB 302 : Newspaper Arabic. (4:5:0)

OFFERED: Study Abroad only.

WHEN TAUGHT: Fall

PREREQUISITE: ARAB 202

DESCRIPTION: Extensive reading of Arabic newspapers and magazines, with appropriate vocabulary building.

**Course Outcomes**

- Read and understand written Standard Arabic texts at the ACTFL Advanced Lo level. Demonstrate an ability to read and comprehend front page news articles fluently with little recourse to a dictionary.
- Write short essays, journal entries and notes at the ACTFL intermediate mid level.

ARAB 311R : Third-Year Conversation. (2:2:0)

OFFERED: Study Abroad only.

WHEN TAUGHT: Fall

PREREQUISITE: ARAB 202

DESCRIPTION: Advanced conversation skills.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL intermediate hi level. Show an ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Demonstrate a mastery of the vocabulary used to describe, narrate and express opinions about current events.

ARAB 331 : Spoken Arabic. (4:5:0)

OFFERED: Study Abroad only.

WHEN TAUGHT: Fall

PREREQUISITE: ARAB 202

DESCRIPTION: Intensive study of the spoken language.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL intermediate hi level. Show an ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Demonstrate a mastery of the vocabulary necessary to narrate, describe and express opinion on a variety of topics.
- Demonstrate a command of the basic rules of grammatical spoken Arabic: agreement, verb conjugation,

word order, etc., and an increasing command of native-like expression, word choice and idiomatic expression.

5. After consultation with a faculty advisor, complete two additional courses from the following:

ARAB 421R : Fourth-Year Arabic Writing Tutorial. (2:2:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Essay and letter writing in Arabic.

**Course Outcomes**

- Write short essays, journal entries and notes at the ACTFL intermediate high level.

ARAB 422R : Advanced Spoken Arabic. (2:2:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Movies, plays, and other texts in spoken Arabic.

**Course Outcomes**

- Students will engage and analyze advanced point/counterpoint media events from a rhetorical viewpoint; they will participate in similar events themselves, with increasing accuracy in displaying prominent features of Arabic rhetorical style; the linguistic accuracy and fluency of their speaking performance will also improve.

ARAB 423R : Current Events in Arabic. (2:2:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Current events from online oral and written news sources, including high-level discussions of causes and context with written analyses and oral presentations.

**Course Outcomes**

- Demonstrate an ability to speak and write fluently in Arabic about current events in the Middle East, expressing and supporting opinion, and giving detailed descriptions and analyses of the events.

ARAB 424R : Modern Arabic Literature. (2:2:0)

WHEN TAUGHT: Winter

DESCRIPTION: Readings in modern Arabic literature.

**Course Outcomes**

- Students will demonstrate their knowledge and understanding of major works and genres in verbal and written forms.
- Students will demonstrate their understanding of the major issues of Modern Arabic Literature.
- Students will demonstrate an ability to understand and analyze the linguistic features of important Arabic literary texts.

ARAB 425R : Classical Arabic Texts. (2:2:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Quran, Hadith, Sira, Adab.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of premodern literature.
- Students will demonstrate their knowledge and understanding of major works and genres.
- Students will be able to analyze and discuss the influence of the pre-modern language on present-day Arabic.

ARAB 426R : Advanced Arabic Grammar. (2:2:0)

WHEN TAUGHT: Winter

DESCRIPTION: The morphology and syntax of modern Arabic, including advanced vocabulary study.

**Course Outcomes**

- Demonstrate in increased ability to understand very difficult Arabic texts, by relying on a firm grasp of the vocabulary and grammar of the language, as well as techniques for figuring out difficult structures that present themselves.

6. Complete the following twice each (once in Winter Semester and once during Spring/Summer terma):

ARAB 411R : Advanced Arabic Conversation and Rhetorical Skills. (1-3:2:1)

WHEN TAUGHT: Winter; Spring; Summer

PREREQUISITE: ARAB 311R

RECOMMENDED: Arab 422R.

DESCRIPTION: Advanced conversation and rhetorical skills based on point/counterpoint debates.

**Course Outcomes**

- Through debates and other activities, students will demonstrate proficiency in advanced conversational skills and rhetorical skills appropriate in Arabic-speaking cultures.

ARAB 495R : Directed Studies in Arabic. (1-3:0:Arr)

WHEN TAUGHT: Winter; Spring; Summer

PREREQUISITE: ARAB 302

RECOMMENDED: Arab 424, 425, 426.

DESCRIPTION: Individual tutorial in topic of student choice; lexical development; major oral and written report in Arabic.

**Course Outcomes**

- Mastery of all of the vocabulary needed for superior level conversation/presentation/writing on the broad topic chosen by the student; advanced to superior level fluency and accuracy in conversation on this topic; professional level oral Arabic report presented to peers and community; accompanying written Arabic report; both reports included in program portfolio (video and paper).

7. Take the ACTFL Speaking and Reading test during the last registration of Arab 495R and achieve a minimum score of *Advanced-Mid*.

*Hours include courses that may fulfill university core requirements.

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# Minor in Arabic (18–35 hours*)

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## Program Requirements

1. Complete the following prerequisite courses (or equivalents):

ARAB 101 : First-Year Arabic. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Basic skills of spoken and written Arabic.
NOTE: Suggested first class for students learning Arabic.

**Course Outcomes**

There are no course outcomes available

ARAB 102 : First-Year Arabic. (4:5:0)

WHEN TAUGHT: Winter; Spring; Summer
DESCRIPTION: Second-semester Arabic. Basic language skills, both spoken and written.

**Course Outcomes**

- Demonstrate expanding ability to socially interact with Arabs appropriately.
- Converse successfully with native speakers of Arabic about likes/dislikes, home/school, health, schedule, plans, and accomplish basic tasks such as shopping.
- Comprehend simple but longer written and audio/video texts on an expanded range of familiar topics.
- Write descriptive prose and narrate events occuring in the past, present and future.
- Demonstrate increasing ability to appropriately employ formal and vernacular Arabic.
- Significantly increase control of foundational structures (verb conjugations, complex sentence types).
- Employ expanded range of language learning and communication strategies (knowledge of root and pattern system, circumlocution).

ARAB 201 : Second-Year Arabic. (4:5:0)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: Arab 102 or equivalent experience.
DESCRIPTION: Significantly expanding proficiency in Modern Standard Arabic and increasing conversational repertoire.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL intermediate low level. Show an elementary ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Read and understand simple written Standard Arabic texts at the ACTFL intermediate low level.
- Understand spoken conversations and dialogues in Standard and Colloquial Arabic at the ACTFL intermediate low level.
- Show a mastery of basic verb conjugations, idaafa, and other basic structures, with some familiarity with more advanced structures (passive, active and passive participles, relative clauses, diptotes and other vowelling issues).

ARAB 202 : Intermediate Arabic. (4:5:0)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: Arab 201 or equivalent experience.
DESCRIPTION: Continuation of Arab 201.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL intermediate mid level. Show a developing ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Read and understand simple written Standard Arabic texts at the ACTFL intermediate mid level. Show a developing ability to understand front page news articles on familiar topics.
- Understand spoken conversations and dialogues in Standard and Colloquial Arabic at the ACTFL intermediate mid level.
- Write short essays, journal entries and notes at the ACTFL novice high level.
- Show a mastery of verb conjugations (including defective verbs), passive, and other basic structures, and a developing familiarity with advanced Arabic grammatical constructions like cognate accusative, false idaafa, tamyiiz, and haal. Demonstrate an ability to vowel simple texts accurately, and a developing ability to vowel more complicated texts.

- Vocabulary MasteryDemonstrate a mastery of basic Arabic vocabulary, both colloquial and standard (2500 words).

2. Complete the following (normally as part of a BYU Semester Abroad program):

ARAB 211R : Second-Year Conversation. (2:2:0)
OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: Arab 202.
DESCRIPTION: Intermediate spoken Arabic.

**Course Outcomes**
- Speak Colloquial Arabic at the ACTFL beginning hi level. Show an ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Demonstrate a mastery of the vocabulary used to describe, narrate and express basic daily functions and interactions

ARAB 300 : Advanced Modern Standard Arabic. (4:5:0)
OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: ARAB 202
DESCRIPTION: Advanced work in reading, writing, listening, speaking.

**Course Outcomes**
- Read and understand written Standard Arabic texts at the ACTFL Advanced Lo level. Demonstrate an ability to read and comprehend front page news articles fluently with little recourse to a dictionary.
- Write short essays, journal entries and notes at the ACTFL intermediate mid level.

ARAB 302 : Newspaper Arabic. (4:5:0)
OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: ARAB 202
DESCRIPTION: Extensive reading of Arabic newspapers and magazines, with appropriate vocabulary building.

**Course Outcomes**
- Read and understand written Standard Arabic texts at the ACTFL Advanced Lo level. Demonstrate an ability to read and comprehend front page news articles fluently with little recourse to a dictionary.
- Write short essays, journal entries and notes at the ACTFL intermediate mid level.

ARAB 311R : Third-Year Conversation. (2:2:0)
OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: ARAB 202
DESCRIPTION: Advanced conversation skills.

**Course Outcomes**
- Speak Colloquial Arabic at the ACTFL intermediate hi level. Show an ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Demonstrate a mastery of the vocabulary used to describe, narrate and express opinions about current events.

And one additional Arabic language course:

ARAB 331 : Spoken Arabic. (4:5:0)
OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: ARAB 202
DESCRIPTION: Intensive study of the spoken language.

**Course Outcomes**
- Speak Colloquial Arabic at the ACTFL intermediate hi level. Show an ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Demonstrate a mastery of the vocabulary necessary to narrate, describe and express opinion on a variety of topics.
- Demonstrate a command of the basic rules of grammatical spoken Arabic: agreement, verb conjugation, word order, etc., and an increasing command of native-like expression, word choice and idiomatic expression.

ARAB 421R : Fourth-Year Arabic Writing Tutorial. (2:2:0)
WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Essay and letter writing in Arabic.

**Course Outcomes**
- Write short essays, journal entries and notes at the ACTFL intermediate high level.

ARAB 422R : Advanced Spoken Arabic. (2:2:0)
WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Movies, plays, and other texts in spoken Arabic.

**Course Outcomes**

- Students will engage and analyze advanced point/counterpoint media events from a rhetorical viewpoint; they will participate in similar events themselves, with increasing accuracy in displaying prominent features of Arabic rhetorical style; the linguistic accuracy and fluency of their speaking performance will also improve.

ARAB 423R : Current Events in Arabic. (2:2:0)
WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Current events from online oral and written news sources, including high-level discussions of causes and context with written analyses and oral presentations.

**Course Outcomes**

- Demonstrate an ability to speak and write fluently in Arabic about current events in the Middle East, expressing and supporting opinion, and giving detailed descriptions and analyses of the events.

ARAB 424R : Modern Arabic Literature. (2:2:0)
WHEN TAUGHT: Winter
DESCRIPTION: Readings in modern Arabic literature.

**Course Outcomes**

- Students will demonstrate their knowledge and understanding of major works and genres in verbal and written forms.
- Students will demonstrate their understanding of the major issues of Modern Arabic Literature.
- Students will demonstrate an ability to understand and analyze the linguistic features of important Arabic literary texts.

ARAB 425R : Classical Arabic Texts. (2:2:0)
WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Quran, Hadith, Sira, Adab.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of premodern literature.
- Students will demonstrate their knowledge and understanding of major works and genres.
- Students will be able to analyze and discuss the influence of the pre-modern language on present-day Arabic.

ARAB 426R : Advanced Arabic Grammar. (2:2:0)
WHEN TAUGHT: Winter
DESCRIPTION: The morphology and syntax of modern Arabic, including advanced vocabulary study.

**Course Outcomes**

- Demonstrate in increased ability to understand very difficult Arabic texts, by relying on a firm grasp of the vocabulary and grammar of the language, as well as techniques for figuring out difficult structures that present themselves.

ARAB 490R : Independent Readings. (.5-3:ARR:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.
DESCRIPTION: Independent readings of Arabic materials.

**Course Outcomes**

- Read selected texts at the advanced lo level.
- Demonstrate an understanding of the place of those texts in the world of Arabic writing.

3. Complete the following:

IHUM 242 : Introduction to the Humanities of the Islamic World. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Major arts of Islamic cultures in their historical, religious, and philosophical settings.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

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Hebrew

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Japanese

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Korean

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# Arabic Language Certificate (9 hours)

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*This Language Certificate program is administered by the Center for Language Studies (3086 JFSB), http://languagecertificate.byu.edu.*

Any matriculated (degree-seeking) BYU student who meets the proficiency and course requirements may earn the Arabic Language Certificate. The proficiency requirement is met through the nationally recognized ACTFL Oral and Writing Proficiency Exams. Qualifying students will be awarded a certificate on one of three levels based on the following:

1. Advanced Certificate: An ACTFL "Advanced" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
2. Mastery Certificate: An ACTFL "Advanced High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
3. Professional Certificate: An ACTFL "Superior" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.

## Required Courses:

**Note:** Students who have completed all of the coursework required for a language major or a language minor will also have satisfied the coursework requirement for the language certificate.

1. Language - complete one course from the following:

ARAB 302 : Newspaper Arabic. (4:5:0)
OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: ARAB 202
DESCRIPTION: Extensive reading of Arabic newspapers and magazines, with appropriate vocabulary building.

**Course Outcomes**
- Read and understand written Standard Arabic texts at the ACTFL Advanced Lo level. Demonstrate an ability to read and comprehend front page news articles fluently with little recourse to a dictionary.
- Write short essays, journal entries and notes at the ACTFL intermediate mid level.

ARAB 426R : Advanced Arabic Grammar. (2:2:0)
WHEN TAUGHT: Winter
DESCRIPTION: The morphology and syntax of modern Arabic, including advanced vocabulary study.

**Course Outcomes**
- Demonstrate in increased ability to understand very difficult Arabic texts, by relying on a firm grasp of the vocabulary and grammar of the language, as well as techniques for figuring out difficult structures that present themselves.

2. Civilization:

IHUM 242 : Introduction to the Humanities of the Islamic World. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Major arts of Islamic cultures in their historical, religious, and philosophical settings.

**Course Outcomes**
There are no course outcomes available

3. Literature - complete one course from the following:

ARAB 424R : Modern Arabic Literature. (2:2:0)
WHEN TAUGHT: Winter
DESCRIPTION: Readings in modern Arabic literature.

**Course Outcomes**
- Students will demonstrate their knowledge and understanding of major works and genres in verbal and written forms.
- Students will demonstrate their understanding of the major issues of Modern Arabic Literature.
- Students will demonstrate an ability to understand and analyze the linguistic features of important Arabic literary texts.

ARAB 425R : Classical Arabic Texts. (2:2:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Quran, Hadith, Sira, Adab.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of premodern literature.
- Students will demonstrate their knowledge and understanding of major works and genres.
- Students will be able to analyze and discuss the influence of the pre-modern language on present-day Arabic.

Students who successfully complete a certificate will receive an official document verifying their level of achievement. The certificate will be listed on the university transcript.

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- Chinese—Cantonese Courses

Hebrew

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- Modern Hebrew

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Japanese

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Korean

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# Arabic (Arab)

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## Undergraduate Courses

### 100-Level Courses

ARAB 100R : Introduction to Arabic. (.5-1:Arr.:0)

OFFERED: Offered at the Jerusalem Center for Near Eastern Studies only.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Beginning Arabic

**Course Outcomes**

- Demonstrate ability to socially interact with Arabs appropriately (control basic "God wishes," gender/status sensitive).
- Comprehend simple written and audio/video texts on familiar topics.
- Converse simply but successfully with native speakers of Arabic about self and family; order a meal, ask/give simple directions, and accomplish other basic tasks.

ARAB 101 : First-Year Arabic. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Basic skills of spoken and written Arabic.
NOTE: Suggested first class for students learning Arabic.

**Course Outcomes**

There are no course outcomes available

ARAB 102 : First-Year Arabic. (4:5:0)

WHEN TAUGHT: Winter; Spring; Summer
DESCRIPTION: Second-semester Arabic. Basic language skills, both spoken and written.

**Course Outcomes**

- Demonstrate expanding ability to socially interact with Arabs appropriately.
- Converse successfully with native speakers of Arabic about likes/dislikes, home/school, health, schedule, plans, and accomplish basic tasks such as shopping.
- Comprehend simple but longer written and audio/video texts on an expanded range of familiar topics.
- Write descriptive prose and narrate events occuring in the past, present and future.
- Demonstrate increasing ability to appropriately employ formal and vernacular Arabic.
- Significantly increase control of foundational structures (verb conjugations, complex sentence types).
- Employ expanded range of language learning and communication strategies (knowledge of root and pattern system, circumlocution).

### 200-Level Courses

ARAB 201 : Second-Year Arabic. (4:5:0)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: Arab 102 or equivalent experience.
DESCRIPTION: Significantly expanding proficiency in Modern Standard Arabic and increasing conversational repertoire.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL intermediate low level. Show an elementary ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Read and understand simple written Standard Arabic texts at the ACTFL intermediate low level.
- Understand spoken conversations and dialogues in Standard and Colloquial Arabic at the ACTFL intermediate low level.
- Show a mastery of basic verb conjugations, idaafa, and other basic structures, with some familiarity with more advanced structures (passive, active and passive participles, relative clauses, diptotes and other vowelling issues).

ARAB 202 : Intermediate Arabic. (4:5:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: Arab 201 or equivalent experience.
DESCRIPTION: Continuation of Arab 201.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL intermediate mid level. Show a developing ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Read and understand simple written Standard Arabic texts at the ACTFL intermediate mid level. Show a developing ability to understand front page news articles on familiar topics.
- Understand spoken conversations and dialogues in Standard and Colloquial Arabic at the ACTFL intermediate mid level.
- Write short essays, journal entries and notes at the ACTFL novice high level.
- Show a mastery of verb conjugations (including defective verbs), passive, and other basic structures, and a developing familiarity with advanced Arabic grammatical constructions like cognate accusative, false idaafa, tamyiiz, and haal. Demonstrate an ability to vowel simple texts accurately, and a developing ability to vowel more complicated texts.
- Vocabulary MasteryDemonstrate a mastery of basic Arabic vocabulary, both colloquial and standard (2500 words).

ARAB 211R : Second-Year Conversation. (2:2:0)
OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: Arab 202.
DESCRIPTION: Intermediate spoken Arabic.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL beginning hi level. Show an ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Demonstrate a mastery of the vocabulary used to describe, narrate and express basic daily functions and interactions

ARAB 221R : Standard Arabic Tutorial. (2:2:0)
WHEN TAUGHT: Spring
DESCRIPTION: Readings, listening and writing activities, and discussion in Arabic designed to maintain vocabulary and fluency while waiting for study abroad.

**Course Outcomes**

- Maintain the level of Arabic achieved in Arabic 201/202 during the Spring/Summer terms while waiting for the intensive Arabic study abroad program, in terms of vocabulary mastery, and reading and speaking fluency.

ARAB 222R : Spoken Arabic Tutorial. (2:2:0)
WHEN TAUGHT: Summer
DESCRIPTION: Conversation with a native speaker; movies, plays, and other written sources of colloquial Arabic.

**Course Outcomes**

- Maintain the level of spoken Arabic achieved in Arabic 201/202 during the Spring/Summer terms while waiting for the intensive Arabic study abroad program, in terms of vocabulary mastery and speaking fluency.

ARAB 223R : Arabic Grammar Review. (2:2:0)
WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Tutorial review of first- and second-year Arabic grammar, with readings and other activities that illustrate the principles discussed.

**Course Outcomes**

- Maintain the level of Arabic achieved in Arabic 201/202 during the Spring/Summer terms while waiting for the intensive Arabic study abroad program, in terms of vocabulary mastery, the verbal system, and the grammatical structures of Arabic including tamyiiz, haal, cognate accusative and the like.

### 300-Level Courses

ARAB 300 : Advanced Modern Standard Arabic. (4:5:0)
OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: ARAB 202
DESCRIPTION: Advanced work in reading, writing, listening, speaking.

**Course Outcomes**

- Read and understand written Standard Arabic texts at the ACTFL Advanced Lo level. Demonstrate an ability to read and comprehend front page news articles fluently with little recourse to a dictionary.
- Write short essays, journal entries and notes at the ACTFL intermediate mid level.

ARAB 302 : Newspaper Arabic. (4:5:0)
OFFERED: Study Abroad only.
WHEN TAUGHT: Fall

PREREQUISITE: ARAB 202
DESCRIPTION: Extensive reading of Arabic newspapers and magazines, with appropriate vocabulary building.

**Course Outcomes**

- Read and understand written Standard Arabic texts at the ACTFL Advanced Lo level. Demonstrate an ability to read and comprehend front page news articles fluently with little recourse to a dictionary.
- Write short essays, journal entries and notes at the ACTFL intermediate mid level.

ARAB 311R : Third-Year Conversation. (2:2:0)

OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: ARAB 202
DESCRIPTION: Advanced conversation skills.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL intermediate hi level. Show an ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Demonstrate a mastery of the vocabulary used to describe, narrate and express opinions about current events.

ARAB 331 : Spoken Arabic. (4:5:0)

OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: ARAB 202
DESCRIPTION: Intensive study of the spoken language.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL intermediate hi level. Show an ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Demonstrate a mastery of the vocabulary necessary to narrate, describe and express opinion on a variety of topics.
- Demonstrate a command of the basic rules of grammatical spoken Arabic: agreement, verb conjugation, word order, etc., and an increasing command of native-like expression, word choice and idiomatic expression.

ARAB 361 : Introduction to Modern Arabic Literature in Translation. (3:3:0)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Reading and discussion of representative sample of modern Arabic short stories, novels, plays, and poetry. All readings in English.

**Course Outcomes**

There are no course outcomes available

ARAB 362 : Introduction to Medieval Arabic Literature in Translation. (3:3:0)

DESCRIPTION: Reading and discussion of representative sample of medieval Arabic literature. All readings in English.

**Course Outcomes**

There are no course outcomes available

ARAB 377 : Arabic Language Teaching Methods. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Language acquisition theories and instructional practices specific to Arabic language classrooms at various levels. Lectures, demonstrations, microteaching.

**Course Outcomes**

- thoughtfully articulate what it means to know, learn, and teach a foreign language
- critically evaluate methods in foreign language pedagogy
- develop effective curricula, syllabi, and lesson plans
- effectively implement lesson plans

**400-Level Courses**

ARAB 411R : Advanced Arabic Conversation and Rhetorical Skills. (1-3:2:1)

WHEN TAUGHT: Winter; Spring; Summer
PREREQUISITE: ARAB 311R
RECOMMENDED: Arab 422R.
DESCRIPTION: Advanced conversation and rhetorical skills based on point/counterpoint debates.

**Course Outcomes**

- Through debates and other activities, students will demonstrate proficiency in advanced conversational skills and rhetorical skills appropriate in Arabic-speaking cultures.

ARAB 421R : Fourth-Year Arabic Writing Tutorial. (2:2:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Essay and letter writing in Arabic.

**Course Outcomes**

- Write short essays, journal entries and notes at the ACTFL intermediate high level.

ARAB 422R : Advanced Spoken Arabic. (2:2:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Movies, plays, and other texts in spoken Arabic.

**Course Outcomes**

- Students will engage and analyze advanced point/counterpoint media events from a rhetorical viewpoint; they will participate in similar events themselves, with increasing accuracy in displaying prominent features of Arabic rhetorical style; the linguistic accuracy and fluency of their speaking performance will also improve.

ARAB 423R : Current Events in Arabic. (2:2:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Current events from online oral and written news sources, including high-level discussions of causes and context with written analyses and oral presentations.

**Course Outcomes**

- Demonstrate an ability to speak and write fluently in Arabic about current events in the Middle East, expressing and supporting opinion, and giving detailed descriptions and analyses of the events.

ARAB 424R : Modern Arabic Literature. (2:2:0)

WHEN TAUGHT: Winter
DESCRIPTION: Readings in modern Arabic literature.

**Course Outcomes**

- Students will demonstrate their knowledge and understanding of major works and genres in verbal and written forms.
- Students will demonstrate their understanding of the major issues of Modern Arabic Literature.
- Students will demonstrate an ability to understand and analyze the linguistic features of important Arabic literary texts.

ARAB 425R : Classical Arabic Texts. (2:2:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Quran, Hadith, Sira, Adab.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of premodern literature.
- Students will demonstrate their knowledge and understanding of major works and genres.
- Students will be able to analyze and discuss the influence of the pre-modern language on present-day Arabic.

ARAB 426R : Advanced Arabic Grammar. (2:2:0)

WHEN TAUGHT: Winter
DESCRIPTION: The morphology and syntax of modern Arabic, including advanced vocabulary study.

**Course Outcomes**

- Demonstrate in increased ability to understand very difficult Arabic texts, by relying on a firm grasp of the vocabulary and grammar of the language, as well as techniques for figuring out difficult structures that present themselves.

ARAB 490R : Independent Readings. (.5-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.
DESCRIPTION: Independent readings of Arabic materials.

**Course Outcomes**

- Read selected texts at the advanced lo level.
- Demonstrate an understanding of the place of those texts in the world of Arabic writing.

ARAB 495R : Directed Studies in Arabic. (1-3:0:Arr)

WHEN TAUGHT: Winter; Spring; Summer
PREREQUISITE: ARAB 302
RECOMMENDED: Arab 424, 425, 426.
DESCRIPTION: Individual tutorial in topic of student choice; lexical development; major oral and written report in Arabic.

**Course Outcomes**

- Mastery of all of the vocabulary needed for superior level conversation/presentation/writing on the broad topic chosen by the student; advanced to superior level fluency and accuracy in conversation on this topic; professional level oral Arabic report presented to peers and community; accompanying written Arabic report; both reports included in program portfolio (video and paper).

## 500-Level Graduate Courses (available to advanced undergraduates)

ARAB 531R : Advanced Topics in Arabic. (.5-3:5:0)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Advanced studies in Arabic language and literature.

**Course Outcomes**

There are no course outcomes available

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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# BA in Chinese (47–59 hours*)

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## Program Requirements | View MAP | View Program Outcomes

1. Complete the following prerequisite courses (or equivalents):

CHIN 101 : Beginning Mandarin. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Basic grammar, vocabulary building, speaking.

**Course Outcomes**
There are no course outcomes available

CHIN 102 : Beginning Mandarin. (4:5:2)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Chin 101 or equivalent.
DESCRIPTION: Continuation of Chin 101.

**Course Outcomes**
- Listen to conversations, dialogs, and live interaction at the ACTFL novice high level. (See Chinese major learning outcome 1).
- Speak and understand Mandarin Chinese at the ACTFL novice high level. (See Chinese major learning outcome 1).
- Write short paragraphs, notes, and similar texts at the ACTFL novice mid level. (See Chinese major learning outcome 2).
- Demonstrate a basic understanding of a variety of Chinese cultural practices and communicative conventions. (See Chinese major learning outcome 3)

CHIN 201 : Intermediate Mandarin. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chin 102.
DESCRIPTION: Advanced grammar, the writing system, reading and writing, speaking.

**Course Outcomes**
- Speak and understand Mandarin Chinese at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Understand conversations and dialogs at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Write short essays, journal entries, and notes at the ACTFL novice mid level. (See Chinese major learning outcome 2)
- Demonstrate an introductory level understanding of Chinese cultural practices. (See Chinese major learning outcome 3)

2. Complete the following:

CHIN 202 : Intermediate Mandarin. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Chin 201.
DESCRIPTION: Advanced grammar, the writing system, reading and writing, speaking.

**Course Outcomes**
- Speak and understand Mandarin Chinese at the ACTFL intermediate mid level. (See Chinese major learning outcome 1)
- Understand conversations and dialogs at the ACTFL intermediate mid level. (See Chinese major learning outcome 1)
- Write short essays, journal entries, and notes at the ACTFL novice high level. (See Chinese major learning outcome 2)
- Demonstrate a fundamental understanding of Chinese social practices as well as linguistically and culturally appropriate behavior. (See Chinese major learning outcome 3)

CHIN 301 : Third-Year Mandarin (4:5:1)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Chin 202.
DESCRIPTION: Discourse grammar, advanced reading.

**Course Outcomes**

- Comprehend non-technical spoken Mandarin in controlled contexts at the ACTFL advanced-low level. (See Chinese major learning outcome 1)
- Speak Mandarin Chinese at the ACTFL intermediate high level, demonstrating the ability to defend a point of view, narrate events, and give a basic presentation. (See Chinese major learning outcome 1)
- Read a variety of informal and easy formal texts at the ACTFL intermediate high level, demonstrating the ability to summarize, skim, scan texts and guess unknown words from context. (See Chinese major learning outcome 2)
- Write notes, correspondence, and short essays at the ACTFL intermediate low level. (See Chinese major expected learning outcome 2)
- Demonstrate an understanding of Chinese cultural features as well as contemporary Chinese society. (See Chinese major expected learning outcome 3)

CHIN 302 : Third-Year Mandarin (4:5:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Chin 301.
DESCRIPTION: Advanced-level Mandarin skills, especially media discourse and reading.

**Course Outcomes**

- Understand the main points of spoken Chinese on television and radio news broadcasts at the ACTFL advanced mid level. (See Chinese major learning outcome 1)
- Read journalistic texts at the ACTFL advanced mid level, demonstrating the ability to both skim and scan texts as well as read for details. (See Chinese major learning outcome 2)
- Summarize news stories, express personal insights, and write and translate descriptive reports in formal written Chinese at the ACTFL intermediate mid level and in spoken Chinese at the advanced low level. (See Chinese major learning outcome 2)
- Understand the structure of Chinese media discourse, including grammar and stylistics, within the Chinese cultural context. (See Chinese major learning outcome 3)

CHIN 321 : Selected Readings of Modern Chinese. (3:3:0)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: CHIN 302
DESCRIPTION: Complements overall language competency through reading modern texts selected from a wide range of styles and genres.

**Course Outcomes**

- Discuss Chinese literary genres, works, and authors in their social, historical, and religious contexts, demonstrating the ability to argue and support supporting and opposing points of view in both formal written Chinese at the ACTFL intermediate mid level and in spoken Chinese at the ACTFL advanced mid level. (See Chinese major learning outcomes 1 and 3)
- Read and comprehend selected texts in modern literary Chinese at the ACTFL advanced mid level, demonstrating a knowledge of key grammatical patterns. (See Chinese major learning outcome 2)
- Analyze and discuss Chinese culture and how it influences Chinese language and literature. (See Chinese major learning outcome 3)

CHIN 322 : Selected Readings of Modern Chinese. (3:3:0)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: CHIN 302
DESCRIPTION: Complements overall language competency through reading modern texts selected from a wide range of styles and genres.

**Course Outcomes**

- Write notes, routine social correspondence, and short essays at the ACTFL intermediate high level while demonstrating an awareness of formal Chinese writing conventions. (See Chinese major learning outcome 2)
- Read a variety of formal and informal genres of writing at the ACTFL advanced-mid level. (See Chinese major learning outcome 2)
- Write essays and research papers in Chinese at the ACTFL intermediate mid level, demonstrating the ability to express personal experiences and opinions as well as well-documented and well-argued research. (See Chinese major learning outcome 2)
- Write formal letters related to school and employment at the ACTFL intermediate-mid level. (See Chinese major learning outcome 2)
- Write narratives and descriptions at the ACTFL intermediate-mid level while demonstrating an awareness of formal Chinese writing conventions. (See Chinese major learning outcome 2)

CHIN 345R : Chinese Culture. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: Selected topics in traditional, modern, and contemporary Chinese culture.

**Course Outcomes**

- Demonstrate cultural literacy of the foundations of Chinese civilization: geography, history, philosophy, thought, political systems and social structures (see Chinese major expected learning outcome 3).
- Explain how cultural factors and institutions have shaped and continue to shape allied disciplines in Chinese studies including language, literature, linguistics, and the visual arts (see Chinese major expected learning outcome 3).

- Write coherently and cohesively in English.

CHIN 495 : Senior Seminar for Majors. (2:2:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Advanced knowledge of Chinese.
DESCRIPTION: Research methods in Chinese language sources. Paper required.

**Course Outcomes**

- Analyze and discuss core aspects of Chinese civilization including classical Chinese language and literature, modern and contemporary Chinese literature and film, Chinese culture, and/or the Chinese language. (See Chinese major learning outcome 3)
- Write a capstone paper or report that requires primary and secondary research using the Chinese language. (See Chinese major learning outcome 2 and 3)
- Give seminar presentations and participate in seminar discussions, thus demonstrating critical thinking and presentation skills.
- Demonstrate English writing skills by completing a seminar capstone paper, problem sets, short essays and/or other written work.

3. Complete one course from the following:

CHIN 342 : Chinese Film in Translation. (3:2:3)
WHEN TAUGHT: Winter
DESCRIPTION: Survey course covering the silent era to the present, including selections from Republican China, the People's Republic of China, Taiwan, and Hong Kong.

**Course Outcomes**

There are no course outcomes available

CHIN 343 : Chinese Literature in Translation--Poetry. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: All readings in English; topics vary.

**Course Outcomes**

- Outline the basic facts of early Chinese poetry: authors, genres, titles (see Chinese major expected learning outcome 3).
- Utilize the basic approaches to analyzing and appreciating literature (see Chinese major expected learning outcome 3).
- Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

CHIN 344 : Chinese Literature in Translation--Prose. (3:3:0)
WHEN TAUGHT: Winter
DESCRIPTION: All readings in English; topics vary.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Acquire and apply knowledge of literary terminology and frameworks for literary analysis (see Chinese major expected learning outcome 3).
- Analyze and discuss classical and modern Chinese narrative literature and its relations to Chinese cultural traditions (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

4. Complete one course from the following:

CHIN 325 : Structure of Chinese. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: CHIN 202
DESCRIPTION: Sound, syntax, meaning, and word structure of Mandarin Chinese and its implications to problems of learning Chinese.

**Course Outcomes**

- Demonstrate an in depth knowledge of the structure of Modern Standard Chinese, including its sound system, syntax, discourse structure, and morphology (see Chinese major expected learning outcome 3).
- Relate the language to its social context (see Chinese major expected learning outcome 3).
- Analyze learner errors in order to resolve problems in ones own spoken and written Mandarin (see Chinese major expected learning outcomes 1 and 2).
- Research, write, and present short reports on aspects of the Chinese language.

CHIN 326 : Introduction to Chinese Linguistics. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: CHIN 202
DESCRIPTION: Dialectology, phonology, syntax, semantics, discourse, morphology, and sociolinguistics.

**Course Outcomes**

- Put the Chinese language into its broader historical and geographic context (see Chinese major expected

learning outcome 3).
- Demonstrate an understanding of the major components of structure of Modern Chinese (see Chinese major expected learning outcomes 1-3).
- Show an understanding of variation in the Chinese language and its implications in high level communication contexts
- Demonstrate a general knowledge of the dialects of Chinese and how they relate to one another (see Chinese major expected learning outcome 3).
- Research, write, and present short reports on aspects of the Chinese language.

5. Complete three courses from the following:

CHIN 441 : Classical and Literary Chinese. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Chin 301 or equivalent.

DESCRIPTION: Introduction to syntax and stylistic patterns.

**Course Outcomes**

- Explain the use of the common grammatical particles and patterns essential in mastering the intricacies and subtleties of "classical" Chinese prose (see Chinese major expected learning outcome 3).
- Discuss and apply the meanings and usages of the standard vocabulary of classical Chinese (see Chinese major expected learning outcome 3).
- Summarize the thought of each important early thinker (see Chinese major expected learning outcome 3).

CHIN 442 : Classical and Literary Chinese. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHIN 441

DESCRIPTION: Introduction to syntax and stylistic patterns.

**Course Outcomes**

- Read, analyze, and discuss documentary Chinese prose (see Chinese major expected learning outcome 3).
- Compare and contrast the literary craftsmanship exhibited by the writers of documentary Chinese and discuss traditional Chinese history, literature, and religion (see Chinese major expected learning outcome 3).
- Explain the use of the basic grammatical particles introduced in Chin 441, learn some more advanced ones, and practice using them in new contexts (see Chinese major expected learning outcome 3).

CHIN 443 : Modern Chinese Literature. (3:3:0)

PREREQUISITE: Chin 321 or 322.

DESCRIPTION: Authors, themes, and writing styles of the period 1915--1949. Texts in Chinese.

**Course Outcomes**

- Read, analyze, and discuss Chinese literary texts from the modern (1900-1949) period in Chinese (see Chinese major expected learning outcomes 2 and 3).
- Discuss modern Chinese literary texts in Chinese with fluency and increasing sophistication, demonstrating facility for expressing subjective judgments on literature and other abstract topics in Chinese (see Chinese major expected learning outcomes 1-3).
- Analyze and discuss modern Chinese literary genres, works and authors in their social, historical, and religious contexts (see Chinese major expected learning outcome 3).

CHIN 444 : Contemporary Chinese Literature. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Chin 321 or 322.

DESCRIPTION: Contemporary literature of Taiwan and the PRC. Texts in Chinese.

**Course Outcomes**

- Read, analyze, and write about Chinese literary texts from the contemporary (1949-present) period in Chinese (see Chinese major expected learning outcomes 2 and 3).
- Discuss contemporary Chinese literary texts in Chinese with fluency and increasing sophistication, demonstrating facility for expressing subjective judgments on literature and other abstract topics in Chinese (see Chinese major expected learning outcomes 1 and 3).
- Analyze and discuss contemporary Chinese literary genres, works and authors in their social, historical, and religious contexts (see Chinese major expected learning outcome 3).

6. Complete nine additional hours required from upper-division (300-level and above) Chinese. It is mandatory that students consult with their advisor to determine supporting courses appropriate to professional goals.

*Hours include courses that may fulfill university core requirements.

## Show all Chinese—Mandarin (Chin) Courses

## Show all Chinese—Cantonese (Cant) Courses

College of Humanities Home

Asian and Near Eastern Languages Department Home

Arabic

Major
- Arabic Language

Minors
- Arabic

Language Certificate
- Arabic

Course Information
- Arabic Courses

Chinese

Majors
- BA in Chinese

Minors
- Chinese
- Chinese Teaching

Language Certificate
- Chinese

Course Information
- Chinese—Mandarin Courses
- Chinese—Cantonese Courses

Hebrew

Minors
- Biblical Hebrew
- Modern Hebrew

Course Information
- Hebrew Courses

Japanese

Majors
- BA in Japanese

Minors
- Japanese
- Japanese Teaching

Language Certificate
- Japanese

Course Information
- Japanese Courses

Korean

Majors
- BA in Korean

Minors
- Korean

Language Certificate
- Korean

Course Information
- Korean Courses

# Minor in Chinese (19–36 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following prerequisite courses (or equivalents):

CHIN 101 : Beginning Mandarin. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Basic grammar, vocabulary building, speaking.

**Course Outcomes**

There are no course outcomes available

CHIN 102 : Beginning Mandarin. (4:5:2)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Chin 101 or equivalent.
DESCRIPTION: Continuation of Chin 101.

**Course Outcomes**

- Listen to conversations, dialogs, and live interaction at the ACTFL novice high level. (See Chinese major learning outcome 1).
- Speak and understand Mandarin Chinese at the ACTFL novice high level. (See Chinese major learning outcome 1).
- Write short paragraphs, notes, and similar texts at the ACTFL novice mid level. (See Chinese major learning outcome 2).
- Demonstrate a basic understanding of a variety of Chinese cultural practices and communicative conventions. (See Chinese major learning outcome 3)

CHIN 201 : Intermediate Mandarin. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chin 102.
DESCRIPTION: Advanced grammar, the writing system, reading and writing, speaking.

**Course Outcomes**

- Speak and understand Mandarin Chinese at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Understand conversations and dialogs at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Write short essays, journal entries, and notes at the ACTFL novice mid level. (See Chinese major learning outcome 2)
- Demonstrate an introductory level understanding of Chinese cultural practices. (See Chinese major learning outcome 3)

CHIN 202 : Intermediate Mandarin. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Chin 201.
DESCRIPTION: Advanced grammar, the writing system, reading and writing, speaking.

**Course Outcomes**

- Speak and understand Mandarin Chinese at the ACTFL intermediate mid level. (See Chinese major learning outcome 1)
- Understand conversations and dialogs at the ACTFL intermediate mid level. (See Chinese major learning outcome 1)
- Write short essays, journal entries, and notes at the ACTFL novice high level. (See Chinese major learning outcome 2)
- Demonstrate a fundamental understanding of Chinese social practices as well as linguistically and culturally appropriate behavior. (See Chinese major learning outcome 3)

2. Complete the following:

CHIN 301 : Third-Year Mandarin (4:5:1)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Chin 202.

DESCRIPTION: Discourse grammar, advanced reading.

**Course Outcomes**

- Comprehend non-technical spoken Mandarin in controlled contexts at the ACTFL advanced-low level. (See Chinese major learning outcome 1)
- Speak Mandarin Chinese at the ACTFL intermediate high level, demonstrating the ability to defend a point of view, narrate events, and give a basic presentation. (See Chinese major learning outcome 1)
- Read a variety of informal and easy formal texts at the ACTFL intermediate high level, demonstrating the ability to summarize, skim, scan texts and guess unknown words from context. (See Chinese major learning outcome 2)
- Write notes, correspondence, and short essays at the ACTFL intermediate low level. (See Chinese major expected learning outcome 2)
- Demonstrate an understanding of Chinese cultural features as well as contemporary Chinese society. (See Chinese major expected learning outcome 3)

CHIN 302 : Third-Year Mandarin (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Chin 301.

DESCRIPTION: Advanced-level Mandarin skills, especially media discourse and reading.

**Course Outcomes**

- Understand the main points of spoken Chinese on television and radio news broadcasts at the ACTFL advanced mid level. (See Chinese major learning outcome 1)
- Read journalistic texts at the ACTFL advanced mid level, demonstrating the ability to both skim and scan texts as well as read for details. (See Chinese major learning outcome 2)
- Summarize news stories, express personal insights, and write and translate descriptive reports in formal written Chinese at the ACTFL intermediate mid level and in spoken Chinese at the advanced low level. (See Chinese major learning outcome 2)
- Understand the structure of Chinese media discourse, including grammar and stylistics, within the Chinese cultural context. (See Chinese major learning outcome 3)

CHIN 345R : Chinese Culture. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Selected topics in traditional, modern, and contemporary Chinese culture.

**Course Outcomes**

- Demonstrate cultural literacy of the foundations of Chinese civilization: geography, history, philosophy, thought, political systems and social structures (see Chinese major expected learning outcome 3).
- Explain how cultural factors and institutions have shaped and continue to shape allied disciplines in Chinese studies including language, literature, linguistics, and the visual arts (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

3. Complete one course from the following:

CHIN 321 : Selected Readings of Modern Chinese. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHIN 302

DESCRIPTION: Complements overall language competency through reading modern texts selected from a wide range of styles and genres.

**Course Outcomes**

- Discuss Chinese literary genres, works, and authors in their social, historical, and religious contexts, demonstrating the ability to argue and support supporting and opposing points of view in both formal written Chinese at the ACTFL intermediate mid level and in spoken Chinese at the ACTFL advanced mid level. (See Chinese major learning outcomes 1 and 3)
- Read and comprehend selected texts in modern literary Chinese at the ACTFL advanced mid level, demonstrating a knowledge of key grammatical patterns. (See Chinese major learning outcome 2)
- Analyze and discuss Chinese culture and how it influences Chinese language and literature. (See Chinese major learning outcome 3)

CHIN 322 : Selected Readings of Modern Chinese. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: CHIN 302

DESCRIPTION: Complements overall language competency through reading modern texts selected from a wide range of styles and genres.

**Course Outcomes**

- Write notes, routine social correspondence, and short essays at the ACTFL intermediate high level while demonstrating an awareness of formal Chinese writing conventions. (See Chinese major learning outcome 2)
- Read a variety of formal and informal genres of writing at the ACTFL advanced-mid level. (See Chinese major learning outcome 2)
- Write essays and research papers in Chinese at the ACTFL intermediate mid level, demonstrating the ability to express personal experiences and opinions as well as well-documented and well-argued research. (See Chinese major learning outcome 2)
- Write formal letters related to school and employment at the ACTFL intermediate-mid level. (See Chinese major learning outcome 2)
- Write narratives and descriptions at the ACTFL intermediate-mid level while demonstrating an awareness

of formal Chinese writing conventions. (See Chinese major learning outcome 2)

4. Complete one course from the following:

CHIN 342 : Chinese Film in Translation. (3:2:3)

WHEN TAUGHT: Winter

DESCRIPTION: Survey course covering the silent era to the present, including selections from Republican China, the People's Republic of China, Taiwan, and Hong Kong.

**Course Outcomes**

There are no course outcomes available

CHIN 343 : Chinese Literature in Translation--Poetry. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: All readings in English; topics vary.

**Course Outcomes**

- Outline the basic facts of early Chinese poetry: authors, genres, titles (see Chinese major expected learning outcome 3).
- Utilize the basic approaches to analyzing and appreciating literature (see Chinese major expected learning outcome 3).
- Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

CHIN 344 : Chinese Literature in Translation--Prose. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: All readings in English; topics vary.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Acquire and apply knowledge of literary terminology and frameworks for literary analysis (see Chinese major expected learning outcome 3).
- Analyze and discuss classical and modern Chinese narrative literature and its relations to Chinese cultural traditions (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

5. Complete one additional class above 301.

*Hours include courses that may fulfill university core requirements.

## Show all Chinese—Mandarin (Chin) Courses

## Show all Chinese—Cantonese (Cant) Courses

College of Humanities Home

Asian and Near Eastern Languages Department Home

Arabic

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- Arabic Language

Minors
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- Arabic

Course Information
- Arabic Courses

Chinese

Majors
- BA in Chinese

Minors
- Chinese
- Chinese Teaching

Language Certificate
- Chinese

Course Information
- Chinese—Mandarin Courses
- Chinese—Cantonese Courses

Hebrew

Minors
- Biblical Hebrew
- Modern Hebrew

Course Information
- Hebrew Courses

Japanese

Majors
- BA in Japanese

Minors
- Japanese
- Japanese Teaching

Language Certificate
- Japanese

Course Information
- Japanese Courses

Korean

Majors
- BA in Korean

Minors
- Korean

Language Certificate
- Korean

Course Information
- Korean Courses

# Minor in Chinese Teaching (23–39 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
2. Complete the following prerequisite courses (or equivalents):

CHIN 101 : Beginning Mandarin. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Basic grammar, vocabulary building, speaking.

**Course Outcomes**

There are no course outcomes available

CHIN 102 : Beginning Mandarin. (4:5:2)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Chin 101 or equivalent.
DESCRIPTION: Continuation of Chin 101.

**Course Outcomes**

- Listen to conversations, dialogs, and live interaction at the ACTFL novice high level. (See Chinese major learning outcome 1).
- Speak and understand Mandarin Chinese at the ACTFL novice high level. (See Chinese major learning outcome 1).
- Write short paragraphs, notes, and similar texts at the ACTFL novice mid level. (See Chinese major learning outcome 2).
- Demonstrate a basic understanding of a variety of Chinese cultural practices and communicative conventions. (See Chinese major learning outcome 3)

CHIN 201 : Intermediate Mandarin. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chin 102.
DESCRIPTION: Advanced grammar, the writing system, reading and writing, speaking.

**Course Outcomes**

- Speak and understand Mandarin Chinese at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Understand conversations and dialogs at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Write short essays, journal entries, and notes at the ACTFL novice mid level. (See Chinese major learning outcome 2)
- Demonstrate an introductory level understanding of Chinese cultural practices. (See Chinese major learning outcome 3)

CHIN 202 : Intermediate Mandarin. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Chin 201.
DESCRIPTION: Advanced grammar, the writing system, reading and writing, speaking.

**Course Outcomes**

- Speak and understand Mandarin Chinese at the ACTFL intermediate mid level. (See Chinese major learning outcome 1)
- Understand conversations and dialogs at the ACTFL intermediate mid level. (See Chinese major learning outcome 1)
- Write short essays, journal entries, and notes at the ACTFL novice high level. (See Chinese major learning outcome 2)
- Demonstrate a fundamental understanding of Chinese social practices as well as linguistically and

culturally appropriate behavior. (See Chinese major learning outcome 3)

3. Complete the following:

CHIN 301 : Third-Year Mandarin (4:5:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Chin 202.

DESCRIPTION: Discourse grammar, advanced reading.

**Course Outcomes**

- Comprehend non-technical spoken Mandarin in controlled contexts at the ACTFL advanced-low level. (See Chinese major learning outcome 1)
- Speak Mandarin Chinese at the ACTFL intermediate high level, demonstrating the ability to defend a point of view, narrate events, and give a basic presentation. (See Chinese major learning outcome 1)
- Read a variety of informal and easy formal texts at the ACTFL intermediate high level, demonstrating the ability to summarize, skim, scan texts and guess unknown words from context. (See Chinese major learning outcome 2)
- Write notes, correspondence, and short essays at the ACTFL intermediate low level. (See Chinese major expected learning outcome 2)
- Demonstrate an understanding of Chinese cultural features as well as contemporary Chinese society. (See Chinese major expected learning outcome 3)

CHIN 302 : Third-Year Mandarin (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Chin 301.

DESCRIPTION: Advanced-level Mandarin skills, especially media discourse and reading.

**Course Outcomes**

- Understand the main points of spoken Chinese on television and radio news broadcasts at the ACTFL advanced mid level. (See Chinese major learning outcome 1)
- Read journalistic texts at the ACTFL advanced mid level, demonstrating the ability to both skim and scan texts as well as read for details. (See Chinese major learning outcome 2)
- Summarize news stories, express personal insights, and write and translate descriptive reports in formal written Chinese at the ACTFL intermediate mid level and in spoken Chinese at the advanced low level. (See Chinese major learning outcome 2)
- Understand the structure of Chinese media discourse, including grammar and stylistics, within the Chinese cultural context. (See Chinese major learning outcome 3)

CHIN 326 : Introduction to Chinese Linguistics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHIN 202

DESCRIPTION: Dialectology, phonology, syntax, semantics, discourse, morphology, and sociolinguistics.

**Course Outcomes**

- Put the Chinese language into its broader historical and geographic context (see Chinese major expected learning outcome 3).
- Demonstrate an understanding of the major components of structure of Modern Chinese (see Chinese major expected learning outcomes 1-3).
- Show an understanding of variation in the Chinese language and its implications in high level communication contexts
- Demonstrate a general knowledge of the dialects of Chinese and how they relate to one another (see Chinese major expected learning outcome 3).
- Research, write, and present short reports on aspects of the Chinese language.

CHIN 345R : Chinese Culture. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Selected topics in traditional, modern, and contemporary Chinese culture.

**Course Outcomes**

- Demonstrate cultural literacy of the foundations of Chinese civilization: geography, history, philosophy, thought, political systems and social structures (see Chinese major expected learning outcome 3).
- Explain how cultural factors and institutions have shaped and continue to shape allied disciplines in Chinese studies including language, literature, linguistics, and the visual arts (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

CHIN 377 : Chinese Language Teaching Procedures. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Chin 301 or instructor's consent.

DESCRIPTION: Acquiring knowledge and skills specific to teaching Chinese as a foreign language. Conducted in Chinese and English.

**Course Outcomes**

- Students will prepare lesson plans and implement their plans in teaching demonstrations (see Chinese major expected learning outcome 3).
- Learn to critically evaluate existing language materials and teaching methods, develop an understanding of curriculum design and materials development, and develop effective teaching materials (see Chinese major expected learning outcome 3).
- Demonstrate an understanding of the basic principles and methods of teaching the four language skills:

listening, speaking, reading, and writing, within a cultural context (see Chinese major expected learning outcomes 1-3).
- Apply a knowledge of basic theories and methodologies for teaching a foreign language including being able to use a performance-based approach for teaching Chinese (see Chinese major expected learning outcome 3).

4. Complete one course from the following:

CHIN 321 : Selected Readings of Modern Chinese. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHIN 302

DESCRIPTION: Complements overall language competency through reading modern texts selected from a wide range of styles and genres.

**Course Outcomes**

- Discuss Chinese literary genres, works, and authors in their social, historical, and religious contexts, demonstrating the ability to argue and support supporting and opposing points of view in both formal written Chinese at the ACTFL intermediate mid level and in spoken Chinese at the ACTFL advanced mid level. (See Chinese major learning outcomes 1 and 3)
- Read and comprehend selected texts in modern literary Chinese at the ACTFL advanced mid level, demonstrating a knowledge of key grammatical patterns. (See Chinese major learning outcome 2)
- Analyze and discuss Chinese culture and how it influences Chinese language and literature. (See Chinese major learning outcome 3)

CHIN 322 : Selected Readings of Modern Chinese. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: CHIN 302

DESCRIPTION: Complements overall language competency through reading modern texts selected from a wide range of styles and genres.

**Course Outcomes**

- Write notes, routine social correspondence, and short essays at the ACTFL intermediate high level while demonstrating an awareness of formal Chinese writing conventions. (See Chinese major learning outcome 2)
- Read a variety of formal and informal genres of writing at the ACTFL advanced-mid level. (See Chinese major learning outcome 2)
- Write essays and research papers in Chinese at the ACTFL intermediate mid level, demonstrating the ability to express personal experiences and opinions as well as well-documented and well-argued research. (See Chinese major learning outcome 2)
- Write formal letters related to school and employment at the ACTFL intermediate-mid level. (See Chinese major learning outcome 2)
- Write narratives and descriptions at the ACTFL intermediate-mid level while demonstrating an awareness of formal Chinese writing conventions. (See Chinese major learning outcome 2)

5. Complete one course from the following:

CHIN 443 : Modern Chinese Literature. (3:3:0)

PREREQUISITE: Chin 321 or 322.

DESCRIPTION: Authors, themes, and writing styles of the period 1915--1949. Texts in Chinese.

**Course Outcomes**

- Read, analyze, and discuss Chinese literary texts from the modern (1900-1949) period in Chinese (see Chinese major expected learning outcomes 2 and 3).
- Discuss modern Chinese literary texts in Chinese with fluency and increasing sophistication, demonstrating facility for expressing subjective judgments on literature and other abstract topics in Chinese (see Chinese major expected learning outcomes 1-3).
- Analyze and discuss modern Chinese literary genres, works and authors in their social, historical, and religious contexts (see Chinese major expected learning outcome 3).

CHIN 444 : Contemporary Chinese Literature. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Chin 321 or 322.

DESCRIPTION: Contemporary literature of Taiwan and the PRC. Texts in Chinese.

**Course Outcomes**

- Read, analyze, and write about Chinese literary texts from the contemporary (1949-present) period in Chinese (see Chinese major expected learning outcomes 2 and 3).
- Discuss contemporary Chinese literary texts in Chinese with fluency and increasing sophistication, demonstrating facility for expressing subjective judgments on literature and other abstract topics in Chinese (see Chinese major expected learning outcomes 1 and 3).
- Analyze and discuss contemporary Chinese literary genres, works and authors in their social, historical, and religious contexts (see Chinese major expected learning outcome 3).

6. Before applying to student teach in the major, complete the Oral Proficiency Interview (OPI) examination with a minimum level of *Advanced-Low* in order to be granted Utah state licensure.

*Hours include courses that may fulfill university core requirements.

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# Chinese Language Certificate (9 hours)

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*This Language Certificate program is administered by the Center for Language Studies (3086 JFSB), http://languagecertificate.byu.edu.*

Any matriculated (degree-seeking) BYU student who meets the proficiency and course requirements may earn the Chinese Language Certificate. The proficiency requirement is met through the nationally recognized ACTFL Oral and Writing Proficiency Exams. Qualifying students will be awarded a certificate on one of three levels based on the following:

1. Advanced Certificate: An ACTFL "Advanced" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
2. Mastery Certificate: An ACTFL "Advanced High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
3. Professional Certificate: An ACTFL "Superior" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.

## Required Courses:

**Note:** Students who have completed all of the coursework required for a language major or a language minor will also have satisfied the coursework requirement for the language certificate.

1. Language:

   CHIN 302 : Third-Year Mandarin (4:5:0)

   WHEN TAUGHT: Fall; Winter

   PREREQUISITE: Chin 301.

   DESCRIPTION: Advanced-level Mandarin skills, especially media discourse and reading.

   **Course Outcomes**
   - Understand the main points of spoken Chinese on television and radio news broadcasts at the ACTFL advanced mid level. (See Chinese major learning outcome 1)
   - Read journalistic texts at the ACTFL advanced mid level, demonstrating the ability to both skim and scan texts as well as read for details. (See Chinese major learning outcome 2)
   - Summarize news stories, express personal insights, and write and translate descriptive reports in formal written Chinese at the ACTFL intermediate mid level and in spoken Chinese at the advanced low level. (See Chinese major learning outcome 2)
   - Understand the structure of Chinese media discourse, including grammar and stylistics, within the Chinese cultural context. (See Chinese major learning outcome 3)

2. Civilization:

   CHIN 345R : Chinese Culture. (3:3:0)

   WHEN TAUGHT: Fall

   DESCRIPTION: Selected topics in traditional, modern, and contemporary Chinese culture.

   **Course Outcomes**
   - Demonstrate cultural literacy of the foundations of Chinese civilization: geography, history, philosophy, thought, political systems and social structures (see Chinese major expected learning outcome 3).
   - Explain how cultural factors and institutions have shaped and continue to shape allied disciplines in Chinese studies including language, literature, linguistics, and the visual arts (see Chinese major expected learning outcome 3).
   - Write coherently and cohesively in English.

3. Literature - complete one course from the following:

   CHIN 343 : Chinese Literature in Translation--Poetry. (3:3:0)

   WHEN TAUGHT: Fall

   DESCRIPTION: All readings in English; topics vary.

   **Course Outcomes**
   - Outline the basic facts of early Chinese poetry: authors, genres, titles (see Chinese major expected learning outcome 3).
   - Utilize the basic approaches to analyzing and appreciating literature (see Chinese major expected learning outcome 3).
   - Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

CHIN 344 : Chinese Literature in Translation--Prose. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: All readings in English; topics vary.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Acquire and apply knowledge of literary terminology and frameworks for literary analysis (see Chinese major expected learning outcome 3).
- Analyze and discuss classical and modern Chinese narrative literature and its relations to Chinese cultural traditions (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

Students who successfully complete a certificate will receive an official document verifying their level of achievement. The certificate will be listed on the university transcript.

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# Chinese—Mandarin (Chin)

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## Undergraduate Courses

### 100-Level Courses

CHIN 101 : Beginning Mandarin. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Basic grammar, vocabulary building, speaking.

**Course Outcomes**
There are no course outcomes available

CHIN 102 : Beginning Mandarin. (4:5:2)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Chin 101 or equivalent.
DESCRIPTION: Continuation of Chin 101.

**Course Outcomes**
- Listen to conversations, dialogs, and live interaction at the ACTFL novice high level. (See Chinese major learning outcome 1).
- Speak and understand Mandarin Chinese at the ACTFL novice high level. (See Chinese major learning outcome 1).
- Write short paragraphs, notes, and similar texts at the ACTFL novice mid level. (See Chinese major learning outcome 2).
- Demonstrate a basic understanding of a variety of Chinese cultural practices and communicative conventions. (See Chinese major learning outcome 3)

CHIN 112 : Beginning Chinese Reading. (2:2:0)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Equivalent of one year spoken Mandarin skills.
DESCRIPTION: Chinese writing system, reading, and basic composition using Chinese characters.

**Course Outcomes**
- Write short paragraphs, journal entries, notes, and similar texts at the ACTFL novice mid level. (See Chinese major learning outcome 2)
- Speak and understand Mandarin Chinese at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Understand the structure and composition of Chinese characters and beginning level etymology. (See Chinese major learning outcome 2)

### 200-Level Courses

CHIN 200R : Chinese Calligraphy. (2:0:2)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Chin 101 or equivalent.
DESCRIPTION: Training in the art of writing Chinese characters with a brush.

**Course Outcomes**
- Write basic Chinese characters using one or more of the writing styles of Chinese calligraphy (see Chinese major expected learning outcome 3).
- Explain the importance of Chinese calligraphy in Chinese culture and civilization (see Chinese major expected learning outcome 3).

CHIN 201 : Intermediate Mandarin. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chin 102.
DESCRIPTION: Advanced grammar, the writing system, reading and writing, speaking.

**Course Outcomes**
- Speak and understand Mandarin Chinese at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Understand conversations and dialogs at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Write short essays, journal entries, and notes at the ACTFL novice mid level. (See Chinese major learning outcome 2)
- Demonstrate an introductory level understanding of Chinese cultural practices. (See Chinese major learning outcome 3)

CHIN 202 : Intermediate Mandarin. (4:5:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Chin 201.

DESCRIPTION: Advanced grammar, the writing system, reading and writing, speaking.

**Course Outcomes**
- Speak and understand Mandarin Chinese at the ACTFL intermediate mid level. (See Chinese major learning outcome 1)
- Understand conversations and dialogs at the ACTFL intermediate mid level. (See Chinese major learning outcome 1)
- Write short essays, journal entries, and notes at the ACTFL novice high level. (See Chinese major learning outcome 2)
- Demonstrate a fundamental understanding of Chinese social practices as well as linguistically and culturally appropriate behavior. (See Chinese major learning outcome 3)

CHIN 211R : Intermediate Conversation. (2:2:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHIN 102

DESCRIPTION: Emphasis on fluency and vocabulary building.

**Course Outcomes**
- Speak Mandarin Chinese at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Understand conversations and dialogs at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Demonstrate an introductory level understanding of Chinese cultural practices and appropriate social interactions. (See Chinese major learning outcome 3)

### 300-Level Courses

CHIN 301 : Third-Year Mandarin (4:5:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Chin 202.

DESCRIPTION: Discourse grammar, advanced reading.

**Course Outcomes**
- Comprehend non-technical spoken Mandarin in controlled contexts at the ACTFL advanced-low level. (See Chinese major learning outcome 1)
- Speak Mandarin Chinese at the ACTFL intermediate high level, demonstrating the ability to defend a point of view, narrate events, and give a basic presentation. (See Chinese major learning outcome 1)
- Read a variety of informal and easy formal texts at the ACTFL intermediate high level, demonstrating the ability to summarize, skim, scan texts and guess unknown words from context. (See Chinese major learning outcome 2)
- Write notes, correspondence, and short essays at the ACTFL intermediate low level. (See Chinese major expected learning outcome 2)
- Demonstrate an understanding of Chinese cultural features as well as contemporary Chinese society. (See Chinese major expected learning outcome 3)

CHIN 302 : Third-Year Mandarin (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Chin 301.

DESCRIPTION: Advanced-level Mandarin skills, especially media discourse and reading.

**Course Outcomes**
- Understand the main points of spoken Chinese on television and radio news broadcasts at the ACTFL advanced mid level. (See Chinese major learning outcome 1)
- Read journalistic texts at the ACTFL advanced mid level, demonstrating the ability to both skim and scan texts as well as read for details. (See Chinese major learning outcome 2)
- Summarize news stories, express personal insights, and write and translate descriptive reports in formal written Chinese at the ACTFL intermediate mid level and in spoken Chinese at the advanced low level. (See Chinese major learning outcome 2)
- Understand the structure of Chinese media discourse, including grammar and stylistics, within the Chinese cultural context. (See Chinese major learning outcome 3)

CHIN 311R : Advanced Conversation. (2:2:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Chin 202 or equivalent.

DESCRIPTION: Emphasis on sophisication of speech.

**Course Outcomes**

- Understand conversations and dialogs at the ACTFL advanced mid level. (See Chinese major learning outcome 1)
- Speak Chinese at the ACTFL advanced low level (See Chinese major learning outcome 1)
- Demonstrate an intermediate level understanding of Chinese cultural practices and appropriate social interactions. (See Chinese major learning outcome 3)

CHIN 321 : Selected Readings of Modern Chinese. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHIN 302

DESCRIPTION: Complements overall language competency through reading modern texts selected from a wide range of styles and genres.

**Course Outcomes**

- Discuss Chinese literary genres, works, and authors in their social, historical, and religious contexts, demonstrating the ability to argue and support supporting and opposing points of view in both formal written Chinese at the ACTFL intermediate mid level and in spoken Chinese at the ACTFL advanced mid level. (See Chinese major learning outcomes 1 and 3)
- Read and comprehend selected texts in modern literary Chinese at the ACTFL advanced mid level, demonstrating a knowledge of key grammatical patterns. (See Chinese major learning outcome 2)
- Analyze and discuss Chinese culture and how it influences Chinese language and literature. (See Chinese major learning outcome 3)

CHIN 322 : Selected Readings of Modern Chinese. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: CHIN 302

DESCRIPTION: Complements overall language competency through reading modern texts selected from a wide range of styles and genres.

**Course Outcomes**

- Write notes, routine social correspondence, and short essays at the ACTFL intermediate high level while demonstrating an awareness of formal Chinese writing conventions. (See Chinese major learning outcome 2)
- Read a variety of formal and informal genres of writing at the ACTFL advanced-mid level. (See Chinese major learning outcome 2)
- Write essays and research papers in Chinese at the ACTFL intermediate mid level, demonstrating the ability to express personal experiences and opinions as well as well-documented and well-argued research. (See Chinese major learning outcome 2)
- Write formal letters related to school and employment at the ACTFL intermediate-mid level. (See Chinese major learning outcome 2)
- Write narratives and descriptions at the ACTFL intermediate-mid level while demonstrating an awareness of formal Chinese writing conventions. (See Chinese major learning outcome 2)

CHIN 325 : Structure of Chinese. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHIN 202

DESCRIPTION: Sound, syntax, meaning, and word structure of Mandarin Chinese and its implications to problems of learning Chinese.

**Course Outcomes**

- Demonstrate an in depth knowledge of the structure of Modern Standard Chinese, including its sound system, syntax, discourse structure, and morphology (see Chinese major expected learning outcome 3).
- Relate the language to its social context (see Chinese major expected learning outcome 3).
- Analyze learner errors in order to resolve problems in ones own spoken and written Mandarin (see Chinese major expected learning outcomes 1 and 2).
- Research, write, and present short reports on aspects of the Chinese language.

CHIN 326 : Introduction to Chinese Linguistics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHIN 202

DESCRIPTION: Dialectology, phonology, syntax, semantics, discourse, morphology, and sociolinguistics.

**Course Outcomes**

- Put the Chinese language into its broader historical and geographic context (see Chinese major expected learning outcome 3).
- Demonstrate an understanding of the major components of structure of Modern Chinese (see Chinese major expected learning outcomes 1-3).
- Show an understanding of variation in the Chinese language and its implications in high level communication contexts
- Demonstrate a general knowledge of the dialects of Chinese and how they relate to one another (see Chinese major expected learning outcome 3).
- Research, write, and present short reports on aspects of the Chinese language.

CHIN 327 : Chinese Translation and Interpretation. (3:3:0)

PREREQUISITE: CHIN 301

DESCRIPTION: Translation techniques, with practice in oral and written translation either from Chinese to English or from English to Chinese.

**Course Outcomes**

- Put the Chinese language into its broader historical and geographic context (see Chinese major expected learning outcome 3).
- Utilize basic vocabulary of translation theory.
- Explain the development of translation practice in China (see Chinese major expected learning outcome 3).

CHIN 342 : Chinese Film in Translation. (3:2:3)

WHEN TAUGHT: Winter

DESCRIPTION: Survey course covering the silent era to the present, including selections from Republican China, the People's Republic of China, Taiwan, and Hong Kong.

**Course Outcomes**

There are no course outcomes available

CHIN 343 : Chinese Literature in Translation--Poetry. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: All readings in English; topics vary.

**Course Outcomes**

- Outline the basic facts of early Chinese poetry: authors, genres, titles (see Chinese major expected learning outcome 3).
- Utilize the basic approaches to analyzing and appreciating literature (see Chinese major expected learning outcome 3).
- Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

CHIN 344 : Chinese Literature in Translation--Prose. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: All readings in English; topics vary.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Acquire and apply knowledge of literary terminology and frameworks for literary analysis (see Chinese major expected learning outcome 3).
- Analyze and discuss classical and modern Chinese narrative literature and its relations to Chinese cultural traditions (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

CHIN 345R : Chinese Culture. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Selected topics in traditional, modern, and contemporary Chinese culture.

**Course Outcomes**

- Demonstrate cultural literacy of the foundations of Chinese civilization: geography, history, philosophy, thought, political systems and social structures (see Chinese major expected learning outcome 3).
- Explain how cultural factors and institutions have shaped and continue to shape allied disciplines in Chinese studies including language, literature, linguistics, and the visual arts (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

CHIN 346 : Introduction to Chinese Philosophy. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction to native Chinese philosophies of Confucianism and Taoism. Readings in translation of *Lun-yu, Meng-tsu, Lao-tzu,* and *Chuang-tzu.* Themes include self, society, and cosmos.

**Course Outcomes**

- Summarize the important facts, figures, and dates relevant to early Chinese philosophy (see Chinese major expected learning outcome 3).
- Explain the broad outlines of the major schools of Confucianism, Mohism, Daoism, and Legalism, and understand their roles in the development of Chinese society and thought (see Chinese major expected learning outcome 3).
- Formulate philosophical questions.
- Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

CHIN 347 : Business Chinese. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Chin 301 or instructor's consent.

DESCRIPTION: Introduction to terminology and format of business communication in Chinese, emphasizing both reading and writing of various forms of business communication.

**Course Outcomes**

- Communicate orally in Modern Standard Chinese at the intermediate high level on business-related topics (see Chinese major expected learning outcome 1).

- Write notes, correspondence, and other short business texts at the ACTFL intermediate low level. (see Chinese major expected learning outcome 2).
- Apply knowledge of Chinese language and culture to real life business and daily life situations in a linguistically, socially, and culturally appropriate ways (see Chinese major expected learning outcome 3).

CHIN 377 : Chinese Language Teaching Procedures. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Chin 301 or instructor's consent.

DESCRIPTION: Acquiring knowledge and skills specific to teaching Chinese as a foreign language. Conducted in Chinese and English.

**Course Outcomes**

- Students will prepare lesson plans and implement their plans in teaching demonstrations (see Chinese major expected learning outcome 3).
- Learn to critically evaluate existing language materials and teaching methods, develop an understanding of curriculum design and materials development, and develop effective teaching materials (see Chinese major expected learning outcome 3).
- Demonstrate an understanding of the basic principles and methods of teaching the four language skills: listening, speaking, reading, and writing, within a cultural context (see Chinese major expected learning outcomes 1-3).
- Apply a knowledge of basic theories and methodologies for teaching a foreign language including being able to use a performance-based approach for teaching Chinese (see Chinese major expected learning outcome 3).

CHIN 399R : Academic Internship. (.5-9:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHIN 202

DESCRIPTION: On-the-job cultural and/or language experience.

**Course Outcomes**

- Increase proficiency in Chinese speaking, listening, reading, and/or writing through participating in an internship (see Chinese major expected learning outcomes 1 and 2).
- Apply knowledge of Chinese culture in a professional work setting (see Chinese major expected learning outcome 3).

### 400-Level Courses

CHIN 441 : Classical and Literary Chinese. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Chin 301 or equivalent.

DESCRIPTION: Introduction to syntax and stylistic patterns.

**Course Outcomes**

- Explain the use of the common grammatical particles and patterns essential in mastering the intricacies and subtleties of "classical" Chinese prose (see Chinese major expected learning outcome 3).
- Discuss and apply the meanings and usages of the standard vocabulary of classical Chinese (see Chinese major expected learning outcome 3).
- Summarize the thought of each important early thinker (see Chinese major expected learning outcome 3).

CHIN 442 : Classical and Literary Chinese. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHIN 441

DESCRIPTION: Introduction to syntax and stylistic patterns.

**Course Outcomes**

- Read, analyze, and discuss documentary Chinese prose (see Chinese major expected learning outcome 3).
- Compare and contrast the literary craftsmanship exhibited by the writers of documentary Chinese and discuss traditional Chinese history, literature, and religion (see Chinese major expected learning outcome 3).
- Explain the use of the basic grammatical particles introduced in Chin 441, learn some more advanced ones, and practice using them in new contexts (see Chinese major expected learning outcome 3).

CHIN 443 : Modern Chinese Literature. (3:3:0)

PREREQUISITE: Chin 321 or 322.

DESCRIPTION: Authors, themes, and writing styles of the period 1915--1949. Texts in Chinese.

**Course Outcomes**

- Read, analyze, and discuss Chinese literary texts from the modern (1900-1949) period in Chinese (see Chinese major expected learning outcomes 2 and 3).
- Discuss modern Chinese literary texts in Chinese with fluency and increasing sophistication, demonstrating facility for expressing subjective judgments on literature and other abstract topics in Chinese (see Chinese major expected learning outcomes 1-3).
- Analyze and discuss modern Chinese literary genres, works and authors in their social, historical, and religious contexts (see Chinese major expected learning outcome 3).

CHIN 444 : Contemporary Chinese Literature. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Chin 321 or 322.

DESCRIPTION: Contemporary literature of Taiwan and the PRC. Texts in Chinese.

**Course Outcomes**

- Read, analyze, and write about Chinese literary texts from the contemporary (1949-present) period in Chinese (see Chinese major expected learning outcomes 2 and 3).
- Discuss contemporary Chinese literary texts in Chinese with fluency and increasing sophistication, demonstrating facility for expressing subjective judgments on literature and other abstract topics in Chinese (see Chinese major expected learning outcomes 1 and 3).
- Analyze and discuss contemporary Chinese literary genres, works and authors in their social, historical, and religious contexts (see Chinese major expected learning outcome 3).

CHIN 445R : Chinese Poetry. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: CHIN 343 & CHIN 441

DESCRIPTION: Readings in Chinese poetry. Topics vary from classical and modern poetry. Various themes and genres introduced, emphasizing shi poetry. Texts in Chinese.

**Course Outcomes**

There are no course outcomes available

CHIN 490R : Individual Study in Chinese. (.5-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Project approval by instructor.

DESCRIPTION: Assignments to fit individual needs of the advanced student.

**Course Outcomes**

- Students will concentrate on a specific topic of study and increase their knowledge of and ability to use language appropriate to that field (see Chinese major expected learning outcomes 1-3).

CHIN 495 : Senior Seminar for Majors. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Advanced knowledge of Chinese.

DESCRIPTION: Research methods in Chinese language sources. Paper required.

**Course Outcomes**

- Analyze and discuss core aspects of Chinese civilization including classical Chinese language and literature, modern and contemporary Chinese literature and film, Chinese culture, and/or the Chinese language. (See Chinese major learning outcome 3)
- Write a capstone paper or report that requires primary and secondary research using the Chinese language. (See Chinese major learning outcome 2 and 3)
- Give seminar presentations and participate in seminar discussions, thus demonstrating critical thinking and presentation skills.
- Demonstrate English writing skills by completing a seminar capstone paper, problem sets, short essays and/or other written work.

### 500-Level Graduate Courses (available to advanced undergraduates)

CHIN 599R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Coordinator's and department's consent.

DESCRIPTION: On-the-job cultural and/or language experience.

**Course Outcomes**

No outcomes are available at this time.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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# Chinese—Cantonese (Cant)

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## Undergraduate Courses

### 100-Level Courses

CANT 101 : First-Year Cantonese. (4:5:0)

WHEN TAUGHT: Fall

DESCRIPTION: Basic language skills.

**Course Outcomes**

- Demonstrate a basic understanding of a variety of Chinese cultural practices and communicative conventions. (See Chinese major learning outcome 3)
- Write short paragraphs, notes, and similar texts in standard Chinese at the ACTFL novice low level. (See Chinese major learning outcome 2)
- Listen to conversations, dialogs, and live interaction in Cantonese at the ACTFL novice mid level. (See Chinese major learning outcome 1)
- Speak and understand Cantonese at the ACTFL novice mid level. (See Chinese major learning outcome 1)

CANT 102 : First-Year Cantonese. (4:5:0)

WHEN TAUGHT: Winter

DESCRIPTION: Basic language skills.

**Course Outcomes**

- Speak and understand Cantonese at the ACTFL novice high level. (See Chinese major learning outcome 1)
- Write short paragraphs, notes, and similar texts in Standard Chinese at the ACTFL novice mid level. (See Chinese major learning outcome 2)
- Listen to conversations, dialogs, and live interaction in Cantonese at the ACTFL novice high level. (See Chinese major learning outcome 1)
- Demonstrate a basic understanding of a variety of Chinese cultural practices communicative conventions. (See Chinese major learning outcome 3)

### 200-Level Courses

CANT 201 : Second-Year Cantonese. (4:5:0)

WHEN TAUGHT: Fall

PREREQUISITE: Cant 102 or foreign residence experience.

DESCRIPTION: Grammatical patterns and vocabulary of spoken and written Cantonese.

**Course Outcomes**

- Speak and understand Cantonese at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Demonstrate an introductory level understanding of a variety of Chinese cultural practices. (See Chinese major learning outcome 3)
- Listen to conversations and dialogs in Cantonese at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Write short essays, journal entries, and notes in standard Cantonese at the ACTFL novice high level. (See Chinese major learning outcome 2)

CANT 202 : Second-Year Cantonese. (4:5:0)

WHEN TAUGHT: Winter

PREREQUISITE: Cant 201 or equivalent.

DESCRIPTION: Intermediate to advanced skills in reading, writing, listening, and speaking.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Write short essays, journal entries, and notes in standard Chinese at the ACTFL novice high level. (See Chinese major learning outcome 2)
- Demonstrate a fundamental understanding of Chinese social practices as well as linguistically and culturally appropriate behavior. (See Chinese major learning outcome 3)
- Speak and understand Cantonese at the ACTFL intermediate mid level. (See Chinese major learning outcome 1)
- Listen to conversations and dialogs in Cantonese at the ACTFL intermediate mid level. (See Chinese major

learning outcome 1)

CANT 211R : Second-Year Conversation. (2:2:0)
WHEN TAUGHT: Winter
PREREQUISITE: Cant 201 or foreign residence experience.
DESCRIPTION: Intermediate listening comprehension and speaking skills.

**Course Outcomes**

No outcomes are available at this time.

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# Minor in Biblical Hebrew (22–30 hours*)

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## Program Requirements

1. Complete one of the following prerequisite options:
   - Complete the following:

HEB 131 : First-Year Biblical Hebrew. (4:5:0)

WHEN TAUGHT: Fall; Summer

DESCRIPTION: Old Testament Hebrew. Provides foundation in grammar and vocabulary; reading Hebrew prose texts in Bible.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Recite the Hebrew alphabet and recognize the vowels;2. Analyze and discuss most of the fundamental elements of Hebrew grammar;3. Read and translate elemental biblical historical narrative texts with limited use of a lexicon;4. Analyze and parse the verbal system: Pa'al (Qal);5. Define approximately 315 vocabulary words.

HEB 132 : First-Year Biblical Hebrew. (4:5:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: HEB 131

DESCRIPTION: Old Testament Hebrew. Provides foundation in grammar and vocabulary; reading Hebrew prose texts in Bible.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Analyze and discuss the fundamental elements of Hebrew grammar.2. Read and translate elemental biblical historical narrative texts with limited use of a lexicon.3. Analyze and parse the verbal system: pa'al, niphal, piel, pual, hiphil, hophal, hithpael.4. Define approximately 400 vocabulary words.

   - Complete the following:

HEB 133 : Honors Hebrew and the Old Testament. (4:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: Must be taken in conjunction with specified Honors section of Rel A 301.

DESCRIPTION: Rapid survey of biblical Hebrew.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Recite the Hebrew alphabet and recognize the vowels;2. Analyze and discuss most of the fundamental elements of Hebrew grammar;3. Read and translate elemental biblical historical narrative texts with limited use of a lexicon;4. Analyze and parse the verbal system: Pa'al (Qal);5. Define approximately 315 vocabulary words.

HEB 134 : Honors Hebrew and the Old Testament. (4:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: Must be taken in conjunction with specified Honors section of Rel A 302.

DESCRIPTION: Rapid survey of biblical Hebrew.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Analyze and discuss the fundamental elements of Hebrew grammar.2. Read and translate elemental biblical historical narrative texts with limited use of a lexicon.3. Analyze and parse the verbal system: pa'al, niphal, piel, pual, hiphil, hophal, hithpael.4. Define approximately 400 vocabulary words.

2. Complete the following:

HEB 101 : First-Year Modern Hebrew 1. (4:5:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Modern Hebrew as spoken in Israel today.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at beginning levels, utilizing pa'al verbs- Read and engage beginning level texts in Hebrew, and express thoughts and ideas in written Hebrew- Understand the modern Israeli cultural tradition (including music, art, and literature)

HEB 331 : Readings in the Hebrew Scriptures 1. (4:5:0)

WHEN TAUGHT: Fall

PREREQUISITE: Heb 132, 201, or equivalent.

DESCRIPTION: Grammar review and vocabulary building through reading historical and prophetic books.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Define the top 300 vocabulary words from the Hebrew Bible.2. Analyze and discuss the fundamental elements of Hebrew grammar.3. Analyze and categorize the verbal system: pa'al, piel, hiphil, hophal, niphal, pual, and hithpael.

HEB 431 : Readings in the Hebrew Scriptures 2. (4:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: HEB 331

DESCRIPTION: Readings in the poetic and wisdom literature.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Define the top 600 vocabulary words from the Hebrew Bible.2. Analyze and discuss the fundamental elements of Hebrew grammar.3. Analyze and categorize the verbal system: pa'al, piel, hiphil, hophal, niphal, pual, and hithpael.4. Understand elemental forms of Hebrew parallelistic poetry and figures of speech.

HEB 432R : Ancient Hebrew Texts. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HEB 331

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Define the top 600 vocabulary words from the Hebrew Bible.2. Analyze and discuss the fundamental elements of Hebrew grammar.3. Analyze and categorize the verbal system: pa'al, piel, hiphil, hophal, niphal, pual, and hithpael.

3. Complete eight hours from the following:

ANES 363 : Hebrew Bible Studies. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: HEB 331

DESCRIPTION: Current analytical methods used in academic study and interpretation of the Hebrew Bible.

**Course Outcomes**

- Students will be introduced to the variety of interpretative strategies and theories about the Hebrew Bible
- Students will analyze and interpret passages of scripture from the Hebrew Bible assisted by and comparing LDS and non-LDS sources and approaches.
- Students will reflect and write about their own approach to the Hebrew Bible.

HEB 102 : First-Year Modern Hebrew 2. (4:5:2)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Modern Hebrew as spoken in Israel today.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at beginning levels, demonstrating an ability to communicate with others- Use pa'al, pi'el, hif'il, and hitpa'el present and past tense verbs correctly- Read and engage beginning level texts in Hebrew- Express thoughts and ideas in written Hebrew- Appreciate and value the modern Israeli cultural tradition (including music, art, and literature)

HEB 313 : Readings in the Old Testament. (3:3:0)

DESCRIPTION: Readings in the Old Testament in Hebrew.

NOTE: Heb 312 (Hebrew Media), Heb 313, Heb 411R (Advanced Conversation), and Heb 421 are offered in the intensive modern Hebrew program. Arab 312 (Arabic Media) and 411R (Advanced Conversation) are offered in the intensive modern Arabic program. The intensive Hebrew and Arabic programs are offered alternate years during the winter program only.

**Course Outcomes**

No outcomes are available at this time.

HEB 421 : Readings in the Hebrew Translation of the New Testament. (3:3:0)

DESCRIPTION: Readings in the New Testament in Hebrew translation.

NOTE: Heb 312 (Hebrew Media), Heb 313, Heb 411R (Advanced Conversation), and Hebrew 421 are offered in the intensive modern Hebrew program. Arab 312 (Arabic Media) and 411R (Advanced Conversation) are offered in the intensive modern Arabic program. The intensive Hebrew and Arabic programs are offered alternate years during the winter program only.

**Course Outcomes**

No outcomes are available at this time.

HEB 432R : Ancient Hebrew Texts. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HEB 331

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Define the top 600 vocabulary words from the Hebrew Bible.2. Analyze and discuss the fundamental elements of Hebrew grammar.3. Analyze and categorize the verbal system: pa'al, piel, hiphil, hophal, niphal, pual, and hithpael.

HEB 441 : Postbiblical Hebrew: Mishnah. (2:2:0)

PREREQUISITE: HEB 331

DESCRIPTION: Introduction to the grammar of Mishnaic Hebrew. Readings from various tractates of the Mishnah.

**Course Outcomes**

- 1. Explain the fundamental differences between Biblical Hebrew and Misnaic Hebrew grammar.2. Read and translate (with the limited use of a Mishnaic Hebrew Dictionary) passages from the Mishnah.

NE LG 511R : Studies in Ancient Near Eastern Languages. (.5-4:4:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Grammar and reading skills.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:Understand and recognize the fundamental elements of subject grammar (i.e., Aramaic, Coptic, Egyptian, Syriac, Akkadian, etc.)Define the top 300 vocabulary words of the subject language.Analyze and categorize the verbal system.

: Akkadian.

**Course Outcomes**

: Aramaic.

**Course Outcomes**

: Coptic.

**Course Outcomes**

: Egyptian.

**Course Outcomes**

: Syriac.

**Course Outcomes**

: Ugaritic.

**Course Outcomes**

(Choose one or more of the following: Akkadian, Aramaic, Coptic, Dead Sea Scroll, Egyptian, Syriac, Ugaritic.)

*Hours include courses that may fulfill university core requirements.

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# Minor in Modern Hebrew (22–30 hours*)

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## Program Requirements

1. Complete the following prerequisites:

HEB 101 : First-Year Modern Hebrew 1. (4:5:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Modern Hebrew as spoken in Israel today.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at beginning levels, utilizing pa'al verbs- Read and engage beginning level texts in Hebrew, and express thoughts and ideas in written Hebrew- Understand the modern Israeli cultural tradition (including music, art, and literature)

HEB 102 : First-Year Modern Hebrew 2. (4:5:2)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Modern Hebrew as spoken in Israel today.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at beginning levels, demonstrating an ability to communicate with others- Use pa'al, pi'el, hif'il, and hitpa'el present and past tense verbs correctly- Read and engage beginning level texts in Hebrew- Express thoughts and ideas in written Hebrew- Appreciate and value the modern Israeli cultural tradition (including music, art, and literature)

2. Complete the following:

HEB 131 : First-Year Biblical Hebrew. (4:5:0)

WHEN TAUGHT: Fall; Summer

DESCRIPTION: Old Testament Hebrew. Provides foundation in grammar and vocabulary; reading Hebrew prose texts in Bible.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Recite the Hebrew alphabet and recognize the vowels;2. Analyze and discuss most of the fundamental elements of Hebrew grammar;3. Read and translate elemental biblical historical narrative texts with limited use of a lexicon;4. Analyze and parse the verbal system: Pa'al (Qal);5. Define approximately 315 vocabulary words.

HEB 201 : Second-Year Modern Hebrew 1. (4:5:0)

WHEN TAUGHT: Fall

PREREQUISITE: Heb 102 or equivalent.

**Course Outcomes**

- Speak Modern Hebrew at intermediate levels, demonstrating an ability to communicate with others
- Use and understand past tense as well as pa'al and piel future tense verbs
- Read and comprehend intermediate level texts in modern Hebrew, including newspapers and Israeli literature
- Write in Modern Hebrew at the intermediate level
- Appreciate and value the modern Israeli cultural tradition (including music, art, and literature)

HEB 202 : Second-Year Modern Hebrew 2. (4:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: Heb 201 or equivalent.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Speak Modern Hebrew at intermediate levels, demonstrating an ability to communicate with others.
- Read and comprehend intermediate level texts in Modern Hebrew, including newspapers and Modern

Israeli literature.
- Use and understand the future tense and passive verb systems.
- Express thoughts and ideas in writing Modern Hebrew at the intermediate level.
- Appreciate and value the modern Israeli cultural tradition (including music, art, and literature).

HEB 301 : Third-Year Modern Hebrew 1. (4:4:1)

WHEN TAUGHT: Fall

PREREQUISITE: Heb 202 or equivalent.

DESCRIPTION: Intermediate-advanced modern Hebrew as spoken in Israel today.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at intermediate-advanced levels, utilizing all tenses and verb systems- Read and comprehend intermediate-advanced level texts in modern Hebrew, and write in Modern Hebrew at the intermediate-advanced level- Understand the modern Israeli cultural tradition (including music, art, and literature)

HEB 311R : Intermediate Conversation. (2:2:0)

WHEN TAUGHT: Fall; Winter

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at intermediate levels, demonstrating an ability to communicate with others- Read and comprehend intermediate level texts in Modern Hebrew- Understand the modern Israeli cultural tradition (including music, art, and literature)

3. Complete four hours from among the following:

HEB 132 : First-Year Biblical Hebrew. (4:5:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: HEB 131

DESCRIPTION: Old Testament Hebrew. Provides foundation in grammar and vocabulary; reading Hebrew prose texts in Bible.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Analyze and discuss the fundamental elements of Hebrew grammar.2. Read and translate elemental biblical historical narrative texts with limited use of a lexicon.3. Analyze and parse the verbal system: pa'al, niphal, piel, pual, hiphil, hophal, hithpael.4. Define approximately 400 vocabulary words.

HEB 302 : Third-Year Modern Hebrew 2. (4:4:1)

WHEN TAUGHT: Winter

PREREQUISITE: Heb 301 or equivalent.

DESCRIPTION: Advanced modern Hebrew as spoken in Israel today.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at advanced levels, utilizing all tenses and verb systems- Read and comprehend advanced level texts in Modern Hebrew, and express thoughts and ideas in written Modern Hebrew at the advanced level- Understand the modern Israeli cultural tradition (including music, art, and literature)

HEB 312 : Hebrew Media. (2-4:Arr:Arr)

WHEN TAUGHT: Contact Department.

PREREQUISITE: HEB 101 & HEB 102

DESCRIPTION: Emphasizes reading, aural comprehension, and speaking Hebrew. Includes newspaper reading, listening to local news on radio and television, and in-class discussion of current events.

NOTE: Heb 312 (Hebrew Media), Heb 313, Heb 411R (Advanced Conversation), and Heb 421 are offered in the intensive modern Hebrew program. Arab 312 (Arabic Media) and 411R (Advanced Conversation) are offered in the intensive modern Arabic program. The intensive Hebrew and Arabic programs are offered alternate years during the winter programs only.

**Course Outcomes**

There are no course outcomes available

HEB 411R : Advanced Conversation. (1-4:4:4)

PREREQUISITE: Heb 311R or equivalent.

DESCRIPTION: Emphasizes conversation in everyday situations. Students role play various situations in class and then apply their learning in Jerusalem.

NOTE: Heb 312 (Hebrew Media), Heb 313, Heb 411R (Advanced Conversation), and Heb 421 are offered in the intensive modern Hebrew program. Arab 312 (Arabic Media) and 411 (Advanced Conversation) are offered in the intensive modern Arabic program. The intensive Hebrew and Arabic programs are offered alternate years during the winter program only.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at advanced levels, demonstrating an ability to communicate with others- Read and comprehend advanced level texts in Modern Hebrew- Understand the modern Israeli cultural tradition (including music, art, and literature)

*Hours include courses that may fulfill university core requirements.

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**Hebrew**

**Minors**
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**Japanese**

**Majors**
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**Minors**
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- Japanese Teaching

**Language Certificate**
- Japanese

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**Korean**

**Majors**
- BA in Korean

**Minors**
- Korean

**Language Certificate**
- Korean

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# Hebrew (Heb)

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## Undergraduate Courses

### 100-Level Courses

HEB 100R : Introduction to Hebrew. (.5-1:Arr.:0)
OFFERED: Offered at the Jerusalem Center for Near Eastern Studies only.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Beginning Hebrew.

**Course Outcomes**
- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at beginning levels- Read and engage beginning level texts in Hebrew, and express thoughts and ideas in written Hebrew- Understand the modern Israeli cultural tradition (including music, art, and literature)

HEB 101 : First-Year Modern Hebrew 1. (4:5:2)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Modern Hebrew as spoken in Israel today.

**Course Outcomes**
- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at beginning levels, utilizing pa'al verbs- Read and engage beginning level texts in Hebrew, and express thoughts and ideas in written Hebrew- Understand the modern Israeli cultural tradition (including music, art, and literature)

HEB 102 : First-Year Modern Hebrew 2. (4:5:2)
WHEN TAUGHT: Winter; Spring
DESCRIPTION: Modern Hebrew as spoken in Israel today.

**Course Outcomes**
- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at beginning levels, demonstrating an ability to communicate with others- Use pa'al, pi'el, hif'il, and hitpa'el present and past tense verbs correctly- Read and engage beginning level texts in Hebrew- Express thoughts and ideas in written Hebrew- Appreciate and value the modern Israeli cultural tradition (including music, art, and literature)

HEB 131 : First-Year Biblical Hebrew. (4:5:0)
WHEN TAUGHT: Fall; Summer
DESCRIPTION: Old Testament Hebrew. Provides foundation in grammar and vocabulary; reading Hebrew prose texts in Bible.

**Course Outcomes**
- Upon completion of this course, participants will have acquired the skills necessary to:1. Recite the Hebrew alphabet and recognize the vowels;2. Analyze and discuss most of the fundamental elements of Hebrew grammar;3. Read and translate elemental biblical historical narrative texts with limited use of a lexicon;4. Analyze and parse the verbal system: Pa'al (Qal);5. Define approximately 315 vocabulary words.

HEB 132 : First-Year Biblical Hebrew. (4:5:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: HEB 131
DESCRIPTION: Old Testament Hebrew. Provides foundation in grammar and vocabulary; reading Hebrew prose texts in Bible.

**Course Outcomes**
- Upon completion of this course, participants will have acquired the skills necessary to:1. Analyze and discuss the fundamental elements of Hebrew grammar.2. Read and translate elemental biblical historical narrative texts with limited use of a lexicon.3. Analyze and parse the verbal system: pa'al, niphal, piel, pual, hiphil, hophal, hithpael.4. Define approximately 400 vocabulary words.

HEB 133 : Honors Hebrew and the Old Testament. (4:4:0)
WHEN TAUGHT: Fall
PREREQUISITE: Must be taken in conjunction with specified Honors section of Rel A 301.
DESCRIPTION: Rapid survey of biblical Hebrew.

**Course Outcomes**
- Upon completion of this course, participants will have acquired the skills necessary to:1. Recite the Hebrew alphabet and recognize the vowels;2. Analyze and discuss most of the fundamental elements of Hebrew grammar;3. Read and translate elemental biblical historical narrative texts with limited use of a lexicon;4. Analyze and parse the verbal system: Pa'al (Qal);5. Define approximately 315 vocabulary words.

HEB 134 : Honors Hebrew and the Old Testament. (4:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: Must be taken in conjunction with specified Honors section of Rel A 302.
DESCRIPTION: Rapid survey of biblical Hebrew.

**Course Outcomes**
- Upon completion of this course, participants will have acquired the skills necessary to:1. Analyze and discuss the fundamental elements of Hebrew grammar.2. Read and translate elemental biblical historical narrative texts with limited use of a lexicon.3. Analyze and parse the verbal system: pa'al, niphal, piel, pual, hiphil, hophal, hithpael.4. Define approximately 400 vocabulary words.

### 200-Level Courses

HEB 201 : Second-Year Modern Hebrew 1. (4:5:0)
WHEN TAUGHT: Fall
PREREQUISITE: Heb 102 or equivalent.

**Course Outcomes**
- Speak Modern Hebrew at intermediate levels, demonstrating an ability to communicate with others
- Use and understand past tense as well as pa'al and piel future tense verbs
- Read and comprehend intermediate level texts in modern Hebrew, including newspapers and Israeli literature
- Write in Modern Hebrew at the intermediate level
- Appreciate and value the modern Israeli cultural tradition (including music, art, and literature)

HEB 202 : Second-Year Modern Hebrew 2. (4:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: Heb 201 or equivalent.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
- Speak Modern Hebrew at intermediate levels, demonstrating an ability to communicate with others.
- Read and comprehend intermediate level texts in Modern Hebrew, including newspapers and Modern Israeli literature.
- Use and understand the future tense and passive verb systems.
- Express thoughts and ideas in writing Modern Hebrew at the intermediate level.
- Appreciate and value the modern Israeli cultural tradition (including music, art, and literature).

### 300-Level Courses

HEB 301 : Third-Year Modern Hebrew 1. (4:4:1)
WHEN TAUGHT: Fall
PREREQUISITE: Heb 202 or equivalent.
DESCRIPTION: Intermediate-advanced modern Hebrew as spoken in Israel today.

**Course Outcomes**
- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at intermediate-advanced levels, utilizing all tenses and verb systems- Read and comprehend intermediate-advanced level texts in modern Hebrew, and write in Modern Hebrew at the intermediate-advanced level- Understand the modern Israeli cultural tradition (including music, art, and literature)

HEB 302 : Third-Year Modern Hebrew 2. (4:4:1)
WHEN TAUGHT: Winter
PREREQUISITE: Heb 301 or equivalent.
DESCRIPTION: Advanced modern Hebrew as spoken in Israel today.

**Course Outcomes**
- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at advanced levels, utilizing all tenses and verb systems- Read and comprehend advanced level texts in Modern Hebrew, and express thoughts and ideas in written Modern Hebrew at the advanced level- Understand the modern Israeli cultural tradition (including music, art, and literature)

HEB 311R : Intermediate Conversation. (2:2:0)
WHEN TAUGHT: Fall; Winter

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at intermediate levels, demonstrating an ability to communicate with others- Read and comprehend intermediate level texts in Modern Hebrew- Understand the modern Israeli cultural tradition (including music, art, and literature)

HEB 312 : Hebrew Media. (2-4:Arr:Arr)

WHEN TAUGHT: Contact Department.

PREREQUISITE: HEB 101 & HEB 102

DESCRIPTION: Emphasizes reading, aural comprehension, and speaking Hebrew. Includes newspaper reading, listening to local news on radio and television, and in-class discussion of current events.

NOTE: Heb 312 (Hebrew Media), Heb 313, Heb 411R (Advanced Conversation), and Heb 421 are offered in the intensive modern Hebrew program. Arab 312 (Arabic Media) and 411R (Advanced Conversation) are offered in the intensive modern Arabic program. The intensive Hebrew and Arabic programs are offered alternate years during the winter programs only.

**Course Outcomes**

There are no course outcomes available

HEB 313 : Readings in the Old Testament. (3:3:0)

DESCRIPTION: Readings in the Old Testament in Hebrew.

NOTE: Heb 312 (Hebrew Media), Heb 313, Heb 411R (Advanced Conversation), and Heb 421 are offered in the intensive modern Hebrew program. Arab 312 (Arabic Media) and 411R (Advanced Conversation) are offered in the intensive modern Arabic program. The intensive Hebrew and Arabic programs are offered alternate years during the winter program only.

**Course Outcomes**

No outcomes are available at this time.

HEB 314R : Intermediate Hebrew Language in Jerusalem. (1-3:Arr:0)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: HEB 202

DESCRIPTION: Emphasizes intermediate conversation in everyday situations. Students role play various situations in class and then apply learning in Jerusalem.

NOTE: Offered at the Jerusalem Center for Near Eastern Studies only. Replaces Jerusalem Center core course equivalent of Hebrew 100R.

**Course Outcomes**

There are no course outcomes available

HEB 321 : Intermediate Conversation and Media. (3:3:0)

OFFERED: Offered at the Jerusalem Center for Near Eastern Studies only.

PREREQUISITE: HEB 101 & HEB 102

DESCRIPTION: Capitalizing on daily life in Jerusalem to increase speaking, reading, writing, and listening comprehension in modern Hebrew.

**Course Outcomes**

No outcomes are available at this time.

HEB 331 : Readings in the Hebrew Scriptures 1. (4:5:0)

WHEN TAUGHT: Fall

PREREQUISITE: Heb 132, 201, or equivalent.

DESCRIPTION: Grammar review and vocabulary building through reading historical and prophetic books.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Define the top 300 vocabulary words from the Hebrew Bible.2. Analyze and discuss the fundamental elements of Hebrew grammar.3. Analyze and categorize the verbal system: pa'al, piel, hiphil, hophal, niphal, pual, and hithpael.

HEB 346R : Israeli and Jewish Civilization. (1-2:Arr:0)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: HEB 202

DESCRIPTION: Social science/humanities core course. Broad introduction to Jewish self-understanding and history, focusing on relationships among people, faith, and land.

NOTE: Offered at the Jerusalem Center for Near Eastern Studies only. Replaces Jerusalem Center core course requirement of NES 349R (2 cr. hrs.). Does not receive GE credit.

**Course Outcomes**

There are no course outcomes available

**400-Level Courses**

HEB 411R : Advanced Conversation. (1-4:4:4)

PREREQUISITE: Heb 311R or equivalent.

DESCRIPTION: Emphasizes conversation in everyday situations. Students role play various situations in class and then apply their learning in Jerusalem.

NOTE: Heb 312 (Hebrew Media), Heb 313, Heb 411R (Advanced Conversation), and Heb 421 are offered in the intensive modern Hebrew program. Arab 312 (Arabic Media) and 411 (Advanced Conversation) are offered in the intensive modern Arabic program. The intensive Hebrew and Arabic programs are offered alternate years during the winter program only.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at advanced levels, demonstrating an ability to communicate with others- Read and comprehend advanced level texts in Modern Hebrew- Understand the modern Israeli cultural tradition (including music, art, and literature)

HEB 421 : Readings in the Hebrew Translation of the New Testament. (3:3:0)

DESCRIPTION: Readings in the New Testament in Hebrew translation.

NOTE: Heb 312 (Hebrew Media), Heb 313, Heb 411R (Advanced Conversation), and Hebrew 421 are offered in the intensive modern Hebrew program. Arab 312 (Arabic Media) and 411R (Advanced Conversation) are offered in the intensive modern Arabic program. The intensive Hebrew and Arabic programs are offered alternate years during the winter program only.

**Course Outcomes**

No outcomes are available at this time.

HEB 431 : Readings in the Hebrew Scriptures 2. (4:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: HEB 331

DESCRIPTION: Readings in the poetic and wisdom literature.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Define the top 600 vocabulary words from the Hebrew Bible.2. Analyze and discuss the fundamental elements of Hebrew grammar.3. Analyze and categorize the verbal system: pa'al, piel, hiphil, hophal, niphal, pual, and hithpael.4. Understand elemental forms of Hebrew parallelistic poetry and figures of speech.

HEB 432R : Ancient Hebrew Texts. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HEB 331

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Define the top 600 vocabulary words from the Hebrew Bible.2. Analyze and discuss the fundamental elements of Hebrew grammar.3. Analyze and categorize the verbal system: pa'al, piel, hiphil, hophal, niphal, pual, and hithpael.

HEB 441 : Postbiblical Hebrew: Mishnah. (2:2:0)

PREREQUISITE: HEB 331

DESCRIPTION: Introduction to the grammar of Mishnaic Hebrew. Readings from various tractates of the Mishnah.

**Course Outcomes**

- 1. Explain the fundamental differences between Biblical Hebrew and Misnaic Hebrew grammar.2. Read and translate (with the limited use of a Mishnaic Hebrew Dictionary) passages from the Mishnah.

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- Korean

Language Certificate
- Korean

Course Information
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# BA in Japanese (44–60 hours*)

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## Program Requirements | View MAP | View Program Outcomes

1. Students will be required to sit for a comprehensive language exam covering grammar and Joyo Kanji.
2. A required reading list must be completed, evidenced by successful completion of Japan 495, normally during the last semester before graduation.
3. Counsel with advisor to determine supporting courses appropriate to your professional goals.
4. Complete the following prerequisite courses (or equivalents):

JAPAN 101 : First-Year Japanese. (4:5:1)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

DESCRIPTION: Writing systems, grammar and vocabulary-building fundamentals, basic conversation and reading.

**Course Outcomes**
- Students will be able to read and write hiragana and katakana. A writing sample will be included in the individual student portfolio.
- Students will be able to ask and give directions
- Students will be able to discuss schedules and itineraries

JAPAN 102 : First-Year Japanese. (4:5:1)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: Japan 101, or equivalent.

DESCRIPTION: Writing systems, grammar and vocabulary-building fundamentals, basic conversation and reading. Includes introduction to Chinese characters.

**Course Outcomes**
- Students will be able to make social introductions covering various levels of formality and honorifics
- Students will be able to read and write simple texts based on 200 elementary kanji characters. A written sample will be included in the individual student portfolio.
- Students will be able to make comparisons

JAPAN 201 : Second-Year Japanese. (4:5:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 102 or equivalent.

DESCRIPTION: Further practice in conversation; basic reading and writing skills.

**Course Outcomes**
- Students will be able to recognize and produce approximately 400 kanji characters with their readings and meanings. A written sample will be included in the individual student portfolio.
- Students will be able to describe and model proper etiquette when visiting a home, making hotel reservations, talking about the weather, clothing terms, etc. They will be able to use verbals of giving and receiving; compare activities; use different patterns of reporting information; and employ embedded questions.

JAPAN 202 : Second-Year Japanese. (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 201 or equivalent.

DESCRIPTION: Further practice in conversation, reading, and writing; introducing culture through short stories, articles.

NOTE: Not for returned missionaries. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
- Students will be able to recognize and use an additional 150 kanji characters in context. A written sample will be included in the individual student portfolio.
- Students will interact appropriately in vertical society situations, using proper levels of honorific

language.

5. Complete the following:

JAPAN 301 : Japanese Reading and Culture. (4:5:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department; Spring Contact Department
PREREQUISITE: Japan 202 or equivalent.
DESCRIPTION: Reading and writing emphasizing essential characters, vocabulary, grammar, and culture.
NOTE: First course for returned missionaries.

**Course Outcomes**

There are no course outcomes available

JAPAN 302 : Readings in Japanese History and Culture. (4:5:0)

PREREQUISITE: Japan 301 or instructor's consent.
DESCRIPTION: Readings in Japanese history and literature with essential characters, vocabulary, and grammatical principles.

**Course Outcomes**

- Students will be able to read and discuss texts relating to Japanese history, literature, and culture.
- Students will be able to write at the intermediate level on assigned topics relating to Japanese history, literature, and culture.
- Students will be able to discuss and give oral presentations on key topics in Japanese history, literature, and culture.

JAPAN 311R : Third-Year Conversation. (2:2:0)

PREREQUISITE: Japan 301 or instructor's consent.
NOTE: May be repeated for Study Abroad in Japan.

**Course Outcomes**

- Students will be able to prepare and present speeches in public settings.
- Students will learn to speak Japanese with more accurate pronunciation, accent, and intonation.
- Students will be able to understand spoken native Japanese with greater accuracy.

JAPAN 321 : Reading Modern Documentary Styles. (3:3:0)

PREREQUISITE: Japan 302 or equivalent.
DESCRIPTION: Readings in modern documentary styles, emphasizing reading comprehension, grammar, and vocabulary building.

**Course Outcomes**

- Students will increase their ability to understand vocabulary commonly used in newspapers
- Students will be able to read a range of types of news articles (politics, business, human interest, sports, etc.)
- Students will be able to compare and contrast print and television news reports. A written sample will be included in the individual student portfolio. The student portfolio will be formally reviewed at the conclusion of this course.

JAPAN 322 : Reading Modern Short Fiction. (3:3:0)

PREREQUISITE: Japan 302 or equivalent.
DESCRIPTION: Readings in modern short fiction, emphasizing grammar, reading comprehension, vocabulary building, and stylistic analysis.

**Course Outcomes**

- Students will be able to use a variety of dictionary sources that will enable them to read and comprehend modern Japanese prose
- Students will be able to recognize a majority of standard-usage kanji and identify various readings for the characters
- Students will be able to analyze and discuss a variety of modern Japanese literary texts at an intermediate level in the target language. A writing sample will be included in the individual student portfolio.

JAPAN 345 : Traditional Japanese Culture. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department
DESCRIPTION: General survey emphasizing aesthetics, religion, and value systems. All readings in English.

**Course Outcomes**

- Students will be able to speak and write about such features of culture as language, literature, thought, religion, aesthetics, art and music. A writing sample will be included in the individual student portfolio.

JAPAN 411 : Advanced Japanese Pragmatics. (2:2:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: JAPAN 311R & JAPAN 321 & JAPAN 322
DESCRIPTION: Advanced skills in speaking and writing.

**Course Outcomes**

- Students will read and discuss in a variety of settings advanced texts relating to current events and issues.
- Students will write essays that analyze, respond to, and express personal opinions on current events and issues. A sample essay will be included in the individual student portfolio.

JAPAN 441 : Introduction to Classical Japanese. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: JAPAN 321 & JAPAN 322

DESCRIPTION: Reading of premodern texts, emphasizing grammar and syntax, and showing differences from and influences on the modern idiom.

**Course Outcomes**

- Students will be able to analyze and discuss the influence of the pre-modern language on present-day Japanese.
- Students will read and analyze the content and linguistic features of important premodern literary texts. A writing sample will be included in the individual student portfolio.

JAPAN 443 : Advanced Documentary Style. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 321, 322; or equivalents.

DESCRIPTION: Reading and discussion of modern expository texts; developing advanced listening skills using authentic materials.

**Course Outcomes**

- Students will demonstrate the ability to read and analyze advanced documentary-style texts. A writing sample will be included in the individual student portfolio.

JAPAN 444 : Reading Modern Japan. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 321, 322; or equivalents.

DESCRIPTION: Fictional texts from major twentieth-century authors. Texts primarily in Japanese.

**Course Outcomes**

- Students will demonstrate their ability to read and interpret modern literary texts with sophistication in both oral and written forms. A writing sample will be included in the individual student portfolio.

JAPAN 495 : Senior Seminar. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Department approval.

DESCRIPTION: Capstone course for the Japanese major.

NOTE: Required of all majors. To be taken the Fall or Winter semester prior to graduation.

**Course Outcomes**

- Students will be able to analyze and discuss such features of the culture as language, literature, thought, religion, aesthetics, art, and music. The student portfolio will be reviewed at the conclusion of this course.
- Students will demonstrate an ability to analyze and discuss aspects of the language, such as phonology, morphology, syntax, semantics, and pragmatics. The student portfolio will be reviewed at the conclusion of this course.

6. Complete one course from the following:

JAPAN 325 : Japanese Morphology, Syntax, and Semantics. (3:3:0)

PREREQUISITE: JAPAN 302

DESCRIPTION: General overview of grammar and its practical application in composition.

**Course Outcomes**

- Students will demonstrate both orally and in writing their knowledge of and ability to use appropriately essential features of the Japanese language, including parts of speech, modification, vector verbs, and honorifics.
- Students will demonstrate, through regular writing assignments and oral presentations, their ability to write and speak Japanese with accuracy and to do contrastive analysis of Japanese and English.

JAPAN 326 : Contrastive Analysis of Japanese and English. (3:3:0)

PREREQUISITE: JAPAN 302

DESCRIPTION: Contrastive overview of Japanese and English phonology, syntax, semantics, and discourse.

**Course Outcomes**

- Students will demonstrate, through appropriate usage, their understanding of important syntactic patterns. A writing sample will be included in the individual student portfolio.
- Students will be able to describe and narrate in different time frames in Japanese.

7. Complete one course from the following:

JAPAN 350 : Japanese Literature in Translation--Eighth Through Sixteenth Centuries. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 700 through 1600 (Nara, Heian, and medieval periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of premodern literature in verbal and written forms. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their knowledge and understanding of major works and genres in verbal and written forms.

JAPAN 351 : Japanese Literature in Translation--Seventeenth Through Nineteenth Centuries. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 1600 through 1900 (Edo and Meiji periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of early modern Japanese literature orally and in writing. A writing sample will be included in individual student portfolio.
- Students will demonstrate their understanding of key literary works and genres in early modern Japanese literature in verbal and written forms.

JAPAN 352 : Japanese Literature in Translation: The Modern Era. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from Meiji period to the present.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of human aspects in works of modern Japanese literature orally and in writing. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their ability to analyze key works and genres in modern Japanese literature in oral and written form.

8. Complete six hours from the following:

JAPAN 325 : Japanese Morphology, Syntax, and Semantics. (3:3:0)

PREREQUISITE: JAPAN 302

DESCRIPTION: General overview of grammar and its practical application in composition.

**Course Outcomes**

- Students will demonstrate both orally and in writing their knowledge of and ability to use appropriately essential features of the Japanese language, including parts of speech, modification, vector verbs, and honorifics.
- Students will demonstrate, through regular writing assignments and oral presentations, their ability to write and speak Japanese with accuracy and to do contrastive analysis of Japanese and English.

JAPAN 326 : Contrastive Analysis of Japanese and English. (3:3:0)

PREREQUISITE: JAPAN 302

DESCRIPTION: Contrastive overview of Japanese and English phonology, syntax, semantics, and discourse.

**Course Outcomes**

- Students will demonstrate, through appropriate usage, their understanding of important syntactic patterns. A writing sample will be included in the individual student portfolio.
- Students will be able to describe and narrate in different time frames in Japanese.

JAPAN 350 : Japanese Literature in Translation--Eighth Through Sixteenth Centuries. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 700 through 1600 (Nara, Heian, and medieval periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of premodern literature in verbal and written forms. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their knowledge and understanding of major works and genres in verbal and written forms.

JAPAN 351 : Japanese Literature in Translation--Seventeenth Through Nineteenth Centuries. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 1600 through 1900 (Edo and Meiji periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of early modern Japanese literature orally and in writing. A writing sample will be included in individual student portfolio.
- Students will demonstrate their understanding of key literary works and genres in early modern Japanese literature in verbal and written forms.

JAPAN 352 : Japanese Literature in Translation: The Modern Era. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from Meiji period to the present.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of human aspects in works of modern Japanese literature orally and in writing. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their ability to analyze key works and genres in modern Japanese literature in oral and written form.

JAPAN 377 : Japanese Language Teaching Procedures. (3:3:0)

PREREQUISITE: Japan 302 or instructor's consent.

DESCRIPTION: Acquiring knowledge and skills specific to teaching of Japanese as a foreign language. Conducted in Japanese and English.

**Course Outcomes**

- Students will evaluate existing language teaching materials, then create and present their own teaching materials. A sample of teaching materials will be included in the individual student portfolio.
- Students will plan language lessons and present them in class.

JAPAN 390 : Japanese for Special Purposes. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Japan 321 or equivalent.

DESCRIPTION: Readings, video materials, discussions, and projects in content areas related specifically to business, science, and technology.

**Course Outcomes**

- Students will gain proficiency in analyzing and discussing, in Japanese, important aspects of the business environment in Japan as compared to that in America.
- Students will acquire and be able to use specialized vocabulary in Japanese relating to their fields of interest.

Additionally, one of the following may be counted toward the six required hours of electives:

HIST 343 : Traditional Japan. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, social, religious, and cultural developments to ca. 1700.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history until around 1600.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 344 : Modern Japan. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Main themes in Japanese history from Tokugawa times to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history from approximately 1600 to the present.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

POLI 354 : Japan: Government and Politics. (3:3:0)

DESCRIPTION: Structure and behavior of politics; contemporary problems.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 386 : Japanese Foreign Policy. (3:3:0)

DESCRIPTION: Process and outcomes of Japan's foreign policy; analysis of its relations with other nations in a historical and contemporary setting.

**Course Outcomes**

There are no course outcomes available

**Recommended Courses**

It is recommended that students complete Engl 311 or similar courses before enrolling in advanced literature courses.

*Hours include courses that may fulfill university core requirements.

## Show all Japanese Courses

College of Humanities Home

Asian and Near Eastern Languages Department Home

Arabic

Major
- Arabic Language

Minors
- Arabic

Language Certificate
- Arabic

Course Information
- Arabic Courses

Chinese

Majors
- BA in Chinese

Minors
- Chinese
- Chinese Teaching

Language Certificate
- Chinese

Course Information
- Chinese—Mandarin Courses
- Chinese—Cantonese Courses

Hebrew

Minors
- Biblical Hebrew
- Modern Hebrew

Course Information
- Hebrew Courses

Japanese

Majors
- BA in Japanese

Minors
- Japanese
- Japanese Teaching

Language Certificate
- Japanese

Course Information
- Japanese Courses

Korean

Majors
- BA in Korean

Minors
- Korean

Language Certificate
- Korean

Course Information
- Korean Courses

# Minor in Japanese (19–35 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following prerequisite courses (or equivalents):

JAPAN 101 : First-Year Japanese. (4:5:1)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

DESCRIPTION: Writing systems, grammar and vocabulary-building fundamentals, basic conversation and reading.

**Course Outcomes**
- Students will be able to read and write hiragana and katakana. A writing sample will be included in the individual student portfolio.
- Students will be able to ask and give directions
- Students will be able to discuss schedules and itineraries

JAPAN 102 : First-Year Japanese. (4:5:1)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: Japan 101, or equivalent.

DESCRIPTION: Writing systems, grammar and vocabulary-building fundamentals, basic conversation and reading. Includes introduction to Chinese characters.

**Course Outcomes**
- Students will be able to make social introductions covering various levels of formality and honorifics
- Students will be able to read and write simple texts based on 200 elementary kanji characters. A written sample will be included in the individual student portfolio.
- Students will be able to make comparisons

JAPAN 201 : Second-Year Japanese. (4:5:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 102 or equivalent.

DESCRIPTION: Further practice in conversation; basic reading and writing skills.

**Course Outcomes**
- Students will be able to recognize and produce approximately 400 kanji characters with their readings and meanings. A written sample will be included in the individual student portfolio.
- Students will be able to describe and model proper etiquette when visiting a home, making hotel reservations, talking about the weather, clothing terms, etc. They will be able to use verbals of giving and receiving; compare activities; use different patterns of reporting information; and employ embedded questions.

JAPAN 202 : Second-Year Japanese. (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 201 or equivalent.

DESCRIPTION: Further practice in conversation, reading, and writing; introducing culture through short stories, articles.

NOTE: Not for returned missionaries. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
- Students will be able to recognize and use an additional 150 kanji characters in context. A written sample will be included in the individual student portfolio.
- Students will interact appropriately in vertical society situations, using proper levels of honorific language.

2. Complete the following:

JAPAN 301 : Japanese Reading and Culture. (4:5:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department; Spring Contact Department

PREREQUISITE: Japan 202 or equivalent.

DESCRIPTION: Reading and writing emphasizing essential characters, vocabulary, grammar, and culture.
NOTE: First course for returned missionaries.

**Course Outcomes**

There are no course outcomes available

JAPAN 302 : Readings in Japanese History and Culture. (4:5:0)

PREREQUISITE: Japan 301 or instructor's consent.
DESCRIPTION: Readings in Japanese history and literature with essential characters, vocabulary, and grammatical principles.

**Course Outcomes**

- Students will be able to read and discuss texts relating to Japanese history, literature, and culture.
- Students will be able to write at the intermediate level on assigned topics relating to Japanese history, literature, and culture.
- Students will be able to discuss and give oral presentations on key topics in Japanese history, literature, and culture.

JAPAN 311R : Third-Year Conversation. (2:2:0)

PREREQUISITE: Japan 301 or instructor's consent.
NOTE: May be repeated for Study Abroad in Japan.

**Course Outcomes**

- Students will be able to prepare and present speeches in public settings.
- Students will learn to speak Japanese with more accurate pronunciation, accent, and intonation.
- Students will be able to understand spoken native Japanese with greater accuracy.

JAPAN 321 : Reading Modern Documentary Styles. (3:3:0)

PREREQUISITE: Japan 302 or equivalent.
DESCRIPTION: Readings in modern documentary styles, emphasizing reading comprehension, grammar, and vocabulary building.

**Course Outcomes**

- Students will increase their ability to understand vocabulary commonly used in newspapers
- Students will be able to read a range of types of news articles (politics, business, human interest, sports, etc.)
- Students will be able to compare and contrast print and television news reports. A written sample will be included in the individual student portfolio. The student portfolio will be formally reviewed at the conclusion of this course.

JAPAN 322 : Reading Modern Short Fiction. (3:3:0)

PREREQUISITE: Japan 302 or equivalent.
DESCRIPTION: Readings in modern short fiction, emphasizing grammar, reading comprehension, vocabulary building, and stylistic analysis.

**Course Outcomes**

- Students will be able to use a variety of dictionary sources that will enable them to read and comprehend modern Japanese prose
- Students will be able to recognize a majority of standard-usage kanji and identify various readings for the characters
- Students will be able to analyze and discuss a variety of modern Japanese literary texts at an intermediate level in the target language. A writing sample will be included in the individual student portfolio.

JAPAN 345 : Traditional Japanese Culture. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department
DESCRIPTION: General survey emphasizing aesthetics, religion, and value systems. All readings in English.

**Course Outcomes**

- Students will be able to speak and write about such features of culture as language, literature, thought, religion, aesthetics, art and music. A writing sample will be included in the individual student portfolio.

*Hours include courses that may fulfill university core requirements.

## Show all Japanese Courses

College of Humanities Home

Asian and Near Eastern Languages Department Home

Arabic

Major
- Arabic Language

Minors
- Arabic

Language Certificate
- Arabic

Course Information
- Arabic Courses

Chinese

Majors
- BA in Chinese

Minors
- Chinese
- Chinese Teaching

Language Certificate
- Chinese

Course Information
- Chinese—Mandarin Courses
- Chinese—Cantonese Courses

Hebrew

Minors
- Biblical Hebrew
- Modern Hebrew

Course Information
- Hebrew Courses

Japanese

Majors
- BA in Japanese

Minors
- Japanese
- Japanese Teaching

Language Certificate
- Japanese

Course Information
- Japanese Courses

Korean

Majors
- BA in Korean

Minors
- Korean

Language Certificate
- Korean

Course Information
- Korean Courses

# Minor in Japanese Teaching (25–41 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following prerequisite courses (or equivalents):

JAPAN 101 : First-Year Japanese. (4:5:1)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

DESCRIPTION: Writing systems, grammar and vocabulary-building fundamentals, basic conversation and reading.

**Course Outcomes**

- Students will be able to read and write hiragana and katakana. A writing sample will be included in the individual student portfolio.
- Students will be able to ask and give directions
- Students will be able to discuss schedules and itineraries

JAPAN 102 : First-Year Japanese. (4:5:1)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: Japan 101, or equivalent.

DESCRIPTION: Writing systems, grammar and vocabulary-building fundamentals, basic conversation and reading. Includes introduction to Chinese characters.

**Course Outcomes**

- Students will be able to make social introductions covering various levels of formality and honorifics
- Students will be able to read and write simple texts based on 200 elementary kanji characters. A written sample will be included in the individual student portfolio.
- Students will be able to make comparisons

JAPAN 201 : Second-Year Japanese. (4:5:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 102 or equivalent.

DESCRIPTION: Further practice in conversation; basic reading and writing skills.

**Course Outcomes**

- Students will be able to recognize and produce approximately 400 kanji characters with their readings and meanings. A written sample will be included in the individual student portfolio.
- Students will be able to describe and model proper etiquette when visiting a home, making hotel reservations, talking about the weather, clothing terms, etc. They will be able to use verbals of giving and receiving; compare activities; use different patterns of reporting information; and employ embedded questions.

JAPAN 202 : Second-Year Japanese. (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 201 or equivalent.

DESCRIPTION: Further practice in conversation, reading, and writing; introducing culture through short stories, articles.

NOTE: Not for returned missionaries. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to recognize and use an additional 150 kanji characters in context. A written sample will be included in the individual student portfolio.

Students will interact appropriately in vertical society situations, using proper levels of honorific language.

3. Complete the following:

JAPAN 301 : Japanese Reading and Culture. (4:5:0)
WHEN TAUGHT: Fall Contact Department; Winter Contact Department; Spring Contact Department
PREREQUISITE: Japan 202 or equivalent.
DESCRIPTION: Reading and writing emphasizing essential characters, vocabulary, grammar, and culture.
NOTE: First course for returned missionaries.

**Course Outcomes**

There are no course outcomes available

JAPAN 302 : Readings in Japanese History and Culture. (4:5:0)
PREREQUISITE: Japan 301 or instructor's consent.
DESCRIPTION: Readings in Japanese history and literature with essential characters, vocabulary, and grammatical principles.

**Course Outcomes**

- Students will be able to read and discuss texts relating to Japanese history, literature, and culture.
- Students will be able to write at the intermediate level on assigned topics relating to Japanese history, literature, and culture.
- Students will be able to discuss and give oral presentations on key topics in Japanese history, literature, and culture.

JAPAN 311R : Third-Year Conversation. (2:2:0)
PREREQUISITE: Japan 301 or instructor's consent.
NOTE: May be repeated for Study Abroad in Japan.

**Course Outcomes**

- Students will be able to prepare and present speeches in public settings.
- Students will learn to speak Japanese with more accurate pronunciation, accent, and intonation.
- Students will be able to understand spoken native Japanese with greater accuracy.

JAPAN 321 : Reading Modern Documentary Styles. (3:3:0)
PREREQUISITE: Japan 302 or equivalent.
DESCRIPTION: Readings in modern documentary styles, emphasizing reading comprehension, grammar, and vocabulary building.

**Course Outcomes**

- Students will increase their ability to understand vocabulary commonly used in newspapers
- Students will be able to read a range of types of news articles (politics, business, human interest, sports, etc.)
- Students will be able to compare and contrast print and television news reports. A written sample will be included in the individual student portfolio. The student portfolio will be formally reviewed at the conclusion of this course.

JAPAN 322 : Reading Modern Short Fiction. (3:3:0)
PREREQUISITE: Japan 302 or equivalent.
DESCRIPTION: Readings in modern short fiction, emphasizing grammar, reading comprehension, vocabulary building, and stylistic analysis.

**Course Outcomes**

- Students will be able to use a variety of dictionary sources that will enable them to read and comprehend modern Japanese prose
- Students will be able to recognize a majority of standard-usage kanji and identify various readings for the characters
- Students will be able to analyze and discuss a variety of modern Japanese literary texts at an intermediate level in the target language. A writing sample will be included in the individual student portfolio.

JAPAN 345 : Traditional Japanese Culture. (3:3:0)
WHEN TAUGHT: Winter; Spring Contact Department
DESCRIPTION: General survey emphasizing aesthetics, religion, and value systems. All readings in English.

**Course Outcomes**

- Students will be able to speak and write about such features of culture as language, literature, thought, religion, aesthetics, art and music. A writing sample will be included in the individual student portfolio.

JAPAN 377 : Japanese Language Teaching Procedures. (3:3:0)
PREREQUISITE: Japan 302 or instructor's consent.
DESCRIPTION: Acquiring knowledge and skills specific to teaching of Japanese as a foreign language. Conducted in Japanese and English.

**Course Outcomes**

- Students will evaluate existing language teaching materials, then create and present their own teaching materials. A sample of teaching materials will be included in the individual student portfolio.
- Students will plan language lessons and present them in class.

4. Complete one course from the following:

JAPAN 325 : Japanese Morphology, Syntax, and Semantics. (3:3:0)

PREREQUISITE: JAPAN 302

DESCRIPTION: General overview of grammar and its practical application in composition.

**Course Outcomes**

- Students will demonstrate both orally and in writing their knowledge of and ability to use appropriately essential features of the Japanese language, including parts of speech, modification, vector verbs, and honorifics.
- Students will demonstrate, through regular writing assignments and oral presentations, their ability to write and speak Japanese with accuracy and to do contrastive analysis of Japanese and English.

JAPAN 326 : Contrastive Analysis of Japanese and English. (3:3:0)

PREREQUISITE: JAPAN 302

DESCRIPTION: Contrastive overview of Japanese and English phonology, syntax, semantics, and discourse.

**Course Outcomes**

- Students will demonstrate, through appropriate usage, their understanding of important syntactic patterns. A writing sample will be included in the individual student portfolio.
- Students will be able to describe and narrate in different time frames in Japanese.

5. Before applying to student teach in the major, complete the Oral Proficiency Interview (OPI) examination with a minimum level of *Intermediate-High* in order to be granted Utah state licensure.

*Hours include courses that may fulfill university core requirements.

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# Japanese Language Certificate (9 hours)

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*This Language Certificate program is administered by The Center for Language Studies (3086 JFSB), http://languagecertificate.byu.edu.*

Any matriculated (degree-seeking) BYU student who meets the proficiency and course requirements may earn the Japanese Language Certificate. The proficiency requirement is met through the nationally recognized ACTFL Oral and Writing Proficiency Exams. Qualifying students will be awarded a certificate on one of three levels:

1. High Intermediate Certificate: An ACTFL "Intermediate High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
2. Advanced Certificate: An ACTFL "Advanced" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
3. Mastery Certificate: An ACTFL "Advanced High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
4. Professional Certificate: An ACTFL "Superior" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.

## Required Courses:

**Note:** Students who have completed all of the coursework required for a language major or a language minor will also have satisfied the coursework requirement for the language certificate.

1. Language - complete the following:

   JAPAN 321 : Reading Modern Documentary Styles. (3:3:0)

   PREREQUISITE: Japan 302 or equivalent.

   DESCRIPTION: Readings in modern documentary styles, emphasizing reading comprehension, grammar, and vocabulary building.

   **Course Outcomes**
   - Students will increase their ability to understand vocabulary commonly used in newspapers
   - Students will be able to read a range of types of news articles (politics, business, human interest, sports, etc.)
   - Students will be able to compare and contrast print and television news reports. A written sample will be included in the individual student portfolio. The student portfolio will be formally reviewed at the conclusion of this course.

2. Civilization - complete the following:

   JAPAN 345 : Traditional Japanese Culture. (3:3:0)

   WHEN TAUGHT: Winter; Spring Contact Department

   DESCRIPTION: General survey emphasizing aesthetics, religion, and value systems. All readings in English.

   **Course Outcomes**
   - Students will be able to speak and write about such features of culture as language, literature, thought, religion, aesthetics, art and music. A writing sample will be included in the individual student portfolio.

3. Literature - complete one course from the following:

   JAPAN 322 : Reading Modern Short Fiction. (3:3:0)

   PREREQUISITE: Japan 302 or equivalent.

   DESCRIPTION: Readings in modern short fiction, emphasizing grammar, reading comprehension, vocabulary building, and stylistic analysis.

   **Course Outcomes**
   - Students will be able to use a variety of dictionary sources that will enable them to read and comprehend modern Japanese prose
   - Students will be able to recognize a majority of standard-usage kanji and identify various readings for the characters
   - Students will be able to analyze and discuss a variety of modern Japanese literary texts at an intermediate level in the target language. A writing sample will be included in the individual student portfolio.

JAPAN 350 : Japanese Literature in Translation--Eighth Through Sixteenth Centuries. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 700 through 1600 (Nara, Heian, and medieval periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of premodern literature in verbal and written forms. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their knowledge and understanding of major works and genres in verbal and written forms.

JAPAN 351 : Japanese Literature in Translation--Seventeenth Through Nineteenth Centuries. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 1600 through 1900 (Edo and Meiji periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of early modern Japanese literature orally and in writing. A writing sample will be included in individual student portfolio.
- Students will demonstrate their understanding of key literary works and genres in early modern Japanese literature in verbal and written forms.

JAPAN 352 : Japanese Literature in Translation: The Modern Era. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from Meiji period to the present.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of human aspects in works of modern Japanese literature orally and in writing. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their ability to analyze key works and genres in modern Japanese literature in oral and written form.

Students who successfully complete a certificate will receive an official document verifying their level of achievement. The certificate will be listed on the university transcript.

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# Japanese (Japan)

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## Undergraduate Courses

### 100-Level Courses

JAPAN 101 : First-Year Japanese. (4:5:1)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

DESCRIPTION: Writing systems, grammar and vocabulary-building fundamentals, basic conversation and reading.

**Course Outcomes**

- Students will be able to read and write hiragana and katakana. A writing sample will be included in the individual student portfolio.
- Students will be able to ask and give directions
- Students will be able to discuss schedules and itineraries

JAPAN 102 : First-Year Japanese. (4:5:1)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: Japan 101, or equivalent.

DESCRIPTION: Writing systems, grammar and vocabulary-building fundamentals, basic conversation and reading. Includes introduction to Chinese characters.

**Course Outcomes**

- Students will be able to make social introductions covering various levels of formality and honorifics
- Students will be able to read and write simple texts based on 200 elementary kanji characters. A written sample will be included in the individual student portfolio.
- Students will be able to make comparisons

### 200-Level Courses

JAPAN 201 : Second-Year Japanese. (4:5:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 102 or equivalent.

DESCRIPTION: Further practice in conversation; basic reading and writing skills.

**Course Outcomes**

- Students will be able to recognize and produce approximately 400 kanji characters with their readings and meanings. A written sample will be included in the individual student portfolio.
- Students will be able to describe and model proper etiquette when visiting a home, making hotel reservations, talking about the weather, clothing terms, etc. They will be able to use verbals of giving and receiving; compare activities; use different patterns of reporting information; and employ embedded questions.

JAPAN 202 : Second-Year Japanese. (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 201 or equivalent.

DESCRIPTION: Further practice in conversation, reading, and writing; introducing culture through short stories, articles.

NOTE: Not for returned missionaries. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to recognize and use an additional 150 kanji characters in context. A written sample will be included in the individual student portfolio.
- Students will interact appropriately in vertical society situations, using proper levels of honorific language.

JAPAN 211R : Second-Year Conversation. (.5-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Japan 102 or equivalent.

NOTE: For Japan Study Abroad or Foreign Language Student Residence students only.

**Course Outcomes**

- Students will learn to speak Japanese with more accurate pronunciation, accent, and intonation.
- Students will be able to understand spoken native Japanese with greater accuracy.
- Students will acquire facility in discussing daily life situations in their apartments in Japanese.

### 300-Level Courses

JAPAN 301 : Japanese Reading and Culture. (4:5:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department; Spring Contact Department
PREREQUISITE: Japan 202 or equivalent.
DESCRIPTION: Reading and writing emphasizing essential characters, vocabulary, grammar, and culture.
NOTE: First course for returned missionaries.

**Course Outcomes**

There are no course outcomes available

JAPAN 302 : Readings in Japanese History and Culture. (4:5:0)

PREREQUISITE: Japan 301 or instructor's consent.
DESCRIPTION: Readings in Japanese history and literature with essential characters, vocabulary, and grammatical principles.

**Course Outcomes**

- Students will be able to read and discuss texts relating to Japanese history, literature, and culture.
- Students will be able to write at the intermediate level on assigned topics relating to Japanese history, literature, and culture.
- Students will be able to discuss and give oral presentations on key topics in Japanese history, literature, and culture.

JAPAN 311R : Third-Year Conversation. (2:2:0)

PREREQUISITE: Japan 301 or instructor's consent.
NOTE: May be repeated for Study Abroad in Japan.

**Course Outcomes**

- Students will be able to prepare and present speeches in public settings.
- Students will learn to speak Japanese with more accurate pronunciation, accent, and intonation.
- Students will be able to understand spoken native Japanese with greater accuracy.

JAPAN 321 : Reading Modern Documentary Styles. (3:3:0)

PREREQUISITE: Japan 302 or equivalent.
DESCRIPTION: Readings in modern documentary styles, emphasizing reading comprehension, grammar, and vocabulary building.

**Course Outcomes**

- Students will increase their ability to understand vocabulary commonly used in newspapers
- Students will be able to read a range of types of news articles (politics, business, human interest, sports, etc.)
- Students will be able to compare and contrast print and television news reports. A written sample will be included in the individual student portfolio. The student portfolio will be formally reviewed at the conclusion of this course.

JAPAN 322 : Reading Modern Short Fiction. (3:3:0)

PREREQUISITE: Japan 302 or equivalent.
DESCRIPTION: Readings in modern short fiction, emphasizing grammar, reading comprehension, vocabulary building, and stylistic analysis.

**Course Outcomes**

- Students will be able to use a variety of dictionary sources that will enable them to read and comprehend modern Japanese prose
- Students will be able to recognize a majority of standard-usage kanji and identify various readings for the characters
- Students will be able to analyze and discuss a variety of modern Japanese literary texts at an intermediate level in the target language. A writing sample will be included in the individual student portfolio.

JAPAN 325 : Japanese Morphology, Syntax, and Semantics. (3:3:0)

PREREQUISITE: JAPAN 302
DESCRIPTION: General overview of grammar and its practical application in composition.

**Course Outcomes**

- Students will demonstrate both orally and in writing their knowledge of and ability to use appropriately essential features of the Japanese language, including parts of speech, modification, vector verbs, and honorifics.
- Students will demonstrate, through regular writing assignments and oral presentations, their ability to write and speak Japanese with accuracy and to do contrastive analysis of Japanese and English.

JAPAN 326 : Contrastive Analysis of Japanese and English. (3:3:0)

PREREQUISITE: JAPAN 302
DESCRIPTION: Contrastive overview of Japanese and English phonology, syntax, semantics, and discourse.

**Course Outcomes**

- Students will demonstrate, through appropriate usage, their understanding of important syntactic patterns. A writing sample will be included in the individual student portfolio.
- Students will be able to describe and narrate in different time frames in Japanese.

JAPAN 345 : Traditional Japanese Culture. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department

DESCRIPTION: General survey emphasizing aesthetics, religion, and value systems. All readings in English.

**Course Outcomes**

- Students will be able to speak and write about such features of culture as language, literature, thought, religion, aesthetics, art and music. A writing sample will be included in the individual student portfolio.

JAPAN 350 : Japanese Literature in Translation--Eighth Through Sixteenth Centuries. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 700 through 1600 (Nara, Heian, and medieval periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of premodern literature in verbal and written forms. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their knowledge and understanding of major works and genres in verbal and written forms.

JAPAN 351 : Japanese Literature in Translation--Seventeenth Through Nineteenth Centuries. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 1600 through 1900 (Edo and Meiji periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of early modern Japanese literature orally and in writing. A writing sample will be included in individual student portfolio.
- Students will demonstrate their understanding of key literary works and genres in early modern Japanese literature in verbal and written forms.

JAPAN 352 : Japanese Literature in Translation: The Modern Era. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from Meiji period to the present.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of human aspects in works of modern Japanese literature orally and in writing. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their ability to analyze key works and genres in modern Japanese literature in oral and written form.

JAPAN 377 : Japanese Language Teaching Procedures. (3:3:0)

PREREQUISITE: Japan 302 or instructor's consent.

DESCRIPTION: Acquiring knowledge and skills specific to teaching of Japanese as a foreign language. Conducted in Japanese and English.

**Course Outcomes**

- Students will evaluate existing language teaching materials, then create and present their own teaching materials. A sample of teaching materials will be included in the individual student portfolio.
- Students will plan language lessons and present them in class.

JAPAN 390 : Japanese for Special Purposes. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Japan 321 or equivalent.

DESCRIPTION: Readings, video materials, discussions, and projects in content areas related specifically to business, science, and technology.

**Course Outcomes**

- Students will gain proficiency in analyzing and discussing, in Japanese, important aspects of the business environment in Japan as compared to that in America.
- Students will acquire and be able to use specialized vocabulary in Japanese relating to their fields of interest.

JAPAN 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: JAPAN 302
DESCRIPTION: On-the-job cultural and/or language experience.

**Course Outcomes**

- Students will enhance functional knowledge of vocabulary as it relates to the workplace in Japan.
- Students will acquire on-the-job understanding of the corporate culture of the firm where they conduct their internship.

### 400-Level Courses

JAPAN 411 : Advanced Japanese Pragmatics. (2:2:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: JAPAN 311R & JAPAN 321 & JAPAN 322
DESCRIPTION: Advanced skills in speaking and writing.

**Course Outcomes**

- Students will read and discuss in a variety of settings advanced texts relating to current events and issues.
- Students will write essays that analyze, respond to, and express personal opinions on current events and issues. A sample essay will be included in the individual student portfolio.

JAPAN 441 : Introduction to Classical Japanese. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: JAPAN 321 & JAPAN 322
DESCRIPTION: Reading of premodern texts, emphasizing grammar and syntax, and showing differences from and influences on the modern idiom.

**Course Outcomes**

- Students will be able to analyze and discuss the influence of the pre-modern language on present-day Japanese.
- Students will read and analyze the content and linguistic features of important premodern literary texts. A writing sample will be included in the individual student portfolio.

JAPAN 443 : Advanced Documentary Style. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Japan 321, 322; or equivalents.
DESCRIPTION: Reading and discussion of modern expository texts; developing advanced listening skills using authentic materials.

**Course Outcomes**

- Students will demonstrate the ability to read and analyze advanced documentary-style texts. A writing sample will be included in the individual student portfolio.

JAPAN 444 : Reading Modern Japan. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Japan 321, 322; or equivalents.
DESCRIPTION: Fictional texts from major twentieth-century authors. Texts primarily in Japanese.

**Course Outcomes**

- Students will demonstrate their ability to read and interpret modern literary texts with sophistication in both oral and written forms. A writing sample will be included in the individual student portfolio.

JAPAN 490R : Individual Study in Japanese. (.5-3:ARR:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Consent of advisor and instructor.
DESCRIPTION: Topics vary. Assignments to fit individual needs of the advanced student.

**Course Outcomes**

- Students will concentrate on a specific topic of study and increase their knowledge of and ability to use language appropriate to that field.
- Students will gain a better appreciation for some of the fine aesthetic and artistic expressions in Japan.

JAPAN 495 : Senior Seminar. (2:2:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Department approval.
DESCRIPTION: Capstone course for the Japanese major.
NOTE: Required of all majors. To be taken the Fall or Winter semester prior to graduation.

**Course Outcomes**

- Students will be able to analyze and discuss such features of the culture as language, literature, thought, religion, aesthetics, art, and music. The student portfolio will be reviewed at the conclusion of this course.
- Students will demonstrate an ability to analyze and discuss aspects of the language, such as phonology, morphology, syntax, semantics, and pragmatics. The student portfolio will be reviewed at the conclusion of this course.

## 500-Level Graduate Courses (available to advanced undergraduates)

JAPAN 599R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Japan 302 or equivalent.

DESCRIPTION: On-the-job cultural and/or language experience.

**Course Outcomes**

There are no course outcomes available

## Graduate Advanced Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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# BA in Korean (37–53 hours*)

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## Program Requirements | View MAP | View Program Outcomes

1. Complete the following prerequisite courses (or equivalents):

KOREA 101 : First-Year Korean 1. (4:5:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Han'gul, the phonetic system, basic grammar and vocabulary, discourse, reading, and culture.

**Course Outcomes**

There are no course outcomes available

KOREA 102 : First-Year Korean 2. (4:5:0)

WHEN TAUGHT: Winter

PREREQUISITE: Korea 101 or equivalent.

DESCRIPTION: Continuation of Korea 101. Phonetic system, basic grammar, vocabulary, discourse, reading, and culture.

**Course Outcomes**

- Students will be able to;1. Comprehend basic reading material2. Use low language in addition to middle and high language3. Use expanded grammar and vocabulary in speech ACTFL 1

KOREA 201 : Second-Year Korean 1. (4:5:0)

WHEN TAUGHT: Fall

PREREQUISITE: Korea 102 or equivalent.

DESCRIPTION: Further practice in discourse and basic reading and writing skills; culture.

**Course Outcomes**

- Students will be able to;Speak somewhat comfortably in everyday situations with peers and acquaintances.Read and write basic Korean (with grammatical and spelling mistakes).Translate from basic Korean to English and English to KoreanGrasp Korean surface and deep culture

KOREA 202 : Second-Year Korean 2. (4:5:0)

WHEN TAUGHT: Winter

PREREQUISITE: Korea 201 or equivalent.

DESCRIPTION: Continuation of Korea 201. Conversation, basic reading and writing skills, culture. Introduction to Chinese characters.

NOTE: Not for returned missionaries. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- 1. Speak and understand Korean at an ACTFL 2
- 2. Read and understand modified or early intermediate level readings
- 3. Recognize basic hanja
- 4. Write in Korean without major spelling or grammatical mistakes

2. Complete the following:

KOREA 301 : Third-Year Korean 1. (4:5:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Korea 202 or equivalent.

DESCRIPTION: Vocabulary, grammar, discourse, pronunciation, hanja, and culture.

NOTE: First course for returned missionaries.

**Course Outcomes**

- Students will be able to;1. Speak in most social and uncomplicated language situations. ACTFL 3-2. Listen and understand most informal topics spoken by native speaker. ACTFL 3-3. Read and

understand leisure stories, essays and easy formal topics.4. Compose one page Korean without major flaws in structure of Korean.

KOREA 302 : Third-Year Korean 2. (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Korea 301 or equivalent.

DESCRIPTION: Continuation of Korea 301. Vocabulary, grammar, discourse, hanja, composition, pronunciation, and culture.

**Course Outcomes**

- Korean 302Students will be able to;1. Speak in most social language situations and some complicated language situations with confidence. ACTFL 3
- 2. Read and understand some intermediate level of formal topics.
- 3. Compose one page Korean using some four-character proverbs and some high level vocabulary without major structural flaws.

KOREA 321 : Selected Readings of Modern Korean. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Korea 301 or equivalent.

DESCRIPTION: Mixed script (with hanja) and other readings from modern documentary and literary texts, emphasizing comprehension, grammar, and vocabulary building.

**Course Outcomes**

- students will develop skills in reading advanced level texts in literature and social sciences.

KOREA 325 : Structure of Korean. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Korea 302.

DESCRIPTION: Applying phonology, morphology, syntax, and semantics to the problems of learning Korean.

**Course Outcomes**

- Students will be able to;1. Analyze and discuss aspects of the structure of the Korean language, including phonology, morphology, semantics, and pragmatics. (Direct Measure 6)2. Analyze and discuss aspects of the structure of the Korean language in relation to other languages.3. Understand and be able to discuss major linguistic theories and theorists.4. Understand and be able to discuss current issues and topics among linguists.

KOREA 340 : Korean Literature to 1900. (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 302

DESCRIPTION: Korean literature from the earliest times to 1900. Emphasis on basic literary concepts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will learn of the wide range of literary genre available in Korea prior to the 20th century.
- Students will learn at least five styles of poetry common in Korea from the Silla period to the late Joseon period, including hyangga, Chinese (Tang) poetry, sijo, gasa, and the poetry of the Yongbi-eo cheon'ga.
- Fiction, in the form of tales, legends, fables, and uniquely Korean "pansori" novels will become familiar to students in this course.

KOREA 401 : Fourth-Year Korean 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 302

DESCRIPTION: Advanced language preparation in reading, discourse, writing, and hanja.

**Course Outcomes**

- Students will expand their vocabularies as the work on reading and writing skills primarily.Speaking and listening skills, while assumed to be strong at this level, will also be improved by listening to authentic language production from news media and dramatic presentations.

KOREA 402 : Fourth-Year Korean 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: KOREA 401

DESCRIPTION: Continuation of Korea 401. Advanced reading, discourse, writing, and hanja.

**Course Outcomes**

- Students will expand their vocabularies as the work on reading and writing skills primarily.Speaking and listening skills, while assumed to be strong at this level, will also be improved by listening to authentic language production from news media and dramatic presentations.

KOREA 443 : Korean Literature after 1900. (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: KOREA 302
DESCRIPTION: Literary texts from major post-1900 authors, in Korean, emphasizing reading, translating, and criticism.

**Course Outcomes**

- Students will learn of the poetry, short stories and novels of the 20th and 21st centuries.Major literature from Korea before the division in 1945, and post-division in South Korea (with a little readings of North Korean literature) will be covered.

KOREA 495 : Senior Seminar. (2:2:0)
WHEN TAUGHT: Winter
DESCRIPTION: Individual research, with seminar paper the primary objective.
NOTE: Required for Korean majors.

**Course Outcomes**

- Students will present their finest research and writing. In some cases they will develop a paper written earlier in their career; in other cases, they will start afresh -- but the outcome will be a publishable (or near-publishable) piece of excellence in writing and research.

3. Complete one course from the following:

HIST 337 : Pre-modern Korea. (3:3:0)
WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Political, economic, and social history of Korea from antiquity to 1850.

**Course Outcomes**

- An understanding of the major features of Korean history and culture both in breadth and in depth.
- An understanding of Korean history contextualized both within the framework of Korean history and in relationship to other histories and other constructions of history.
- The ability to think and write about issues in Korean history in a critical and compelling manner.

HIST 338 : Modern Korea. (3:3:0)
WHEN TAUGHT: Fall Odd Yrs.
DESCRIPTION: Political, economic, and social history of Korea from 1850 to the present.

**Course Outcomes**

- Students will be able to describe the most significant aspects of the polity, economy, society and ideology of Korea from 1850 to the present.
- Students will be able to recognize and analyze change over time in East Asia
- Students will be able to evaluate and apply primary source texts to broad historical themes
- Students will be able to conduct individual research and situate it in the broader historical context

4. Complete six hours from the following:

KOREA 311R : Third-Year Conversation. (2:2:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Korea 301 or foreign residence experience.
DESCRIPTION: Advanced conversational skills.

**Course Outcomes**

- A third-year level course, students should become coversant in a range of common and sophisticated subjects.
- Students will begin to develop professional speaking abilities to include conversation at a well-educated natives speakers level, ability to make professional presenations, and respond to questions in a formal setting.

KOREA 345 : Korean Culture. (3:3:0)
WHEN TAUGHT: Winter
DESCRIPTION: Selected topics in traditional, modern, and contemporary Korean culture. All readings in English.

**Course Outcomes**

- -- become familiar with the historical framework of Korea, the major dynasties and historic events.-- become familiar with major religions including shamanism, Buddhism, Confucianism, and Christianity as well as some "new religions".-- learn basic concepts of lineage and family structure, organization and activities, including ancestor veneration ceremonies.-- learn the political structure of South Korea and North Korea

KOREA 399R : Academic Internship. (.5-9:0:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Korea 301; instructor's consent.
DESCRIPTION: On-the-job cultural and language experience.

**Course Outcomes**

- Students will have hands-on, practical experience in which they will use the language daily and learn and respect the culture of Korea.

KOREA 441 : Classical Korean (Hanmun). (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 321; or CHIN 441

DESCRIPTION: Reading of premodern, documentary Sino-Korean texts, including genealogy records and the Chosŏn Dynasty Annals.

**Course Outcomes**

- Students will learn to read academic journals articles, reference works, genealogies, and other primary source documents, all of which contain Sino-Korean vocabulary.This course will assist students who work for the government or need to take advanced proficiency test to do well and excel on such tests in their future professions.

KOREA 490R : Individual Study in Korean. (.5-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Individual assignments appropriate to needs of advanced students.

**Course Outcomes**

- Understand diverse language teaching methods and strategiesUnderstand current language teaching theories and issuesFeel comfortable teaching in front of other 490r studentsExperience teaching in a real Korean language classroomCritique their own teaching as well as peer teaching.Prepare interactive lessons plans and measures of assessment

## Recommended

Prospective majors are urged to have a concurrent major or minor in another discipline.

*Hours include courses that may fulfill university core requirements.

## Show all Korean Courses

College of Humanities Home

Asian and Near Eastern Languages Department Home

Arabic

Major
- Arabic Language

Minors
- Arabic

Language Certificate
- Arabic

Course Information
- Arabic Courses

Chinese

Majors
- BA in Chinese

Minors
- Chinese
- Chinese Teaching

Language Certificate
- Chinese

Course Information
- Chinese—Mandarin Courses
- Chinese—Cantonese Courses

Hebrew

Minors
- Biblical Hebrew
- Modern Hebrew

Course Information
- Hebrew Courses

Japanese

Majors
- BA in Japanese

Minors
- Japanese
- Japanese Teaching

Language Certificate
- Japanese

Course Information
- Japanese Courses

Korean

Majors
- BA in Korean

Minors
- Korean

Language Certificate
- Korean

Course Information
- Korean Courses

# Minor in Korean (16–33 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following prerequisite courses (or equivalents):

KOREA 101 : First-Year Korean 1. (4:5:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Han'gul, the phonetic system, basic grammar and vocabulary, discourse, reading, and culture.

**Course Outcomes**

There are no course outcomes available

KOREA 102 : First-Year Korean 2. (4:5:0)

WHEN TAUGHT: Winter

PREREQUISITE: Korea 101 or equivalent.

DESCRIPTION: Continuation of Korea 101. Phonetic system, basic grammar, vocabulary, discourse, reading, and culture.

**Course Outcomes**

- Students will be able to;1. Comprehend basic reading material2. Use low language in addition to middle and high language3. Use expanded grammar and vocabulary in speech ACTFL 1

KOREA 201 : Second-Year Korean 1. (4:5:0)

WHEN TAUGHT: Fall

PREREQUISITE: Korea 102 or equivalent.

DESCRIPTION: Further practice in discourse and basic reading and writing skills; culture.

**Course Outcomes**

- Students will be able to;Speak somewhat comfortably in everyday situations with peers and acquaintances.Read and write basic Korean (with grammatical and spelling mistakes).Translate from basic Korean to English and English to KoreanGrasp Korean surface and deep culture

KOREA 202 : Second-Year Korean 2. (4:5:0)

WHEN TAUGHT: Winter

PREREQUISITE: Korea 201 or equivalent.

DESCRIPTION: Continuation of Korea 201. Conversation, basic reading and writing skills, culture. Introduction to Chinese characters.

NOTE: Not for returned missionaries. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- 1. Speak and understand Korean at an ACTFL 2
- 2. Read and understand modified or early intermediate level readings
- 3. Recognize basic hanja
- 4. Write in Korean without major spelling or grammatical mistakes

2. Complete the following:

KOREA 301 : Third-Year Korean 1. (4:5:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Korea 202 or equivalent.

DESCRIPTION: Vocabulary, grammar, discourse, pronunciation, hanja, and culture.

NOTE: First course for returned missionaries.

**Course Outcomes**

- Students will be able to;1. Speak in most social and uncomplicated language situations. ACTFL 3-2. Listen and understand most informal topics spoken by native speaker. ACTFL 3-3. Read and understand leisure stories, essays and easy formal topics.4. Compose one page Korean without

major flaws in structure of Korean.

KOREA 302 : Third-Year Korean 2. (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Korea 301 or equivalent.

DESCRIPTION: Continuation of Korea 301. Vocabulary, grammar, discourse, hanja, composition, pronunciation, and culture.

**Course Outcomes**

- Korean 302Students will be able to;1. Speak in most social language situations and some complicated language situations with confidence. ACTFL 3
- 2. Read and understand some intermediate level of formal topics.
- 3. Compose one page Korean using some four-character proverbs and some high level vocabulary without major structural flaws.

KOREA 321 : Selected Readings of Modern Korean. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Korea 301 or equivalent.

DESCRIPTION: Mixed script (with hanja) and other readings from modern documentary and literary texts, emphasizing comprehension, grammar, and vocabulary building.

**Course Outcomes**

- students will develop skills in reading advanced level texts in literature and social sciences.

KOREA 340 : Korean Literature to 1900. (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 302

DESCRIPTION: Korean literature from the earliest times to 1900. Emphasis on basic literary concepts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will learn of the wide range of literary genre available in Korea prior to the 20th century.
- Students will learn at least five styles of poetry common in Korea from the Silla period to the late Joseon period, including hyangga, Chinese (Tang) poetry, sijo, gasa, and the poetry of the Yongbi-eo cheon'ga.
- Fiction, in the form of tales, legends, fables, and uniquely Korean "pansori" novels will become familiar to students in this course.

3. Complete one course from the following:

BUS M 596R : Business Korean. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: For experienced speakers of the language being taught. Emphasizes business concepts; practice and case study including conversation, reading,and presenting, while enriching business vocabulary.

**Course Outcomes**

No outcomes are available at this time.

KOREA 311R or higher.

*Hours include courses that may fulfill university core requirements.

## Show all Korean Courses

College of Humanities Home

Asian and Near Eastern Languages Department Home

Arabic

Major
- Arabic Language

Minors
- Arabic

Language Certificate
- Arabic

Course Information
- Arabic Courses

Chinese

Majors
- BA in Chinese

Minors
- Chinese
- Chinese Teaching

Language Certificate
- Chinese

Course Information
- Chinese—Mandarin Courses
- Chinese—Cantonese Courses

Hebrew

Minors
- Biblical Hebrew
- Modern Hebrew

Course Information
- Hebrew Courses

Japanese

Majors
- BA in Japanese

Minors
- Japanese
- Japanese Teaching

Language Certificate
- Japanese

Course Information
- Japanese Courses

Korean

Majors
- BA in Korean

Minors
- Korean

Language Certificate
- Korean

Course Information
- Korean Courses

# Korean Language Certificate (9 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This Language Certificate program is administered by the Center for Language Studies (3086 JFSB), http://languagecertificate.byu.edu.*

Any matriculated (degree-seeking) BYU student who meets the proficiency and course requirements may earn the Korean Language Certificate. The proficiency requirement is met through the nationally recognized ACTFL Oral and Writing Proficiency Exams. Qualifying students will be awarded a certificate on one of three levels based on the following:

1. Advanced Certificate: An ACTFL "Advanced" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
2. Mastery Certificate: An ACTFL "Advanced High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
3. Professional Certificate: An ACTFL "Superior" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.

## Required Courses:

**Note:** Students who have completed all of the coursework required for a language major or a language minor will also have satisfied the coursework requirement for the language certificate.

1. Language:

KOREA 302 : Third-Year Korean 2. (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Korea 301 or equivalent.

DESCRIPTION: Continuation of Korea 301. Vocabulary, grammar, discourse, hanja, composition, pronunciation, and culture.

**Course Outcomes**

- Korean 302Students will be able to;1. Speak in most social language situations and some complicated language situations with confidence. ACTFL 3
- 2. Read and understand some intermediate level of formal topics.
- 3. Compose one page Korean using some four-character proverbs and some high level vocabulary without major structural flaws.

2. Civilization:

KOREA 345 : Korean Culture. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Selected topics in traditional, modern, and contemporary Korean culture. All readings in English.

**Course Outcomes**

- -- become familiar with the historical framework of Korea, the major dynasties and historic events.-- become familiar with major religions including shamanism, Buddhism, Confucianism, and Christianity as well as some "new religions".-- learn basic concepts of lineage and family structure, organization and activities, including ancestor veneration ceremonies.-- learn the political structure of South Korea and North Korea

3. Literature - complete one course from the following:

KOREA 321 : Selected Readings of Modern Korean. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Korea 301 or equivalent.

DESCRIPTION: Mixed script (with hanja) and other readings from modern documentary and literary texts, emphasizing comprehension, grammar, and vocabulary building.

**Course Outcomes**

- students will develop skills in reading advanced level texts in literature and social sciences.

KOREA 340 : Korean Literature to 1900. (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 302

DESCRIPTION: Korean literature from the earliest times to 1900. Emphasis on basic literary concepts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will learn of the wide range of literary genre available in Korea prior to the 20th century.
- Students will learn at least five styles of poetry common in Korea from the Silla period to the late Joseon period, including hyangga, Chinese (Tang) poetry, sijo, gasa, and the poetry of the Yongbi-eo cheon'ga.
- Fiction, in the form of tales, legends, fables, and uniquely Korean "pansori" novels will become familiar to students in this course.

KOREA 441 : Classical Korean (Hanmun). (3:4:0)

WHEN TAUGHT: Fall
PREREQUISITE: KOREA 321; or CHIN 441
DESCRIPTION: Reading of premodern, documentary Sino-Korean texts, including genealogy records and the Chosŏn Dynasty Annals.

**Course Outcomes**

- Students will learn to read academic journals articles, reference works, genealogies, and other primary source documents, all of which contain Sino-Korean vocabulary.This course will assist students who work for the government or need to take advanced proficiency test to do well and excel on such tests in their future professions.

Students who successfully complete a certificate will receive an official document verifying their level of achievement. The certificate will be listed on the university transcript.

College of Humanities Home

Asian and Near Eastern Languages Department Home

**Arabic**

Major
- Arabic Language

Minors
- Arabic

Language Certificate
- Arabic

Course Information
- Arabic Courses

**Chinese**

Majors
- BA in Chinese

Minors
- Chinese
- Chinese Teaching

Language Certificate
- Chinese

Course Information
- Chinese—Mandarin Courses
- Chinese—Cantonese Courses

**Hebrew**

Minors
- Biblical Hebrew
- Modern Hebrew

Course Information
- Hebrew Courses

**Japanese**

Majors
- BA in Japanese

Minors
- Japanese
- Japanese Teaching

Language Certificate
- Japanese

Course Information
- Japanese Courses

**Korean**

Majors
- BA in Korean

Minors
- Korean

Language Certificate
- Korean

Course Information
- Korean Courses

# Korean (Korea)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

KOREA 101 : First-Year Korean 1. (4:5:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Han'gul, the phonetic system, basic grammar and vocabulary, discourse, reading, and culture.

**Course Outcomes**
There are no course outcomes available

KOREA 102 : First-Year Korean 2. (4:5:0)
WHEN TAUGHT: Winter
PREREQUISITE: Korea 101 or equivalent.
DESCRIPTION: Continuation of Korea 101. Phonetic system, basic grammar, vocabulary, discourse, reading, and culture.

**Course Outcomes**
- Students will be able to;1. Comprehend basic reading material2. Use low language in addition to middle and high language3. Use expanded grammar and vocabulary in speech ACTFL 1

### 200-Level Courses

KOREA 201 : Second-Year Korean 1. (4:5:0)
WHEN TAUGHT: Fall
PREREQUISITE: Korea 102 or equivalent.
DESCRIPTION: Further practice in discourse and basic reading and writing skills; culture.

**Course Outcomes**
- Students will be able to;Speak somewhat comfortably in everyday situations with peers and acquaintances.Read and write basic Korean (with grammatical and spelling mistakes).Translate from basic Korean to English and English to KoreanGrasp Korean surface and deep culture

KOREA 202 : Second-Year Korean 2. (4:5:0)
WHEN TAUGHT: Winter
PREREQUISITE: Korea 201 or equivalent.
DESCRIPTION: Continuation of Korea 201. Conversation, basic reading and writing skills, culture. Introduction to Chinese characters.
NOTE: Not for returned missionaries. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
- 1. Speak and understand Korean at an ACTFL 2
- 2. Read and understand modified or early intermediate level readings
- 3. Recognize basic hanja
- 4. Write in Korean without major spelling or grammatical mistakes

KOREA 211R : Second-Year Conversation. (2:2:0)
PREREQUISITE: Korea 201 or foreign residence experience.
DESCRIPTION: Intermediate listening comprehension and speaking skills.

**Course Outcomes**
There are no course outcomes available

### 300-Level Courses

KOREA 301 : Third-Year Korean 1. (4:5:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Korea 202 or equivalent.
DESCRIPTION: Vocabulary, grammar, discourse, pronunciation, hanja, and culture.
NOTE: First course for returned missionaries.

**Course Outcomes**

- Students will be able to;1. Speak in most social and uncomplicated language situations. ACTFL 3-2. Listen and understand most informal topics spoken by native speaker. ACTFL 3-3. Read and understand leisure stories, essays and easy formal topics.4. Compose one page Korean without major flaws in structure of Korean.

KOREA 302 : Third-Year Korean 2. (4:5:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Korea 301 or equivalent.
DESCRIPTION: Continuation of Korea 301. Vocabulary, grammar, discourse, hanja, composition, pronunciation, and culture.

**Course Outcomes**

- Korean 302Students will be able to;1. Speak in most social language situations and some complicated language situations with confidence. ACTFL 3
- 2. Read and understand some intermediate level of formal topics.
- 3. Compose one page Korean using some four-character proverbs and some high level vocabulary without major structural flaws.

KOREA 311R : Third-Year Conversation. (2:2:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Korea 301 or foreign residence experience.
DESCRIPTION: Advanced conversational skills.

**Course Outcomes**

- A third-year level course, students should become coversant in a range of common and sophisticated subjects.
- Students will begin to develop professional speaking abilities to include conversation at a well-educated natives speakers level, ability to make professional presenations, and respond to questions in a formal setting.

KOREA 321 : Selected Readings of Modern Korean. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Korea 301 or equivalent.
DESCRIPTION: Mixed script (with hanja) and other readings from modern documentary and literary texts, emphasizing comprehension, grammar, and vocabulary building.

**Course Outcomes**

- students will develop skills in reading advanced level texts in literature and social sciences.

KOREA 325 : Structure of Korean. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Korea 302.
DESCRIPTION: Applying phonology, morphology, syntax, and semantics to the problems of learning Korean.

**Course Outcomes**

- Students will be able to;1. Analyze and discuss aspects of the structure of the Korean language, including phonology, morphology, semantics, and pragmatics. (Direct Measure 6)2. Analyze and discuss aspects of the structure of the Korean language in relation to other languages.3. Understand and be able to discuss major linguistic theories and theorists.4. Understand and be able to discuss current issues and topics among linguists.

KOREA 340 : Korean Literature to 1900. (3:4:0)

WHEN TAUGHT: Fall
PREREQUISITE: KOREA 302
DESCRIPTION: Korean literature from the earliest times to 1900. Emphasis on basic literary concepts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will learn of the wide range of literary genre available in Korea prior to the 20th century.
- Students will learn at least five styles of poetry common in Korea from the Silla period to the late Joseon period, including hyangga, Chinese (Tang) poetry, sijo, gasa, and the poetry of the Yongbi-eo cheon'ga.
- Fiction, in the form of tales, legends, fables, and uniquely Korean "pansori" novels will become familiar to students in this course.

KOREA 345 : Korean Culture. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Selected topics in traditional, modern, and contemporary Korean culture. All readings in English.

**Course Outcomes**

- -- become familiar with the historical framework of Korea, the major dynasties and historic events.-- become familiar with major religions including shamanism, Buddhism, Confucianism, and Christianity as well as some

"new religions".-- learn basic concepts of lineage and family structure, organization and activities, including ancestor veneration ceremonies.-- learn the political structure of South Korea and North Korea

KOREA 399R : Academic Internship. (.5-9:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Korea 301; instructor's consent.

DESCRIPTION: On-the-job cultural and language experience.

**Course Outcomes**

- Students will have hands-on, practical experience in which they will use the language daily and learn and respect the culture of Korea.

**400-Level Courses**

KOREA 401 : Fourth-Year Korean 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 302

DESCRIPTION: Advanced language preparation in reading, discourse, writing, and hanja.

**Course Outcomes**

- Students will expand their vocabularies as the work on reading and writing skills primarily.Speaking and listening skills, while assumed to be strong at this level, will also be improved by listening to authentic language production from news media and dramatic presentations.

KOREA 402 : Fourth-Year Korean 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: KOREA 401

DESCRIPTION: Continuation of Korea 401. Advanced reading, discourse, writing, and hanja.

**Course Outcomes**

- Students will expand their vocabularies as the work on reading and writing skills primarily.Speaking and listening skills, while assumed to be strong at this level, will also be improved by listening to authentic language production from news media and dramatic presentations.

KOREA 441 : Classical Korean (Hanmun). (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 321; or CHIN 441

DESCRIPTION: Reading of premodern, documentary Sino-Korean texts, including genealogy records and the Chosŏn Dynasty Annals.

**Course Outcomes**

- Students will learn to read academic journals articles, reference works, genealogies, and other primary source documents, all of which contain Sino-Korean vocabulary.This course will assist students who work for the government or need to take advanced proficiency test to do well and excel on such tests in their future professions.

KOREA 443 : Korean Literature after 1900. (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: KOREA 302

DESCRIPTION: Literary texts from major post-1900 authors, in Korean, emphasizing reading, translating, and criticism.

**Course Outcomes**

- Students will learn of the poetry, short stories and novels of the 20th and 21st centuries.Major literature from Korea before the division in 1945, and post-division in South Korea (with a little readings of North Korean literature) will be covered.

KOREA 490R : Individual Study in Korean. (.5-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Individual assignments appropriate to needs of advanced students.

**Course Outcomes**

- Understand diverse language teaching methods and strategiesUnderstand current language teaching theories and issuesFeel comfortable teaching in front of other 490r studentsExperience teaching in a real Korean language classroomCritique their own teaching as well as peer teaching.Prepare interactive lessons plans and measures of assessment

KOREA 495 : Senior Seminar. (2:2:0)

WHEN TAUGHT: Winter

DESCRIPTION: Individual research, with seminar paper the primary objective.

NOTE: Required for Korean majors.

**Course Outcomes**

- Students will present their finest research and writing. In some cases they will develop a paper written earlier in

their career; in other cases, they will start afresh -- but the outcome will be a publishable (or near-publishable) piece of excellence in writing and research.

## Graduate Courses

For 600-level courses, see the BYU 2014–2015 Graduate Catalog.

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Asian and Near Eastern Languages Department Home

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**Chinese**

**Majors**
- BA in Chinese

**Minors**
- Chinese
- Chinese Teaching

**Language Certificate**
- Chinese

**Course Information**
- Chinese—Mandarin Courses
- Chinese—Cantonese Courses

**Hebrew**

**Minors**
- Biblical Hebrew
- Modern Hebrew

**Course Information**
- Hebrew Courses

**Japanese**

**Majors**
- BA in Japanese

**Minors**
- Japanese
- Japanese Teaching

**Language Certificate**
- Japanese

**Course Information**
- Japanese Courses

**Korean**

**Majors**
- BA in Korean

**Minors**
- Korean

**Language Certificate**
- Korean

**Course Information**
- Korean Courses

# Near Eastern Languages (Ne Lg)

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Hide All Course Descriptions

## Undergraduate Courses

### 300-Level Courses

NE LG 321R : Studies in Modern Near Eastern Languages. (4:4:2)
DESCRIPTION: Grammar, reading, writing, and conversational skills.

**Course Outcomes**
There are no course outcomes available

NE LG 340 : Ancient Near Eastern Mythology. (3:3:0)
DESCRIPTION: Major themes in mythological literature of Egypt, Canaan, Mesopotamia, Anatolia, and ancient Iran. All readings in English.

**Course Outcomes**
No outcomes are available at this time.

NE LG 345 : Texts and Ancient Temples. (3:3:0)
WHEN TAUGHT: Winter
DESCRIPTION: Major ancient Near Eastern texts dealing with the temple; analysis of primary elements of ancient temple type as a place of worship.

**Course Outcomes**
- Upon completion of this course, participants will have acquired the skills necessary to:Define the concept of sacred space and time.Understand the temples as sacred space.Analyze temple systems in the ancient world.Understand that the church, synagogue, and mosque have decisively been influenced by the temple.

### 400-Level Courses

NE LG 495 : Senior Seminar in Near Eastern Studies. (3:3:0)
PREREQUISITE: Near Eastern Studies major; senior status.
DESCRIPTION: Capstone course for Near Eastern Studies majors. Includes major research paper demonstrating ability to integrate cross-disciplinary information and methodology.

**Course Outcomes**
No outcomes are available at this time.

## 500-Level Graduate Courses (available to advanced undergraduates)

NE LG 511R : Studies in Ancient Near Eastern Languages. (.5-4:4:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Grammar and reading skills.

**Course Outcomes**
- Upon completion of this course, participants will have acquired the skills necessary to:Understand and recognize the fundamental elements of subject grammar (i.e., Aramaic, Coptic, Egyptian, Syriac, Akkadian, etc.)Define the top 300 vocabulary words of the subject language.Analyze and categorize the verbal system.

: Akkadian.

**Course Outcomes**

: Aramaic.

**Course Outcomes**

: Coptic.

**Course Outcomes**

: Egyptian.

**Course Outcomes**

: Syriac.

**Course Outcomes**

: Ugaritic.

**Course Outcomes**

NE LG 521R : Special Topics in Ancient Near Eastern Literature. (.5-3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Historical and comparative studies of ancient Near Eastern literature.

**Course Outcomes**

There are no course outcomes available

: Near Eastern Mythology.

**Course Outcomes**

: Texts and Temples.

**Course Outcomes**

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**Arabic**

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Language Certificate
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Course Information
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**Chinese**

Majors
- BA in Chinese

Minors
- Chinese
- Chinese Teaching

Language Certificate
- Chinese

Course Information
- Chinese—Mandarin Courses
- Chinese—Cantonese Courses

**Hebrew**

Minors
- Biblical Hebrew
- Modern Hebrew

Course Information
- Hebrew Courses

**Japanese**

Majors
- BA in Japanese

Minors
- Japanese
- Japanese Teaching

Language Certificate
- Japanese

Course Information
- Japanese Courses

**Korean**

Majors
- BA in Korean

Minors
- Korean

Language Certificate
- Korean

Course Information
- Korean Courses

# Asian and Near Eastern Languages Faculty

Show All
Hide All

## Professors

Belnap, Robert Kirk
- **COLLEGE:** Humanities
- **DEPARTMENT:** Asian and Near Eastern Languages
- **RANK:** Professor
- **DEGREES:** BA, Brigham Young University, 1983
  MA, Brigham Young University, 1986
  PhD, University of Pennsylvania, 1991

Bourgerie, Dana Scott
- **COLLEGE:** Humanities
- **DEPARTMENT:** Asian and Near Eastern Languages
- **RANK:** Professor
- **DEGREES:** BA, University of Minnesota, Minneapolis, 1982
  MA, Ohio State University, Columbus, 1987
  PhD, Ohio State University, Columbus, 1990

Christensen, Matthew B.
- **COLLEGE:** Humanities
- **DEPARTMENT:** Asian and Near Eastern Languages
- **RANK:** Professor
- **DEGREES:** BA, Brigham Young University, 1988
  MA, Ohio State University, Columbus, 1990
  PhD, Ohio State University, Columbus, 1994

Gessel, Van
- **COLLEGE:** Humanities
- **DEPARTMENT:** Asian and Near Eastern Languages
- **RANK:** Professor
- **DEGREES:** BA, University of Utah, 1972
  MA, Columbia University, 1975
  PhD, Columbia University, 1979

Honey, David Brian
- **COLLEGE:** Humanities
- **DEPARTMENT:** Asian and Near Eastern Languages
- **RANK:** Professor
- **DEGREES:** BA, University of California, Berkeley, 1980
  MA, University of California, Berkeley, 1984
  PhD, University of California, Berkeley, 1988

Miller, J. Scott
- **COLLEGE:** Humanities
- **DEPARTMENT:** Asian and Near Eastern Languages
- **RANK:** Professor
- **DEGREES:** BA, Brigham Young University, 1982
  MA, Princeton University, 1986
  PhD, Princeton University, 1988

Parkinson, Dilworth B.
- **COLLEGE:** Humanities
- **DEPARTMENT:** Asian and Near Eastern Languages
- **RANK:** Professor
- **DEGREES:** BA, Brigham Young University, 1975
  MA, University of Michigan, Ann Arbor, 1976

PhD, University of Michigan, Ann Arbor, 1982

Parry, Donald W.
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, Brigham Young University, 1986
PhD, University of Utah, 1992

Peterson, Daniel C.
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
PhD, University of California, Los Angeles, 1990

Ricks, Stephen David
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1974
MA, Brigham Young University, 1976
PhD, University of California, Berkeley, 1982

Watabe, Masakazu
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1972
MA, Brigham Young University, 1973
PhD, University of Southern California, 1978

## Associate Professors

Peterson, Mark Arlen
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1971
MA, Harvard University, 1973
PhD, Harvard University, 1987

Riep, Steven L.
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Associate Professor
**DEGREES:** BA, University of California, Berkeley, 1987
MA, University of California, Los Angeles, 1991
PhD, University of California, Los Angeles, 2001

Stoneman, Jack Chris
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, Columbia University, 2001
PhD, Columbia University, 2006

Toronto, James A.
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1975
MEd, Brigham Young University, 1980
MA, Harvard University, 1984
PhD, Harvard University, 1992

Warnick, J. Paul
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages

**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1983
MA, Brigham Young University, 1989
PhD, Ohio State University, 1996

## Assistant Professors

Damron, Julie Ann
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1991
MAT, School of International Training, 1993
PhD, Purdue University, 2000

Scoville, Spencer Dan
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, Georgetown University, 2005
PhD, University of Michigan, 2012

## Associate Teaching Professor

Wang, Shu Pei
**COLLEGE:** Humanities
**DEPARTMENT:** Asian and Near Eastern Languages
**RANK:** Associate Teaching Professor
**DEGREES:** BA, National Tsing Hua University, 1992
MA, Brigham Young University, 2002
PhD, Brigham Young University, 2007

College of Humanities Home

Digital Humanities and Technology Home

Minors

- Digital Humanities and Technology

Course Information

- Digital Humanities and Technology (DigHT) Courses

# Digital Humanities and Technology Program

Jeremy M. Browne, Coordinator
1163 JSFB, (801) 422-7439

College of Humanities Advisement Center
1175 JFSB, (801) 422-4789

## Admission to Program

The Digital Humanities and Technology minor degree program is open enrollment. All courses are open to all students who have met the prerequisite requirements.

## The Discipline

The Digital Humanities extends the traditional Humanities in two ways. First, it employs traditional Humanities methods to examine and present new media—from movies and television to text messages and twitter feeds—alongside traditional Humanities content. Second, it uses new, technology-based approaches to re-examine and re-present traditional Humanities content.

At Brigham Young University, the Digital Humanities field is matched with application-based technology skills training. Along with the ability to use current technology, DigHT minors develop the ability to think soundly about using current technology. The program includes a capstone experience of either a mentored research and development project or a technology-based internship.

## Career Opportunities

The Digital Humanities minor provides students of all disciplines with the narrative to describe how their university education is immediately applicable to the needs of employers. Additionally, the Digital Humanities is a current area of growth in academia, which increases demand for graduate students with technology skills.

**College of Humanities Home**

**Digital Humanities and Technology Home**

**Minors**

- Digital Humanities and Technology

**Course Information**

- Digital Humanities and Technology (DigHT) Courses

# Minor in Digital Humanities and Technology (18 hours)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

DIGHT 215 : Introduction to the Digital Humanities. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to the premises and practices of the Digital Humanities. Exploration of current technology used in Digital Humanities research.

**Course Outcomes**

- Students will understand Unsworth's scholarly primitives and give examples of these primitives in Humanities scholarship.
- Students will be able to evaluate the utility of new technology for use in the Humanities.
- Students will be able to propose new uses for technology based on unmet needs in the Humanities.

2. Complete 12 credit hours from the following:

DIGHT 210 : Humanities Technology: Tools & Skills. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to the skills required to create teaching and research applications in the Humanities; fundamental principles and skills of programming; principles of interface and human/computer interaction; critical problem solving.

**Course Outcomes**

- Students will be able to model the flow and structure of information between users and application.
- Students will be able to reason logically and think critically to solve basic programming problems.
- Students will understand fundamental programming concepts: sequence, conditions, loops, variables, etc.
- Students will be able to convert abstract design requirements into machine-executable code.

DIGHT 230 : Introduction to Print Publishing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Introduction to layout and typesetting and their place in the publications process; includes graphic design theory, audience analysis, and basic skills with professional desktop publishing application.

**Course Outcomes**

- Students will recognize the differences in purpose, audience, and style between various print publications.
- Students will situate typesetting and printing within the scope of the publishing process as a whole.
- Students will master the basic functions of Adobe InDesign for the purpose of typesetting various publications.
- Students will use a set of basic design principles (proximity, alignment, repetition, contrast) to improve the quality of their publications in InDesign.
- Students will be familiar with Adobe Photoshop and some of its uses in print publishing.
- Students will work effectively in groups to produce high quality printed material.

DIGHT 250 : Web Publishing. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview and introduction to web programming as a form of expression. Includes HTML, CSS, and some JavaScript.

**Course Outcomes**

- Students will evaluate new web technologies in light of the general history of the web.
- Students will be able to draft, design, and code static web content, and then post that content to a publicly-accessible web server.
- Students will have a mastery of HTML/CSS syntax, common HTML elements/attributes/properties, and basic skill with JavaScript.

DIGHT 260 : Tools for Text Processing and Analysis. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: LingC 200 or C S 100 or equivalent experience.

DESCRIPTION: Introduction to tools and techniques suited for use with text analysis, including basic text encoding, text preparation, basic regular expression, and concordance programs.

**Course Outcomes**

There are no course outcomes available

DIGHT 310 : Programming in the Humanities. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: DigHT 210 or instructor approval.

DESCRIPTION: Intermediate topics in programming and creating teaching and research applications in the Humanities, including digital media integration, networked and mobile applications.

**Course Outcomes**

- Students will be able to reason logically and think critically to collaboratively solve significant programming problems.
- Students will understand advanced programming concepts: object orientation, data-driven applications, encapsulation, etc.
- Students will know how to integrate databases, web services, and basic server side scripting.
- Students will be able to convert abstract design requirements into machine-executable code.

DIGHT 315 : Research in the Digital Humanities. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DIGHT 215

RECOMMENDED: DigHT 260.

DESCRIPTION: Applications of computer technology to research in the Digital Humanities across language and literature, e.g. text processing, data mining, information storage and retrieval, etc.

**Course Outcomes**

There are no course outcomes available

DIGHT 330 : Print Publishing 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DIGHT 230

DESCRIPTION: Advanced application of digital layout and typesetting. Includes audience analysis, color theory, and photo preparation.

**Course Outcomes**

There are no course outcomes available

DIGHT 350 : Web Information Technologies. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DigHT 250 or instructor approval.

DESCRIPTION: Using advanced web applications and services to create dynamic, database-driven Web sites. Integrating database methods with web publishing approaches and principles. Techniques for Web-based Digital Humanities applications such as crowd-sourced markup, automatic data visualizations, etc.

**Course Outcomes**

- Students will be able to organize information in various electronic schemas.
- Students will be able to extract information across a variety of electronic relationships.
- Students will be able to routinize the insertion, extraction, manipulation, and reporting of information.

DIGHT 360 : (DigHT-Ling) Programming for Text Processing and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 100 or equivalent experience.

DESCRIPTION: Development of computer applications for research in language and literature (text processing, retrieval, and analysis) in one or more programming languages (e.g., Perl, Python, etc.).

**Course Outcomes**

There are no course outcomes available

DIGHT 390R : Tools Development Seminar. (1-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DIGHT 250; or DIGHT 260; or DIGHT 350

DESCRIPTION: Individual or group development of new technological tools with use in the Digital Humanities.

**Course Outcomes**

There are no course outcomes available

DIGHT 395R : Digital Humanities Research Seminar. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: DIGHT 215
RECOMMENDED: DigHT 315.
DESCRIPTION: Individual or group research of original problems in Digital Humanities research.

**Course Outcomes**

No outcomes are available at this time.

Up to 6 credits of approved 300-level or higher courses with a technology focus offered by other departments across campus.

3. Complete 3 credit hours of capstone courses:

DIGHT 495R : Digital Humanities Project. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Any DigHT 300-level course or instructor approval.
DESCRIPTION: Original research project on open questions within the Digital Humanities field. Content and/or technology advisor is required.

**Course Outcomes**

- Students will be able to draft written proposals for products/techniques they hope to develop.
- Students will be able to negotiate and meet the demands of a sponsor/client to develop technology solutions.
- Students will be able to apply their technology kills to solve a real problem they or someone else has.

DIGHT 496R : Technology Internship. (1-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Any DigHT 300-level course or instructor approval.
DESCRIPTION: Sponsored development of technology tools for application within the Digital Humanities (e.g. print or electronic publishing production, courseware/software development, museum/collection/textbase management, language/linguistic tools, etc.). Approval by project sponsor, DigHT Coordinator, and BYU Internship Office are required.

**Course Outcomes**

- Students will be able to complete tasks related to DHT skills in a professional environment.
- Students will be able to apply at least one DHT-related technology at a professional level.
- Student will be able to demonstrate professional traits such as promptness, positive demeanor, well-spokenness, etc.

A project/internship/capstone course in the student's major involving substantial computer work may also be used. See the DigHT coordinator for details.

## Show all Digital Humanities and Technology (DigHT) Courses

College of Humanities Home

Digital Humanities and Technology Home

Minors

- Digital Humanities and Technology

Course Information

- Digital Humanities and Technology (DigHT) Courses

# Digital Humanities and Technology (DigHT)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 200-Level Courses

DIGHT 210 : Humanities Technology: Tools & Skills. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to the skills required to create teaching and research applications in the Humanities; fundamental principles and skills of programming; principles of interface and human/computer interaction; critical problem solving.

**Course Outcomes**

- Students will be able to model the flow and structure of information between users and application.
- Students will be able to reason logically and think critically to solve basic programming problems.
- Students will understand fundamental programming concepts: sequence, conditions, loops, variables, etc.
- Students will be able to convert abstract design requirements into machine-executable code.

DIGHT 215 : Introduction to the Digital Humanities. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to the premises and practices of the Digital Humanities. Exploration of current technology used in Digital Humanities research.

**Course Outcomes**

- Students will understand Unsworth's scholarly primitives and give examples of these primitives in Humanities scholarship.
- Students will be able to evaluate the utility of new technology for use in the Humanities.
- Students will be able to propose new uses for technology based on unmet needs in the Humanities.

DIGHT 230 : Introduction to Print Publishing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Introduction to layout and typesetting and their place in the publications process; includes graphic design theory, audience analysis, and basic skills with professional desktop publishing application.

**Course Outcomes**

- Students will recognize the differences in purpose, audience, and style between various print publications.
- Students will situate typesetting and printing within the scope of the publishing process as a whole.
- Students will master the basic functions of Adobe InDesign for the purpose of typesetting various publications.
- Students will use a set of basic design principles (proximity, alignment, repetition, contrast) to improve the quality of their publications in InDesign.
- Students will be familiar with Adobe Photoshop and some of its uses in print publishing.
- Students will work effectively in groups to produce high quality printed material.

DIGHT 250 : Web Publishing. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview and introduction to web programming as a form of expression. Includes HTML, CSS, and some JavaScript.

**Course Outcomes**

- Students will evaluate new web technologies in light of the general history of the web.
- Students will be able to draft, design, and code static web content, and then post that content to a publicly-accessible web server.
- Students will have a mastery of HTML/CSS syntax, common HTML elements/attributes/properties, and basic skill with JavaScript.

DIGHT 260 : Tools for Text Processing and Analysis. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: LingC 200 or C S 100 or equivalent experience.

DESCRIPTION: Introduction to tools and techniques suited for use with text analysis, including basic text encoding, text preparation, basic regular expression, and concordance programs.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

DIGHT 310 : Programming in the Humanities. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: DigHT 210 or instructor approval.

DESCRIPTION: Intermediate topics in programming and creating teaching and research applications in the Humanities, including digital media integration, networked and mobile applications.

**Course Outcomes**

- Students will be able to reason logically and think critically to collaboratively solve significant programming problems.
- Students will understand advanced programming concepts: object orientation, data-driven applications, encapsulation, etc.
- Students will know how to integrate databases, web services, and basic server side scripting.
- Students will be able to convert abstract design requirements into machine-executable code.

DIGHT 315 : Research in the Digital Humanities. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DIGHT 215

RECOMMENDED: DigHT 260.

DESCRIPTION: Applications of computer technology to research in the Digital Humanities across language and literature, e.g. text processing, data mining, information storage and retrieval, etc.

**Course Outcomes**

There are no course outcomes available

DIGHT 330 : Print Publishing 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DIGHT 230

DESCRIPTION: Advanced application of digital layout and typesetting. Includes audience analysis, color theory, and photo preparation.

**Course Outcomes**

There are no course outcomes available

DIGHT 350 : Web Information Technologies. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DigHT 250 or instructor approval.

DESCRIPTION: Using advanced web applications and services to create dynamic, database-driven Web sites. Integrating database methods with web publishing approaches and principles. Techniques for Web-based Digital Humanities applications such as crowd-sourced markup, automatic data visualizations, etc.

**Course Outcomes**

- Students will be able to organize information in various electronic schemas.
- Students will be able to extract information across a variety of electronic relationships.
- Students will be able to routinize the insertion, extraction, manipulation, and reporting of information.

DIGHT 360 : (DigHT-Ling) Programming for Text Processing and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 100 or equivalent experience.

DESCRIPTION: Development of computer applications for research in language and literature (text processing, retrieval, and analysis) in one or more programming languages (e.g., Perl, Python, etc.).

**Course Outcomes**

There are no course outcomes available

DIGHT 390R : Tools Development Seminar. (1-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DIGHT 250; or DIGHT 260; or DIGHT 350

DESCRIPTION: Individual or group development of new technological tools with use in the Digital Humanities.

**Course Outcomes**

There are no course outcomes available

DIGHT 395R : Digital Humanities Research Seminar. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: DIGHT 215
RECOMMENDED: DigHT 315.
DESCRIPTION: Individual or group research of original problems in Digital Humanities research.

**Course Outcomes**

No outcomes are available at this time.

**400-Level Courses**

DIGHT 495R : Digital Humanities Project. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Any DigHT 300-level course or instructor approval.
DESCRIPTION: Original research project on open questions within the Digital Humanities field. Content and/or technology advisor is required.

**Course Outcomes**

- Students will be able to draft written proposals for products/techniques they hope to develop.
- Students will be able to negotiate and meet the demands of a sponsor/client to develop technology solutions.
- Students will be able to apply their technology kills to solve a real problem they or someone else has.

DIGHT 496R : Technology Internship. (1-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Any DigHT 300-level course or instructor approval.
DESCRIPTION: Sponsored development of technology tools for application within the Digital Humanities (e.g. print or electronic publishing production, courseware/software development, museum/collection/textbase management, language/linguistic tools, etc.). Approval by project sponsor, DigHT Coordinator, and BYU Internship Office are required.

**Course Outcomes**

- Students will be able to complete tasks related to DHT skills in a professional environment.
- Students will be able to apply at least one DHT-related technology at a professional level.
- Student will be able to demonstrate professional traits such as promptness, positive demeanor, well-spokenness, etc.

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**College of Humanities Home**

**English Department Home**

**Majors**

- BA in English
- BA in English Teaching

**Minors**

- English
- English Teaching
- Writing and Rhetoric

**Course Information**

- English Courses
- Writing Course

**Faculty**

# English

Phillip A. Snyder, Chair
4198 JFSB, (801) 422-4938

Brian D. Jackson, Coordinator, University Writing
4110 JFSB, (801) 422-3565

College of Humanities Advisement Center
1175 JFSB, (801) 422-4789

## Admission to Degree Program

All degree programs in the Department of English are open enrollment. However, special enrollment limitations apply for English teaching majors.

## The Discipline

The English major provides a detailed knowledge of the English language and of literature written in English. English majors approach language and literature as a source of knowledge and aesthetic pleasure, a mode of encountering and evaluating diverse minds and attitudes, a vehicle for art and action, a means of historical understanding, and a source of spiritual insight. English majors use writing as their primary means (1) of knowing, understanding, and evaluating their experience and their reading and (2) of sharing their insight with others. In keeping with the long-standing ideals of a liberal arts education, the English Department aims to cultivate in its students those foundational skills in writing, awareness, and judgment upon which lives of wisdom, service, and an ever-increasing love for learning might be built.

## Career Opportunities

With a firm grounding in the liberal arts, English majors are prepared for any career that requires perceptive reading, orderly and clear thinking, intellectual maturity, and effective writing. Many career opportunities for English majors exist in teaching, professional writing and editing, law, business, communications, or government service. English majors can certify to teach secondary-school English, or they can prepare for graduate study in English and college teaching. When combined with prerequisite courses in other departments, the English major provides excellent preparation for graduate work in law, business, library science, medicine, humanities, or religion. By selecting areas of concentration, some English majors prepare for careers in technical and professional communication, editing, creative writing, and related fields. By supplementing their English major with computer classes, some find work in information technology. The skills and knowledge acquired by an English major also provide good preparation for government service, especially when combined with the study of foreign languages, economics, political science, and history.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- Earn a minimum of 120 credit hours
- Have a cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in English** (Program Outcomes)
**BA in English Teaching** (Program Outcomes)

**Minor in English**
**Minor in English Teaching**
**Minor in Writing and Rhetoric**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MA in English
MFA in English

For more information see the BYU 2014–2015 Graduate Catalog.

## General Information

The Department of English strongly recommends that StDev 317, a 1-credit-hour course, be taken at the end of the sophomore year or the beginning of the junior year. Because liberal arts degrees provide preparation in a variety of useful fields rather than a single career track, this course is recommended to help liberal arts students focus on specific educational and occupational goals and to identify the career options or educational opportunities available to them. The course will introduce them to the resources needed for accessing information about graduate schools, internships, careers, and career development. Students will learn basic employment strategies, including the steps necessary for obtaining employment related to their own specialty.

College of Humanities Home

English Department Home

Majors

- BA in English
- BA in English Teaching

Minors

- English
- English Teaching
- Writing and Rhetoric

Course Information

- English Courses
- Writing Course

Faculty

# BA in English (48–65 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Students must complete the GE Foreign Language option even if the Advanced Mathematics option has already been completed.
2. The English Department requires a minimum of 21 hours of English major course work to be taken in residency at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
3. Engl 195 is recommended.
4. Because upper-division English courses require substantial writing, students should complete their Engl 295 before they begin their first upper-division courses, preferably in the second semester of their sophomore year.
5. No more than three hours of any one R course may apply toward the hours required for the major.
6. Complete the following core requirements:
   - Students are strongly encouraged to take a freshman college-level writing course, regardless of their AP test scores (Wrtg 150 or Phil 150).
   - Fundamentals of language and literature: complete the following:

ENGL 251 : Introduction to English Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Introduction to the discipline of English studies, including the fundamental concepts and practice of literary analysis and critical theory.

NOTE: Engl 251 fulfills the GE Letters requirement only for English majors and minors. Other students will not receive GE Letters credit for this course.

**Course Outcomes**

There are no course outcomes available

**Note:** Students must complete Engl 251 before or concurrently with the Literary History requirements (Engl 291, 292, 293, 294).

   - British and American literary history:

**Either**

ENGL 291 : British Literary History 1. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251; or concurrent enrollment.

DESCRIPTION: Development of ideas, movements, genres, and styles in early English literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 292 : British Literary History 2. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251; or concurrent enrollment.

DESCRIPTION: Development of ideas, movements, genres, and styles in later English literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 293 : American Literary History. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in American literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

**Or**

ENGL 291 : British Literary History 1. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in early English literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 294 : Transatlantic Literary History. (6:6:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: This course explores British and American literary history from the eighteenth through the twenty-first centuries by studying key figures, movements, genres, events, themes, and ideas through the lens of transatlantic literary exchange.

**Course Outcomes**

- Identify and discuss representative authors, works, and movements in the transatlantic literary tradition.
- Through writing, exams, and other activities, demonstrate an understanding of the historical development and cultural context of the transatlantic literary tradition.

**Note:** Students must complete the literary history course in a period before taking any 300-level courses in that period.

- Complete the following core course:

ENGL 295 : Writing Literary Criticism. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: English major status.
DESCRIPTION: How to address an academic audience, support arguments, and engage effectively in critical conversations about literature.

**Course Outcomes**

- Students will: 1) find and interpret credible research sources, 2) integrate them purposefully in support of their own literary analysis, 3) document these sources correctly using MLA format.
- Students will effectively employ the appropriate conventions of style, form, and tone in literary scholarship in written and oral communications.
- Students will construct a conference length (8-10 page) paper employing purposeful rhetorical moves to develop a coherent and logical argument that makes a significant literary claim.
- Students will mature as writers as they devise productive and flexible individual and collaborative processes of writing, including methods for gathering evidence, organizing their argument, prewriting, drafting, revising, editings, proofreading, and peer reviewing.

**Note:** Students must complete Engl 295 before taking most 300- and 400-level courses for majors.

7. Complete one major authors course from the following:

ENGL 381 : Chaucer. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 291 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Intensive study of Chaucer's literature and language from medieval and modern perspectives.

**Course Outcomes**

- Explain the historical and literary contexts, genres and themes, and ethical dimensions of Chaucer's representative works.
- Demonstrate familiarity with key secondary scholarship about and critical perspectives of Chaucer's works.
- Develop reading fluency in Middle English.
- Develop reading strategies that explore how texts are constructed to present a set of argument (historical, aestheic, etc) and use those critical reading skills to interpret the texts' concerns and to trace interrelationships among them.
- Perform scholarly research on Chaucer's works by identifying and evaluating relevant primary and secondary sources, by formulating arguments conversant with these sources, and by articulating those arguments in formal academic writing.

ENGL 382 : Shakespeare. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 291 & ENGL 295; Either Engl 292 & 293, or Engl 294.

DESCRIPTION: Intensive reading, discussion, and (in some sections) viewing of plays from the comedy, tragedy, romance, and history genres.

NOTE: For English majors and minors.

**Course Outcomes**

There are no course outcomes available

ENGL 383 : Milton. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 291 & ENGL 295; Either Engl 292 & 293, or Engl 294.

DESCRIPTION: Analysis of poetry and selected prose, including detailed study of such work as *Paradise Lost, Paradise Regained*, and *Samson Agonistes*.

**Course Outcomes**

- Explain the historical and literary contexts, genres and themes, and ethical dimensions of Milton's representative works.
- Demonstrate familiarity with key secondary scholarship about and critical perspectives of Milton's works.
- Perform scholarly research on the major author's works by identifying and evaluating relevant primary and secondary sources, by formulating arguments conversant with these sources, and by articulating those arguments in formal academic writing.
- Develop reading strategies that explore how texts are constructed to present a set of arguments (historical, aesthetic, etc) and use those critical reading skills to interpret the texts' concerns and to trace interrelationships among them.

ENGL 384R : Major Authors. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.

DESCRIPTION: Topics vary.

**Course Outcomes**

There are no course outcomes available

: Early British Authors.

**Course Outcomes**

: Later British Authors.

**Course Outcomes**

: American Authors.

**Course Outcomes**

8. Complete one course from each of the following three areas:
   - Literature before 1800:

ENGL 360 : American Literature to 1800. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from the colonial and early national periods.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the colonial and early national periods of American literature.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 371 : British Literature to 1500: The Medieval Period. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295

DESCRIPTION: Principal works, mainly in translation, from Britain's medieval period.

**Course Outcomes**

- Read critically and analyze principal works, mainly in translation, from Britain's medieval period (to 1500).
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax,

and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 372 : British Literature 1500 - 1603: The Early Renaissance. (3:3:0)
WHEN TAUGHT: Fall Contact Department; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Drama, poetry, and prose of the early Renaissance.

**Course Outcomes**
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose of Britain's early Renaissance period (1500 to 1603).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 373 : British Literature 1660 - 1789: The Enlightenment. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Poetry, prose, and drama of the Restoration and eighteenth century.

**Course Outcomes**
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose of Britain's Restoration period and eighteenth century (1660 to 1789).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 385 : British Literature 1603 - 1660: The Late Renaissance. (3:3:0)
WHEN TAUGHT: Winter Contact Department; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Drama, poetry, and prose of the late Renaissance.

**Course Outcomes**
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze Britain's drama, poetry, and prose written between 1603 and 1660.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 390R : Transnational/Transatlantic Literature. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.
DESCRIPTION: Period-specific courses using transnational models for literary analysis. Read selected texts in a transatlantic context and in the light of applicable theoretical approaches. Identify and locate appropriate research sources for the study of transatlantic literatures. Incorporate these sources into a research paper and other possible assignments. Produce polished writing free from distracting errors and in accordance with MLA formatting and citation guidelines.

**Course Outcomes**
There are no course outcomes available

(with pre-1800 focus)

- Literature from 1800-1900:

ENGL 361 : American Literature 1800 - 1865. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1800 to 1865.

**Course Outcomes**
There are no course outcomes available

ENGL 362 : American Literature 1865 - 1914. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1865 to 1914.

**Course Outcomes**
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1865 to 1914.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax,

and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 374 : British Literature 1789 - 1832: The Romantic Period. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Poetry, prose, and drama from Britain's Romantic period.

**Course Outcomes**
There are no course outcomes available

ENGL 375 : British Literature 1832-1900: The Victorian Period. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Poetry, prose, and drama from Britain's Victorian period.

**Course Outcomes**
- Read critically and analyze the drama, poetry, and prose of Britain's Victorian period (1832 to 1900).
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 390R : Transnational/Transatlantic Literature. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.
DESCRIPTION: Period-specific courses using transnational models for literary analysis. Read selected texts in a transatlantic context and in the light of applicable theoretical approaches. Identify and locate appropriate research sources for the study of transatlantic literatures. Incorporate these sources into a research paper and other possible assignments. Produce polished writing free from distracting errors and in accordance with MLA formatting and citation guidelines.

**Course Outcomes**
There are no course outcomes available

(with 1800-1900 focus)

- Literature from 1900-present:

ENGL 363 : American Literature 1914 - 1960. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1914 to 1960.

**Course Outcomes**
- Read critically and analyze major and selected minor texts and literary trends from the period of 1914 to 1960.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 365 : American Literature 1960 to Present. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1960 to the present.

**Course Outcomes**
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1960 to the present.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 376 : British Literature 1900 - 1950: The Modern Period. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Poetry, prose, and drama from Britain's modernist period.

**Course Outcomes**
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose of Britain's Modern period (1900 to

1950).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 380 : British Literature 1950 - Present: The Contemporary Period. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Poetry, prose, and drama from Britain and the Commonwealth since 1950.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose from Britain and the Commonwealth since 1950.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 390R : Transnational/Transatlantic Literature. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.

DESCRIPTION: Period-specific courses using transnational models for literary analysis. Read selected texts in a transatlantic context and in the light of applicable theoretical approaches. Identify and locate appropriate research sources for the study of transatlantic literatures. Incorporate these sources into a research paper and other possible assignments. Produce polished writing free from distracting errors and in accordance with MLA formatting and citation guidelines.

**Course Outcomes**

There are no course outcomes available

(with post-1900 focus)

9. Rhetoric and Theory: complete one course from the following:

ENGL 322 : History and Criticism of Rhetoric. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Historical study of rhetorical theory and criticism, emphasizing both classical and contemporary practice.

**Course Outcomes**

- Students will be able to identify issues debated in the history of rhetoric and trace how positions in the debates change among various theorists and time periods.
- Students will be able to explain why rhetoric one of the single most formative elements in the development of Western civilization, particularly in shaping its educational, political, social, and religious institutions.
- Students will be able to explain and apply principles from rhetorical theories to explicate, evaluate, and create effective spoken and written texts.

ENGL 324 : Writing with Style. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Developing stylistic competency and range in nonfiction writing, especially at the sentence and paragraph levels.

**Course Outcomes**

- Students will use grammar, punctuation, figures, and various styles as appropriate to differing purposes, audiences, occasions, and genres.
- Students will explicate the meanings and evaluate the quality of a text's style.

ENGL 325 : Visual Rhetoric. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Rhetorical perspectives on the theory, criticism, and production of images and other visual texts, including visual elements of literary texts.

**Course Outcomes**

- Discuss current research and theory regarding the presentation of visual information.
- Explain the purposes, modes, and persuasive effect that visual communication has in various forms of rhetorical discourse.
- Use current design vocabulary and demonstrate an understanding of accepted visual conventions.
- Identify, analyze, create, and critique visual texts in multiple media.
- Make decisions regarding content, organization, and style in a variety of visual genres.
- Articulate ethical, cultural, technical, and legal considerations implicit in visual discourse.

ENGL 326 : Digital Culture. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department

DESCRIPTION: Analyzing the virtual rhetorical spaces and culture created by digital technologies, focusing on interactivity, social networking, and media convergence.

**Course Outcomes**

- Explain relationships between changes in material technological relationships and cultural formations.
- Define key terms in digital culture.
- Analyze, evaluate, and create digital cultural artifacts.
- Conduct independent scholarly investigation into issues related to digital culture.
- Participate, consciously and critically, in digital culture.

ENGL 327R : Studies in Rhetoric. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department

DESCRIPTION: Special topics in rhetorical history, theory, and criticism.

**Course Outcomes**

- Form a more specialized focus on particular questions, theorists, practices, or genres in rhetoric, students will be able to explain and use rhetorical principles and practices to explicate, evaluate, and create a broad array of effective spoken and written texts.
- Form a more specialized focus on particular questions, theorists, practices, or genres in rhetoric, students will be able to evaluate the quality of rhetorical theories and practices.

ENGL 328R : Studies in Composing. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Special topics in composing in different media (visual, digital, aural) and genres for a range of purposes and audiences.

**Course Outcomes**

- From a more specialized focus on particular questions, theorists, practices, or genres in the field of composition studies, students will be able to explain and use rhetorical principles and practices to explicate, evaluate, and create a broad array of effective spoken and written texts.
- From a more specialized focus on particular questions, theorists, practices, or genres in the field of composition studies, students will be able to evaluate the quality of composition theories and practices.

ENGL 330 : Literary English: History and Style. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.

DESCRIPTION: Developing a framework of English linguistic history; characterizing a style of literary text through analysis of register, diction, and syntactical patterns; and developing an appreciation of how linguistic texture of texts creates meaning.

**Course Outcomes**

- Students will develop a framework of English linguistic history; they will be able to trace changes in morphological, syntactical, lexical stratification, and stylistic patterns from Old English to Present Day English.
- Students will learn how to characterize a style of a literary text through analysis of register, diction, and syntactical patterns.
- Students will develop an appreciation of how the linguistic texture of texts creates meaning.

ENGL 451 : Literary Theory and Criticism 1: The Critical Tradition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.

DESCRIPTION: Historical survey from Plato to the early twentieth century.

**Course Outcomes**

- Students will analyze and demonstrate a sound knowledge of a selection of primary and secondary documents related to the historical development of literary theory.
- Students will form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Students will produce a substansive term paper focused on the historical development of literary theory that includes polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 452 : Literary Theory and Criticism 2: Contemporary Criticism. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 295; Engl 291, Engl 295; and either Engl 292 & 293 or Engl 294.

DESCRIPTION: Introduction to issues in twentieth-century literary criticism.

**Course Outcomes**

- Students will analyze and demonstrate a sound knowledge of a selection of primary and secondary documents related to contemporary literary theory.
- Students will form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Students will produce a substansive term paper focused on contemporary literary theory that includes polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

10. Diverse Traditions and Methods: complete one course from the following:

ELANG 468 : Varieties of English. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ELANG 223; or LING 201

DESCRIPTION: Regional and social variation in English, especially standard and nonstandard national and world Englishes such as English-based pidgins and creoles.

**Course Outcomes**

- Students will learn the basic properties of several varieties of English.
- Students will be able to understand the basic terminology as well as the theoretical and social issues associated with studying varieties of English.
- Students will learn to collect and analyze data using several data collection methods.
- Students will collect and analyze data on a topic of their choice and present their findings in a research paper.

ENGL 337R : Advanced Studies in Genre. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Advanced studies in fiction, drama, poetry, or creative nonfiction.

**Course Outcomes**

- Read critically and analyze selected literary texts selected with a specific genre focus (poetry, drama, personal essay, etc.).
- Form a research strategy appropriate to the texts and genre studied in the course, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument about the texts studied.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 338 : Literary Studies of the Bible. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295

DESCRIPTION: Scholarly engagement with the aesthetic forms and cultural context of Biblical texts.

**Course Outcomes**

There are no course outcomes available

ENGL 345 : Literature and Film. (3:3:.5)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Emphasis on film as an interpretation of texts. Includes International Cinema.

**Course Outcomes**

- Analyze a written text/film set using an appropriate and well-defined scholarly approach.
- Write a research paper using proper MLA guidelines that is situated in the context of recent scholarship in the field.
- Identify and describe major and minor works, authors, and directors associated with this course.
- Form a research strategy. Independently identify and locate relevant print and digital sources, and incorporate these sources into a well-formed argument.

ENGL 355 : (Engl-ClCv) Greek and Roman Classics and the English Tradition. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Major works by such authors as Homer, the Greek and Roman tragedians, Thucydides, Vergil, and Petronius in English translation, emphasizing their influence on English and American literature.

**Course Outcomes**

- Read critically and analyze selected classical texts in translation in the context of English literature.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 356 : Myth, Legend, and Folktales. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Major mythic and legendary works that provide background for the literary tradition.

**Course Outcomes**

- Students will be able to read critically and analyze major and selected minor texts and trends in myth, legend, and folktale over time and place.
- Students will be able to form research strategies and write critical and informational papers that reflect their use and application of these topics.
- Students final project will be polished, competent, formal writing, free from distracting errors in mechanics, syntax. Formatting will be in accordance with MLA formatting and citation guidelines.
- Students will be able to critically identify the commonalities and difference in myth, legend, and folktale.
- Students will be able to research, prepare, and present a topic related to the class study of the class.

- Students will be able to articulate and write responses to assigned readings.
- Students will produce two research papers; one on literary folkloristics, and one of their choice related to the class study.

ENGL 358R : Ethnic Literatures. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Study of literary texts representative of a thoughtfully focused dimension of a given ethnic group.

**Course Outcomes**

There are no course outcomes available

: Native American Literature.

**Course Outcomes**

: African American Literature.

**Course Outcomes**

: Asian American Literature.

**Course Outcomes**

: Latino/a American Literature.

**Course Outcomes**

: Jewish American Literature. (0::)

**Course Outcomes**

ENGL 364 : Literature and Cultures of the American West. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Literature and cultural representations of the American West and the frontier.

**Course Outcomes**

- Read critically and analyze in the context of appropriate literary and cultural theories major and selected minor texts and associated with the American West.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the literature and cultures of the American West.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 367R : Urban Literature. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295
DESCRIPTION: Literature and cultural representations of a given American region.

**Course Outcomes**

There are no course outcomes available

: American Regional Literature.

**Course Outcomes**

: Southern American Literature.

**Course Outcomes**

ENGL 368 : Literature of the Latter-day Saints. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Fiction, poetry, drama, folklore, personal essay, and other literature emerging from the LDS experience and expressing various perspectives on it.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the material studied in the class.
- Identify, locate, read critically, and analyze major and selected minor texts and associated with the Latter-Day Saints.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 391 : Introduction to Folklore. (3:3:0)

WHEN Fall; Winter; Spring Contact Department; Summer Contact Department

TAUGHT:
DESCRIPTION: Major types of folklore (e.g., myth, legend, folktale, folksong, custom, and belief); practical experience in collecting folklore.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Create and share a persuasive analysis of folklore texts in context by using "logical reasoning and critical analysis."
- Identify and remember three categories of folklore, four types of folk narrative, and eight folk groups.
- Produce several brief folkloristic observations, and document those observations using established formats.
- Understand some methods of recording and archiving local traditions using "moral discrimination, creative imagination, and independent thought."
- Explain the choices and forces that help perpetuate or extinguish traditional practices, both locally and globally.
- Identify the shaping functions and theory of folklore.
- Produce a focused fieldwork project which includes, among other requirements, an essay, collection, and consent forms created according to the William A.Wilson Folklore Archive.

ENGL 392 : American Folklore. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251
DESCRIPTION: American folk art and literature and the historical and cultural circumstances from which they developed.

**Course Outcomes**

- Document folklore using established formats and understand some methods of recording and archiving local traditions in order to "analyze rigorously" American texts and artifacts in context and in terms of how "the American experience has been, and continues to be, constructed and transmitted."
- Identify and remember 3 categories of folklore; 4 types of folk narrative; 8 folk groups.
- Relate worldview with the performance of traditions, comparing similarities and differences of groups with differing worldviews and obtaining a wider view of American history and diversity.
- Reason intelligently in oral and written discourse while allowing that traditions are meaningful to participants in places and times different from your present circumstances.
- Work independently to connect folklore studies with other course work and life experiences and goals.
- Get excited about personal, group, and aesthetic dynamics in the performance of traditions and "question ethically" the choices and forces that help perpetuate or extinguish traditional practices, both locally and globally.

ENGL 396 : Studies in Women's Literature. (3:3:0)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Female-authored literary texts and literary theory concerning women.
NOTE: A core class for the women's studies minor.

**Course Outcomes**

- Read critically and analyze selected literary texts representative of the general history or of a thoughtfully focused dimension of women's literature.
- Demonstrate a knowledge of the history, nature, aesthetics, and broadly defined thematic concerns of the literature at the center of the course.
- Compare and contrast women's literature in question with larger or "mainstream" British or American literature.
- Form an appropriate research strategy, independently locate relevant digital and print sources, and draw upon these to develop a focused and effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 397R : World Literatures in English. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Study of the literature of a given world region or culture.

**Course Outcomes**

There are no course outcomes available

: African Literature.

**Course Outcomes**

: Australian Literature.

**Course Outcomes**

: Canadian Literature.

**Course Outcomes**

: Caribbean Literature.

**Course Outcomes**

: Hemispheric Literatures.

**Course Outcomes**

: Irish Literature.

**Course Outcomes**

: New Zealand Literature.

**Course Outcomes**

: Post-Colonial Literature.

**Course Outcomes**

: South-Asian Literature.

**Course Outcomes**

: Scottish Literature.

**Course Outcomes**

11. Complete the following:

ENGL 495 : The Senior Course. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 382; or ENGL 383; or ENGL 384R; senior status.

DESCRIPTION: In-depth study of a limited area of literature, language, or criticism. Content varies; requires research and writing.

NOTE: Engl 381 is also a valid prerequisite choice. See the Humanities Advisement Center to obtain a permission-to-add code.

**Course Outcomes**

There are no course outcomes available

**Note:** Students must complete a major author course (Engl 381, 382, 383, or 384R) before taking Engl 495. Students will take this course their senior year.

12. Complete 9 elective hours from any 300- or 400-level English courses, **except**:
    - English education courses (Engl 329, 377, 378, 379, 423, 479).
    - Engl 399R.

The following may also be counted toward the elective hours:

- The following course:

ENGL 218R : Creative Writing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Introductory instructions in the writing of poetry, the short story, and the essay.

**Course Outcomes**

- Demonstrate effort and discipline in their creative work as well as a knowledge of various creative genres and their conventions.
- Read literary models analytically, with an eye to authorial intention and technique and be able to articulate the same.
- Use correct grammar, punctuation, and an appropriate style in their writing.
- Write a successful poem, short story, or essay using literary models and following explicit instructions from the teacher.
- Revise intelligently, edit carefully, and share one's work with others in the class.

- Only one of the following English Advanced Written and Oral Communications courses can count as an English elective.

ENGL 310 : Writing and Tutoring. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: WRTG 150

DESCRIPTION: Instruction in advanced writing and peer tutoring. Students will learn to design and present ideas to be successfully understood by specified audiences; write coherent and unified texts; use various methods of invention, organization, and style; utilize the library and electronic resources; evaluate and comment on the writing of others. Students will learn to understand not only their own writing process but help tutees do the same; communicate orally in class and in one-on-one conferences; master composition and peer tutoring theory and practice.

**Course Outcomes**

There are no course outcomes available

: Honors Writing and Tutoring.

**Course Outcomes**

ENGL 311 : Writing About the Arts and Humanities. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Writing for both academic and mass audiences about the functions, meanings, values, and qualities of art and the humanities. Library research paper.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Write and speak effectively about the arts to academic and general audiences and for a variety of purposes.
- Critically read and evaluate different artistic mediums as well as scholarship in the humanities.

ENGL 312 : Persuasive Writing. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Expository and persuasive writing focusing on practical reasons for evaluating audiences, generating and structuring an argument, and making stylistic decisions. Library research paper.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Create an appropriate ethos in both writing and speaking.
- Analyze the parts of an argument; evaluate them in terms of the intended audience; and generate a reasonable argument for a specific audience.Anticipate and effectively respond to audience objections and counterarguments.

ENGL 313 : Expository Writing for Elementary Education Majors. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Learning to write as professional educators and to teach writing to children. Best taken before the professional sequence. Library research paper.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

There are no course outcomes available

ENGL 315 : Writing in the Social Sciences. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Writing characteristic of disciplines that inquire into human behavior and institutions; correspondence, proposals, library paper, empirical research, and reviews.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to specific rhetorical situations.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and

usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Successfully complete the library tour, tutorial, and tests (if not completed as part of the first-year writing requirement). Successfully complete a library mini-course taught for their major area and demonstrate the ability to use the library effectively.
- Demonstrate the ability to create, number, and label tables and figures.
- Effectively evaluate and comment on the writing of others to facilitate revision.

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

- Only one of the following English language courses:

ELANG 322 : Modern American Usage. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: ELang 223 or Ling 201 or concurrent enrollment.
DESCRIPTION: Current conventions and effective use of American English.

**Course Outcomes**

- Students will be able to identify and use multiple approaches to evaluating English usage.
- Students will be able to identify and use the most appropriate tools for each approach.
- Students will be able to evaluate the validity of prescriptive rules by using these approaches and tools.

ELANG 324 : History of the English Language. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: ELang 223 or Ling 201, or concurrent enrollment.
DESCRIPTION: Basic changes from Old English to modern English, including modern American dialects.

**Course Outcomes**

- Students will be able to trace the general phonemic, morphological, syntactic, and semantic changes of English in relation to the major periods of Old English, Middle English, Early Modern English, and Present-Day English.
- Students will be able to identify some of the appropriate linguistic tools and resources that are available to answer specific questions about the history and development of the English language.
- Students will be able to explain the important social and political factors as well as linguistic processes that have influenced the development of the English language and some of its varieties, including the current standard variety.
- Students will be able to apply course concepts and information to the assessment and interpretation of authentic historical texts.

ELANG 325 : The Grammar of English. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: ELang 223 or Ling 201 or concurrent enrollment.
DESCRIPTION: Study of English grammar in various applications.

**Course Outcomes**

- Students will be able to analyze and describe grammatical structures in English at the word, phrase, clause, and sentence levels.
- Students will be able to apply the knowledge from parts 1) and 2) towards the analysis of authentic texts.
- Students will be able to identify and label parts of speech in English sentences.

ELANG 350 : Basic Editing Skills. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 223 & ELANG 322 & ELANG 325

DESCRIPTION: Editing theory and practice, emphasizing copy editing and basic line editing.

**Course Outcomes**

- Students demonstrate copy editing skills by using these skills to improve sample manuscripts in terms of punctuation, spelling, usage, and sentence clarity.
- Students apply style and usage requirements with flexibility, customized to specific contexts and circumstances.
- Students deploy empirical methods to investigate patterns of style and usage and make editorial decisions.

ELANG 410R : Genre and Substantive Editing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 223 & ELANG 322 & ELANG 325

DESCRIPTION: Exploring a different genre of publishing each semester; instruction in substantive editing.

**Course Outcomes**

- Students articulate a personal perspective on ethical issues in publishing, such as preserving the author's voice, plagiarism, copyright infringement, the tensions between the editorial and the marketing sides of publishing, the promotion of values and the transmission of our cultural heritage.
- Students demonstrate specialized skills and the perspective required by at least one specific editing genre (such as magazine publishing, technical communication, fiction, scholarly publishing, or visual information design).

ELANG 430R : Editing for Publication. (1-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 350 & ELANG 410R & DIGHT 230

DESCRIPTION: Refining copy editing and substantive editing skills through hands-on work with actual publications; one-on-one feedback and mentoring.

**Course Outcomes**

- Students demonstrate improvement in basic editing skills acquired in previous courses: copy editing, substantive genre editing, and use of electronic tools for editing and layout.
- Students demonstrate ability to work in small groups by producing as a group a publication project effectively edited and visually designed.
- Students demonstrate a basic understanding of the publication industry and the requirements of an effective job search by creating a job application and an editing skills portfolio.

**Note 1:** Some English majors choose to minor in editing, which is offered by the Department of Linguistics and English Language.

**Note 2:** Some English majors choose to focus on special areas of concentration within the major itself, such as:

*Creative Writing*

Engl 218R, 317R, 318R, 319R, 320R, 419R, 518R.

*Folklore, Ethnic, and Regional Literature*

Engl 356, 358R, 364, 367R, 368, 391, 392, 393R, 397R.

*Rhetoric and Academic Writing*

Engl 322, 324, 325, 326, 327R, 328R, 330.

*Preparation for Graduate Studies in English*

Engl 451 or 452.

*Hours include courses that may fulfill university core requirements.

## Show all English Courses

College of Humanities Home

English Department Home

Majors

- BA in English
- BA in English Teaching

Minors

- English
- English Teaching
- Writing and Rhetoric

Course Information

- English Courses
- Writing Course

Faculty

# BA in English Teaching (74–91 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see item 1 below for information regarding admission to this program.*

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

1. This is a closed major requiring application to the program. Application forms are available in the Humanities Advisement Center (1175 JFSB) and the English Education Office (4168 JFSB). Students cannot apply until they have completed at least 9 hours of English major core courses.
2. Students must complete the GE Foreign Language option* even if the Advanced Mathematics option has already been completed.
3. The English Department requires a minimum of 24 hours of English major course work to be taken in residency at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
4. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
5. Engl 195 is recommended.
6. Because upper-division English courses require substantial writing, students should complete their Engl 295 before they begin their first upper-division courses, preferably in the second semester of their sophomore year.
7. A teaching minor is not required for licensure. However, it is strongly recommended.
8. Engl 276R is prerequisite to Engl 329, 377, 378, 379, and 423. All are prerequisite to Engl 476R.
9. Complete the following core requirements:
   - Because English is a writing-intensive major, students are strongly encouraged to take a first-year freshman college-level writing course regardless of their AP test scores (Wrtg 150 or Phil 150).
   - Fundamentals of language and literature: complete the following:

     ENGL 251 : Introduction to English Studies. (3:3:0)

     WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

     DESCRIPTION: Introduction to the discipline of English studies, including the fundamental concepts and practice of literary analysis and critical theory.

     NOTE: Engl 251 fulfills the GE Letters requirement only for English majors and minors. Other students will not receive GE Letters credit for this course.

     **Course Outcomes**
     There are no course outcomes available

     **Note:** Students must complete Engl 251 before or concurrently with the Literary History requirements (Engl 291, 292, 293, 294).

   - British and American literary history: complete the following:

     **Either**

     ENGL 291 : British Literary History 1. (3:3:0)

     OFFERED: Independent Study also.

     WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

     PREREQUISITE: ENGL 251; or concurrent enrollment.

     DESCRIPTION: Development of ideas, movements, genres, and styles in early English literature as illustrated through representative texts.

     **Course Outcomes**
     There are no course outcomes available

ENGL 292 : British Literary History 2. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in later English literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 293 : American Literary History. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in American literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

**Or**

ENGL 291 : British Literary History 1. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in early English literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 294 : Transatlantic Literary History. (6:6:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: This course explores British and American literary history from the eighteenth through the twenty-first centuries by studying key figures, movements, genres, events, themes, and ideas through the lens of transatlantic literary exchange.

**Course Outcomes**

- Identify and discuss representative authors, works, and movements in the transatlantic literary tradition.
- Through writing, exams, and other activities, demonstrate an understanding of the historical development and cultural context of the transatlantic literary tradition.

**Note:** Students must complete the literary history courses in a period before taking any 300-level courses in that period.

- Complete the following:

ENGL 295 : Writing Literary Criticism. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: English major status.
DESCRIPTION: How to address an academic audience, support arguments, and engage effectively in critical conversations about literature.

**Course Outcomes**

- Students will: 1) find and interpret credible research sources, 2) integrate them purposefully in support of their own literary analysis, 3) document these sources correctly using MLA format.
- Students will effectively employ the appropriate conventions of style, form, and tone in literary scholarship in written and oral communications.
- Students will construct a conference length (8-10 page) paper employing purposeful rhetorical moves to develop a coherent and logical argument that makes a significant literary claim.
- Students will mature as writers as they devise productive and flexible individual and collaborative processes of writing, including methods for gathering evidence, organizing their argument, prewriting, drafting, revising, editings, proofreading, and peer reviewing.

**Note:** Students must complete Engl 295 before taking most 300- and 400-level courses for teaching majors.

10. Complete two courses from the following:

ENGL 360 : American Literature to 1800. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from the colonial and early national periods.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the colonial and early national periods of American literature.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 361 : American Literature 1800 - 1865. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1800 to 1865.

**Course Outcomes**

There are no course outcomes available

ENGL 362 : American Literature 1865 - 1914. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1865 to 1914.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1865 to 1914.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 363 : American Literature 1914 - 1960. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1914 to 1960.

**Course Outcomes**

- Read critically and analyze major and selected minor texts and literary trends from the period of 1914 to 1960.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 365 : American Literature 1960 to Present. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1960 to the present.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1960 to the present.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

11. Complete one course from the following:

ENGL 345 : Literature and Film. (3:3:.5)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Emphasis on film as an interpretation of texts. Includes International Cinema.

**Course Outcomes**

- Analyze a written text/film set using an appropriate and well-defined scholarly approach.
- Write a research paper using proper MLA guidelines that is situated in the context of recent scholarship in the field.
- Identify and describe major and minor works, authors, and directors associated with this course.
- Form a research strategy. Independently identify and locate relevant print and digital sources, and incorporate these sources into a well-formed argument.

ENGL 356 : Myth, Legend, and Folktales. (3:3:0)
WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Major mythic and legendary works that provide background for the literary tradition.

**Course Outcomes**

- Students will be able to read critically and analyze major and selected minor texts and trends in myth, legend, and folktale over time and place.
- Students will be able to form research strategies and write critical and informational papers that reflect their use and application of these topics.
- Students final project will be polished, competent, formal writing, free from distracting errors in mechanics, syntax. Formatting will be in accordance with MLA formatting and citation guidelines.
- Students will be able to critically identify the commonalities and difference in myth, legend, and folktale.
- Students will be able to research, prepare, and present a topic related to the class study of the class.
- Students will be able to articulate and write responses to assigned readings.
- Students will produce two research papers; one on literary folkloristics, and one of their choice related to the class study.

(356 is recommended)

ENGL 358R : Ethnic Literatures. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Study of literary texts representative of a thoughtfully focused dimension of a given ethnic group.

**Course Outcomes**

There are no course outcomes available

: Native American Literature.

**Course Outcomes**

: African American Literature.

**Course Outcomes**

: Asian American Literature.

**Course Outcomes**

: Latino/a American Literature.

**Course Outcomes**

: Jewish American Literature. (0::)

**Course Outcomes**

ENGL 359 : The Short Story. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Critical study of American, English, and European short stories, emphasizing those of the twentieth century.

**Course Outcomes**

- Analyze selected short stories to develop the skills of literary criticism.
- Explain the conventions and historical development of the short story genre.
- Form a research strategy appropriate to the study of short stories by independently locating relevant print and digital sources and drawing upon these sources to develop a focused and effective written argument about selected short stories
- Produce a polished research paper following MLA formatting and citation guidelines

ENGL 366 : Studies in Poetry. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Topics vary.

**Course Outcomes**

There are no course outcomes available

ENGL 367R : Urban Literature. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295
DESCRIPTION: Literature and cultural representations of a given American region.

**Course Outcomes**

There are no course outcomes available

: American Regional Literature.

**Course Outcomes**

: Southern American Literature.

**Course Outcomes**

12. Complete three elective hours from the following list (**Note:** TMA 457 is strongly recommended):
    - TMA 457 : Media in the Contemporary Classroom. (3:4:4)

      WHEN TAUGHT: Winter

      PREREQUISITE: TMA 276; or ENGL 276R

      DESCRIPTION: Developing educational methods and techniques for using media in the specialized media classroom; study of educational models and theories related to historical and emerging media technologies.

      **Course Outcomes**

      - Examine media education theories and strategies of media education practice
      - Implement media and media literacy strategies into theatre or English curricula
      - Investigate the mediated world at large, considering personal media presence as well as the global media.
      - Discuss and examine local and global media secondary programs.
      - Develop personal pedagogical standards from which they create and teach a media infused curriculum for their future classroom
      - Create a photo essay, and audio and video documentaries that demonstrate the principles of community storytelling

    - Any 300- or 400-level English course.

    - ENGL 218R : Creative Writing. (3:3:0)

      WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

      DESCRIPTION: Introductory instructions in the writing of poetry, the short story, and the essay.

      **Course Outcomes**

      - Demonstrate effort and discipline in their creative work as well as a knowledge of various creative genres and their conventions.
      - Read literary models analytically, with an eye to authorial intention and technique and be able to articulate the same.
      - Use correct grammar, punctuation, and an appropriate style in their writing.
      - Write a successful poem, short story, or essay using literary models and following explicit instructions from the teacher.
      - Revise intelligently, edit carefully, and share one's work with others in the class.

    - One of the following ELang courses:

      ELANG 322 : Modern American Usage. (3:3:0)

      WHEN TAUGHT: Fall; Winter; Summer

      PREREQUISITE: ELang 223 or Ling 201 or concurrent enrollment.

      DESCRIPTION: Current conventions and effective use of American English.

      **Course Outcomes**

      - Students will be able to identify and use multiple approaches to evaluating English usage.
      - Students will be able to identify and use the most appropriate tools for each approach.
      - Students will be able to evaluate the validity of prescriptive rules by using these approaches and tools.

      ELANG 324 : History of the English Language. (3:3:0)

      WHEN TAUGHT: Fall; Winter; Spring

      PREREQUISITE: ELang 223 or Ling 201, or concurrent enrollment.

      DESCRIPTION: Basic changes from Old English to modern English, including modern American dialects.

      **Course Outcomes**

      - Students will be able to trace the general phonemic, morphological, syntactic, and semantic changes of English in relation to the major periods of Old English, Middle English, Early Modern English, and Present-Day English.
      - Students will be able to identify some of the appropriate linguistic tools and resources that are available to answer specific questions about the history and development of the English language.
      - Students will be able to explain the important social and political factors as well as linguistic processes that have influenced the development of the English language and some of its varieties, including the current standard variety.
      - Students will be able to apply course concepts and information to the assessment and interpretation of authentic historical texts.

      ELANG 325 : The Grammar of English. (3:3:0)

      WHEN TAUGHT: Fall; Winter; Spring; Summer

      PREREQUISITE: ELang 223 or Ling 201 or concurrent enrollment.

      DESCRIPTION: Study of English grammar in various applications.

      **Course Outcomes**

- Students will be able to analyze and describe grammatical structures in English at the word, phrase, clause, and sentence levels.
- Students will be able to apply the knowledge from parts 1) and 2) towards the analysis of authentic texts.
- Students will be able to identify and label parts of speech in English sentences.

ELANG 350 : Basic Editing Skills. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 223 & ELANG 322 & ELANG 325

DESCRIPTION: Editing theory and practice, emphasizing copy editing and basic line editing.

**Course Outcomes**

- Students demonstrate copy editing skills by using these skills to improve sample manuscripts in terms of punctuation, spelling, usage, and sentence clarity.
- Students apply style and usage requirements with flexibility, customized to specific contexts and circumstances.
- Students deploy empirical methods to investigate patterns of style and usage and make editorial decisions.

ELANG 410R : Genre and Substantive Editing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 223 & ELANG 322 & ELANG 325

DESCRIPTION: Exploring a different genre of publishing each semester; instruction in substantive editing.

**Course Outcomes**

- Students articulate a personal perspective on ethical issues in publishing, such as preserving the author's voice, plagiarism, copyright infringement, the tensions between the editorial and the marketing sides of publishing, the promotion of values and the transmission of our cultural heritage.
- Students demonstrate specialized skills and the perspective required by at least one specific editing genre (such as magazine publishing, technical communication, fiction, scholarly publishing, or visual information design).

ELANG 430R : Editing for Publication. (1-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 350 & ELANG 410R & DIGHT 230

DESCRIPTION: Refining copy editing and substantive editing skills through hands-on work with actual publications; one-on-one feedback and mentoring.

**Course Outcomes**

- Students demonstrate improvement in basic editing skills acquired in previous courses: copy editing, substantive genre editing, and use of electronic tools for editing and layout.
- Students demonstrate ability to work in small groups by producing as a group a publication project effectively edited and visually designed.
- Students demonstrate a basic understanding of the publication industry and the requirements of an effective job search by creating a job application and an editing skills portfolio.

13. Complete the following:

ENGL 329 : Teaching Grammar and Usage in Secondary Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 276R

DESCRIPTION: Language issues, particularly grammar, usage, and pedagogy, for students preparing to teach English at the secondary level.

NOTE: Required before student teaching.

**Course Outcomes**

- Students will be able to understand and explain the basic principles of English grammar and usage.
- Students will be able to design and implement effective instruction of English grammar and usage.

ENGL 377 : Teaching English in Secondary Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 276R; concurrent enrollment in Engl 379.

DESCRIPTION: Theories and methods of teaching English and language arts to secondary school students.

NOTE: To be taken immediately before student teaching or interning.

**Course Outcomes**

- Students will be able to write effective lesson plans with clear objectives and appropriate activities and assessments that promote and measure the desired learning for a variety of learners in an English/language arts classroom.
- Students will be able to develop a unit plan that shows the ability to integrate all areas of language arts; to correlate unit goals, activities, and assessments; and to show understanding of current best practice.
- Students will be able to establish patterns for future professional practices by accessing and evaluating ideas in professional journals and conference presentations.
- Students will be able to show how context influences good instructional decisions and how a variety of assessments can foster student learning as well as measure it for diverse students.
- Students will be develop their ability to improve as teachers in the future by reflecting on their teaching

experiences through both talk and writing.
- Students will be able to analyze readings to extract main ideas, synthesize readings with their own ideas/experiences and those of others in the classroom, and reach well-supported conclusions.

ENGL 378 : Teaching Literature and Reading in Secondary Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 276R
RECOMMENDED: Completion of all English major courses.
DESCRIPTION: Theories and methods of teaching literature, reading, and related literacy skills in secondary English classes.
NOTE: Required before student teaching.

**Course Outcomes**

- Students will be able to explain the basic principles of reading and literature.
- Students will be able to design and implement effective reading strategies that reinforce basic principles of reading and that enhance the understanding and appreciation of literature.

ENGL 379 : Practicum in Secondary English Teaching. (1:0:2)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 276R; concurrent enrollment in Engl 377.
DESCRIPTION: Applying content and methods learned in Engl 377 in a school classroom.

**Course Outcomes**

- Students will be able to analyze contextual factors in a school setting and discern instructional implications that arise from these factors.
- Students will write appropriate and effective learning objectives that are correlated with state standards and that serve to facilitate learning.
- Students will be able to develop assessments that measure the learning described in an objective.
- Students will plan for and make adjustments in their teaching, objectives, and assessments based on students' needs and classroom context.
- Students will establish a teacher's presence in their teaching classrooms.
- Students will reflect on and critique their own planning and teaching performance.

ENGL 382 : Shakespeare. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 291 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Intensive reading, discussion, and (in some sections) viewing of plays from the comedy, tragedy, romance, and history genres.
NOTE: For English majors and minors.

**Course Outcomes**

There are no course outcomes available

ENGL 420 : Literature for Adolescents. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 295; or instructor permission.
DESCRIPTION: Wide range of literature written for or read by teenagers.
NOTE: Required before student teaching.

**Course Outcomes**

- Students will become familiar with a broad range of Young Adult books, authors, and genre.
- Students will become familiar with a broad range of Young Adult books, authors, and genre.
- Students will learn how to select appropriate quality YA books for classroom, school, and personal use.
- Students will demonstrate an in-depth knowledge of at least one YA author and his/her work.

ENGL 423 : Teaching Composition in Secondary Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 276R
DESCRIPTION: Theories and methods of teaching writing to secondary school students.
NOTE: Required before student teaching.

**Course Outcomes**

- Students will be able to design effective assessments for a variety of writing tasks and articulate a philosophy for grading.
- Students will develop their abilities to be reflective practitioners who evaluate their own writing, writing processes, and instructional practices.

ENGL 479 : Secondary Student Teaching Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 377 & ENGL 378; concurrent enrollment in Engl 476 or 496R.
DESCRIPTION: Issues experienced during secondary student teaching practicum.

**Course Outcomes**

- Students teachers and interns will be able to apply the topics presented in the seminar to their own

teaching experience. University supervisors will observe the various applications such as classroom management, managing the paper load, using young adult literature, supporting English Language Learners, etc.
- Student teachers and interns will be able to produce a full, 7-part reflective Teacher Work Sample to demonstrate their understanding and effectiveness as a classroom teacher.
- Student teachers and interns will demonstrate their ability to teach using state core guidelines and also their ability to plan and use effective units.
- Student teachers and interns will be able to correctly and in a timely manner enter the required material evidence of their semester's performance and teaching on the Education Department's LiveText (or whatever system is in place at the required time).

ENGL 495 : The Senior Course. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 382; or ENGL 383; or ENGL 384R; senior status.

DESCRIPTION: In-depth study of a limited area of literature, language, or criticism. Content varies; requires research and writing.

NOTE: Engl 381 is also a valid prerequisite choice. See the Humanities Advisement Center to obtain a permission-to-add code.

**Course Outcomes**

There are no course outcomes available

**Note:** Students must complete Engl 382 before taking Engl 495.

14. Complete the Professional Education Component:
    - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

ENGL 276R : Exploration of Teaching. (3:4:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Successful application into the program; FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

- Create an instructional resource file.
- Evaluate a variety of learning styles.
- Video record one lesson to view and analyze and review with peers.
- Create school newsletter, bulletin board display and an instructional resource aid.
- Analyze case study incidences regarding the moral dimensions of teaching.
- Generate lesson plans in relation to observations, school cultures, district and state mandates, and contemporary educational theory.

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or HIth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or HIth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.

DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

**Note:** FBI fingerprinting and background clearance must be completed before registration for Engl 276R.

- Complete 12 hours from one of the following:

ENGL 476 : Secondary English Student Teaching. (12:0:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Engl 377. Concurrent enrollment in Engl 479.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards.

**Course Outcomes**

- Student teachers will successfully complete his or her student teaching.
- Student teachers will successfully demonstrate their ability to teach using state core guidelines and also their ability to plan and use effective units.
- Student teachers will learn and practice effective classroom management skills.
- Student teachers will practice and demonstrate professional educational behavior.

ENGL 496R : Secondary English Teaching Internship. (12:0:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- grade in Engl 377. Concurrent enrollment in Engl 479.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards.

**Course Outcomes**

- Interns will successfully complete his or her assigned internship.
- Interns will successfully demonstrate their ability to teach using state core guidelines and also their ability to plan and use effective units.
- Interns will learn and practice effective classroom management skills.
- Interns will practice and demonstrate professional educational behavior.

*Hours include courses that may fulfill university core requirements.

## Show all English Courses

College of Humanities Home

English Department Home

Majors

- BA in English
- BA in English Teaching

Minors

- English
- English Teaching
- Writing and Rhetoric

Course Information

- English Courses
- Writing Course

Faculty

# Minor in English (18 hours)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. The English Department requires a minimum of 9 hours of course work to be taken in residency at BYU for this minor program. These hours may also go toward BYU's 30-hour residency requirement for graduation.

2. Complete the following prerequisite course:

   ENGL 251 : Introduction to English Studies. (3:3:0)

   WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

   DESCRIPTION: Introduction to the discipline of English studies, including the fundamental concepts and practice of literary analysis and critical theory.

   NOTE: Engl 251 fulfills the GE Letters requirement only for English majors and minors. Other students will not receive GE Letters credit for this course.

   **Course Outcomes**

   There are no course outcomes available

3. Complete 15 elective hours from 218R and higher. At least nine hours must be 300-level or higher.

**Note:** No more than 3 hours of any one R-suffix course may apply toward the elective hours required.

## Show all English Courses

College of Humanities Home

English Department Home

Majors

- BA in English
- BA in English Teaching

Minors

- English
- English Teaching
- Writing and Rhetoric

Course Information

- English Courses
- Writing Course

Faculty

# Minor in English Teaching (30 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. The English Department requires a minimum of 12 minor hours to be taken in residency at BYU for this minor program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
2. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
3. Complete the following prerequisite course:

ENGL 251 : Introduction to English Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Introduction to the discipline of English studies, including the fundamental concepts and practice of literary analysis and critical theory.
NOTE: Engl 251 fulfills the GE Letters requirement only for English majors and minors. Other students will not receive GE Letters credit for this course.

**Course Outcomes**

There are no course outcomes available

4. Complete the following:

ENGL 232 : Shakespeare. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Careful reading and discussion of six to eight major plays.
NOTE: Does not fulfill English major requirements. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate basic proficiency in reading and interpreting Shakespeare's plays.
- Demonstrate your understanding of Shakespeare through written and oral assignments , including papers and exams.
- Explain the historical and literary contexts, genres and themes, and ethical dimensions of Shakespeare's representative works.

ENGL 292 : British Literary History 2. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in later English literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 293 : American Literary History. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in American literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 329 : Teaching Grammar and Usage in Secondary Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 276R

DESCRIPTION: Language issues, particularly grammar, usage, and pedagogy, for students preparing to teach English at the secondary level.

NOTE: Required before student teaching.

**Course Outcomes**

- Students will be able to understand and explain the basic principles of English grammar and usage.
- Students will be able to design and implement effective instruction of English grammar and usage.

ENGL 377 : Teaching English in Secondary Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 276R; concurrent enrollment in Engl 379.

DESCRIPTION: Theories and methods of teaching English and language arts to secondary school students.

NOTE: To be taken immediately before student teaching or interning.

**Course Outcomes**

- Students will be able to write effective lesson plans with clear objectives and appropriate activities and assessments that promote and measure the desired learning for a variety of learners in an English/language arts classroom.
- Students will be able to develop a unit plan that shows the ability to integrate all areas of language arts; to correlate unit goals, activities, and assessments; and to show understanding of current best practice.
- Students will be able to establish patterns for future professional practices by accessing and evaluating ideas in professional journals and conference presentations.
- Students will be able to show how context influences good instructional decisions and how a variety of assessments can foster student learning as well as measure it for diverse students.
- Students will be develop their ability to improve as teachers in the future by reflecting on their teaching experiences through both talk and writing.
- Students will be able to analyze readings to extract main ideas, synthesize readings with their own ideas/experiences and those of others in the classroom, and reach well-supported conclusions.

ENGL 378 : Teaching Literature and Reading in Secondary Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 276R

RECOMMENDED: Completion of all English major courses.

DESCRIPTION: Theories and methods of teaching literature, reading, and related literacy skills in secondary English classes.

NOTE: Required before student teaching.

**Course Outcomes**

- Students will be able to explain the basic principles of reading and literature.
- Students will be able to design and implement effective reading strategies that reinforce basic principles of reading and that enhance the understanding and appreciation of literature.

ENGL 420 : Literature for Adolescents. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 295; or instructor permission.

DESCRIPTION: Wide range of literature written for or read by teenagers.

NOTE: Required before student teaching.

**Course Outcomes**

- Students will become familiar with a broad range of Young Adult books, authors, and genre.
- Students will become familiar with a broad range of Young Adult books, authors, and genre.
- Students will learn how to select appropriate quality YA books for classroom, school, and personal use.
- Students will demonstrate an in-depth knowledge of at least one YA author and his/her work.

ENGL 423 : Teaching Composition in Secondary Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 276R

DESCRIPTION: Theories and methods of teaching writing to secondary school students.

NOTE: Required before student teaching.

**Course Outcomes**

- Students will be able to design effective assessments for a variety of writing tasks and articulate a philosophy for grading.
- Students will develop their abilities to be reflective practitioners who evaluate their own writing, writing processes, and instructional practices.

5. Complete one course from the following:

ENGL 235 : Masterpieces of American Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Selected readings from Puritan times to the present.

**Course Outcomes**

- Demonstrate basic proficiency in reading and interpreting American literature.
- Demonstrate your understanding of American literature through written and oral assignments, including papers and exams.
- Explain the historical and literary contexts, genres and themes, and ethical dimensions of representative works of American literature.

ENGL 336 : The American Novel. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 293 & ENGL 295; or ENGL 294 & ENGL 295; Engl 291. (Engl 292 may also be a prerequisite option.)

DESCRIPTION: Representative novels of the American tradition from the late eighteenth century to the present.

**Course Outcomes**

- Analyze selected American novels in order to create a foundation for the further study of literature.
- Explain the general formal and historical development of the American novel and define a coherent approach to the study of American novels.
- Form a research strategy appropriate to the study of American novels, independently locate relevant digital and print sources, and draw upon these sources to develop a focused and effective written argument about an American novel(s).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 361 : American Literature 1800 - 1865. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1800 to 1865.

**Course Outcomes**

There are no course outcomes available

ENGL 362 : American Literature 1865 - 1914. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1865 to 1914.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1865 to 1914.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 363 : American Literature 1914 - 1960. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1914 to 1960.

**Course Outcomes**

- Read critically and analyze major and selected minor texts and literary trends from the period of 1914 to 1960.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

## Show all English Courses

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English Department Home

Majors

- BA in English
- BA in English Teaching

Minors

- English
- English Teaching
- Writing and Rhetoric

Course Information

- English Courses
- Writing Course

Faculty

# Minor in Writing and Rhetoric (19 hours)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

ENGL 322 : History and Criticism of Rhetoric. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Historical study of rhetorical theory and criticism, emphasizing both classical and contemporary practice.

**Course Outcomes**

- Students will be able to identify issues debated in the history of rhetoric and trace how positions in the debates change among various theorists and time periods.
- Students will be able to explain why rhetoric one of the single most formative elements in the development of Western civilization, particularly in shaping its educational, political, social, and religious institutions.
- Students will be able to explain and apply principles from rhetorical theories to explicate, evaluate, and create effective spoken and written texts.

ENGL 324 : Writing with Style. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Developing stylistic competency and range in nonfiction writing, especially at the sentence and paragraph levels.

**Course Outcomes**

- Students will use grammar, punctuation, figures, and various styles as appropriate to differing purposes, audiences, occasions, and genres.
- Students will explicate the meanings and evaluate the quality of a text's style.

ENGL 400 : Portfolio Capstone for Writing and Rhetoric Minors. (1:0:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 322 & ENGL 324; An advanced writing course.

DESCRIPTION: Producing a portfolio of writing projects by writing and rhetoric minors.

NOTE: Engl 400 should be taken during the last semester of the minor.

**Course Outcomes**

- Students will demonstrate their degree of rhetorical competency by submitting three texts that represent their best use of interpretive, evaluative, and composing skills, texts they created during their minor course work.
- Students will demonstrate their degree of rhetorical competency by submitting a critical reflective essay that: 1) describes how they define rhetoric as a theoretical concept, and 2) explains how they have applied rhetorical principles in the personal, professional, (or academic), and public life and will do so in the future.

2. Complete one course from the following:

ENGL 311 : Writing About the Arts and Humanities. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Writing for both academic and mass audiences about the functions, meanings, values, and qualities of art and the humanities. Library research paper.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.

- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Write and speak effectively about the arts to academic and general audiences and for a variety of purposes.
- Critically read and evaluate different artistic mediums as well as scholarship in the humanities.

ENGL 312 : Persuasive Writing. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Expository and persuasive writing focusing on practical reasons for evaluating audiences, generating and structuring an argument, and making stylistic decisions. Library research paper.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Create an appropriate ethos in both writing and speaking.
- Analyze the parts of an argument; evaluate them in terms of the intended audience; and generate a reasonable argument for a specific audience.Anticipate and effectively respond to audience objections and counterarguments.

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

3. Complete 9 additional credit hours from the following (courses will not double count between items 2 and 3):

ENGL 211 : Rhetoric and Civilization 1. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Western civilization from Greek antiquity to the Renaissance emphasizing rhetoric; the arts of language and their role in shaping institutions, values, and beliefs.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate your understanding of the texts through written and oral assignments as well as through papers and essay exams.
- Read carefully and critically primary texts from people and periods in history that have shaped the civilization we now have—particularly our intellectual traditions and values, but also our political, social, educational, and religious institutions.
- Understand the vocabulary and canons of rhetoric so that you can use the art of rhetoric effectively in listening to, reading, and analyzing the discourse of others, and in speaking and writing clearly and

persuasively.

ENGL 212 : Rhetoric and Civilization 2. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Western civilization from the Renaissance to the present emphasizing rhetoric; the arts of language and their role in shaping institutions, values, and beliefs.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Read carefully and critically primary texts from people and periods in history that have shaped the civilization we now have—particularly our intellectual traditions and values, but also our political, social, educational, and religious institutions.
- Demonstrate your understanding of the texts through written and oral assignments as well as through papers and essay exams.
- Understand the vocabulary and canons of rhetoric so that you can use the art of rhetoric effectively in listening to, reading, and analyzing the discourse of others, and in speaking and writing clearly and persuasively.

ENGL 218R : Creative Writing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Introductory instructions in the writing of poetry, the short story, and the essay.

**Course Outcomes**

- Demonstrate effort and discipline in their creative work as well as a knowledge of various creative genres and their conventions.
- Read literary models analytically, with an eye to authorial intention and technique and be able to articulate the same.
- Use correct grammar, punctuation, and an appropriate style in their writing.
- Write a successful poem, short story, or essay using literary models and following explicit instructions from the teacher.
- Revise intelligently, edit carefully, and share one's work with others in the class.

ENGL 220 : Composing Personal History. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Composing personal history through writing, mementos, oral history, chronologies, letters, documents, journals, and other mediums.
NOTE: Independent Study also.

**Course Outcomes**

- Students will be able to use technologies (paper, print, and digital media) effectively for composing, editing, and preserving family history.
- Students will be able to write, revise, and edit narratives, sketches, and memoirs effectively.
- Students will use methods of interviewing and researching effectively.

ENGL 311 : Writing About the Arts and Humanities. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Writing for both academic and mass audiences about the functions, meanings, values, and qualities of art and the humanities. Library research paper.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Write and speak effectively about the arts to academic and general audiences and for a variety of purposes.
- Critically read and evaluate different artistic mediums as well as scholarship in the humanities.

ENGL 312 : Persuasive Writing. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Expository and persuasive writing focusing on practical reasons for evaluating audiences, generating and structuring an argument, and making stylistic decisions. Library research paper.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Create an appropriate ethos in both writing and speaking.
- Analyze the parts of an argument; evaluate them in terms of the intended audience; and generate a reasonable argument for a specific audience.Anticipate and effectively respond to audience objections and counterarguments.

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

ENGL 325 : Visual Rhetoric. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Rhetorical perspectives on the theory, criticism, and production of images and other visual texts, including visual elements of literary texts.

**Course Outcomes**

- Discuss current research and theory regarding the presentation of visual information.
- Explain the purposes, modes, and persuasive effect that visual communication has in various forms of rhetorical discourse.
- Use current design vocabulary and demonstrate an understanding of accepted visual conventions.
- Identify, analyze, create, and critique visual texts in multiple media.
- Make decisions regarding content, organization, and style in a variety of visual genres.
- Articulate ethical, cultural, technical, and legal considerations implicit in visual discourse.

ENGL 326 : Digital Culture. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department

DESCRIPTION: Analyzing the virtual rhetorical spaces and culture created by digital technologies, focusing on interactivity, social networking, and media convergence.

**Course Outcomes**

- Explain relationships between changes in material technological relationships and cultural formations.
- Define key terms in digital culture.
- Analyze, evaluate, and create digital cultural artifacts.
- Conduct independent scholarly investigation into issues related to digital culture.
- Participate, consciously and critically, in digital culture.

ENGL 327R : Studies in Rhetoric. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department

DESCRIPTION: Special topics in rhetorical history, theory, and criticism.

**Course Outcomes**

Form a more specialized focus on particular questions, theorists, practices, or genres in rhetoric, students will be able to explain and use rhetorical principles and practices to explicate, evaluate, and create a broad array of effective spoken and written texts.
- Form a more specialized focus on particular questions, theorists, practices, or genres in rhetoric, students will be able to evaluate the quality of rhetorical theories and practices.

ENGL 328R : Studies in Composing. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Special topics in composing in different media (visual, digital, aural) and genres for a range of purposes and audiences.

**Course Outcomes**

- From a more specialized focus on particular questions, theorists, practices, or genres in the field of composition studies, students will be able to explain and use rhetorical principles and practices to explicate, evaluate, and create a broad array of effective spoken and written texts.
- From a more specialized focus on particular questions, theorists, practices, or genres in the field of composition studies, students will be able to evaluate the quality of composition theories and practices.

**ENGL 399R : Academic Internship. (.5-9:0:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Consent of cooperative education coordinator.

DESCRIPTION: On-the-job training.

**Course Outcomes**

- Students will track their progress as they develop the skills and expertise required by their internship.
- Students will meet the challenges of their internship.
- Students will consider the positives and negatives of a career in the area of their internship.
- Students will recognize the portability of the skills they have developed English majors and the value of these skills in the marketplace.

***ENGL 495 : The Senior Course. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 382; or ENGL 383; or ENGL 384R; senior status.

DESCRIPTION: In-depth study of a limited area of literature, language, or criticism. Content varies; requires research and writing.

NOTE: Engl 381 is also a valid prerequisite choice. See the Humanities Advisement Center to obtain a permission-to-add code.

**Course Outcomes**

There are no course outcomes available

**In a rhetoric- or writing-related profession.
***May have prerequisites.

## Show all English Courses

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English Department Home

Majors

- BA in English
- BA in English Teaching

Minors

- English
- English Teaching
- Writing and Rhetoric

Course Information

- English Courses
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Faculty

# English (Engl)

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## Undergraduate Courses

### 100-Level Courses

ENGL 115 : College Writing and Reading. (3:3:0)

OFFERED: Independent Study only.
WHEN TAUGHT: Contact Department.
DESCRIPTION: Principles of expository writing and critical reading with an emphasis on library-based research.
NOTE: Fulfills General Education First-Year Writing requirement.

**Course Outcomes**

- Use rhetoric responsibly to compose texts in a variety of genres for specific audiences and purposes.
- Critically read texts. This includeso analyzing how a text functions in a specific situation, community, or public; o analyzing the nuances of language (diction, figures of speech, tone, etc.);o identifying and evaluating the elements of an argument—claims, reasons, assumptions, and ethical, emotional, and logical appeals.
- Write coherent and unified texts (effective introductions, clear theses, supporting details, transitions, and strong conclusions) using a flexible and effective writing process, including prewriting, drafting, revising, and editing.
- Use style—diction, figurative language, tone, grammar, punctuation, spelling, mechanics—genre, conventions, and document design correctly and for rhetorical effect.
- Navigate the library to locate primary and secondary sources, evaluate the appropriateness and credibility of those sources, and effectively incorporate and accurately document outside sources in a research paper.

ENGL 195 : Academic and Career Preparation for English Majors. (1:1:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Overview of the English major for the beginning student: curriculum, faculty, career options.
NOTE: Grading based chiefly on attendance.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

ENGL 201 : Masterpieces of World Literature 1. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department
DESCRIPTION: Major world civilizations from antiquity through the early Italian Renaissance, approached through literature and emphasizing socioeconomic, religious, political, intellectual, and aesthetic developments.

**Course Outcomes**

There are no course outcomes available

: Honors Masterpieces of World Literature 1.

**Course Outcomes**

ENGL 202 : Masterpieces of World Literature 2. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Major world civilizations from Europe's High Renaissance to modern times, approached through literature and emphasizing socioeconomic, religious, political, intellectual, and aesthetic developments.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Masterpieces of World Literature 2.

**Course Outcomes**

ENGL 211 : Rhetoric and Civilization 1. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Western civilization from Greek antiquity to the Renaissance emphasizing rhetoric; the arts of language and their role in shaping institutions, values, and beliefs.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate your understanding of the texts through written and oral assignments as well as through papers and essay exams.
- Read carefully and critically primary texts from people and periods in history that have shaped the civilization we now have—particularly our intellectual traditions and values, but also our political, social, educational, and religious institutions.
- Understand the vocabulary and canons of rhetoric so that you can use the art of rhetoric effectively in listening to, reading, and analyzing the discourse of others, and in speaking and writing clearly and persuasively.

ENGL 212 : Rhetoric and Civilization 2. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Western civilization from the Renaissance to the present emphasizing rhetoric; the arts of language and their role in shaping institutions, values, and beliefs.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Read carefully and critically primary texts from people and periods in history that have shaped the civilization we now have—particularly our intellectual traditions and values, but also our political, social, educational, and religious institutions.
- Demonstrate your understanding of the texts through written and oral assignments as well as through papers and essay exams.
- Understand the vocabulary and canons of rhetoric so that you can use the art of rhetoric effectively in listening to, reading, and analyzing the discourse of others, and in speaking and writing clearly and persuasively.

ENGL 218R : Creative Writing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Introductory instructions in the writing of poetry, the short story, and the essay.

**Course Outcomes**

- Demonstrate effort and discipline in their creative work as well as a knowledge of various creative genres and their conventions.
- Read literary models analytically, with an eye to authorial intention and technique and be able to articulate the same.
- Use correct grammar, punctuation, and an appropriate style in their writing.
- Write a successful poem, short story, or essay using literary models and following explicit instructions from the teacher.
- Revise intelligently, edit carefully, and share one's work with others in the class.

ENGL 220 : Composing Personal History. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Composing personal history through writing, mementos, oral history, chronologies, letters, documents, journals, and other mediums.
NOTE: Independent Study also.

**Course Outcomes**

- Students will be able to use technologies (paper, print, and digital media) effectively for composing, editing, and preserving family history.
- Students will be able to write, revise, and edit narratives, sketches, and memoirs effectively.
- Students will use methods of interviewing and researching effectively.

ENGL 230 : Introduction to Literature: Fiction, Drama, Poetry. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Introduction to various literary themes, forms, and authors.
NOTE: Does not fulfill English major requirements. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate basic proficiency in reading and interpreting fiction, drama, and poetry.
- Demonstrate your understanding of literature through written and oral assignments , including papers and exams.

Be able to discuss the ethical and aesthetic implications of choosing particular reading strategies including those that center on texts, genres, authors, readers.

ENGL 232 : Shakespeare. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Careful reading and discussion of six to eight major plays.

NOTE: Does not fulfill English major requirements. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate basic proficiency in reading and interpreting Shakespeare's plays.
- Demonstrate your understanding of Shakespeare through written and oral assignments , including papers and exams.
- Explain the historical and literary contexts, genres and themes, and ethical dimensions of Shakespeare's representative works.

ENGL 235 : Masterpieces of American Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Selected readings from Puritan times to the present.

**Course Outcomes**

- Demonstrate basic proficiency in reading and interpreting American literature.
- Demonstrate your understanding of American literature through written and oral assignments, including papers and exams.
- Explain the historical and literary contexts, genres and themes, and ethical dimensions of representative works of American literature.

ENGL 236 : Masterpieces of English Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Selected readings from medieval times to the present.

**Course Outcomes**

- Demonstrate basic proficiency in reading and interpreting English literature.
- Demonstrate your understanding of English literature through written and oral assignments, including papers and exams.
- Explain the historical and literary contexts, genres and themes, and ethical dimensions of representative works of American literature.

ENGL 238 : The Bible as Literature. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department

DESCRIPTION: Introduction to the literary forms and aesthetic strategies of the Bible.

**Course Outcomes**

There are no course outcomes available

ENGL 251 : Introduction to English Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Introduction to the discipline of English studies, including the fundamental concepts and practice of literary analysis and critical theory.

NOTE: Engl 251 fulfills the GE Letters requirement only for English majors and minors. Other students will not receive GE Letters credit for this course.

**Course Outcomes**

There are no course outcomes available

ENGL 268 : Literature of the Latter-Day Saints. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Fiction, poetry, drama, folklore, essay, etc., emerging from and reflecting upon the LDS experience from Joseph Smith to the present.

**Course Outcomes**

- Demonstrate basic proficiency in reading and interpreting LDS literature
- Demonstrate your understanding of LDS literature through written and oral assignments, including papers and exams.
- Explain the historical and literary contexts, genres and themes, and ethical dimensions of representative works of LDS literature.

ENGL 276R : Exploration of Teaching. (3:4:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Successful application into the program; FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

- Create an instructional resource file.
- Evaluate a variety of learning styles.
- Video record one lesson to view and analyze and review with peers.
- Create school newsletter, bulletin board display and an instructional resource aid.
- Analyze case study incidences regarding the moral dimensions of teaching.
- Generate lesson plans in relation to observations, school cultures, district and state mandates, and contemporary educational theory.

ENGL 291 : British Literary History 1. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251; or concurrent enrollment.

DESCRIPTION: Development of ideas, movements, genres, and styles in early English literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 292 : British Literary History 2. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251; or concurrent enrollment.

DESCRIPTION: Development of ideas, movements, genres, and styles in later English literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 293 : American Literary History. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251; or concurrent enrollment.

DESCRIPTION: Development of ideas, movements, genres, and styles in American literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 294 : Transatlantic Literary History. (6:6:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251; or concurrent enrollment.

DESCRIPTION: This course explores British and American literary history from the eighteenth through the twenty-first centuries by studying key figures, movements, genres, events, themes, and ideas through the lens of transatlantic literary exchange.

**Course Outcomes**

- Identify and discuss representative authors, works, and movements in the transatlantic literary tradition.
- Through writing, exams, and other activities, demonstrate an understanding of the historical development and cultural context of the transatlantic literary tradition.

ENGL 295 : Writing Literary Criticism. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: English major status.

DESCRIPTION: How to address an academic audience, support arguments, and engage effectively in critical conversations about literature.

**Course Outcomes**

- Students will: 1) find and interpret credible research sources, 2) integrate them purposefully in support of their own literary analysis, 3) document these sources correctly using MLA format.
- Students will effectively employ the appropriate conventions of style, form, and tone in literary scholarship in written and oral communications.
- Students will construct a conference length (8-10 page) paper employing purposeful rhetorical moves to develop a coherent and logical argument that makes a significant literary claim.
- Students will mature as writers as they devise productive and flexible individual and collaborative processes of writing, including methods for gathering evidence, organizing their argument, prewriting, drafting, revising, editings, proofreading, and peer reviewing.

**300-Level Courses**

ENGL 300R : English Literature in a Cultural Setting. (.5-6:ARR:ARR)

WHEN TAUGHT: Contact Department.

NOTE: For Study Abroad students only.

**Course Outcomes**

- Students will identify and define significant characteristics of the literature from each period of British literary history that we study.
- Students will display in several short essays detailed knowledge of the author, time period, and literary text for each of the sites we visit in Britain.
- Students will demonstrate their knowledge of the historical relations among the texts we study by preparing a timeline that features both the birth date and the death date of each author and the composition and publication dates of their works.

ENGL 305 : Critical Reading. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Multidisciplinary approaches to literacy. Strategies and contexts for critical reading and thinking.

**Course Outcomes**

There are no course outcomes available

ENGL 306 : Travel Writing. (1-3:Arr:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Theory and practice of writing about travel experience.

NOTE: For Study Abroad or Travel Study students only.

**Course Outcomes**

There are no course outcomes available

ENGL 310 : Writing and Tutoring. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: WRTG 150

DESCRIPTION: Instruction in advanced writing and peer tutoring. Students will learn to design and present ideas to be successfully understood by specified audiences; write coherent and unified texts; use various methods of invention, organization, and style; utilize the library and electronic resources; evaluate and comment on the writing of others. Students will learn to understand not only their own writing process but help tutees do the same; communicate orally in class and in one-on-one conferences; master composition and peer tutoring theory and practice.

**Course Outcomes**

There are no course outcomes available

: Honors Writing and Tutoring.

**Course Outcomes**

ENGL 311 : Writing About the Arts and Humanities. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Writing for both academic and mass audiences about the functions, meanings, values, and qualities of art and the humanities. Library research paper.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Write and speak effectively about the arts to academic and general audiences and for a variety of purposes.
- Critically read and evaluate different artistic mediums as well as scholarship in the humanities.

ENGL 312 : Persuasive Writing. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Expository and persuasive writing focusing on practical reasons for evaluating audiences, generating and structuring

an argument, and making stylistic decisions. Library research paper.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Create an appropriate ethos in both writing and speaking.
- Analyze the parts of an argument; evaluate them in terms of the intended audience; and generate a reasonable argument for a specific audience.Anticipate and effectively respond to audience objections and counterarguments.

ENGL 313 : Expository Writing for Elementary Education Majors. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Learning to write as professional educators and to teach writing to children. Best taken before the professional sequence. Library research paper.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

There are no course outcomes available

ENGL 314 : Writing About Literature. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Writing about the functions, meanings, qualities, and contexts of literature for specialist and nonspecialist audiences using selected critical theories. Research paper.

NOTE: Primarily for majors in literary studies. Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Use writing to enhance their understanding of and appreciation for literature.
- Analyze and discuss (in writing and speech) literary texts clearly and cogently, develop and defend literary interpretations, and relate individual texts to their historical and cultural contexts. Apply critical theories to produce distinctive readingsof literary texts.
- Effectively evaluate and comment on the writing of others to facilitate revision.

ENGL 315 : Writing in the Social Sciences. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Writing characteristic of disciplines that inquire into human behavior and institutions; correspondence, proposals, library paper, empirical research, and reviews.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to specific rhetorical situations.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Successfully complete the library tour, tutorial, and tests (if not completed as part of the first-year writing requirement). Successfully complete a library mini-course taught for their major area and demonstrate the ability to use the library effectively.
- Demonstrate the ability to create, number, and label tables and figures.
- Effectively evaluate and comment on the writing of others to facilitate revision.

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

ENGL 317R : Writing Creative Nonfiction. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 218R; or instructor's consent.

DESCRIPTION: Creations of style and technique in prose nonfiction; discipline and practice of the writer.

**Course Outcomes**

- Demonstrate effort and discipline in crafting creative nonfiction and display a knowledge of its conventions.
- Read creative nonfiction models analytically, with an eye to authorial intention and technique and be able to articulate the same.
- Use correct grammar, punctuation, and an appropriate style in creative nonfiction.
- Write a variety of essays using literary models and following explicit instructions from the teacher.
- Revise intelligently, edit carefully, and share one's work with others in the class.

ENGL 318R : Writing Fiction. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 218R; or instructor's consent.

DESCRIPTION: Creation of style and technique in prose fiction; discipline and practice of the writer.

**Course Outcomes**

- Demonstrate effort and discipline in crafting fiction and display a knowledge of its conventions.
- Read fiction models analytically, with an eye to authorial intention and technique and be able to articulate the same.
- Use correct grammar, punctuation, and an appropriate style in fiction.
- Write a variety of fiction using literary models and following explicit instructions from the teacher.
- Revise intelligently, edit carefully, and share one's work with others in the class.

ENGL 319R : Writing Poetry. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 218R; or instructor's consent.

DESCRIPTION: Creation of style and technique in poetry; discipline and practice of the poet.

**Course Outcomes**

- Demonstrate effort and discipline in crafting poetry and display a knowledge of its conventions.
- Read poetry models analytically, with an eye to authorial intention and technique and be able to articulate the same.
- Use correct grammar, punctuation, and an appropriate style in poetry.
- Write a variety of poems using literary models and following explicit instructions from the teacher.
- Revise intelligently, edit carefully, and share one's work with others in the class.

ENGL 320R : Writing for Children and Adolescents. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 218R

DESCRIPTION: Theory and practice of writing prose and verse for youth readership. Specific attention to requirements of picture books, middle-grade novels, and young adult stories.

**Course Outcomes**

- Demonstrate effort and discipline in crafting prose and verse for a young readership and display a knowledge of

relevant conventions.
- Read models for picture books, middle-grade novels, and young adult stories analytically, with an eye to authorial intention and technique and be able to articulate the same.
- Use correct grammar, punctuation, and an appropriate style in genres for younger readers.
- Write a variety of pieces for younger readers using literary models and following explicit instructions from the teacher.
- Revise intelligently, edit carefully, and share one's work with others in the class.

ENGL 321R : English Department Reading Series. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Weekly readings of poetry, essays, and fiction by distinguished creative writers.

**Course Outcomes**

- Analyze poetry, fiction, and creative nonfiction presented orally, with an eye to authorial intention and technique and be able to articulate the same.

ENGL 322 : History and Criticism of Rhetoric. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Historical study of rhetorical theory and criticism, emphasizing both classical and contemporary practice.

**Course Outcomes**

- Students will be able to identify issues debated in the history of rhetoric and trace how positions in the debates change among various theorists and time periods.
- Students will be able to explain why rhetoric one of the single most formative elements in the development of Western civilization, particularly in shaping its educational, political, social, and religious institutions.
- Students will be able to explain and apply principles from rhetorical theories to explicate, evaluate, and create effective spoken and written texts.

ENGL 324 : Writing with Style. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Developing stylistic competency and range in nonfiction writing, especially at the sentence and paragraph levels.

**Course Outcomes**

- Students will use grammar, punctuation, figures, and various styles as appropriate to differing purposes, audiences, occasions, and genres.
- Students will explicate the meanings and evaluate the quality of a text's style.

ENGL 325 : Visual Rhetoric. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Rhetorical perspectives on the theory, criticism, and production of images and other visual texts, including visual elements of literary texts.

**Course Outcomes**

- Discuss current research and theory regarding the presentation of visual information.
- Explain the purposes, modes, and persuasive effect that visual communication has in various forms of rhetorical discourse.
- Use current design vocabulary and demonstrate an understanding of accepted visual conventions.
- Identify, analyze, create, and critique visual texts in multiple media.
- Make decisions regarding content, organization, and style in a variety of visual genres.
- Articulate ethical, cultural, technical, and legal considerations implicit in visual discourse.

ENGL 326 : Digital Culture. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department

DESCRIPTION: Analyzing the virtual rhetorical spaces and culture created by digital technologies, focusing on interactivity, social networking, and media convergence.

**Course Outcomes**

- Explain relationships between changes in material technological relationships and cultural formations.
- Define key terms in digital culture.
- Analyze, evaluate, and create digital cultural artifacts.
- Conduct independent scholarly investigation into issues related to digital culture.
- Participate, consciously and critically, in digital culture.

ENGL 327R : Studies in Rhetoric. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department

DESCRIPTION: Special topics in rhetorical history, theory, and criticism.

**Course Outcomes**

- Form a more specialized focus on particular questions, theorists, practices, or genres in rhetoric, students will be able to explain and use rhetorical principles and practices to explicate, evaluate, and create a broad array of effective spoken and written texts.
- Form a more specialized focus on particular questions, theorists, practices, or genres in rhetoric, students will be able to evaluate the quality of rhetorical theories and practices.

ENGL 328R : Studies in Composing. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Special topics in composing in different media (visual, digital, aural) and genres for a range of purposes and audiences.

**Course Outcomes**

- From a more specialized focus on particular questions, theorists, practices, or genres in the field of composition studies, students will be able to explain and use rhetorical principles and practices to explicate, evaluate, and create a broad array of effective spoken and written texts.
- From a more specialized focus on particular questions, theorists, practices, or genres in the field of composition studies, students will be able to evaluate the quality of composition theories and practices.

ENGL 329 : Teaching Grammar and Usage in Secondary Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 276R

DESCRIPTION: Language issues, particularly grammar, usage, and pedagogy, for students preparing to teach English at the secondary level.

NOTE: Required before student teaching.

**Course Outcomes**

- Students will be able to understand and explain the basic principles of English grammar and usage.
- Students will be able to design and implement effective instruction of English grammar and usage.

ENGL 330 : Literary English: History and Style. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.

DESCRIPTION: Developing a framework of English linguistic history; characterizing a style of literary text through analysis of register, diction, and syntactical patterns; and developing an appreciation of how linguistic texture of texts creates meaning.

**Course Outcomes**

- Students will develop a framework of English linguistic history; they will be able to trace changes in morphological, syntactical, lexical stratification, and stylistic patterns from Old English to Present Day English.
- Students will learn how to characterize a style of a literary text through analysis of register, diction, and syntactical patterns.
- Students will develop an appreciation of how the linguistic texture of texts creates meaning.

ENGL 333 : The English Novel. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 292 & ENGL 295; or ENGL 294 & ENGL 295; Engl 291. (Engl 293 may also be a prerequisite option.)

DESCRIPTION: Novels selected according to time period or theme from the past three centuries.

**Course Outcomes**

- Analyze selected British novels in order to create a foundation for the further study of literature.
- Explain the general formal and historical development of the British novel and define a coherent approach to the study of British novels.
- Form a research strategy appropriate to the study of British novels, independently locate relevant digital and print sources, and draw upon these sources to develop a focused and effective written argument about a British novel(s).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 336 : The American Novel. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 293 & ENGL 295; or ENGL 294 & ENGL 295; Engl 291. (Engl 292 may also be a prerequisite option.)

DESCRIPTION: Representative novels of the American tradition from the late eighteenth century to the present.

**Course Outcomes**

- Analyze selected American novels in order to create a foundation for the further study of literature.
- Explain the general formal and historical development of the American novel and define a coherent approach to the study of American novels.
- Form a research strategy appropriate to the study of American novels, independently locate relevant digital and print sources, and draw upon these sources to develop a focused and effective written argument about an American novel(s).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 337R : Advanced Studies in Genre. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Advanced studies in fiction, drama, poetry, or creative nonfiction.

**Course Outcomes**

- Read critically and analyze selected literary texts selected with a specific genre focus (poetry, drama, personal

essay, etc.).
- Form a research strategy appropriate to the texts and genre studied in the course, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument about the texts studied.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 338 : Literary Studies of the Bible. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Scholarly engagement with the aesthetic forms and cultural context of Biblical texts.

**Course Outcomes**

There are no course outcomes available

ENGL 341 : English Drama: Beginnings to 1800, Excluding Shakespeare. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Selected plays from medieval, Tudor, Stuart, Restoration, and 18th-century drama.

**Course Outcomes**

- Understand in general, and in several details, the development of drama in England, and, in your writing, intelligently discuss major developments, continuities, or turning points.
- Demonstrate a sure knowledge of the plays we read, and be able to interpret those plays.
- Explain the significance of specific passages and elements of each play.
- Relate selected theoretical ideas to your understanding of the plays we read.

ENGL 343 : Modern English and American Drama. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295

**Course Outcomes**

- Read critically and analyze selected dramatic texts along with critical and/or interpretative texts.
- Form a research strategy appropriate to the study of drama, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument about the texts studied.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

: Modern British Drama.

**Course Outcomes**

: Modern American Drama.

**Course Outcomes**

ENGL 345 : Literature and Film. (3:3:.5)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Emphasis on film as an interpretation of texts. Includes International Cinema.

**Course Outcomes**

- Analyze a written text/film set using an appropriate and well-defined scholarly approach.
- Write a research paper using proper MLA guidelines that is situated in the context of recent scholarship in the field.
- Identify and describe major and minor works, authors, and directors associated with this course.
- Form a research strategy. Independently identify and locate relevant print and digital sources, and incorporate these sources into a well-formed argument.

ENGL 355 : (Engl-ClCv) Greek and Roman Classics and the English Tradition. (3:3:0)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Major works by such authors as Homer, the Greek and Roman tragedians, Thucydides, Vergil, and Petronius in English translation, emphasizing their influence on English and American literature.

**Course Outcomes**

- Read critically and analyze selected classical texts in translation in the context of English literature.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 356 : Myth, Legend, and Folktales. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Major mythic and legendary works that provide background for the literary tradition.

**Course Outcomes**

- Students will be able to read critically and analyze major and selected minor texts and trends in myth, legend, and folktale over time and place.
- Students will be able to form research strategies and write critical and informational papers that reflect their use and application of these topics.
- Students final project will be polished, competent, formal writing, free from distracting errors in mechanics, syntax. Formatting will be in accordance with MLA formatting and citation guidelines.
- Students will be able to critically identify the commonalities and difference in myth, legend, and folktale.
- Students will be able to research, prepare, and present a topic related to the class study of the class.
- Students will be able to articulate and write responses to assigned readings.
- Students will produce two research papers; one on literary folkloristics, and one of their choice related to the class study.

ENGL 358R : Ethnic Literatures. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Study of literary texts representative of a thoughtfully focused dimension of a given ethnic group.

**Course Outcomes**

There are no course outcomes available

: Native American Literature.

**Course Outcomes**

: African American Literature.

**Course Outcomes**

: Asian American Literature.

**Course Outcomes**

: Latino/a American Literature.

**Course Outcomes**

: Jewish American Literature. (0::)

**Course Outcomes**

ENGL 359 : The Short Story. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Critical study of American, English, and European short stories, emphasizing those of the twentieth century.

**Course Outcomes**

- Analyze selected short stories to develop the skills of literary criticism.
- Explain the conventions and historical development of the short story genre.
- Form a research strategy appropriate to the study of short stories by independently locating relevant print and digital sources and drawing upon these sources to develop a focused and effective written argument about selected short stories
- Produce a polished research paper following MLA formatting and citation guidelines

ENGL 360 : American Literature to 1800. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from the colonial and early national periods.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the colonial and early national periods of American literature.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 361 : American Literature 1800 - 1865. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1800 to 1865.

**Course Outcomes**

There are no course outcomes available

ENGL 362 : American Literature 1865 - 1914. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1865 to 1914.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1865 to 1914.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 363 : American Literature 1914 - 1960. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1914 to 1960.

**Course Outcomes**

- Read critically and analyze major and selected minor texts and literary trends from the period of 1914 to 1960.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 364 : Literature and Cultures of the American West. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Literature and cultural representations of the American West and the frontier.

**Course Outcomes**

- Read critically and analyze in the context of appropriate literary and cultural theories major and selected minor texts and associated with the American West.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the literature and cultures of the American West.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 365 : American Literature 1960 to Present. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1960 to the present.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1960 to the present.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 366 : Studies in Poetry. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Topics vary.

**Course Outcomes**

There are no course outcomes available

ENGL 367R : Urban Literature. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295
DESCRIPTION: Literature and cultural representations of a given American region.

**Course Outcomes**

There are no course outcomes available

: American Regional Literature.

**Course Outcomes**

: Southern American Literature.

**Course Outcomes**

ENGL 368 : Literature of the Latter-day Saints. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Fiction, poetry, drama, folklore, personal essay, and other literature emerging from the LDS experience and expressing various perspectives on it.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the material studied in the class.
- Identify, locate, read critically, and analyze major and selected minor texts and associated with the Latter-Day Saints.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 371 : British Literature to 1500: The Medieval Period. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295

DESCRIPTION: Principal works, mainly in translation, from Britain's medieval period.

**Course Outcomes**

- Read critically and analyze principal works, mainly in translation, from Britain's medieval period (to 1500).
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 372 : British Literature 1500 - 1603: The Early Renaissance. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295

DESCRIPTION: Drama, poetry, and prose of the early Renaissance.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose of Britain's early Renaissance period (1500 to 1603).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 373 : British Literature 1660 - 1789: The Enlightenment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295

DESCRIPTION: Poetry, prose, and drama of the Restoration and eighteenth century.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose of Britain's Restoration period and eighteenth century (1660 to 1789).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 374 : British Literature 1789 - 1832: The Romantic Period. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Poetry, prose, and drama from Britain's Romantic period.

**Course Outcomes**

There are no course outcomes available

ENGL 375 : British Literature 1832-1900: The Victorian Period. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Poetry, prose, and drama from Britain's Victorian period.

**Course Outcomes**

- Read critically and analyze the drama, poetry, and prose of Britain's Victorian period (1832 to 1900).
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 376 : British Literature 1900 - 1950: The Modern Period. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Poetry, prose, and drama from Britain's modernist period.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose of Britain's Modern period (1900 to 1950).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 377 : Teaching English in Secondary Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 276R; concurrent enrollment in Engl 379.
DESCRIPTION: Theories and methods of teaching English and language arts to secondary school students.
NOTE: To be taken immediately before student teaching or interning.

**Course Outcomes**

- Students will be able to write effective lesson plans with clear objectives and appropriate activities and assessments that promote and measure the desired learning for a variety of learners in an English/language arts classroom.
- Students will be able to develop a unit plan that shows the ability to integrate all areas of language arts; to correlate unit goals, activities, and assessments; and to show understanding of current best practice.
- Students will be able to establish patterns for future professional practices by accessing and evaluating ideas in professional journals and conference presentations.
- Students will be able to show how context influences good instructional decisions and how a variety of assessments can foster student learning as well as measure it for diverse students.
- Students will be develop their ability to improve as teachers in the future by reflecting on their teaching experiences through both talk and writing.
- Students will be able to analyze readings to extract main ideas, synthesize readings with their own ideas/experiences and those of others in the classroom, and reach well-supported conclusions.

ENGL 378 : Teaching Literature and Reading in Secondary Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 276R
RECOMMENDED: Completion of all English major courses.
DESCRIPTION: Theories and methods of teaching literature, reading, and related literacy skills in secondary English classes.
NOTE: Required before student teaching.

**Course Outcomes**

- Students will be able to explain the basic principles of reading and literature.
- Students will be able to design and implement effective reading strategies that reinforce basic principles of reading and that enhance the understanding and appreciation of literature.

ENGL 379 : Practicum in Secondary English Teaching. (1:0:2)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 276R; concurrent enrollment in Engl 377.
DESCRIPTION: Applying content and methods learned in Engl 377 in a school classroom.

**Course Outcomes**

- Students will be able to analyze contextual factors in a school setting and discern instructional implications that arise from these factors.
- Students will write appropriate and effective learning objectives that are correlated with state standards and that serve to facilitate learning.
- Students will be able to develop assessments that measure the learning described in an objective.
- Students will plan for and make adjustments in their teaching, objectives, and assessments based on students' needs and classroom context.
- Students will establish a teacher's presence in their teaching classrooms.
- Students will reflect on and critique their own planning and teaching performance.

ENGL 380 : British Literature 1950 - Present: The Contemporary Period. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Poetry, prose, and drama from Britain and the Commonwealth since 1950.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose from Britain and the Commonwealth since 1950.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 381 : Chaucer. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 291 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Intensive study of Chaucer's literature and language from medieval and modern perspectives.

**Course Outcomes**

- Explain the historical and literary contexts, genres and themes, and ethical dimensions of Chaucer's representative works.
- Demonstrate familiarity with key secondary scholarship about and critical perspectives of Chaucer's works.
- Develop reading fluency in Middle English.
- Develop reading strategies that explore how texts are constructed to present a set of argument (historical, aestheic, etc) and use those critical reading skills to interpret the texts' concerns and to trace interrelationships

among them.
- Perform scholarly research on Chaucer's works by identifying and evaluating relevant primary and secondary sources, by formulating arguments conversant with these sources, and by articulating those arguments in formal academic writing.

ENGL 382 : Shakespeare. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 291 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Intensive reading, discussion, and (in some sections) viewing of plays from the comedy, tragedy, romance, and history genres.
NOTE: For English majors and minors.

**Course Outcomes**

There are no course outcomes available

ENGL 383 : Milton. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 291 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Analysis of poetry and selected prose, including detailed study of such work as *Paradise Lost, Paradise Regained*, and *Samson Agonistes*.

**Course Outcomes**

- Explain the historical and literary contexts, genres and themes, and ethical dimensions of Milton's representative works.
- Demonstrate familiarity with key secondary scholarship about and critical perspectives of Milton's works.
- Perform scholarly research on the major author's works by identifying and evaluating relevant primary and secondary sources, by formulating arguments conversant with these sources, and by articulating those arguments in formal academic writing.
- Develop reading strategies that explore how texts are constructed to present a set of arguments (historical, aesthetic, etc) and use those critical reading skills to interpret the texts' concerns and to trace interrelationships among them.

ENGL 384R : Major Authors. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.
DESCRIPTION: Topics vary.

**Course Outcomes**

There are no course outcomes available

: Early British Authors.

**Course Outcomes**

: Later British Authors.

**Course Outcomes**

: American Authors.

**Course Outcomes**

ENGL 385 : British Literature 1603 - 1660: The Late Renaissance. (3:3:0)

WHEN TAUGHT: Winter Contact Department; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Drama, poetry, and prose of the late Renaissance.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze Britain's drama, poetry, and prose written between 1603 and 1660.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 390R : Transnational/Transatlantic Literature. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.
DESCRIPTION: Period-specific courses using transnational models for literary analysis. Read selected texts in a transatlantic context and in the light of applicable theoretical approaches. Identify and locate appropriate research sources for the study of transatlantic literatures. Incorporate these sources into a research paper and other possible assignments. Produce polished writing free from distracting errors and in accordance with MLA formatting and citation guidelines.

**Course Outcomes**

There are no course outcomes available

ENGL 391 : Introduction to Folklore. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Major types of folklore (e.g., myth, legend, folktale, folksong, custom, and belief); practical experience in collecting folklore.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Create and share a persuasive analysis of folklore texts in context by using "logical reasoning and critical analysis."
- Identify and remember three categories of folklore, four types of folk narrative, and eight folk groups.
- Produce several brief folkloristic observations, and document those observations using established formats.
- Understand some methods of recording and archiving local traditions using "moral discrimination, creative imagination, and independent thought."
- Explain the choices and forces that help perpetuate or extinguish traditional practices, both locally and globally.
- Identify the shaping functions and theory of folklore.
- Produce a focused fieldwork project which includes, among other requirements, an essay, collection, and consent forms created according to the William A.Wilson Folklore Archive.

ENGL 392 : American Folklore. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251

DESCRIPTION: American folk art and literature and the historical and cultural circumstances from which they developed.

**Course Outcomes**

- Document folklore using established formats and understand some methods of recording and archiving local traditions in order to "analyze rigorously" American texts and artifacts in context and in terms of how "the American experience has been, and continues to be, constructed and transmitted."
- Identify and remember 3 categories of folklore; 4 types of folk narrative; 8 folk groups.
- Relate worldview with the performance of traditions, comparing similarities and differences of groups with differing worldviews and obtaining a wider view of American history and diversity.
- Reason intelligently in oral and written discourse while allowing that traditions are meaningful to participants in places and times different from your present circumstances.
- Work independently to connect folklore studies with other course work and life experiences and goals.
- Get excited about personal, group, and aesthetic dynamics in the performance of traditions and "question ethically" the choices and forces that help perpetuate or extinguish traditional practices, both locally and globally.

ENGL 393R : Studies in Folklore. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 391

DESCRIPTION: Focused themes and topics in folklore. Topics may include regional or transnational folklore, folklore genres, folk groups, ethnographic research, cross-disciplinary issues, and history of folklore studies.

**Course Outcomes**

There are no course outcomes available

ENGL 395R : Studies in Literature. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295; Either Engl 292 & 293, or Engl 294.

DESCRIPTION: Topics vary.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the material studied in the class.
- Identify, locate, read critically, and analyze major and selected minor texts and associated with the literature of the class theme.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 396 : Studies in Women's Literature. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Female-authored literary texts and literary theory concerning women.

NOTE: A core class for the women's studies minor.

**Course Outcomes**

- Read critically and analyze selected literary texts representative of the general history or of a thoughtfully focused dimension of women's literature.
- Demonstrate a knowledge of the history, nature, aesthetics, and broadly defined thematic concerns of the literature at the center of the course.
- Compare and contrast women's literature in question with larger or "mainstream" British or American literature.
- Form an appropriate research strategy, independently locate relevant digital and print sources, and draw upon these to develop a focused and effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 397R : World Literatures in English. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Study of the literature of a given world region or culture.

**Course Outcomes**

There are no course outcomes available

: African Literature.

**Course Outcomes**

: Australian Literature.

**Course Outcomes**

: Canadian Literature.

**Course Outcomes**

: Caribbean Literature.

**Course Outcomes**

: Hemispheric Literatures.

**Course Outcomes**

: Irish Literature.

**Course Outcomes**

: New Zealand Literature.

**Course Outcomes**

: Post-Colonial Literature.

**Course Outcomes**

: South-Asian Literature.

**Course Outcomes**

: Scottish Literature.

**Course Outcomes**

ENGL 399R : Academic Internship. (.5-9:0:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: Consent of cooperative education coordinator.
DESCRIPTION: On-the-job training.

**Course Outcomes**

- Students will track their progress as they develop the skills and expertise required by their internship.
- Students will meet the challenges of their internship.
- Students will consider the positives and negatives of a career in the area of their internship.
- Students will recognize the portability of the skills they have developed English majors and the value of these skills in the marketplace.

### 400-Level Courses

ENGL 400 : Portfolio Capstone for Writing and Rhetoric Minors. (1:0:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 322 & ENGL 324; An advanced writing course.
DESCRIPTION: Producing a portfolio of writing projects by writing and rhetoric minors.
NOTE: Engl 400 should be taken during the last semester of the minor.

**Course Outcomes**

- Students will demonstrate their degree of rhetorical competency by submitting three texts that represent their best use of interpretive, evaluative, and composing skills, texts they created during their minor course work.
- Students will demonstrate their degree of rhetorical competency by submitting a critical reflective essay that: 1) describes how they define rhetoric as a theoretical concept, and 2) explains how they have applied rhetorical principles in the personal, professional, (or academic), and public life and will do so in the future.

ENGL 419R : Creative Writing Projects. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 317R; or ENGL 318R; or ENGL 319R
DESCRIPTION: Individual major creative writing projects: novel, novella, play, poetry collection, short stories, or essays.

**Course Outcomes**

There are no course outcomes available

ENGL 420 : Literature for Adolescents. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 295; or instructor permission.

DESCRIPTION: Wide range of literature written for or read by teenagers.

NOTE: Required before student teaching.

**Course Outcomes**

- Students will become familiar with a broad range of Young Adult books, authors, and genre.
- Students will become familiar with a broad range of Young Adult books, authors, and genre.
- Students will learn how to select appropriate quality YA books for classroom, school, and personal use.
- Students will demonstrate an in-depth knowledge of at least one YA author and his/her work.

ENGL 423 : Teaching Composition in Secondary Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 276R

DESCRIPTION: Theories and methods of teaching writing to secondary school students.

NOTE: Required before student teaching.

**Course Outcomes**

- Students will be able to design effective assessments for a variety of writing tasks and articulate a philosophy for grading.
- Students will develop their abilities to be reflective practitioners who evaluate their own writing, writing processes, and instructional practices.

ENGL 451 : Literary Theory and Criticism 1: The Critical Tradition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.

DESCRIPTION: Historical survey from Plato to the early twentieth century.

**Course Outcomes**

- Students will analyze and demonstrate a sound knowledge of a selection of primary and secondary documents related to the historical development of literary theory.
- Students will form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Students will produce a substansive term paper focused on the historical development of literary theory that includes polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 452 : Literary Theory and Criticism 2: Contemporary Criticism. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 295; Engl 291, Engl 295; and either Engl 292 & 293 or Engl 294.

DESCRIPTION: Introduction to issues in twentieth-century literary criticism.

**Course Outcomes**

- Students will analyze and demonstrate a sound knowledge of a selection of primary and secondary documents related to contemporary literary theory.
- Students will form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Students will produce a substansive term paper focused on contemporary literary theory that includes polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 476 : Secondary English Student Teaching. (12:0:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Engl 377. Concurrent enrollment in Engl 479.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards.

**Course Outcomes**

- Student teachers will successfully complete his or her student teaching.
- Student teachers will successfully demonstrate their ability to teach using state core guidelines and also their ability to plan and use effective units.
- Student teachers will learn and practice effective classroom management skills.
- Student teachers will practice and demonstrate professional educational behavior.

ENGL 479 : Secondary Student Teaching Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 377 & ENGL 378; concurrent enrollment in Engl 476 or 496R.

DESCRIPTION: Issues experienced during secondary student teaching practicum.

**Course Outcomes**

- Students teachers and interns will be able to apply the topics presented in the seminar to their own teaching

experience. University supervisors will observe the various applications such as classroom management, managing the paper load, using young adult literature, supporting English Language Learners, etc.
- Student teachers and interns will be able to produce a full, 7-part reflective Teacher Work Sample to demonstrate their understanding and effectiveness as a classroom teacher.
- Student teachers and interns will demonstrate their ability to teach using state core guidelines and also their ability to plan and use effective units.
- Student teachers and interns will be able to correctly and in a timely manner enter the required material evidence of their semester's performance and teaching on the Education Department's LiveText (or whatever system is in place at the required time).

ENGL 480R : Directed Research in English. (1-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Department chair's consent.

DESCRIPTION: Directed research for ORCA grant recipients, research assistants, and other undergraduate students pursuing research projects.

**Course Outcomes**

- Complete directed research as designed by your faculty mentor.

ENGL 490R : Individual Readings in English. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Department chair's consent.

DESCRIPTION: Language and/or literature beyond what is offered in the curriculum.

NOTE: May not be substituted for another catalog course.

**Course Outcomes**

- Complete readings and assignments as designed by your faculty mentor.

ENGL 495 : The Senior Course. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 382; or ENGL 383; or ENGL 384R; senior status.

DESCRIPTION: In-depth study of a limited area of literature, language, or criticism. Content varies; requires research and writing.

NOTE: Engl 381 is also a valid prerequisite choice. See the Humanities Advisement Center to obtain a permission-to-add code.

**Course Outcomes**

There are no course outcomes available

ENGL 496R : Secondary English Teaching Internship. (12:0:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- grade in Engl 377. Concurrent enrollment in Engl 479.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards.

**Course Outcomes**

- Interns will successfully complete his or her assigned internship.
- Interns will successfully demonstrate their ability to teach using state core guidelines and also their ability to plan and use effective units.
- Interns will learn and practice effective classroom management skills.
- Interns will practice and demonstrate professional educational behavior.

ENGL 499R : Honors Thesis. (.5-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

**Course Outcomes**

- Complete your honors thesis with the aid of your thesis advisor.

## 500-Level Graduate Courses (available to advanced undergraduates)

ENGL 515R : Advanced Scholarly Writing. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Workshop for potential graduate students, graduate students, and professionals in all disciplines in preparing the thesis, dissertation, book chapter, and article.

**Course Outcomes**

No outcomes are available at this time.

ENGL 516 : Advanced Technical Writing. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Engl 316 or instructor's consent.

DESCRIPTION: Advanced concepts, including literature of technical writing, liaison with technical staff, communication networks, rhetoric of graphics, and teaching and freelancing technical writing.

**Course Outcomes**

- English 516 students will resourcefully incorporate major texts, issues, and debates in technical writing (including subjects like the literature of technical writing, communication networks, the rhetoric of graphics,technical writing pedagogy, and freelancing as a technical writer)into the formation of a conference-length conference paper suitable for professional presentation.

ENGL 520R : Studies in Theme and Form. (.5-3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Topics vary: literature and film, myth and archetype, science fiction, etc.

**Course Outcomes**

- Students in English 520R will identify and critique major texts, issues, and debates from the study of various topics of theme and form (including topics like literature and film, myth and archetype, science fiction, etc.).
- Students will produce a conference-length paper on these topics suitable for professional presentation.

ENGL 590R : Directed Readings. (1-3:Arr:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Graduate advisory committee approval.

DESCRIPTION: Individual readings beyond what is offered in the curriculum.

NOTE: Primarily available for English graduate students in Study Abroad programs.

**Course Outcomes**

- Students in English 590R will, subject to the approval of a course contract by the department graduate studies committee,studyunder a faculty member's supervision individualized readings beyond what is offered in the curriculum. This study should help the study to resourcefully incorporate major texts, issues, and debates from these readings into the formation of a conference-length conference paper suitable for professional presentation.

ENGL 599R : Academic Internship. (.5-9:0:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Department chair's consent.

DESCRIPTION: On-the-job training.

**Course Outcomes**

- Students will track their progress as they develop the skills and expertise required by their internship.
- Students will meet the challenges of their internship.
- Students will consider the positives and negatives of a career in the area of their internship.
- Students will recognize the portability of the skills they have developed English majors and the value of these skills in the marketplace.

: Internship in Professional Community.

**Course Outcomes**

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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# Writing (Wrtg)

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## Undergraduate Courses

**100-Level Courses**

WRTG 150 : Writing and Rhetoric. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Processes of writing, reading, and research with an emphasis on argumentation and rhetorical analysis.
NOTE: Fulfills General Education First-Year Writing requirement.

**Course Outcomes**

- Use rhetoric responsibly to compose arguments in a variety of genres for specific audiences and purposes.
- Critically read texts. This includesanalyzing how a text functions in a specific situation, community, or public;analyzing the nuances of language (diction, figures of speech, tone, etc.);identifying and evaluating the elements of an argument—claims, reasons, assumptions, and ethical, emotional, and logical appeals.
- Write coherent and unified texts (effective introductions, clear theses, supporting details, transitions, and strong conclusions) using a flexible and effective writing process, including prewriting, drafting, revising, and editing.
- Use style—diction, figurative language, tone, grammar, punctuation, spelling, mechanics—genre, conventions, and document design correctly and for rhetorical effect.
- Navigate the library to locate primary and secondary sources, evaluate the appropriateness and credibility of those sources, and effectively incorporate and accurately document outside sources in a research paper.

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Course Information

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Faculty

# English Faculty

Show All
Hide All

## Professors

Clark, Gregory
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1972
MA, Brigham Young University, 1977
PhD, Rensselaer Polytechnic Institute, 1985

Crisler, Jesse S.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Trinity University, 1969
PhD, University of South Carolina, Columbia, 1973

Crowe, Christopher E.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1976
MEd, Arizona State University, 1980
EdD, Arizona State University, 1986

Dean, Deborah Marquiss
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1988
MEd, City University, Bellevue, 1994
EdD, Seattle Pacific University, 1999

Eliason, Eric Alden
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, University of Texas, Austin, 1994
PhD, University of Texas, Austin, 1998

Hansen, Kristine
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1973
MA, Brigham Young University, 1981
PhD, University of Texas, Austin, 1987

Larsen, Lance Eric
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, Brigham Young University, 1987
PhD, University of Houston, 1993

Tanner, John S.

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1974
PhD, University of California, Berkeley, 1980

Thursby, Jacqueline Schuster

**COLLEGE:** Humanities
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**RANK:** Professor
**DEGREES:** BA, Idaho State University, 1985
MS, Utah State University, 1991
PhD, Bowling Green State University, 1994

## Associate Professors

Bennion, John Serge

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Utah State University, 1977
MA, Brigham Young University, 1981
PhD, University of Houston, 1989

Boswell, Grant Maurice

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1976
MA, University of Southern California, 1982
PhD, University of Southern California, 1986

Christiansen, Nancy Lee

**COLLEGE:** Humanities
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**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young Un iversity, 1978
MA, Brigham Young University, 1983
PhD, University of California, Los Angeles, 1994

Christianson, Frank Quinn

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994
MA, Brigham Young University, 1996
PhD, Brown University, 2005

Cutchins, Dennis Ray

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1992
PhD, Florida State University, 1997

Cutler, Edward Smith

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1992
PhD, University of California, San Diego, 1997

Duerden, Richard Y.

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1979

MA, Brigham Young University, 1981
PhD, University of Chicago, 1989

Eastley, Aaron
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1997
MA, Brigham Young University, 1998
PhD, University of California, San Diego, 2003

Grierson, Sirpa T.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BEd, University of British Columbia, Canada, 1974
MLIS, Brigham Young University, 1992
PhD, University of Southern Mississippi, 1996

Hickman, Trenton L.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994
MA, Brigham Young University, 1996
PhD, State University of New York, Stony Brook, 2000

Howe, Susan
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1971
MA, University of Utah, 1978
PhD, University of Denver, 1989

Jackson, Brian David
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 2001
MA, Brigham Young University, 2003
PhD, University of Arizona, 2007

Johnson, Kimberly
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1992
MA, Johns Hopkins University, 1995
MFA, University of Iowa, 1997
PhD, University of California, Berkeley, 2003

Jorgensen, Bruce W.
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1966
MA, Cornell University, 1969
PhD, Cornell University, 1978

Lawrence, Alma Keith
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1977
MA, Brigham Young University, 1980
PhD, University of Southern California, 1987

Madden, Patrick
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BS, University of Notre Dame, 1993
MA, Brigham Young University, 1999

PhD, Ohio University, 2004

Mason, Nicholas

**COLLEGE:** Humanities
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**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1993
MA, Brigham Young University, 1995
PhD, State University of New York, Stony Brook, 1999

Matthews, Kristin L.

**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1995
MA, University of Wisconsin, Madison, 1997
PhD, University of Wisconsin, Madison, 2004

McInelly, Brett Chan

**COLLEGE:** Humanities
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**RANK:** Associate Professor
**DEGREES:** BA, Weber State College, 1992
MA, Brigham Young University, 1995
PhD, University of Cincinnati, 2000

Paul, Danette

**COLLEGE:** Humanities
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**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
MA, Brigham Young University, 1989
PhD, Pennsylvania State University, 1996

Perry, Dennis R.

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MA, Brigham Young University, 1981
PhD, University of Wisconsin, Madison, 1986

Petersen, Zina Nibley

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MA, Catholic University of America, 1990
PhD, Catholic University of America, 1997

Rowan, Jamin Creed

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**DEGREES:** BA, Brigham Young University, 1999
MA, University of Southampton (U.K.), 2001
MA, Boston College, 2002
PhD, Boston College, 2008

Rudy, Jill Terry

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**DEGREES:** BA, Brigham Young University, 1987
MA, Brigham Young University, 1990
PhD, Indiana University, Bloomington, 1997

Siegfried, Brandie R.

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**DEGREES:** BA, Brigham Young University, 1988
MA, Brigham Young University, 1990
MA, Brandeis University, 1993

PhD, Brandeis University, 1993

Snyder, Phillip A.
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**DEGREES:** BA, Brigham Young University, 1977
MA, Brigham Young University, 1980
PhD, University of North Carolina, Chapel Hill, 1988

Talbot, John
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MA, Boston University, 1993
PhD, Boston University, 2001

Thorne-Murphy, Leslee
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MA, Brigham Young University, 1993
PhD, Brandeis University, 2001

Tuttle, Stephen B.
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MFA, University of Utah, 2002
PhD, University of Utah, 2006

Wickman, Matthew Farr
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MA, New York University, 1994
PhD, University of California, Los Angeles, 2000

Young, Bruce Wilson
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**DEGREES:** BA, Brigham Young University, 1975
MA, Columbia University, 1976
AM, Harvard University, 1978
PhD, Harvard University, 1983

## Assistant Professors

Burton, Gideon Omer
**COLLEGE:** Humanities
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MA, University of Southern California, 1991
PhD, University of Southern California, 1994
MPW, University of Southern California, 1995

Coombs, Dawan Lynn
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**DEGREES:** BA, Brigham Young University, 2004
Masters of Education, University of Utah, 2008
PhD, University of Georgia, 2012

Esplin, Emron Lee

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**DEGREES:** BA, Brigham Young University, 2000
MA, Brigham Young University, 2003
PhD, Michigan State University, 2008

Franklin, Joseph Clark
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MA, Ohio University, 2009
PhD, Texas Tech, 2012

Hall, William Max
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MA, Brigham Young University, 2003
PhD, University of California Santa Barbara, 2010

Horrocks, Jamie
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**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, Brigham Young University, 2004
PhD, Indiana University, 2010

Leman, Peter Daniel
**COLLEGE:** Humanities
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**RANK:** Assistant Professor
**DEGREES:** BA, University of Idaho, 2003
MA, Univeristy of California, Irvine, 2006
PhD, University of California, Irvine, 2011

Muhlestein, Daniel K.
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**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1984
MA, Brigham Young University, 1987
PhD, Rice University, 1992

Ostenson, Jonathan W.
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MEd, University of Utah, 2005
PhD, University of Utah, 2010

Roberts, Brian R.
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MA, Brigham Young University, 2003
PhD, University of Virginia, 2008

Rowan, Jamin Creed
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MA, University of Southampton (U.K.), 2001
MA, Boston College, 2002
PhD, Boston College, 2008

Stock, David Michael
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MA, Brigham Young University, 2005
PhD, Univeristy of Wisconsin-Madison, 2012

Westover, Paul A.
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**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, Brigham Young University, 2002
PhD, Indiana University, 2008

Wilcox, Miranda
**COLLEGE:** Humanities
**DEPARTMENT:** English
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1999
MMS, University of Notre Dame, 2002
PhD, University of Notre Dame, 2006

College of Humanities Home

French and Italian Department Home

French

Majors
- BA in French
- BA in French Studies (secondary major program)
- BA in French Teaching

Minors
- French
- French Teaching

Language Certificate
- French

Course Information
- French (Fren) Courses

Italian

Majors
- BA in Italian
- BA in Italian Studies (secondary major program)

Minors
- Italian

Language Certificate
- Italian

Course Information
- Italian (Ital) Courses

Faculty

# French and Italian

Corry Cropper, Chair
3134 JFSB, (801) 422-2209

College of Humanities Advisement Center
1175 JFSB, (801) 422-4789

## Admission to Degree Program

All degree programs in the Department of French and Italian are open enrollment.

## The Discipline

The study of French or Italian language and literature sharpens analytical and communicative skills useful in a myriad of professional contexts. Students develop proficiency in listening, reading, writing, and speaking, and they learn to use literature as a means to deepen their understanding of culturally specific as well as universal issues and values.

## Career Opportunities

Italian and French are valuable research and communication tools for students in music, art, history, European studies, international relations, library science, and comparative literature. Many have chosen a major or minor in Italian or French in addition to a second major or minor in an area such as accounting or business management, or as preparation for professional programs in public administration, business administration, organizational behavior, dentistry, law, or medicine.

Many of our students have opted for a career in government service, working with an embassy, the State Department, the CIA, and other government agencies.

Other students have gone into travel and tourism, working with tour agencies, airlines, major hotel chains, or resort communities.

The computer industry also provides employment opportunity for our graduates. Many computer companies have expanded into foreign markets and hire people who can translate computer and software instruction and sales publications in a foreign language.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in French** (Program Outcomes)
**BA in French Studies (secondary major program)** (Program Outcomes)
**BA in French Teaching** (Program Outcomes)
**BA in Italian** (Program Outcomes)
**BA in Italian Studies (secondary major program)** (Program Outcomes)

**Minor in French**
**Minor in French Teaching**
**Minor in Italian**

**Certificate in French**
**Certificate in Italian**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MA in French Studies

For more information see the BYU 2014–2015 Graduate Catalog.

## General Information

The Department of French and Italian strongly recommends that StDev 317, a 1-credit-hour course, be taken at the end of the

sophomore year or the beginning of the junior year. Because liberal arts degrees provide preparation in a variety of useful fields rather than a single career track, this course is recommended to help liberal arts students focus on specific educational and occupational goals and to identify the career options or educational opportunities available to them. The course will introduce them to the resources needed for accessing information about graduate schools, internships, careers, and career development. Students will learn basic employment strategies, including the steps necessary for obtaining employment related to their own specialty.

**Internships Abroad.** The Department of French and Italian in association with the French Embassy's Cultural Services and the Dante Alighieri School in Siena, Italy offers spring/summer internships in France and Italy in a variety of positions: businesses, corporations, industry, hospitals, research laboratories, national and local governments, cultural organizations, nonprofit agencies and nongovernmental organizations, hotels and tourism, etc. Job placements are made according to the student's language proficiency, previous work experience, field of study, and personal interest. Students may enroll for Fren and Ital 399R, 211R, 311R, or 411R, or other courses such as Fren 490R. The internship proves invaluable in strengthening language skills.

**Oral Proficiency Interview.** All French-teaching majors and minors and all Italian majors are required to enroll in Fren 491 or Ital 491 and have an oral proficiency interview (OPI). French studies majors and French majors are required to take the OPI as part of the requirements for Fren 495. French teaching majors and minors are required to take the OPI before taking Fren 378. The minimum rating of *Advanced* is required of all *teaching* majors and minors. Appointments for the interviews are made through the department secretary. French students are strongly encouraged to complete Fren 411R prior to taking the OPI.

When it is necessary to strengthen oral proficiency, students are encouraged to take conversation courses. They should also take advantage of Foreign Language Housing, Study Abroad programs, summer internships abroad, and support materials in the Humanities Learning Resource Center, such as CDs, videos, and satellite broadcasts. The department strongly encourages all majors to complete an internship prior to graduation.

**Instruction.** All courses are taught in the target language unless indicated otherwise in this catalog.

College of Humanities Home

French and Italian Department Home

French

Majors

- BA in French
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- BA in French Teaching

Minors

- French
- French Teaching

Language Certificate

- French

Course Information

- French (Fren) Courses

Italian

Majors

- BA in Italian
- BA in Italian Studies (secondary major program)

Minors

- Italian

Language Certificate

- Italian

Course Information

- Italian (Ital) Courses

Faculty

# French

## General Information

**Language Credit by Examination.** A student enrolled full-time at BYU whose native language is not French may receive credit by special examination for French for which he or she has acquired the equivalent skill or knowledge. However, this is possible only if no university credit has been given through AP, CLEP, or transfer of equivalent credit from another university or other institutions.

The French Language for Credit Examination is administered by the French and Italian Department twice a year: in November during fall semester and in March during winter semester. Based on enrollment, the credit examination may be administered during spring and/or summer terms. Details about this examination will be given by the student's Fren 201, 202, or 321 teacher. Please note that students can test out of classes as follows, depending on a student's status:

*Students who start with French 201 can test out of:*

Fren 101 and 102 (8 hours).

*Returned missionaries from Quebec or Creole-speaking missions, etc., who start with Fren 201 can test out of:*

Fren 101, 102, and 211R (10 hours)

For returned missionaries to be eligible to take the exam, they need to be enrolled in Fren 201.

*Returned missionaries from France, Belgium, Switzerland, etc., can test out of:*

Fren 101, 102, 201, 211R, and 311R (16 hours)

For returned missionaries to be eligible to take the exam, they need to be enrolled in Fren 321.

**Note 1:** The above five classes are *not* part of a French major or minor. The first French minor class requirement is Fren 321.

**Note 2:** Fren 340 fulfills the GE Foreign Language option for returned missionaries from France, Belgium, Switzerland and other French-speaking countries. Fren 321 does not.

**Accelerated Program.** The department offers an accelerated course in beginning French (101 and 102) every fall and winter semester. These courses are offered on the term.

**Foreign Language Student Residence.** An excellent alternative to or preparation for foreign residency is offered through the Foreign Language Student Residence, where participants speak, eat, and live with a *French only* rule. This program, with numerous cultural opportunities, is available each semester to women and men who have completed at least one year of college French. Residents may also receive 2 hours of conversation credit per semester by enrolling in a specially designated section of 211R or 311R.

**Study Abroad Programs.** All students of French are encouraged to participate in a Study Abroad program. Study Abroad typically offers during spring and/or summer terms a language and civilization program in Paris, France. It provides an excellent opportunity for developing language proficiency and better understanding of the history and culture of France. Study Abroad also offers a semester-long program in Paris emphasizing general education courses.

College of Humanities Home

French and Italian Department Home

French

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Minors
- French
- French Teaching

Language Certificate
- French

Course Information
- French (Fren) Courses

Italian

Majors
- BA in Italian
- BA in Italian Studies (secondary major program)

Minors
- Italian

Language Certificate
- Italian

Course Information
- Italian (Ital) Courses

Faculty

# BA in French (45.5–66.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. The French and Italian Department requires a minimum of 15 major hours to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
2. Complete a minor (approximately 16–21 hours) or 15 hours of course work in an area approved by the major advisor. Courses must be approved before the senior year.
3. Complete the following prerequisites (or equivalent):

FREN 101 : First-Year French, Part 1. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Development of the four language skills: understanding, speaking, reading, and writing.

**Course Outcomes**
- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to satisfy immediate needs. (You will learn to communicate in basic social situations, meet routine travel needs, obtain food and lodging, carry out simple transactions, and talk about a variety of topics of common interest primarily in the present, with limited use of other time frames.)
- Write short messages and well-articulated sentences in French on familiar topics.

FREN 102 : First-Year French, Part 2. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Fren 101 or equivalent.
DESCRIPTION: Continuation of French 101.

**Course Outcomes**
- Write well-articulated sentences and loosely connected texts related to personal experiences and common events.
- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to handle a variety of simple communicative tasks in basic social situations. You will be able to meet routine travel needs, carry out simple transactions, and talk about a variety of topics of common interest in present, past, and future times.

FREN 201 : Intermediate French, Part 1. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Fren 102 or equivalent.
DESCRIPTION: Reading, writing, conversation, vocabulary building, and review of grammar.

**Course Outcomes**
- Improve your ability to use French in real-life situations and for real-life purposes.
- Create elaborated utterances and group them into paragraphs and narratives.
- Broaden vocabulary for both reception (listening and reading comprehension) and production (speaking and writing).
- Review and increase understanding of basic language structures.
- Discuss in French selected current events and various francophone regions of the world and some of their cultural practices.

FREN 202 : Intermediate French, Part 2. (3:3:1)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Fren 201 or equivalent.
DESCRIPTION: Final course for GE Languages of Learning requirement (except for full-time French speaking returned missionaries); extensive reading in French literature and culture.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
- Read beyond basic plot and learn to apply tools of literary analysis.

Recognize and analyze key genres in French literature.
- Identify and define key characteristics of the important French literary movements.
- Place literature in a meaningful cultural and historical context.
- Improve your reading and writing skills in French.
- Broaden and deepen your perception and appreciation of French culture.

4. Complete the following core courses:

FREN 321 : Advanced French Part 1. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Fren 202 or equivalent.
DESCRIPTION: Grammar and composition, listening and speaking skills.

**Course Outcomes**

- Students will develop their ability to narrate and describe in the present and past time frames, use connected discourse, and learn to manage complications in the language through communicative strategies, without patterns of breakdown.
- Students will analyze and employ proper grammatical, lexical, phonological and stylistic features of Advanced-level French in descriptive and narrative texts.

FREN 322 : Advanced French Part 2. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: FREN 321
DESCRIPTION: Grammar and composition, listening and speaking skills.

**Course Outcomes**

- Students will solidify their ability to narrate and describe in present, past and future time frames, use connected discourse, and manage complications in the language through communicative strategies, without patterns of breakdown.
- Students will develop partial control of their ability to support their opinions and hypothesize about abstract topics, in the context of extended discourse.
- Students will analyze and employ proper grammatical, lexical, phonological and stylistic features of Advanced-level French language in summaries, detailed descriptions and narrations, analyses and argumentative essays

FREN 340 : Introduction to Literary Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Fren 321 or concurrent enrollment.
DESCRIPTION: How to read French prose, drama, and poetry and apply methods of literary criticism.
NOTE: Capstone course for GE Languages of Learning requirement for returned missionaries

**Course Outcomes**

- Contextualize and analyze French literature of various periods and genres.
- Write analytically about the literature in well-formatted essays.
- Identify basic terms of literary analysis. (The specific list is available on the syllabus.)

5. Complete two courses from the following:

FREN 361 : French Civilization from the Beginning to 1715. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions to the death of Louis XIV.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 362 : French Civilization from 1715 to the Present. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).

- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 363 : Contemporary French Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Current cultural, political, and social trends and issues in France as well as the francophone world.
NOTE: Fulfills GE Global and Cultural Awareness requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Locate and evaluate resources relevant to course assignments.
- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

6. Complete five courses from the following:

FREN 431 : Introduction to French Linguistics. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322, 340, 361, 362.
DESCRIPTION: Subfields (phonetics, morphology, syntax, lexicology, semantics) and approaches (socio-linguistics, semiology, and pragmatics).

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Conduct independent research (finding examples of the linguistic phenomena examined in the course, applying analytical diagrams, comparing linguistic phenomena in various languages, using various instruments of linguistic analysis) and identify the most significant databases of francophone linguistic research.
- Identify the fundamental elements of French linguistics (basic terms and concepts of phonetics, phonology, morphology, syntax, lexicology, and semantics)
- Evaluate and appreciate francophone diversity.

FREN 432 : History of French. (3:3:0)

WHEN TAUGHT: Fall
RECOMMENDED: Fren 431 or concurrent enrollment.
DESCRIPTION: Introduction to the diachronic study of French beginning with its roots in Latin.

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Demonstrate improved language ability

FREN 433 : Studies in French Linguistics. (3:3:0)

WHEN TAUGHT: Winter
RECOMMENDED: Fren 431 or concurrent enrollment.
DESCRIPTION: Advanced study of linguistic features such as phonetics and phonology, semantization, lexical development, morphology, and contrastive syntax.

**Course Outcomes**

- Demonstrate mastery the elements of advanced French linguistics.
- Write at least one substantive research paper that effectively incorporates secondary sources.
- Codify and draw conclusions from the data analyzed.

FREN 452R : Studies in Period, Movement, and Theme. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Fren 340.
DESCRIPTION: Various periods and movements (e.g., medieval, classicism, romanticism) or themes (e.g., Arthur, Faust). Topics vary.

**Course Outcomes**

- Evaluate and contextualize a particular period, movement, or theme in French or Francophone studies and justify the limitations of its definitions.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 453R : Studies in Genre. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Fren 340.

DESCRIPTION: In-depth study of various genres (e.g., epic, novel, lyric, film) and problems of genre in French.

**Course Outcomes**

- Evaluate basic concepts of a particular genre and explain the limitations of generic categorizations.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 454R : Studies in Author. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Fren 340.

DESCRIPTION: In-depth study of major French or Francophone authors (e.g., Rabelais, Moliere, Diderot, Balzac).

**Course Outcomes**

- Evaluate and contextualize the unique contributions of a particular author.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 455R : Studies in Literary Theory. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Fren 340.

DESCRIPTION: In-depth study of primary texts by contemporary literary theorists (e.g., Barthes, Genette, structuralism, etc.). Language of instruction is English.

**Course Outcomes**

- Apply theoretical models to various cultural artifacts and practices
- Investigate a variety of theoretical models for the analysis of literature and cultural phenomena.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 456R : Francophone Studies. (3:3:0)

PREREQUISITE: Fren 340.

DESCRIPTION: Readings from major French-speaking writers from countries outside France, such as Canada, Africa, and the Caribbean.

**Course Outcomes**

- Analyze and compare the cultures and practices that create African Francophone identities.
- Analyze and interpret literary texts of the French-speaking world.

FREN 457R : Studies in French Culture. (3:3:0)

PREREQUISITE: Fren 361, 362, or 363.

DESCRIPTION: In-depth study of French historical, political, and social issues or artistic trends.

**Course Outcomes**

- Evaluate and contextualize a significant component of French or Francophone culture.
- Write at least one substantive research paper that effectively incorporates secondary sources.

**Note:** French majors can select Fren 445, 490R, or Bus M 596R as one of the five required 400-level courses to count toward the major.

7. Complete the following:

FREN 495 : Senior Portfolio Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

RECOMMENDED: Fren 321, 322, 340.

DESCRIPTION: Capstone experience for French studies majors, including revision and assessment of writing.

**Course Outcomes**

- Identify connections between French degree and future plans.
- Pass OPI at Advanced Low or higher.
- Compose a professional resume with feedback from the advisement center.
- Identify and revise your best papers from French courses.

**Recommended**

Students who need to strengthen oral skills should enroll in Fren 211R, 311R, and 411R.

*Hours include courses that may fulfill university core requirements.

## Show all French (Fren) Courses

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French and Italian Department Home

French

Majors
- BA in French
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- BA in French Teaching

Minors
- French
- French Teaching

Language Certificate
- French

Course Information
- French (Fren) Courses

Italian

Majors
- BA in Italian
- BA in Italian Studies (secondary major program)

Minors
- Italian

Language Certificate
- Italian

Course Information
- Italian (Ital) Courses

Faculty

# BA in French Studies (secondary major program) (30.5–45.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Students must complete the requirements for a primary major in another field.
2. The French and Italian Department requires a minimum of 15 major hours to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
3. Complete the following prerequisites (or equivalent):

FREN 101 : First-Year French, Part 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Development of the four language skills: understanding, speaking, reading, and writing.

**Course Outcomes**
- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to satisfy immediate needs. (You will learn to communicate in basic social situations, meet routine travel needs, obtain food and lodging, carry out simple transactions, and talk about a variety of topics of common interest primarily in the present, with limited use of other time frames.)
- Write short messages and well-articulated sentences in French on familiar topics.

FREN 102 : First-Year French, Part 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Fren 101 or equivalent.
DESCRIPTION: Continuation of French 101.

**Course Outcomes**
- Write well-articulated sentences and loosely connected texts related to personal experiences and common events.
- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to handle a variety of simple communicative tasks in basic social situations. You will be able to meet routine travel needs, carry out simple transactions, and talk about a variety of topics of common interest in present, past, and future times.

FREN 201 : Intermediate French, Part 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Fren 102 or equivalent.
DESCRIPTION: Reading, writing, conversation, vocabulary building, and review of grammar.

**Course Outcomes**
- Improve your ability to use French in real-life situations and for real-life purposes.
- Create elaborated utterances and group them into paragraphs and narratives.
- Broaden vocabulary for both reception (listening and reading comprehension) and production (speaking and writing).
- Review and increase understanding of basic language structures.
- Discuss in French selected current events and various francophone regions of the world and some of their cultural practices.

FREN 202 : Intermediate French, Part 2. (3:3:1)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Fren 201 or equivalent.
DESCRIPTION: Final course for GE Languages of Learning requirement (except for full-time French speaking returned missionaries); extensive reading in French literature and culture.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
- Read beyond basic plot and learn to apply tools of literary analysis.
- Recognize and analyze key genres in French literature.

Identify and define key characteristics of the important French literary movements.
- Place literature in a meaningful cultural and historical context.
- Improve your reading and writing skills in French.
- Broaden and deepen your perception and appreciation of French culture.

4. Complete the following core courses:

FREN 321 : Advanced French Part 1. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Fren 202 or equivalent.
DESCRIPTION: Grammar and composition, listening and speaking skills.

**Course Outcomes**

- Students will develop their ability to narrate and describe in the present and past time frames, use connected discourse, and learn to manage complications in the language through communicative strategies, without patterns of breakdown.
- Students will analyze and employ proper grammatical, lexical, phonological and stylistic features of Advanced-level French in descriptive and narrative texts.

FREN 322 : Advanced French Part 2. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: FREN 321
DESCRIPTION: Grammar and composition, listening and speaking skills.

**Course Outcomes**

- Students will solidify their ability to narrate and describe in present, past and future time frames, use connected discourse, and manage complications in the language through communicative strategies, without patterns of breakdown.
- Students will develop partial control of their ability to support their opinions and hypothesize about abstract topics, in the context of extended discourse.
- Students will analyze and employ proper grammatical, lexical, phonological and stylistic features of Advanced-level French language in summaries, detailed descriptions and narrations, analyses and argumentative essays

FREN 340 : Introduction to Literary Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Fren 321 or concurrent enrollment.
DESCRIPTION: How to read French prose, drama, and poetry and apply methods of literary criticism.
NOTE: Capstone course for GE Languages of Learning requirement for returned missionaries

**Course Outcomes**

- Contextualize and analyze French literature of various periods and genres.
- Write analytically about the literature in well-formatted essays.
- Identify basic terms of literary analysis. (The specific list is available on the syllabus.)

5. Complete two courses from the following:

FREN 361 : French Civilization from the Beginning to 1715. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions to the death of Louis XIV.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 362 : French Civilization from 1715 to the Present. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.

- Articulate and defend clear, orderly thought on cultural topics.

FREN 363 : Contemporary French Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Current cultural, political, and social trends and issues in France as well as the francophone world.
NOTE: Fulfills GE Global and Cultural Awareness requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Locate and evaluate resources relevant to course assignments.
- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

6. Complete five courses from the following (courses taken to complete item 5 above may not be double counted here):

BUS M 596R : Business French. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: For experienced speakers of the language being taught. Emphasizes business concepts; practice and case study including conversation, reading,and presenting, while enriching business vocabulary.

**Course Outcomes**

No outcomes are available at this time.

FREN 317 : (Fren-Ital) French and Italian Cinema. (3:3:2)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Background for understanding and appreciating the best of motion picture art in France and Italy. Includes components of critical theory essential for analyzing film. Language of instruction is English; no knowledge of French or Italian required.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Identify the major filmmakers and cinematic movements in the history of French and Italian cinema, with particular attention to the socio-historical contexts that shaped their creation.
- Explore the essential aspects of cinema as an artistic medium and master the technical and critical terminology necessary to intelligently discuss the creative process.

FREN 361 : French Civilization from the Beginning to 1715. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions to the death of Louis XIV.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 362 : French Civilization from 1715 to the Present. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.

- Articulate and defend clear, orderly thought on cultural topics.

FREN 363 : Contemporary French Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Fren 321.

RECOMMENDED: Fren 322.

DESCRIPTION: Current cultural, political, and social trends and issues in France as well as the francophone world.

NOTE: Fulfills GE Global and Cultural Awareness requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Locate and evaluate resources relevant to course assignments.
- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 377 : Introduction to French Language Teaching. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Fren 321; FLang 276 (if a French teaching major)

DESCRIPTION: Language acquisition theories and instructional practices specific to French language classrooms. Includes teaching phonological features and pronunciation. Lectures, demonstrations, and microteaching.

NOTE: Taught in French and English.

**Course Outcomes**

- Design and deliver effective French instruction appropriate to learners' needs.
- Discuss and apply basic principles of language acquisition.
- Discuss and apply basic principles of formal and informal assessment.
- Reflect on and justify instructional choices and actions.
- Describe the phonological features of French and diagnose your own pronunciation problems.

FREN 431 : Introduction to French Linguistics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Fren 321.

RECOMMENDED: Fren 322, 340, 361, 362.

DESCRIPTION: Subfields (phonetics, morphology, syntax, lexicology, semantics) and approaches (socio-linguistics, semiology, and pragmatics).

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Conduct independent research (finding examples of the linguistic phenomena examined in the course, applying analytical diagrams, comparing linguistic phenomena in various languages, using various instruments of linguistic analysis) and identify the most significant databases of francophone linguistic research.
- Identify the fundamental elements of French linguistics (basic terms and concepts of phonetics, phonology, morphology, syntax, lexicology, and semantics)
- Evaluate and appreciate francophone diversity.

FREN 432 : History of French. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Fren 431 or concurrent enrollment.

DESCRIPTION: Introduction to the diachronic study of French beginning with its roots in Latin.

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Demonstrate improved language ability

FREN 433 : Studies in French Linguistics. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Fren 431 or concurrent enrollment.

DESCRIPTION: Advanced study of linguistic features such as phonetics and phonology, semantization, lexical development, morphology, and contrastive syntax.

**Course Outcomes**

- Demonstrate mastery the elements of advanced French linguistics.
- Write at least one substantive research paper that effectively incorporates secondary sources.
- Codify and draw conclusions from the data analyzed.

FREN 445 : Advanced Francophone Culture. (3:3:0)

OFFERED: Study Abroad only.

WHEN TAUGHT: Spring; Summer

PREREQUISITE: Fren 321.
NOTE: Research paper required.

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Demonstrate improved language ability

FREN 452R : Studies in Period, Movement, and Theme. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Fren 340.
DESCRIPTION: Various periods and movements (e.g., medieval, classicism, romanticism) or themes (e.g., Arthur, Faust). Topics vary.

**Course Outcomes**

- Evaluate and contextualize a particular period, movement, or theme in French or Francophone studies and justify the limitations of its definitions.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 453R : Studies in Genre. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Fren 340.
DESCRIPTION: In-depth study of various genres (e.g., epic, novel, lyric, film) and problems of genre in French.

**Course Outcomes**

- Evaluate basic concepts of a particular genre and explain the limitations of generic categorizations.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 454R : Studies in Author. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Fren 340.
DESCRIPTION: In-depth study of major French or Francophone authors (e.g., Rabelais, Moliere, Diderot, Balzac).

**Course Outcomes**

- Evaluate and contextualize the unique contributions of a particular author.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 455R : Studies in Literary Theory. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Fren 340.
DESCRIPTION: In-depth study of primary texts by contemporary literary theorists (e.g., Barthes, Genette, structuralism, etc.). Language of instruction is English.

**Course Outcomes**

- Apply theoretical models to various cultural artifacts and practices
- Investigate a variety of theoretical models for the analysis of literature and cultural phenomena.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 456R : Francophone Studies. (3:3:0)

PREREQUISITE: Fren 340.
DESCRIPTION: Readings from major French-speaking writers from countries outside France, such as Canada, Africa, and the Caribbean.

**Course Outcomes**

- Analyze and compare the cultures and practices that create African Francophone identities.
- Analyze and interpret literary texts of the French-speaking world.

FREN 457R : Studies in French Culture. (3:3:0)

PREREQUISITE: Fren 361, 362, or 363.
DESCRIPTION: In-depth study of French historical, political, and social issues or artistic trends.

**Course Outcomes**

- Evaluate and contextualize a significant component of French or Francophone culture.
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 490R : Individual Study in French. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.

DESCRIPTION: Faculty-supervised instruction/research to fit the individual needs of the advanced student. Terms must be established by contract and approved by chair.

**Course Outcomes**

- Formulate and express in writing critical arguments on a specialized topic reflecting an understanding of primary and secondary sources.

**Note 1:** Students may substitute up to two approved courses from their primary major that are related to this French major. Each course must be approved by the French undergraduate coordinator and will require a "French secondary major course substitution approval form" signed by the professor in their primary major.

**Note 2:** A minimum of three of the five elective courses must be taught in French.

7. Complete the following:

FREN 495 : Senior Portfolio Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.
RECOMMENDED: Fren 321, 322, 340.
DESCRIPTION: Capstone experience for French studies majors, including revision and assessment of writing.

**Course Outcomes**

- Identify connections between French degree and future plans.
- Pass OPI at Advanced Low or higher.
- Compose a professional resume with feedback from the advisement center.
- Identify and revise your best papers from French courses.

*Hours include courses that may fulfill university core requirements.

## Show all French (Fren) Courses

College of Humanities Home

French and Italian Department Home

French

Majors
- BA in French
- BA in French Studies (secondary major program)
- BA in French Teaching

Minors
- French
- French Teaching

Language Certificate
- French

Course Information
- French (Fren) Courses

Italian

Majors
- BA in Italian
- BA in Italian Studies (secondary major program)

Minors
- Italian

Language Certificate
- Italian

Course Information
- Italian (Ital) Courses

Faculty

# BA in French Teaching (53–68 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This major is designed to prepare students to teach in public secondary schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

1. Obtain application instructions by meeting with the Department of French and Italian French secondary education supervisor. Applications are accepted during the first term of each semester while student is enrolled in FLANG 276.
2. The French and Italian Department requires a minimum of 18 major hours to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
3. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
4. A teaching minor in another subject is strongly recommended. Teaching opportunities in public schools may be significantly reduced without a second teaching subject that a teaching minor provides.
5. Complete the following prerequisites (or equivalent):

FREN 101 : First-Year French, Part 1. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Development of the four language skills: understanding, speaking, reading, and writing.

**Course Outcomes**
- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to satisfy immediate needs. (You will learn to communicate in basic social situations, meet routine travel needs, obtain food and lodging, carry out simple transactions, and talk about a variety of topics of common interest primarily in the present, with limited use of other time frames.)
- Write short messages and well-articulated sentences in French on familiar topics.

FREN 102 : First-Year French, Part 2. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Fren 101 or equivalent.
DESCRIPTION: Continuation of French 101.

**Course Outcomes**
- Write well-articulated sentences and loosely connected texts related to personal experiences and common events.
- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to handle a variety of simple communicative tasks in basic social situations. You will be able to meet routine travel needs, carry out simple transactions, and talk about a variety of topics of common interest in present, past, and future times.

FREN 201 : Intermediate French, Part 1. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Fren 102 or equivalent.
DESCRIPTION: Reading, writing, conversation, vocabulary building, and review of grammar.

**Course Outcomes**
- Improve your ability to use French in real-life situations and for real-life purposes.
- Create elaborated utterances and group them into paragraphs and narratives.
- Broaden vocabulary for both reception (listening and reading comprehension) and production (speaking and writing).
- Review and increase understanding of basic language structures.
- Discuss in French selected current events and various francophone regions of the world and some of their cultural practices.

FREN 202 : Intermediate French, Part 2. (3:3:1)
OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Fren 201 or equivalent.
DESCRIPTION: Final course for GE Languages of Learning requirement (except for full-time French speaking returned missionaries); extensive reading in French literature and culture.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Read beyond basic plot and learn to apply tools of literary analysis.
- Recognize and analyze key genres in French literature.
- Identify and define key characteristics of the important French literary movements.
- Place literature in a meaningful cultural and historical context.
- Improve your reading and writing skills in French.
- Broaden and deepen your perception and appreciation of French culture.

6. Complete the following:

FREN 321 : Advanced French Part 1. (3:3:1)
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Fren 202 or equivalent.
DESCRIPTION: Grammar and composition, listening and speaking skills.

**Course Outcomes**

- Students will develop their ability to narrate and describe in the present and past time frames, use connected discourse, and learn to manage complications in the language through communicative strategies, without patterns of breakdown.
- Students will analyze and employ proper grammatical, lexical, phonological and stylistic features of Advanced-level French in descriptive and narrative texts.

FREN 322 : Advanced French Part 2. (3:3:1)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: FREN 321
DESCRIPTION: Grammar and composition, listening and speaking skills.

**Course Outcomes**

- Students will solidify their ability to narrate and describe in present, past and future time frames, use connected discourse, and manage complications in the language through communicative strategies, without patterns of breakdown.
- Students will develop partial control of their ability to support their opinions and hypothesize about abstract topics, in the context of extended discourse.
- Students will analyze and employ proper grammatical, lexical, phonological and stylistic features of Advanced-level French language in summaries, detailed descriptions and narrations, analyses and argumentative essays

FREN 340 : Introduction to Literary Analysis. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Fren 321 or concurrent enrollment.
DESCRIPTION: How to read French prose, drama, and poetry and apply methods of literary criticism.
NOTE: Capstone course for GE Languages of Learning requirement for returned missionaries

**Course Outcomes**

- Contextualize and analyze French literature of various periods and genres.
- Write analytically about the literature in well-formatted essays.
- Identify basic terms of literary analysis. (The specific list is available on the syllabus.)

FREN 377 : Introduction to French Language Teaching. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: Fren 321; FLang 276 (if a French teaching major)
DESCRIPTION: Language acquisition theories and instructional practices specific to French language classrooms. Includes teaching phonological features and pronunciation. Lectures, demonstrations, and microteaching.
NOTE: Taught in French and English.

**Course Outcomes**

- Design and deliver effective French instruction appropriate to learners' needs.
- Discuss and apply basic principles of language acquisition.
- Discuss and apply basic principles of formal and informal assessment.
- Reflect on and justify instructional choices and actions.
- Describe the phonological features of French and diagnose your own pronunciation problems.

FREN 378 : French Language Teaching Procedures and Practicum. (2:1:1)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Fren 377; 491 with minimum rating of advanced--low on the French oral proficiency exam; fingerprinting and FBI clearance for students planning to do an internship or student teach in the public schools.
DESCRIPTION: Designing and practicing instruction for French classes in secondary schools. Developing teaching, critical thinking, and assessment skills.

NOTE: Taught in French and English.

**Course Outcomes**

- Begin to apply principles of second language teaching and acquisition in a public-secondary school settings.
- Design and teach basic culture, vocabulary, comprehension, and oral communication lessons in a secondary school.
- Begin to apply formal and informal assessment principles. Document and reflect on teaching and learning.

FREN 431 : Introduction to French Linguistics. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322, 340, 361, 362.
DESCRIPTION: Subfields (phonetics, morphology, syntax, lexicology, semantics) and approaches (socio-linguistics, semiology, and pragmatics).

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Conduct independent research (finding examples of the linguistic phenomena examined in the course, applying analytical diagrams, comparing linguistic phenomena in various languages, using various instruments of linguistic analysis) and identify the most significant databases of francophone linguistic research.
- Identify the fundamental elements of French linguistics (basic terms and concepts of phonetics, phonology, morphology, syntax, lexicology, and semantics)
- Evaluate and appreciate francophone diversity.

**Note:** Fren 378 must be taken the semester immediately before student teaching.

7. Complete 2 courses from the following:

FREN 361 : French Civilization from the Beginning to 1715. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions to the death of Louis XIV.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 362 : French Civilization from 1715 to the Present. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 363 : Contemporary French Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Current cultural, political, and social trends and issues in France as well as the francophone world.
NOTE: Fulfills GE Global and Cultural Awareness requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Locate and evaluate resources relevant to course assignments.
- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).

- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

8. Complete 2 courses from the following:

FREN 432 : History of French. (3:3:0)

WHEN TAUGHT: Fall
RECOMMENDED: Fren 431 or concurrent enrollment.
DESCRIPTION: Introduction to the diachronic study of French beginning with its roots in Latin.

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Demonstrate improved language ability

FREN 433 : Studies in French Linguistics. (3:3:0)

WHEN TAUGHT: Winter
RECOMMENDED: Fren 431 or concurrent enrollment.
DESCRIPTION: Advanced study of linguistic features such as phonetics and phonology, semantization, lexical development, morphology, and contrastive syntax.

**Course Outcomes**

- Demonstrate mastery the elements of advanced French linguistics.
- Write at least one substantive research paper that effectively incorporates secondary sources.
- Codify and draw conclusions from the data analyzed.

FREN 445 : Advanced Francophone Culture. (3:3:0)

OFFERED: Study Abroad only.
WHEN TAUGHT: Spring; Summer
PREREQUISITE: Fren 321.
NOTE: Research paper required.

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Demonstrate improved language ability

FREN 452R : Studies in Period, Movement, and Theme. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Fren 340.
DESCRIPTION: Various periods and movements (e.g., medieval, classicism, romanticism) or themes (e.g., Arthur, Faust). Topics vary.

**Course Outcomes**

- Evaluate and contextualize a particular period, movement, or theme in French or Francophone studies and justify the limitations of its definitions.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 453R : Studies in Genre. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Fren 340.
DESCRIPTION: In-depth study of various genres (e.g., epic, novel, lyric, film) and problems of genre in French.

**Course Outcomes**

- Evaluate basic concepts of a particular genre and explain the limitations of generic categorizations.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 454R : Studies in Author. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Fren 340.
DESCRIPTION: In-depth study of major French or Francophone authors (e.g., Rabelais, Moliere, Diderot, Balzac).

**Course Outcomes**

- Evaluate and contextualize the unique contributions of a particular author.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 455R : Studies in Literary Theory. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Fren 340.
DESCRIPTION: In-depth study of primary texts by contemporary literary theorists (e.g., Barthes, Genette, structuralism, etc.). Language of instruction is English.

**Course Outcomes**

- Apply theoretical models to various cultural artifacts and practices
- Investigate a variety of theoretical models for the analysis of literature and cultural phenomena.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 456R : Francophone Studies. (3:3:0)

PREREQUISITE: Fren 340.

DESCRIPTION: Readings from major French-speaking writers from countries outside France, such as Canada, Africa, and the Caribbean.

**Course Outcomes**

- Analyze and compare the cultures and practices that create African Francophone identities.
- Analyze and interpret literary texts of the French-speaking world.

FREN 457R : Studies in French Culture. (3:3:0)

PREREQUISITE: Fren 361, 362, or 363.

DESCRIPTION: In-depth study of French historical, political, and social issues or artistic trends.

**Course Outcomes**

- Evaluate and contextualize a significant component of French or Francophone culture.
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 490R : Individual Study in French. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Faculty-supervised instruction/research to fit the individual needs of the advanced student. Terms must be established by contract and approved by chair.

**Course Outcomes**

- Formulate and express in writing critical arguments on a specialized topic reflecting an understanding of primary and secondary sources.

**Note:** Only one registration of Fren 490R will count toward the major requirements.

9. Complete the following before enrolling in FREN 378. The rating will be recorded on the student's transcript. The expected minimum rating of *advanced—low* must be completed before applying to student teach.

FREN 491R : Senior Oral Proficiency Evaluation. (0:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Evaluation required of all French majors during the senior year and all French-teaching majors and minors before enrolling in Fren 378.

**Course Outcomes**

- Establish an oral proficiency rating by taking the Oral Proficiency Interview.

**Note:** Before applying for student teaching or an internship, students must receive an official OPI certificate from ACTFL with a rating of *advanced-low* or higher and take the French PRAXIS test. At least one month before student teaching applications are due, students should schedule an OPI through the Center for Language Studies, 3086 JFSB.

10. Complete the Professional Education Component:
    - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.

- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

FLANG 276 : Exploration of Teaching Foreign Languages. (4:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Field-based exposure to practices, demands, and issues associated with teaching foreign languages in public secondary schools.

**Course Outcomes**

- Determine if pursuing a personal career in foreign language teaching in public secondary schools is the correct decision.
- Have a developing awareness of what foreign-language students should know and be able to do and of good foreign-language teaching practice.
- Discuss the public purposes of education, related social and political issues, and the benefits of speaking a foreign language.
- Articulate personal motivations for becoming a teacher, as well as recognize potential strengths and weaknesses as a teacher.

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.

DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

**Note:** FBI fingerprint and background clearance must be completed before enrollment in FLANG 276.

- Complete 12 hours of one of the following:

SC ED 476R : Secondary Student Teaching - French. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will put into practice the theories they have learned in content and pedagogy courses

including planning lessons, assessing students of all abilities and cultural backgrounds, using a variety of instructional strategies, and collaborating with other teachers and with the community.

SC ED 496R : Academic Internship: Secondary Education. (12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will demonstrate that they can teach, manage, and assess content area knowledge and skills in the 7-12 classroom.
- Foster relationships with school colleagues, parents, and the larger community.

: Academic Internship: Social Sciences.

**Course Outcomes**

: Academic Internship: English.

**Course Outcomes**

: Academic Internship: Mathematics.

**Course Outcomes**

: Academic Internship: Biological Sciences.

**Course Outcomes**

: Academic Internship: Physical Sciences.

**Course Outcomes**

Note: FBI fingerprint and background clearance must be completed prior to enrollment in Sc Ed 496R.

11. It is the student's responsibility to take the French PRAXIS test and ensure BYU receives the test scores.

**Note:** The Department of French and Italian offers the following resources to strengthen oral language skills: conversation courses (Fren 211R, 311R, 411R), the Foreign Language Student Residence, Study Abroad, or an internship in French-speaking countries. Please refer to the specific program or course description for detailed information about these resources.

*Hours include courses that may fulfill university core requirements.

## Show all French (Fren) Courses

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French and Italian Department Home

French

Majors
- BA in French
- BA in French Studies (secondary major program)
- BA in French Teaching

Minors
- French
- French Teaching

Language Certificate
- French

Course Information
- French (Fren) Courses

Italian

Majors
- BA in Italian
- BA in Italian Studies (secondary major program)

Minors
- Italian

Language Certificate
- Italian

Course Information
- Italian (Ital) Courses

Faculty

# Minor in French (18–33 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. The French and Italian Department requires a minimum of nine minor hours to be taken in residence at BYU for this minor program. These hours may also go toward BYU's 30-hour residency requirement for graduation.

2. Complete the following prerequisites (or equivalent):

FREN 101 : First-Year French, Part 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Development of the four language skills: understanding, speaking, reading, and writing.

**Course Outcomes**
- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to satisfy immediate needs. (You will learn to communicate in basic social situations, meet routine travel needs, obtain food and lodging, carry out simple transactions, and talk about a variety of topics of common interest primarily in the present, with limited use of other time frames.)
- Write short messages and well-articulated sentences in French on familiar topics.

FREN 102 : First-Year French, Part 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Fren 101 or equivalent.

DESCRIPTION: Continuation of French 101.

**Course Outcomes**
- Write well-articulated sentences and loosely connected texts related to personal experiences and common events.
- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to handle a variety of simple communicative tasks in basic social situations. You will be able to meet routine travel needs, carry out simple transactions, and talk about a variety of topics of common interest in present, past, and future times.

FREN 201 : Intermediate French, Part 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Fren 102 or equivalent.

DESCRIPTION: Reading, writing, conversation, vocabulary building, and review of grammar.

**Course Outcomes**
- Improve your ability to use French in real-life situations and for real-life purposes.
- Create elaborated utterances and group them into paragraphs and narratives.
- Broaden vocabulary for both reception (listening and reading comprehension) and production (speaking and writing).
- Review and increase understanding of basic language structures.
- Discuss in French selected current events and various francophone regions of the world and some of their cultural practices.

FREN 202 : Intermediate French, Part 2. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Fren 201 or equivalent.

DESCRIPTION: Final course for GE Languages of Learning requirement (except for full-time French speaking returned missionaries); extensive reading in French literature and culture.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
- Read beyond basic plot and learn to apply tools of literary analysis.
- Recognize and analyze key genres in French literature.
- Identify and define key characteristics of the important French literary movements.
- Place literature in a meaningful cultural and historical context.
- Improve your reading and writing skills in French.
- Broaden and deepen your perception and appreciation of French culture.

3. Complete the following core courses:

FREN 321 : Advanced French Part 1. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Fren 202 or equivalent.
DESCRIPTION: Grammar and composition, listening and speaking skills.

**Course Outcomes**

- Students will develop their ability to narrate and describe in the present and past time frames, use connected discourse, and learn to manage complications in the language through communicative strategies, without patterns of breakdown.
- Students will analyze and employ proper grammatical, lexical, phonological and stylistic features of Advanced-level French in descriptive and narrative texts.

FREN 322 : Advanced French Part 2. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: FREN 321
DESCRIPTION: Grammar and composition, listening and speaking skills.

**Course Outcomes**

- Students will solidify their ability to narrate and describe in present, past and future time frames, use connected discourse, and manage complications in the language through communicative strategies, without patterns of breakdown.
- Students will develop partial control of their ability to support their opinions and hypothesize about abstract topics, in the context of extended discourse.
- Students will analyze and employ proper grammatical, lexical, phonological and stylistic features of Advanced-level French language in summaries, detailed descriptions and narrations, analyses and argumentative essays

FREN 340 : Introduction to Literary Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Fren 321 or concurrent enrollment.
DESCRIPTION: How to read French prose, drama, and poetry and apply methods of literary criticism.
NOTE: Capstone course for GE Languages of Learning requirement for returned missionaries

**Course Outcomes**

- Contextualize and analyze French literature of various periods and genres.
- Write analytically about the literature in well-formatted essays.
- Identify basic terms of literary analysis. (The specific list is available on the syllabus.)

4. Complete two courses from the following:

FREN 361 : French Civilization from the Beginning to 1715. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions to the death of Louis XIV.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 362 : French Civilization from 1715 to the Present. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 363 : Contemporary French Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Current cultural, political, and social trends and issues in France as well as the francophone world.
NOTE: Fulfills GE Global and Cultural Awareness requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Locate and evaluate resources relevant to course assignments.
- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

5. Complete one course from the following:

BUS M 596R : Business French. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: For experienced speakers of the language being taught. Emphasizes business concepts; practice and case study including conversation, reading,and presenting, while enriching business vocabulary.

**Course Outcomes**

No outcomes are available at this time.

FREN 431 : Introduction to French Linguistics. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322, 340, 361, 362.
DESCRIPTION: Subfields (phonetics, morphology, syntax, lexicology, semantics) and approaches (socio-linguistics, semiology, and pragmatics).

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Conduct independent research (finding examples of the linguistic phenomena examined in the course, applying analytical diagrams, comparing linguistic phenomena in various languages, using various instruments of linguistic analysis) and identify the most significant databases of francophone linguistic research.
- Identify the fundamental elements of French linguistics (basic terms and concepts of phonetics, phonology, morphology, syntax, lexicology, and semantics)
- Evaluate and appreciate francophone diversity.

FREN 432 : History of French. (3:3:0)

WHEN TAUGHT: Fall
RECOMMENDED: Fren 431 or concurrent enrollment.
DESCRIPTION: Introduction to the diachronic study of French beginning with its roots in Latin.

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Demonstrate improved language ability

FREN 445 : Advanced Francophone Culture. (3:3:0)

OFFERED: Study Abroad only.
WHEN TAUGHT: Spring; Summer
PREREQUISITE: Fren 321.
NOTE: Research paper required.

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Demonstrate improved language ability

FREN 452R : Studies in Period, Movement, and Theme. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Fren 340.
DESCRIPTION: Various periods and movements (e.g., medieval, classicism, romanticism) or themes (e.g., Arthur, Faust). Topics vary.

**Course Outcomes**

- Evaluate and contextualize a particular period, movement, or theme in French or Francophone studies and justify the limitations of its definitions.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 453R : Studies in Genre. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Fren 340.

DESCRIPTION: In-depth study of various genres (e.g., epic, novel, lyric, film) and problems of genre in French.

**Course Outcomes**

- Evaluate basic concepts of a particular genre and explain the limitations of generic categorizations.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 454R : Studies in Author. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Fren 340.

DESCRIPTION: In-depth study of major French or Francophone authors (e.g., Rabelais, Moliere, Diderot, Balzac).

**Course Outcomes**

- Evaluate and contextualize the unique contributions of a particular author.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 455R : Studies in Literary Theory. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Fren 340.

DESCRIPTION: In-depth study of primary texts by contemporary literary theorists (e.g., Barthes, Genette, structuralism, etc.). Language of instruction is English.

**Course Outcomes**

- Apply theoretical models to various cultural artifacts and practices
- Investigate a variety of theoretical models for the analysis of literature and cultural phenomena.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 456R : Francophone Studies. (3:3:0)

PREREQUISITE: Fren 340.

DESCRIPTION: Readings from major French-speaking writers from countries outside France, such as Canada, Africa, and the Caribbean.

**Course Outcomes**

- Analyze and compare the cultures and practices that create African Francophone identities.
- Analyze and interpret literary texts of the French-speaking world.

FREN 457R : Studies in French Culture. (3:3:0)

PREREQUISITE: Fren 361, 362, or 363.

DESCRIPTION: In-depth study of French historical, political, and social issues or artistic trends.

**Course Outcomes**

- Evaluate and contextualize a significant component of French or Francophone culture.
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 490R : Individual Study in French. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Faculty-supervised instruction/research to fit the individual needs of the advanced student. Terms must be established by contract and approved by chair.

**Course Outcomes**

- Formulate and express in writing critical arguments on a specialized topic reflecting an understanding of primary and secondary sources.

*Hours include courses that may fulfill university core requirements.

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- BA in French Teaching

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Italian

Majors
- BA in Italian
- BA in Italian Studies (secondary major program)

Minors
- Italian

Language Certificate
- Italian

Course Information
- Italian (Ital) Courses

Faculty

# Minor in French Teaching (23–38 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public secondary schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. The French and Italian Department requires a minimum of 12 minor hours to be taken in residence at BYU for this minor program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
2. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
3. Complete the following prerequisites (or equivalent):

FREN 101 : First-Year French, Part 1. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Development of the four language skills: understanding, speaking, reading, and writing.

**Course Outcomes**
- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to satisfy immediate needs. (You will learn to communicate in basic social situations, meet routine travel needs, obtain food and lodging, carry out simple transactions, and talk about a variety of topics of common interest primarily in the present, with limited use of other time frames.)
- Write short messages and well-articulated sentences in French on familiar topics.

FREN 102 : First-Year French, Part 2. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Fren 101 or equivalent.
DESCRIPTION: Continuation of French 101.

**Course Outcomes**
- Write well-articulated sentences and loosely connected texts related to personal experiences and common events.
- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to handle a variety of simple communicative tasks in basic social situations. You will be able to meet routine travel needs, carry out simple transactions, and talk about a variety of topics of common interest in present, past, and future times.

FREN 201 : Intermediate French, Part 1. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Fren 102 or equivalent.
DESCRIPTION: Reading, writing, conversation, vocabulary building, and review of grammar.

**Course Outcomes**
- Improve your ability to use French in real-life situations and for real-life purposes.
- Create elaborated utterances and group them into paragraphs and narratives.
- Broaden vocabulary for both reception (listening and reading comprehension) and production (speaking and writing).
- Review and increase understanding of basic language structures.
- Discuss in French selected current events and various francophone regions of the world and some of their cultural practices.

FREN 202 : Intermediate French, Part 2. (3:3:1)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Fren 201 or equivalent.
DESCRIPTION: Final course for GE Languages of Learning requirement (except for full-time French speaking returned missionaries); extensive reading in French literature and culture.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Read beyond basic plot and learn to apply tools of literary analysis.
- Recognize and analyze key genres in French literature.
- Identify and define key characteristics of the important French literary movements.
- Place literature in a meaningful cultural and historical context.
- Improve your reading and writing skills in French.
- Broaden and deepen your perception and appreciation of French culture.

4. Complete the following:

FREN 321 : Advanced French Part 1. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Fren 202 or equivalent.
DESCRIPTION: Grammar and composition, listening and speaking skills.

**Course Outcomes**

- Students will develop their ability to narrate and describe in the present and past time frames, use connected discourse, and learn to manage complications in the language through communicative strategies, without patterns of breakdown.
- Students will analyze and employ proper grammatical, lexical, phonological and stylistic features of Advanced-level French in descriptive and narrative texts.

FREN 340 : Introduction to Literary Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Fren 321 or concurrent enrollment.
DESCRIPTION: How to read French prose, drama, and poetry and apply methods of literary criticism.
NOTE: Capstone course for GE Languages of Learning requirement for returned missionaries

**Course Outcomes**

- Contextualize and analyze French literature of various periods and genres.
- Write analytically about the literature in well-formatted essays.
- Identify basic terms of literary analysis. (The specific list is available on the syllabus.)

FREN 377 : Introduction to French Language Teaching. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Fren 321; FLang 276 (if a French teaching major)
DESCRIPTION: Language acquisition theories and instructional practices specific to French language classrooms. Includes teaching phonological features and pronunciation. Lectures, demonstrations, and microteaching.
NOTE: Taught in French and English.

**Course Outcomes**

- Design and deliver effective French instruction appropriate to learners' needs.
- Discuss and apply basic principles of language acquisition.
- Discuss and apply basic principles of formal and informal assessment.
- Reflect on and justify instructional choices and actions.
- Describe the phonological features of French and diagnose your own pronunciation problems.

FREN 378 : French Language Teaching Procedures and Practicum. (2:1:1)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Fren 377; 491 with minimum rating of advanced--low on the French oral proficiency exam; fingerprinting and FBI clearance for students planning to do an internship or student teach in the public schools.
DESCRIPTION: Designing and practicing instruction for French classes in secondary schools. Developing teaching, critical thinking, and assessment skills.
NOTE: Taught in French and English.

**Course Outcomes**

- Begin to apply principles of second language teaching and acquisition in a public-secondary school settings.
- Design and teach basic culture, vocabulary, comprehension, and oral communication lessons in a secondary school.
- Begin to apply formal and informal assessment principles. Document and reflect on teaching and learning.

**Note:** Fren 377 and 378 must be taken before student teaching.

5. Complete two courses from the following:

FREN 361 : French Civilization from the Beginning to 1715. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions to the death of Louis XIV.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 362 : French Civilization from 1715 to the Present. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 363 : Contemporary French Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Current cultural, political, and social trends and issues in France as well as the francophone world.
NOTE: Fulfills GE Global and Cultural Awareness requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Locate and evaluate resources relevant to course assignments.
- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

6. Complete one course from the following:

FREN 431 : Introduction to French Linguistics. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322, 340, 361, 362.
DESCRIPTION: Subfields (phonetics, morphology, syntax, lexicology, semantics) and approaches (socio-linguistics, semiology, and pragmatics).

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Conduct independent research (finding examples of the linguistic phenomena examined in the course, applying analytical diagrams, comparing linguistic phenomena in various languages, using various instruments of linguistic analysis) and identify the most significant databases of francophone linguistic research.
- Identify the fundamental elements of French linguistics (basic terms and concepts of phonetics, phonology, morphology, syntax, lexicology, and semantics)
- Evaluate and appreciate francophone diversity.

FREN 445 : Advanced Francophone Culture. (3:3:0)

OFFERED: Study Abroad only.
WHEN TAUGHT: Spring; Summer
PREREQUISITE: Fren 321.
NOTE: Research paper required.

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Demonstrate improved language ability

FREN 452R : Studies in Period, Movement, and Theme. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Fren 340.

DESCRIPTION: Various periods and movements (e.g., medieval, classicism, romanticism) or themes (e.g., Arthur, Faust). Topics vary.

**Course Outcomes**

- Evaluate and contextualize a particular period, movement, or theme in French or Francophone studies and justify the limitations of its definitions.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 453R : Studies in Genre. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Fren 340.

DESCRIPTION: In-depth study of various genres (e.g., epic, novel, lyric, film) and problems of genre in French.

**Course Outcomes**

- Evaluate basic concepts of a particular genre and explain the limitations of generic categorizations.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 454R : Studies in Author. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Fren 340.

DESCRIPTION: In-depth study of major French or Francophone authors (e.g., Rabelais, Moliere, Diderot, Balzac).

**Course Outcomes**

- Evaluate and contextualize the unique contributions of a particular author.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 456R : Francophone Studies. (3:3:0)

PREREQUISITE: Fren 340.

DESCRIPTION: Readings from major French-speaking writers from countries outside France, such as Canada, Africa, and the Caribbean.

**Course Outcomes**

- Analyze and compare the cultures and practices that create African Francophone identities.
- Analyze and interpret literary texts of the French-speaking world.

FREN 457R : Studies in French Culture. (3:3:0)

PREREQUISITE: Fren 361, 362, or 363.

DESCRIPTION: In-depth study of French historical, political, and social issues or artistic trends.

**Course Outcomes**

- Evaluate and contextualize a significant component of French or Francophone culture.
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 490R : Individual Study in French. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Faculty-supervised instruction/research to fit the individual needs of the advanced student. Terms must be established by contract and approved by chair.

**Course Outcomes**

- Formulate and express in writing critical arguments on a specialized topic reflecting an understanding of primary and secondary sources.

(3 hours required)

7. Complete the following and have an oral proficiency interview (OPI) before enrolling in Fren 378. The rating will be recorded on the student's transcript. The required minimum OPI rating is *advanced—low* before applying to student teach in the major.

FREN 491R : Senior Oral Proficiency Evaluation. (0:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Evaluation required of all French majors during the senior year and all French-teaching majors and minors before enrolling in Fren 378.

**Course Outcomes**

- Establish an oral proficiency rating by taking the Oral Proficiency Interview.

**Note:** Before applying for student teaching or an internship, students must receive an official OPI certificate from ACTFL with a rating of *advanced-low* or higher. At least one month before student teaching applications are due, students should schedule an OPI through the Center for Language Studies, 3086 JFSB.

8. It is the student's responsibility to take the French PRAXIS test and ensure BYU receives the test scores.

**Note:** The Department of French and Italian offers the following resources to strengthen oral language skills: conversation courses (Fren 211R, 311R, 411R), the Foreign Language Student Residence, Study Abroad, or an internship in French-speaking countries. Please refer to the specific program or course description for detailed information about these resources.

*Hours include courses that may fulfill university core requirements.

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Italian

Majors
- BA in Italian
- BA in Italian Studies (secondary major program)

Minors
- Italian

Language Certificate
- Italian

Course Information
- Italian (Ital) Courses

Faculty

# French Language Certificate (9 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This Language Certificate program is administered by the Center for Language Studies (3086 JFSB), http://languagecertificate.byu.edu.*

Any matriculated (degree-seeking) BYU student who meets the proficiency and course requirements may earn the French Language Certificate. The proficiency requirement is met through the nationally recognized ACTFL Oral and Writing Proficiency Exams. Qualifying students will be awarded a certificate on one of three levels based on the following:

1. Advanced Certificate: An ACTFL "Advanced" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
2. Mastery Certificate: An ACTFL "Advanced High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
3. Professional Certificate: An ACTFL "Superior" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.

## Required Courses:

**Note:** Students who have completed all of the coursework required for a language major or a language minor will also have satisfied the coursework requirement for the language certificate.

1. Language - complete one course from the following:

FREN 321 : Advanced French Part 1. (3:3:1)
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Fren 202 or equivalent.
DESCRIPTION: Grammar and composition, listening and speaking skills.

**Course Outcomes**
- Students will develop their ability to narrate and describe in the present and past time frames, use connected discourse, and learn to manage complications in the language through communicative strategies, without patterns of breakdown.
- Students will analyze and employ proper grammatical, lexical, phonological and stylistic features of Advanced-level French in descriptive and narrative texts.

FREN 322 : Advanced French Part 2. (3:3:1)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: FREN 321
DESCRIPTION: Grammar and composition, listening and speaking skills.

**Course Outcomes**
- Students will solidify their ability to narrate and describe in present, past and future time frames, use connected discourse, and manage complications in the language through communicative strategies, without patterns of breakdown.
- Students will develop partial control of their ability to support their opinions and hypothesize about abstract topics, in the context of extended discourse.
- Students will analyze and employ proper grammatical, lexical, phonological and stylistic features of Advanced-level French language in summaries, detailed descriptions and narrations, analyses and argumentative essays

2. Civilization - complete one course from the following:

FREN 361 : French Civilization from the Beginning to 1715. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions to the death of Louis XIV.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**
- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).

- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 362 : French Civilization from 1715 to the Present. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 363 : Contemporary French Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Current cultural, political, and social trends and issues in France as well as the francophone world.
NOTE: Fulfills GE Global and Cultural Awareness requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Locate and evaluate resources relevant to course assignments.
- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

3. Literature:

FREN 340 : Introduction to Literary Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Fren 321 or concurrent enrollment.
DESCRIPTION: How to read French prose, drama, and poetry and apply methods of literary criticism.
NOTE: Capstone course for GE Languages of Learning requirement for returned missionaries

**Course Outcomes**

- Contextualize and analyze French literature of various periods and genres.
- Write analytically about the literature in well-formatted essays.
- Identify basic terms of literary analysis. (The specific list is available on the syllabus.)

Students who successfully complete a certificate will receive an official document verifying their level of achievement. The certificate will be listed on the university transcript.

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- BA in French Teaching

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- BA in Italian
- BA in Italian Studies (secondary major program)

Minors

- Italian

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- Italian

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- Italian (Ital) Courses

Faculty

# French (Fren)

Show All Course Descriptions
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## Undergraduate Courses

### 100-Level Courses

FREN 101 : First-Year French, Part 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Development of the four language skills: understanding, speaking, reading, and writing.

**Course Outcomes**

- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to satisfy immediate needs. (You will learn to communicate in basic social situations, meet routine travel needs, obtain food and lodging, carry out simple transactions, and talk about a variety of topics of common interest primarily in the present, with limited use of other time frames.)
- Write short messages and well-articulated sentences in French on familiar topics.

FREN 102 : First-Year French, Part 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Fren 101 or equivalent.

DESCRIPTION: Continuation of French 101.

**Course Outcomes**

- Write well-articulated sentences and loosely connected texts related to personal experiences and common events.
- Comprehend French as you hear and read authentic language relating to familiar topics.
- Speak French well enough to handle a variety of simple communicative tasks in basic social situations. You will be able to meet routine travel needs, carry out simple transactions, and talk about a variety of topics of common interest in present, past, and future times.

FREN 121 : Intensive Reading in French. (.5-4:ARR:0)

DESCRIPTION: Reading for research purposes, including reading skills in area of student's specialization or interest. Conducted in English.

NOTE: For students with little or no French. Graduate students will be graded pass/fail. Undergraduates will receive letter grades.

**Course Outcomes**

- Evaluate authentic written French from different eras and in different discourse types.
- Acquire basic (5000-7000 lexemes) and discipline-specific vocabulary for the purposes of reading.

### 200-Level Courses

FREN 201 : Intermediate French, Part 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Fren 102 or equivalent.

DESCRIPTION: Reading, writing, conversation, vocabulary building, and review of grammar.

**Course Outcomes**

- Improve your ability to use French in real-life situations and for real-life purposes.
- Create elaborated utterances and group them into paragraphs and narratives.
- Broaden vocabulary for both reception (listening and reading comprehension) and production (speaking and writing).
- Review and increase understanding of basic language structures.
- Discuss in French selected current events and various francophone regions of the world and some of their cultural practices.

FREN 202 : Intermediate French, Part 2. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Fren 201 or equivalent.

DESCRIPTION: Final course for GE Languages of Learning requirement (except for full-time French speaking returned missionaries); extensive reading in French literature and culture.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Read beyond basic plot and learn to apply tools of literary analysis.
- Recognize and analyze key genres in French literature.
- Identify and define key characteristics of the important French literary movements.
- Place literature in a meaningful cultural and historical context.
- Improve your reading and writing skills in French.
- Broaden and deepen your perception and appreciation of French culture.

FREN 211R : Second-Year Conversation. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Fren 102 or equivalent. May be taken concurrently with Fren 201.

**Course Outcomes**

- Describe and narrate in present, past and future times in the context of paragraph-level speech about autobiographical and concrete topics.
- Speak in contexts related to autobiographical and concrete topics, initiate and maintain conversations by asking and responding to questions and coping with gaps in knowledge.
- Speak using an apporopriate variety of vocabulary related to autobiographical and concrete topics.
- Be understood most of the time without difficulty by native speakers unaccustomed to dealing with non-native speakers.

**300-Level Courses**

FREN 311R : Third-Year Conversation. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Fren 211R or instructor's consent.

NOTE: May be taken concurrently with Fren 340.

**Course Outcomes**

- Describe and narrate in present, past and future times in the context of paragraph-level speech about autobiographical and concrete topics.
- Relate current events, plots of books or movies and state opinion.
- Initiate and maintain fluent conversations, and cope with gaps in knowledge in contexts related to concrete topics.
- Speak using an apporopriate variety of vocabulary related to autobiographical and concrete topics as well as to current and other events.
- Be understood without difficulty by speakers unaccustomed to dealing with non-native speakers.

FREN 317 : (Fren-Ital) French and Italian Cinema. (3:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Background for understanding and appreciating the best of motion picture art in France and Italy. Includes components of critical theory essential for analyzing film. Language of instruction is English; no knowledge of French or Italian required.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Identify the major filmmakers and cinematic movements in the history of French and Italian cinema, with particular attention to the socio-historical contexts that shaped their creation.
- Explore the essential aspects of cinema as an artistic medium and master the technical and critical terminology necessary to intelligently discuss the creative process.

FREN 321 : Advanced French Part 1. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Fren 202 or equivalent.

DESCRIPTION: Grammar and composition, listening and speaking skills.

**Course Outcomes**

- Students will develop their ability to narrate and describe in the present and past time frames, use connected discourse, and learn to manage complications in the language through communicative strategies, without patterns of breakdown.
- Students will analyze and employ proper grammatical, lexical, phonological and stylistic features of Advanced-level French in descriptive and narrative texts.

FREN 322 : Advanced French Part 2. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: FREN 321

DESCRIPTION: Grammar and composition, listening and speaking skills.

**Course Outcomes**

- Students will solidify their ability to narrate and describe in present, past and future time frames, use connected discourse, and manage complications in the language through communicative strategies, without patterns of

breakdown.
- Students will develop partial control of their ability to support their opinions and hypothesize about abstract topics, in the context of extended discourse.
- Students will analyze and employ proper grammatical, lexical, phonological and stylistic features of Advanced-level French language in summaries, detailed descriptions and narrations, analyses and argumentative essays

FREN 325R : Individual French Language Review. (1:0:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: FREN 202
RECOMMENDED: Fren 211.
DESCRIPTION: Guided individual online language practice.
NOTE: May be taken as supplemental bridge between Fren 202 and Fren 321 or for extra practice while taking any 300- or 400-level French course.

**Course Outcomes**

No outcomes are available at this time.

FREN 340 : Introduction to Literary Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Fren 321 or concurrent enrollment.
DESCRIPTION: How to read French prose, drama, and poetry and apply methods of literary criticism.
NOTE: Capstone course for GE Languages of Learning requirement for returned missionaries

**Course Outcomes**

- Contextualize and analyze French literature of various periods and genres.
- Write analytically about the literature in well-formatted essays.
- Identify basic terms of literary analysis. (The specific list is available on the syllabus.)

FREN 345 : Francophone Culture. (3:1:3)

PREREQUISITE: Fren 102 or equivalent.
NOTE: Study Abroad only.

**Course Outcomes**

- The purpose of this course is to provide an organized, meaningful, and memorable overview of Paris as well as sites visited during organized excursions.

FREN 346R : French Choir. (1:1:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: French choir practice.

**Course Outcomes**

- Bring together language skills and cultural appreciation through choral singing.

FREN 361 : French Civilization from the Beginning to 1715. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions to the death of Louis XIV.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 362 : French Civilization from 1715 to the Present. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Fren 321.
RECOMMENDED: Fren 322.
DESCRIPTION: Historical survey of institutions, fine arts, and social conditions.
NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 363 : Contemporary French Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Fren 321.

RECOMMENDED: Fren 322.

DESCRIPTION: Current cultural, political, and social trends and issues in France as well as the francophone world.

NOTE: Fulfills GE Global and Cultural Awareness requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Locate and evaluate resources relevant to course assignments.
- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 377 : Introduction to French Language Teaching. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Fren 321; FLang 276 (if a French teaching major)

DESCRIPTION: Language acquisition theories and instructional practices specific to French language classrooms. Includes teaching phonological features and pronunciation. Lectures, demonstrations, and microteaching.

NOTE: Taught in French and English.

**Course Outcomes**

- Design and deliver effective French instruction appropriate to learners' needs.
- Discuss and apply basic principles of language acquisition.
- Discuss and apply basic principles of formal and informal assessment.
- Reflect on and justify instructional choices and actions.
- Describe the phonological features of French and diagnose your own pronunciation problems.

FREN 378 : French Language Teaching Procedures and Practicum. (2:1:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Fren 377; 491 with minimum rating of advanced--low on the French oral proficiency exam; fingerprinting and FBI clearance for students planning to do an internship or student teach in the public schools.

DESCRIPTION: Designing and practicing instruction for French classes in secondary schools. Developing teaching, critical thinking, and assessment skills.

NOTE: Taught in French and English.

**Course Outcomes**

- Begin to apply principles of second language teaching and acquisition in a public-secondary school settings.
- Design and teach basic culture, vocabulary, comprehension, and oral communication lessons in a secondary school.
- Begin to apply formal and informal assessment principles. Document and reflect on teaching and learning.

FREN 399R : Academic Internship: French Language Field Experience. (.5-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Program coordinator's consent.

DESCRIPTION: On-the-job experience in French.

**Course Outcomes**

- Improve professional experience and appreciation of cultural practices in an international context.

### 400-Level Courses

FREN 411R : Fourth-Year Conversation. (2:2:1)

PREREQUISITE: Fren 311R or equivalent.

**Course Outcomes**

- Initiate and maintain fluent conversations, and cope with gaps in knowledge in contexts related to concrete topics.

FREN 431 : Introduction to French Linguistics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Fren 321.

RECOMMENDED: Fren 322, 340, 361, 362.

DESCRIPTION: Subfields (phonetics, morphology, syntax, lexicology, semantics) and approaches (socio-linguistics, semiology, and pragmatics).

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Conduct independent research (finding examples of the linguistic phenomena examined in the course, applying

analytical diagrams, comparing linguistic phenomena in various languages, using various instruments of linguistic analysis) and identify the most significant databases of francophone linguistic research.
- Identify the fundamental elements of French linguistics (basic terms and concepts of phonetics, phonology, morphology, syntax, lexicology, and semantics)
- Evaluate and appreciate francophone diversity.

FREN 432 : History of French. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Fren 431 or concurrent enrollment.

DESCRIPTION: Introduction to the diachronic study of French beginning with its roots in Latin.

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Demonstrate improved language ability

FREN 433 : Studies in French Linguistics. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Fren 431 or concurrent enrollment.

DESCRIPTION: Advanced study of linguistic features such as phonetics and phonology, semantization, lexical development, morphology, and contrastive syntax.

**Course Outcomes**

- Demonstrate mastery the elements of advanced French linguistics.
- Write at least one substantive research paper that effectively incorporates secondary sources.
- Codify and draw conclusions from the data analyzed.

FREN 445 : Advanced Francophone Culture. (3:3:0)

OFFERED: Study Abroad only.

WHEN TAUGHT: Spring; Summer

PREREQUISITE: Fren 321.

NOTE: Research paper required.

**Course Outcomes**

- Write at least one substantive research paper that effectively incorporates secondary sources.
- Demonstrate improved language ability

FREN 452R : Studies in Period, Movement, and Theme. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Fren 340.

DESCRIPTION: Various periods and movements (e.g., medieval, classicism, romanticism) or themes (e.g., Arthur, Faust). Topics vary.

**Course Outcomes**

- Evaluate and contextualize a particular period, movement, or theme in French or Francophone studies and justify the limitations of its definitions.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 453R : Studies in Genre. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Fren 340.

DESCRIPTION: In-depth study of various genres (e.g., epic, novel, lyric, film) and problems of genre in French.

**Course Outcomes**

- Evaluate basic concepts of a particular genre and explain the limitations of generic categorizations.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 454R : Studies in Author. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Fren 340.

DESCRIPTION: In-depth study of major French or Francophone authors (e.g., Rabelais, Moliere, Diderot, Balzac).

**Course Outcomes**

- Evaluate and contextualize the unique contributions of a particular author.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 455R : Studies in Literary Theory. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Fren 340.

DESCRIPTION: In-depth study of primary texts by contemporary literary theorists (e.g., Barthes, Genette, structuralism, etc.). Language of instruction is English.

**Course Outcomes**

- Apply theoretical models to various cultural artifacts and practices
- Investigate a variety of theoretical models for the analysis of literature and cultural phenomena.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 456R : Francophone Studies. (3:3:0)

PREREQUISITE: Fren 340.

DESCRIPTION: Readings from major French-speaking writers from countries outside France, such as Canada, Africa, and the Caribbean.

**Course Outcomes**

- Analyze and compare the cultures and practices that create African Francophone identities.
- Analyze and interpret literary texts of the French-speaking world.

FREN 457R : Studies in French Culture. (3:3:0)

PREREQUISITE: Fren 361, 362, or 363.

DESCRIPTION: In-depth study of French historical, political, and social issues or artistic trends.

**Course Outcomes**

- Evaluate and contextualize a significant component of French or Francophone culture.
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 490R : Individual Study in French. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Faculty-supervised instruction/research to fit the individual needs of the advanced student. Terms must be established by contract and approved by chair.

**Course Outcomes**

- Formulate and express in writing critical arguments on a specialized topic reflecting an understanding of primary and secondary sources.

FREN 491R : Senior Oral Proficiency Evaluation. (0:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Evaluation required of all French majors during the senior year and all French-teaching majors and minors before enrolling in Fren 378.

**Course Outcomes**

- Establish an oral proficiency rating by taking the Oral Proficiency Interview.

FREN 495 : Senior Portfolio Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

RECOMMENDED: Fren 321, 322, 340.

DESCRIPTION: Capstone experience for French studies majors, including revision and assessment of writing.

**Course Outcomes**

- Identify connections between French degree and future plans.
- Pass OPI at Advanced Low or higher.
- Compose a professional resume with feedback from the advisement center.
- Identify and revise your best papers from French courses.

FREN 499R : Honors Thesis. (.5-6:0:0)

**Course Outcomes**

- Develop advanced skills in research techniques and academic writing and produce an acceptable Honors thesis.

## 500-Level Graduate Courses (available to advanced undergraduates)

FREN 510 : MA Practicum 1. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: Graduate status.

DESCRIPTION: Critical strategies and interpretative skills necessary for MA examinations.

**Course Outcomes**

- Discuss significant works of French and Francophone literature, explain their historical context, importance, influence, and distinctive features.

FREN 511 : MA Practicum 2. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: Graduate status.

DESCRIPTION: Critical strategies and interpretative skills necessary for MA examinations.

**Course Outcomes**

- Discuss significant works of French and Francophone literature, explain their historical context, importance, influence, and distinctive features.

FREN 512 : MA Practicum 3. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: Graduate status.

DESCRIPTION: Research tools and methods, the process of selecting a thesis topic, compiling a bibliography, and writing a prospectus.

**Course Outcomes**

- Generate a preparatory bibliography that will establish a scholarly foundation for the thesis.
- Generate a well-conceived, clearly-articulated, and well-documented prospectus for the MA thesis.

FREN 533 : Advanced Studies in French Linguistics. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Advanced study of linguistic features such as phonetics and phonology, semantization, lexical development, morphology, and contrastive syntax.

**Course Outcomes**

- Demonstrate mastery the elements of advanced French linguistics.
- Write at least one substantive research paper that effectively incorporates secondary sources.
- Codify and draw conclusions from the data analyzed.

FREN 599R : Academic Internship: French Language Field Experience. (3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Program coordinator's consent.

DESCRIPTION: On-the-job experience in French; research paper analyzing the experience and other requirements as graduate coordinator sees fit.

**Course Outcomes**

There are no course outcomes available

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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# Italian

## General Information

**Language Credit by Examination.** A student enrolled full-time at BYU whose native language is not Italian may receive credit by special examination for Italian for which he or she has acquired the equivalent skill or knowledge. However, this is possible only if no university credit has been given through AP, CLEP, or transfer of equivalent credit from another university or other institutions.

The Italian Language for Credit Examination is administered by the French and Italian Department twice a year: in November during fall semester and in March during winter semester. Based on enrollment, the credit examination may be administered during spring and/or summer terms. Details about this examination will be given by the student's Ital 321 teacher.

*Returned missionaries from Italy can test out of:*

Ital 101, 102, 201, 211R, and 311R (16 hours)

**Note 1:** The above five classes are *not* part of the Italian minor. The first class for the Italian minor is Ital 321.

**Note 2:** Ital 340 fulfills the GE Foreign Language option. Ital 321 does not.

Eligible students can take the exam if they are enrolled or have successfully completed Ital 321.

**Accelerated Program, Beginning:** The department offers an accelerated course in beginning Italian (101 and 102) every fall and winter semester. These courses are offered on the term.

**Foreign Language Student Residence.** In addition to BYU's spring or summer term in Italy, intensive "live-in" experience is available based on enrollment in the Foreign Language Student Residence. Besides taking regular courses in the department, students participate in lectures, discussions, films, and related extracurricular activities under the supervision of native Italian head residents. Vital to the success of the program is the 24-hour *Italian only* rule whereby students use the Italian language as their only means of communication while they are at home.

**Study Abroad / Internship Programs.** All students of Italian are encouraged to participate in a Study Abroad (usually offered spring term, every other year) or internship program in Italy offered year round. These programs provide excellent opportunities for developing language proficiency and understanding the rich culture of Italy.

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# BA in Italian (45.5–66.5 hours*)

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## Program Requirements | View MAP | View Program Outcomes

1. The French and Italian Department requires a minimum of 15 major hours to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
2. Complete a minor (approximately 16–21 hours) or 15 hours of course work in an area approved by the major advisor. Courses must be approved before the senior year.
3. Complete the following prerequisites (or equivalent):

ITAL 101 : First-Year Italian, Part 1. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Daily development of the four language skills: understanding, speaking, reading, and writing.

**Course Outcomes**
- Become familiar with basic grammatical rules in Italian, including some verb tenses and their conjugations.
- Will understand simple sentences on familiar subjects in Italian.
- Will speak simple sentences on familiar subjects in Italian.

ITAL 102 : First-Year Italian, Part 2. (4:5:2)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Ital 101 or equivalent.
DESCRIPTION: Continuation of Ital 101.

**Course Outcomes**
- Become familiar with grammatical rules in Italian, especially the verb tenses and their conjugations.
- Students will understand simple sentences on familiar topics in Italian.
- Students will speak simple sentences on familiar topics in Italian.

ITAL 201 : Intermediate Italian 1. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Ital 102 or two years of high school Italian or equivalent.
DESCRIPTION: Reading, writing, conversation, vocabulary building, and review of grammar.

**Course Outcomes**
- Students will expand their knowledge of Italian grammar by reviewing and increasing their understanding of rules and structures.
- Students will learn to handle most uncomplicated communication and social situations in Italian. Sustain a general conversation and understand longer connected discourse on topics dealing with different times and places.
- Students will develop competence consistent with the "Intermediate" range of the ACTFL Proficiency Guidelines.http://actflproficiencyguidelines2012.org/
- Students will read texts dealing with descriptions and narration, while complex structures may still interfere with understanding.

ITAL 202 : Intermediate Italian 2. (3:3:1)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ITAL 201; or instructor's consent.
DESCRIPTION: Final course for GE Foreign Language requirement (except for returned missionaries); extensive reading in Italian literature and culture.

**Course Outcomes**
- Develop a critical approach to Italian literature through a second-year proficiency level in Italian, analyzing a selection of literary works (listed in the syllabus) within their historical and cultural context.
- Apply the fundamentals of literary interpretation to the texts we discuss.
- Improve oral and written skills in Italian, particularly reading and listening comprehension, written production, and oral expression. Linguistic expected outcome for successful students will target approximately the "Intermediate" range on the ACTFL Proficiency scale.

4. Complete the following core requirements:

ITAL 321 : Advanced Grammar. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Ital 202 or equivalent.
DESCRIPTION: Intensive review of grammar; vocabulary building.

**Course Outcomes**

- Show control of Italian morphology and increase vocabulary knowledge
- Handle linguistic tasks and social situations in Italian with confidence, and communicate on topics of current public and personal interest.
- Read and comment on short stories and a short novel in Italian.
- Students will develop functional abilities consistent with the "Advanced" range of the official ACTFL Proficiency Guidelines.http://actflproficiencyguidelines2012.org/

ITAL 322 : Advanced Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Ital 321 or concurrent enrollment.
DESCRIPTION: Italian syntax and composition.

**Course Outcomes**

- Write about personal experiences, narrative and descriptions of a factual nature. Students will show some difficulty supporting points of view in written discourse.
- Show control of the morphology and the most frequently used syntactic structures, e.g., common-word order patterns, coordination, subordination. It is expected that some students will make errors in producing complex sentences.
- Students will develop functional abilities consistent with the "Advanced mid" or "Advanced high" and some "Superior" ratings of the ACTFL Proficiency Guidelines. http://actflproficiencyguidelines2012.org/

ITAL 340 : Introduction to Italian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter
RECOMMENDED: Ital 321 and 322.
DESCRIPTION: Basic literary concepts and terms coupled with readings of Italian works from various genres and periods.
NOTE: Capstone course for GE Languages of Learning requirement for returned missionaries.

**Course Outcomes**

- Read, understand, and analyze the Italian literary texts in the syllabus
- Identify the poetic devices included in the "poetry section" of the syllabus and describe their function within the texts discussed in class
- Acquire and implement research skills for the study of Italian literature in order to create two original analytical papers
- Write and speak clearly and effectively in Italian to the Advanced-level range on the ACTFL scale

5. Complete at least 3 hours of one of the following:

ITAL 326 : Italian Phonetics and Pronunciation. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: ITAL 321
DESCRIPTION: General rules of pronunciation. Introduction to history of Italian language.

**Course Outcomes**

- Critically discuss how the Italian language has developed from Latin to modern Italian and distinguish between different language samples, from archaic to the most recent.
- Apply phonetics to improve pronunciation. Transcribe words and paragraphs into the International Phonetic Alphabet.

ITAL 399R : Academic Internship: Italian Language Field Experience. (.5-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Program coordinator's consent.
DESCRIPTION: On-the-job experience in Italian.

**Course Outcomes**

- Articulate an analytical knowledge of the foreign culture and of its people, as related specifically to the working field(s) of their chosen internship(s).
- Describe the active role of the LDS Church in Italy, by comparing and contrasting it with other local religious faiths, specifically observing the cultural variations in religious expression(s).
- Demonstrate achieved improvement in language proficiency, as assessed by pre-departure and post-internship tests.

6. Complete six courses from the following:

BUS M 596R : Business Language. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: For experienced speakers of the language being taught. Emphasizes business concepts; practice and case study including conversation, reading,and presenting, while enriching business vocabulary.

**Course Outcomes**

No outcomes are available at this time.

ITAL 317 : (Fren-Ital) French and Italian Cinema. (3:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Background for understanding and appreciating the best of motion picture art in France and Italy. Includes components of critical theory essential for analyzing film. Language of instruction is English; no knowledge of French or Italian required.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Identify major filmmakers, and cinematic movements in the history of French and Italian cinema, with particular attention to the socio-historical situations that engendered creation.
- Explore the essential aspects of cinema as an artistic medium and master the technical and critical terminology necessary to intelligently discuss the creative process.
- Develop critical skills for aesthetic judgment in applying acquired techincal knowledge to the films of individual filmmakers from these two traditions.
- Analyze cinema as an art form and "read" individual films in terms of the specificity of an artistic, authorial message.

ITAL 420 : Italian Civilization from the Beginning to 1600. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Ital 340.

DESCRIPTION: Survey of history, music, architecture, literature, and arts that shaped the Italian culture and civilization from the beginning through the Renaissance.

NOTE: Fulfills GE Arts elective.

**Course Outcomes**

- Become familiar with the major intellectual and artistic traditions of Italy from the Etruscan period to the Renaissance by identifying the chronology and main characteristics of each period listed in the syllabus.
- Apply vocabulary, grammar, theory, and history to the texts, music, artifacts, and works of art listed in the syllabus to discover, interpret, and evaluate multiple meanings.
- Develop critical skills and informed aesthetic judgment to discuss and analyze the music, architecture, and works of art listed in the syllabus, paying particular attention to their historical or social setting and their place in shaping culture.
- Locate and evaluate resources relevant to course assignments and apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations, and communicate findings coherently both orally and in writing).

ITAL 421 : Italian Civilization from 1600 to the Modern Era. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Ital 340.

DESCRIPTION: Survey of institutions, fine arts, and great writers that shaped the history of Italy from the Baroque period to the modern era.

NOTE: Fulfills GE Arts elective.

**Course Outcomes**

- Become familiar with the major intellectual and artistic traditions of Italy from the Baroque Period to modern times by identifying the chronology and main characteristics of each period listed in the syllabus.
- Apply critical concepts, theory, and history to the texts, music, artifacts, and works of art listed in the syllabus to discover, interpret, and evaluate their multiple meanings.
- Develop critical skills and informed aesthetic judgment to discuss and analyze the music, architecture, and works of art listed in the syllabus, paying particular attention to their historical or social setting and their place in shaping culture.
- Locate and evaluate resources relevant to course assignments and apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations), and communicate findings coherently both orally and in writing).

ITAL 441 : Italian Literature of the Late Middle Ages and Renaissance. (3:3:0)

PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the “Advanced Low” level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, and demonstrate knowledge of appropriate bibliographic literary databases, such as the MLA’s. Moreover, students will be throughly familiar with the MLA 7th style for their writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. Successful students will be prepared to analyze and critique the main literary currents and authors of Italy’s late Middle Ages and the Renaissance.

ITAL 442 : Italian Literature of the Baroque and Enlightenment Periods. (3:3:0)

PREREQUISITE: ITAL 340

**Course Outcomes**

- Read, understand, and analyze all Italian literature selections listed in the syllabus.
- By the end of the semester, successful students will have written a critical and analytical paper on a topic of their choice, incorporating existing peer-reviewed research and adding their own assessment and originalideas to the discourse.
- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at the “Advanced” level in speaking, listening, writing, and reading on the ACTFL Proficiency scale.

ITAL 443 : Italian Literature of the Romantic Period. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the “Advanced Low” level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, and demonstrate knowledge of appropriate bibliographic literary databases, such as the MLA’s. Moreover, students will be throughly familiar with the MLA 7th style for their writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. They will analyze and critique the three main lines of Italian Romanticism: political, religious, and existential/philosophical.

ITAL 444 : Italian Literature of the Twentieth Century. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the “Advanced Low” level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, demonstrate knowledge of appropriate bibliographic literary databases, such as the MLA’s, and properly use the most up-to-date MLA style for writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. Successful students will be prepared to analyze and critique the main literary currents and authors of Italy’s 20th and 21st Centuries.

ITAL 460 : Dante's *Divine Comedy*. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ITAL 340

DESCRIPTION: Intensive examination of Dante's major opus.

**Course Outcomes**

- By the end of this semester, successful students will be able to discuss any of the cantos listed in this syllabus from a linguistic, theological, historical and critical point of view.
- By the end of the semester, successful students will have written a critical and analytical paper, incorporating existing peer-reviewed research on their topic and adding their own assessment and original ideas to the discourse. Their written linguistic ability will place in the "Advanced Low" (ACTFL scale) level, with the help of the Italian Writing Lab tutor.
- Successful students will be fully familiar with MLA 7th style, and with the MLA bibliographical database.

ITAL 495R : Senior Seminar in Italian. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ITAL 340

DESCRIPTION: In-depth study of a limited area of literature, culture, or criticism; content varies; requires research and writing.

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus.Successful students will place at least at the "Advanced Low" level in Italian speaking, listening, writing, and reading on the ACTFL Proficiency scale
- Locate and evaluate primary and secondary sources on a specialized topic.
- Articulate and defend an analytical research paper.
- Acquire basic skills for reading and transcribing manuscript documents written in Italian from the Early Modern period.

7. Complete the following and have an oral proficiency interview (OPI) during the senior year. The rating will be recorded on the student's transcript. The desired minimum OPI rating is in the *advanced* range.
   ITAL 491 : Senior Oral Proficiency Evaluation and Senior Portfolio. (.5:0:0)
   WHEN TAUGHT: Fall; Winter
   NOTE: Should be completed the semester of graduation.

**Course Outcomes**

- Establish an oral proficiency rating by taking the Oral Proficiency Interview.
- Identify and revise your best papers from Italian courses.
- Write a reflection paper on the experience of graduating in Italian and the future implications on your life and career.

*Hours include courses that may fulfill university core requirements.

## Show all Italian (Ital) Courses

College of Humanities Home

French and Italian Department Home

French

Majors
- BA in French
- BA in French Studies (secondary major program)
- BA in French Teaching

Minors
- French
- French Teaching

Language Certificate
- French

Course Information
- French (Fren) Courses

Italian

Majors
- BA in Italian
- BA in Italian Studies (secondary major program)

Minors
- Italian

Language Certificate
- Italian

Course Information
- Italian (Ital) Courses

Faculty

# BA in Italian Studies (secondary major program) (30.5–45.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Students must complete the requirements for a primary major in another field.
2. The French and Italian Department requires a minimum of 15 major hours to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
3. Complete the following prerequisites (or equivalent):

ITAL 101 : First-Year Italian, Part 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Daily development of the four language skills: understanding, speaking, reading, and writing.

**Course Outcomes**
- Become familiar with basic grammatical rules in Italian, including some verb tenses and their conjugations.
- Will understand simple sentences on familiar subjects in Italian.
- Will speak simple sentences on familiar subjects in Italian.

ITAL 102 : First-Year Italian, Part 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Ital 101 or equivalent.

DESCRIPTION: Continuation of Ital 101.

**Course Outcomes**
- Become familiar with grammatical rules in Italian, especially the verb tenses and their conjugations.
- Students will understand simple sentences on familiar topics in Italian.
- Students will speak simple sentences on familiar topics in Italian.

ITAL 201 : Intermediate Italian 1. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Ital 102 or two years of high school Italian or equivalent.

DESCRIPTION: Reading, writing, conversation, vocabulary building, and review of grammar.

**Course Outcomes**
- Students will expand their knowledge of Italian grammar by reviewing and increasing their understanding of rules and structures.
- Students will learn to handle most uncomplicated communication and social situations in Italian. Sustain a general conversation and understand longer connected discourse on topics dealing with different times and places.
- Students will develop competence consistent with the "Intermediate" range of the ACTFL Proficiency Guidelines.http://actflproficiencyguidelines2012.org/
- Students will read texts dealing with descriptions and narration, while complex structures may still interfere with understanding.

ITAL 202 : Intermediate Italian 2. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ITAL 201; or instructor's consent.

DESCRIPTION: Final course for GE Foreign Language requirement (except for returned missionaries); extensive reading in Italian literature and culture.

**Course Outcomes**
- Develop a critical approach to Italian literature through a second-year proficiency level in Italian, analyzing a selection of literary works (listed in the syllabus) within their historical and cultural context.
- Apply the fundamentals of literary interpretation to the texts we discuss.
- Improve oral and written skills in Italian, particularly reading and listening comprehension, written production, and oral expression. Linguistic expected outcome for successful students will target approximately the "Intermediate" range on the ACTFL Proficiency scale.

4. Complete the following core requirements:

ITAL 321 : Advanced Grammar. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Ital 202 or equivalent.
DESCRIPTION: Intensive review of grammar; vocabulary building.

**Course Outcomes**

- Show control of Italian morphology and increase vocabulary knowledge
- Handle linguistic tasks and social situations in Italian with confidence, and communicate on topics of current public and personal interest.
- Read and comment on short stories and a short novel in Italian.
- Students will develop functional abilities consistent with the "Advanced" range of the official ACTFL Proficiency Guidelines.http://actflproficiencyguidelines2012.org/

ITAL 322 : Advanced Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Ital 321 or concurrent enrollment.
DESCRIPTION: Italian syntax and composition.

**Course Outcomes**

- Write about personal experiences, narrative and descriptions of a factual nature. Students will show some difficulty supporting points of view in written discourse.
- Show control of the morphology and the most frequently used syntactic structures, e.g., common-word order patterns, coordination, subordination. It is expected that some students will make errors in producing complex sentences.
- Students will develop functional abilities consistent with the "Advanced mid" or "Advanced high" and some "Superior" ratings of the ACTFL Proficiency Guidelines. http://actflproficiencyguidelines2012.org/

ITAL 326 : Italian Phonetics and Pronunciation. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: ITAL 321
DESCRIPTION: General rules of pronunciation. Introduction to history of Italian language.

**Course Outcomes**

- Critically discuss how the Italian language has developed from Latin to modern Italian and distinguish between different language samples, from archaic to the most recent.
- Apply phonetics to improve pronunciation. Transcribe words and paragraphs into the International Phonetic Alphabet.

ITAL 340 : Introduction to Italian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter
RECOMMENDED: Ital 321 and 322.
DESCRIPTION: Basic literary concepts and terms coupled with readings of Italian works from various genres and periods.
NOTE: Capstone course for GE Languages of Learning requirement for returned missionaries.

**Course Outcomes**

- Read, understand, and analyze the Italian literary texts in the syllabus
- Identify the poetic devices included in the "poetry section" of the syllabus and describe their function within the texts discussed in class
- Acquire and implement research skills for the study of Italian literature in order to create two original analytical papers
- Write and speak clearly and effectively in Italian to the Advanced-level range on the ACTFL scale

5. Complete 18 hours of upper-division (300-level and above) electives from the following:

BUS M 596R : Business Language. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: For experienced speakers of the language being taught. Emphasizes business concepts; practice and case study including conversation, reading,and presenting, while enriching business vocabulary.

**Course Outcomes**

No outcomes are available at this time.

ITAL 317 : (Fren-Ital) French and Italian Cinema. (3:3:2)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Background for understanding and appreciating the best of motion picture art in France and Italy. Includes components of critical theory essential for analyzing film. Language of instruction is English; no knowledge of French or Italian required.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Identify major filmmakers, and cinematic movements in the history of French and Italian cinema, with particular attention to the socio-historical situations that engendered creation.

- Explore the essential aspects of cinema as an artistic medium and master the technical and critical terminology necessary to intelligently discuss the creative process.
- Develop critical skills for aesthetic judgment in applying acquired techincal knowledge to the films of individual filmmakers from these two traditions.
- Analyze cinema as an art form and "read" individual films in terms of the specificity of an artistic, authorial message.

ITAL 420 : Italian Civilization from the Beginning to 1600. (3:3:0)

WHEN TAUGHT: Winter
RECOMMENDED: Ital 340.
DESCRIPTION: Survey of history, music, architecture, literature, and arts that shaped the Italian culture and civilization from the beginning through the Renaissance.
NOTE: Fulfills GE Arts elective.

**Course Outcomes**

- Become familiar with the major intellectual and artistic traditions of Italy from the Etruscan period to the Renaissance by identifying the chronology and main characteristics of each period listed in the syllabus.
- Apply vocabulary, grammar, theory, and history to the texts, music, artifacts, and works of art listed in the syllabus to discover, interpret, and evaluate multiple meanings.
- Develop critical skills and informed aesthetic judgment to discuss and analyze the music, architecture, and works of art listed in the syllabus, paying particular attention to their historical or social setting and their place in shaping culture.
- Locate and evaluate resources relevant to course assignments and apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations, and communicate findings coherently both orally and in writing).

ITAL 421 : Italian Civilization from 1600 to the Modern Era. (3:3:0)

WHEN TAUGHT: Winter
RECOMMENDED: Ital 340.
DESCRIPTION: Survey of institutions, fine arts, and great writers that shaped the history of Italy from the Baroque period to the modern era.
NOTE: Fulfills GE Arts elective.

**Course Outcomes**

- Become familiar with the major intellectual and artistic traditions of Italy from the Baroque Period to modern times by identifying the chronology and main characteristics of each period listed in the syllabus.
- Apply critical concepts, theory, and history to the texts, music, artifacts, and works of art listed in the syllabus to discover, interpret, and evaluate their multiple meanings.
- Develop critical skills and informed aesthetic judgment to discuss and analyze the music, architecture, and works of art listed in the syllabus, paying particular attention to their historical or social setting and their place in shaping culture.
- Locate and evaluate resources relevant to course assignments and apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations), and communicate findings coherently both orally and in writing).

ITAL 441 : Italian Literature of the Late Middle Ages and Renaissance. (3:3:0)

PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the “Advanced Low” level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, and demonstrate knowledge of appropriate bibliographic literary databases, such as the MLA’s. Moreover, students will be throughly familiar with the MLA 7th style for their writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. Successful students will be prepared to analyze and critique the main literary currents and authors of Italy’s late Middle Ages and the Renaissance.

ITAL 442 : Italian Literature of the Baroque and Enlightenment Periods. (3:3:0)

PREREQUISITE: ITAL 340

**Course Outcomes**

- Read, understand, and analyze all Italian literature selections listed in the syllabus.
- By the end of the semester, successful students will have written a critical and analytical paper on a topic of their choice, incorporating existing peer-reviewed research and adding their own assessment and originalideas to the discourse.
- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at the “Advanced” level in speaking, listening, writing, and reading on the ACTFL Proficiency scale.

ITAL 443 : Italian Literature of the Romantic Period. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the "Advanced Low" level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, and demonstrate knowledge of appropriate bibliographic literary databases, such as the MLA's. Moreover, students will be throughly familiar with the MLA 7th style for their writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. They will analyze and critique the three main lines of Italian Romanticism: political, religious, and existential/philosophical.

ITAL 444 : Italian Literature of the Twentieth Century. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the "Advanced Low" level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, demonstrate knowledge of appropriate bibliographic literary databases, such as the MLA's, and properly use the most up-to-date MLA style for writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. Successful students will be prepared to analyze and critique the main literary currents and authors of Italy's 20th and 21st Centuries.

ITAL 460 : Dante's *Divine Comedy.* (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ITAL 340

DESCRIPTION: Intensive examination of Dante's major opus.

**Course Outcomes**

- By the end of this semester, successful students will be able to discuss any of the cantos listed in this syllabus from a linguistic, theological, historical and critical point of view.
- By the end of the semester, successful students will have written a critical and analytical paper, incorporating existing peer-reviewed research on their topic and adding their own assessment and original ideas to the discourse. Their written linguistic ability will place in the "Advanced Low" (ACTFL scale) level, with the help of the Italian Writing Lab tutor.
- Successful students will be fully familiar with MLA 7th style, and with the MLA bibliographical database.

ITAL 495R : Senior Seminar in Italian. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ITAL 340

DESCRIPTION: In-depth study of a limited area of literature, culture, or criticism; content varies; requires research and writing.

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus.Successful students will place at least at the "Advanced Low" level in Italian speaking, listening, writing, and reading on the ACTFL Proficiency scale
- Locate and evaluate primary and secondary sources on a specialized topic.
- Articulate and defend an analytical research paper.
- Acquire basic skills for reading and transcribing manuscript documents written in Italian from the Early Modern period.

**Note:** up to 12 credit hours from related departments may be counted upon departmental approval.

6. Complete the following and have an oral proficiency interview (OPI) during the senior year. The rating will be recorded on the student's transcript. The desired minimum ACTFL Proficiency scale is *Intermediate-High*.

ITAL 491 : Senior Oral Proficiency Evaluation and Senior Portfolio. (.5:0:0)

WHEN TAUGHT: Fall; Winter

NOTE: Should be completed the semester of graduation.

**Course Outcomes**

- Establish an oral proficiency rating by taking the Oral Proficiency Interview.
- Identify and revise your best papers from Italian courses.
- Write a reflection paper on the experience of graduating in Italian and the future implications on your life and career.

*Hours include courses that may fulfill university core requirements.

**Show all Italian (Ital) Courses**

College of Humanities Home

French and Italian Department Home

French

Majors
- BA in French
- BA in French Studies (secondary major program)
- BA in French Teaching

Minors
- French
- French Teaching

Language Certificate
- French

Course Information
- French (Fren) Courses

Italian

Majors
- BA in Italian
- BA in Italian Studies (secondary major program)

Minors
- Italian

Language Certificate
- Italian

Course Information
- Italian (Ital) Courses

Faculty

# Minor in Italian (18–33 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. The French and Italian Department requires a minimum of nine minor hours to be taken in residence at BYU for this minor program. These hours may also go toward BYU's 30-hour residency requirement for graduation.

2. Complete the following prerequisites (or equivalent):

ITAL 101 : First-Year Italian, Part 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Daily development of the four language skills: understanding, speaking, reading, and writing.

**Course Outcomes**
- Become familiar with basic grammatical rules in Italian, including some verb tenses and their conjugations.
- Will understand simple sentences on familiar subjects in Italian.
- Will speak simple sentences on familiar subjects in Italian.

ITAL 102 : First-Year Italian, Part 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Ital 101 or equivalent.

DESCRIPTION: Continuation of Ital 101.

**Course Outcomes**
- Become familiar with grammatical rules in Italian, especially the verb tenses and their conjugations.
- Students will understand simple sentences on familiar topics in Italian.
- Students will speak simple sentences on familiar topics in Italian.

ITAL 201 : Intermediate Italian 1. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Ital 102 or two years of high school Italian or equivalent.

DESCRIPTION: Reading, writing, conversation, vocabulary building, and review of grammar.

**Course Outcomes**
- Students will expand their knowledge of Italian grammar by reviewing and increasing their understanding of rules and structures.
- Students will learn to handle most uncomplicated communication and social situations in Italian. Sustain a general conversation and understand longer connected discourse on topics dealing with different times and places.
- Students will develop competence consistent with the "Intermediate" range of the ACTFL Proficiency Guidelines.http://actflproficiencyguidelines2012.org/
- Students will read texts dealing with descriptions and narration, while complex structures may still interfere with understanding.

ITAL 202 : Intermediate Italian 2. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ITAL 201; or instructor's consent.

DESCRIPTION: Final course for GE Foreign Language requirement (except for returned missionaries); extensive reading in Italian literature and culture.

**Course Outcomes**
- Develop a critical approach to Italian literature through a second-year proficiency level in Italian, analyzing a selection of literary works (listed in the syllabus) within their historical and cultural context.
- Apply the fundamentals of literary interpretation to the texts we discuss.
- Improve oral and written skills in Italian, particularly reading and listening comprehension, written production, and oral expression. Linguistic expected outcome for successful students will target approximately the "Intermediate" range on the ACTFL Proficiency scale.

3. Complete the following:

ITAL 321 : Advanced Grammar. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Ital 202 or equivalent.
DESCRIPTION: Intensive review of grammar; vocabulary building.

**Course Outcomes**

- Show control of Italian morphology and increase vocabulary knowledge
- Handle linguistic tasks and social situations in Italian with confidence, and communicate on topics of current public and personal interest.
- Read and comment on short stories and a short novel in Italian.
- Students will develop functional abilities consistent with the "Advanced" range of the official ACTFL Proficiency Guidelines.http://actflproficiencyguidelines2012.org/

ITAL 322 : Advanced Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Ital 321 or concurrent enrollment.
DESCRIPTION: Italian syntax and composition.

**Course Outcomes**

- Write about personal experiences, narrative and descriptions of a factual nature. Students will show some difficulty supporting points of view in written discourse.
- Show control of the morphology and the most frequently used syntactic structures, e.g., common-word order patterns, coordination, subordination. It is expected that some students will make errors in producing complex sentences.
- Students will develop functional abilities consistent with the "Advanced mid" or "Advanced high" and some "Superior" ratings of the ACTFL Proficiency Guidelines. http://actflproficiencyguidelines2012.org/

ITAL 340 : Introduction to Italian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter
RECOMMENDED: Ital 321 and 322.
DESCRIPTION: Basic literary concepts and terms coupled with readings of Italian works from various genres and periods.
NOTE: Capstone course for GE Languages of Learning requirement for returned missionaries.

**Course Outcomes**

- Read, understand, and analyze the Italian literary texts in the syllabus
- Identify the poetic devices included in the "poetry section" of the syllabus and describe their function within the texts discussed in class
- Acquire and implement research skills for the study of Italian literature in order to create two original analytical papers
- Write and speak clearly and effectively in Italian to the Advanced-level range on the ACTFL scale

4. Complete at least 3 hours of one of the following:

ITAL 326 : Italian Phonetics and Pronunciation. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: ITAL 321
DESCRIPTION: General rules of pronunciation. Introduction to history of Italian language.

**Course Outcomes**

- Critically discuss how the Italian language has developed from Latin to modern Italian and distinguish between different language samples, from archaic to the most recent.
- Apply phonetics to improve pronunciation. Transcribe words and paragraphs into the International Phonetic Alphabet.

ITAL 399R : Academic Internship: Italian Language Field Experience. (.5-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Program coordinator's consent.
DESCRIPTION: On-the-job experience in Italian.

**Course Outcomes**

- Articulate an analytical knowledge of the foreign culture and of its people, as related specifically to the working field(s) of their chosen internship(s).
- Describe the active role of the LDS Church in Italy, by comparing and contrasting it with other local religious faiths, specifically observing the cultural variations in religious expression(s).
- Demonstrate achieved improvement in language proficiency, as assessed by pre-departure and post-internship tests.

5. Complete two courses from the following:

BUS M 596R : Business Language. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: For experienced speakers of the language being taught. Emphasizes business concepts; practice and case study including conversation, reading,and presenting, while enriching business vocabulary.

**Course Outcomes**

No outcomes are available at this time.

ITAL 420 : Italian Civilization from the Beginning to 1600. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Ital 340.

DESCRIPTION: Survey of history, music, architecture, literature, and arts that shaped the Italian culture and civilization from the beginning through the Renaissance.

NOTE: Fulfills GE Arts elective.

**Course Outcomes**

- Become familiar with the major intellectual and artistic traditions of Italy from the Etruscan period to the Renaissance by identifying the chronology and main characteristics of each period listed in the syllabus.
- Apply vocabulary, grammar, theory, and history to the texts, music, artifacts, and works of art listed in the syllabus to discover, interpret, and evaluate multiple meanings.
- Develop critical skills and informed aesthetic judgment to discuss and analyze the music, architecture, and works of art listed in the syllabus, paying particular attention to their historical or social setting and their place in shaping culture.
- Locate and evaluate resources relevant to course assignments and apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations, and communicate findings coherently both orally and in writing).

ITAL 421 : Italian Civilization from 1600 to the Modern Era. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Ital 340.

DESCRIPTION: Survey of institutions, fine arts, and great writers that shaped the history of Italy from the Baroque period to the modern era.

NOTE: Fulfills GE Arts elective.

**Course Outcomes**

- Become familiar with the major intellectual and artistic traditions of Italy from the Baroque Period to modern times by identifying the chronology and main characteristics of each period listed in the syllabus.
- Apply critical concepts, theory, and history to the texts, music, artifacts, and works of art listed in the syllabus to discover, interpret, and evaluate their multiple meanings.
- Develop critical skills and informed aesthetic judgment to discuss and analyze the music, architecture, and works of art listed in the syllabus, paying particular attention to their historical or social setting and their place in shaping culture.
- Locate and evaluate resources relevant to course assignments and apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations), and communicate findings coherently both orally and in writing).

ITAL 441 : Italian Literature of the Late Middle Ages and Renaissance. (3:3:0)

PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the “Advanced Low” level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, and demonstrate knowledge of appropriate bibliographic literary databases, such as the MLA’s. Moreover, students will be throughly familiar with the MLA 7th style for their writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. Successful students will be prepared to analyze and critique the main literary currents and authors of Italy’s late Middle Ages and the Renaissance.

ITAL 442 : Italian Literature of the Baroque and Enlightenment Periods. (3:3:0)

PREREQUISITE: ITAL 340

**Course Outcomes**

- Read, understand, and analyze all Italian literature selections listed in the syllabus.
- By the end of the semester, successful students will have written a critical and analytical paper on a topic of their choice, incorporating existing peer-reviewed research and adding their own assessment and originalideas to the discourse.
- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at the “Advanced” level in speaking, listening, writing, and reading on the ACTFL Proficiency scale.

ITAL 443 : Italian Literature of the Romantic Period. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the “Advanced Low” level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, and demonstrate knowledge of

appropriate bibliographic literary databases, such as the MLA's. Moreover, students will be throughly familiar with the MLA 7th style for their writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. They will analyze and critique the three main lines of Italian Romanticism: political, religious, and existential/philosophical.

ITAL 444 : Italian Literature of the Twentieth Century. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the "Advanced Low" level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, demonstrate knowledge of appropriate bibliographic literary databases, such as the MLA's, and properly use the most up-to-date MLA style for writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. Successful students will be prepared to analyze and critique the main literary currents and authors of Italy's 20th and 21st Centuries.

ITAL 460 : Dante's *Divine Comedy*. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ITAL 340

DESCRIPTION: Intensive examination of Dante's major opus.

**Course Outcomes**

- By the end of this semester, successful students will be able to discuss any of the cantos listed in this syllabus from a linguistic, theological, historical and critical point of view.
- By the end of the semester, successful students will have written a critical and analytical paper, incorporating existing peer-reviewed research on their topic and adding their own assessment and original ideas to the discourse. Their written linguistic ability will place in the "Advanced Low" (ACTFL scale) level, with the help of the Italian Writing Lab tutor.
- Successful students will be fully familiar with MLA 7th style, and with the MLA bibliographical database.

ITAL 495R : Senior Seminar in Italian. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ITAL 340

DESCRIPTION: In-depth study of a limited area of literature, culture, or criticism; content varies; requires research and writing.

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus.Successful students will place at least at the "Advanced Low" level in Italian speaking, listening, writing, and reading on the ACTFL Proficiency scale
- Locate and evaluate primary and secondary sources on a specialized topic.
- Articulate and defend an analytical research paper.
- Acquire basic skills for reading and transcribing manuscript documents written in Italian from the Early Modern period.

*Hours include courses that may fulfill university core requirements.

## Show all Italian (Ital) Courses

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French and Italian Department Home

French

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- BA in French
- BA in French Studies (secondary major program)
- BA in French Teaching

Minors
- French
- French Teaching

Language Certificate
- French

Course Information
- French (Fren) Courses

Italian

Majors
- BA in Italian
- BA in Italian Studies (secondary major program)

Minors
- Italian

Language Certificate
- Italian

Course Information
- Italian (Ital) Courses

Faculty

# Italian Language Certificate (9 hours)

Show All Course Descriptions
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*This Language Certificate program is administered by the Center for Language Studies (3086 JFSB), http://languagecertificate.byu.edu.*

Any matriculated (degree-seeking) BYU student who meets the proficiency and course requirements may earn the Italian Language Certificate. The proficiency requirement is met through the nationally recognized ACTFL Oral and Writing Proficiency Exams. Qualifying students will be awarded a certificate on one of three levels based on the following:

1. Advanced Certificate: An ACTFL "Advanced" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
2. Mastery Certificate: An ACTFL "Advanced High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
3. Professional Certificate: An ACTFL "Superior" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.

## Required Courses:

**Note:** Students who have completed all of the coursework required for a language major or a language minor will also have satisfied the coursework requirement for the language certificate.

1. Language:

ITAL 321 : Advanced Grammar. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Ital 202 or equivalent.
DESCRIPTION: Intensive review of grammar; vocabulary building.

**Course Outcomes**

- Show control of Italian morphology and increase vocabulary knowledge
- Handle linguistic tasks and social situations in Italian with confidence, and communicate on topics of current public and personal interest.
- Read and comment on short stories and a short novel in Italian.
- Students will develop functional abilities consistent with the "Advanced" range of the official ACTFL Proficiency Guidelines.http://actflproficiencyguidelines2012.org/

2. Civilization - complete one course from the following:

ITAL 420 : Italian Civilization from the Beginning to 1600. (3:3:0)

WHEN TAUGHT: Winter
RECOMMENDED: Ital 340.
DESCRIPTION: Survey of history, music, architecture, literature, and arts that shaped the Italian culture and civilization from the beginning through the Renaissance.
NOTE: Fulfills GE Arts elective.

**Course Outcomes**

- Become familiar with the major intellectual and artistic traditions of Italy from the Etruscan period to the Renaissance by identifying the chronology and main characteristics of each period listed in the syllabus.
- Apply vocabulary, grammar, theory, and history to the texts, music, artifacts, and works of art listed in the syllabus to discover, interpret, and evaluate multiple meanings.
- Develop critical skills and informed aesthetic judgment to discuss and analyze the music, architecture, and works of art listed in the syllabus, paying particular attention to their historical or social setting and their place in shaping culture.
- Locate and evaluate resources relevant to course assignments and apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations, and communicate findings coherently both orally and in writing).

ITAL 421 : Italian Civilization from 1600 to the Modern Era. (3:3:0)

WHEN TAUGHT: Winter
RECOMMENDED: Ital 340.
DESCRIPTION: Survey of institutions, fine arts, and great writers that shaped the history of Italy from the Baroque period to the modern era.
NOTE: Fulfills GE Arts elective.

**Course Outcomes**

- Become familiar with the major intellectual and artistic traditions of Italy from the Baroque Period to

modern times by identifying the chronology and main characteristics of each period listed in the syllabus.
- Apply critical concepts, theory, and history to the texts, music, artifacts, and works of art listed in the syllabus to discover, interpret, and evaluate their multiple meanings.
- Develop critical skills and informed aesthetic judgment to discuss and analyze the music, architecture, and works of art listed in the syllabus, paying particular attention to their historical or social setting and their place in shaping culture.
- Locate and evaluate resources relevant to course assignments and apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations), and communicate findings coherently both orally and in writing).

3. Literature:

ITAL 340 : Introduction to Italian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Ital 321 and 322.

DESCRIPTION: Basic literary concepts and terms coupled with readings of Italian works from various genres and periods.

NOTE: Capstone course for GE Languages of Learning requirement for returned missionaries.

**Course Outcomes**

- Read, understand, and analyze the Italian literary texts in the syllabus
- Identify the poetic devices included in the "poetry section" of the syllabus and describe their function within the texts discussed in class
- Acquire and implement research skills for the study of Italian literature in order to create two original analytical papers
- Write and speak clearly and effectively in Italian to the Advanced-level range on the ACTFL scale

Students who successfully complete a certificate will receive an official document verifying their level of achievement. The certificate will be listed on the university transcript.

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French and Italian Department Home

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- BA in French Teaching

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- French Teaching

Language Certificate
- French

Course Information
- French (Fren) Courses

Italian

Majors
- BA in Italian
- BA in Italian Studies (secondary major program)

Minors
- Italian

Language Certificate
- Italian

Course Information
- Italian (Ital) Courses

Faculty

# Italian (Ital)

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## Undergraduate Courses

### 100-Level Courses

ITAL 101 : First-Year Italian, Part 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Daily development of the four language skills: understanding, speaking, reading, and writing.

**Course Outcomes**

- Become familiar with basic grammatical rules in Italian, including some verb tenses and their conjugations.
- Will understand simple sentences on familiar subjects in Italian.
- Will speak simple sentences on familiar subjects in Italian.

ITAL 102 : First-Year Italian, Part 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Ital 101 or equivalent.

DESCRIPTION: Continuation of Ital 101.

**Course Outcomes**

- Become familiar with grammatical rules in Italian, especially the verb tenses and their conjugations.
- Students will understand simple sentences on familiar topics in Italian.
- Students will speak simple sentences on familiar topics in Italian.

### 200-Level Courses

ITAL 201 : Intermediate Italian 1. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Ital 102 or two years of high school Italian or equivalent.

DESCRIPTION: Reading, writing, conversation, vocabulary building, and review of grammar.

**Course Outcomes**

- Students will expand their knowledge of Italian grammar by reviewing and increasing their understanding of rules and structures.
- Students will learn to handle most uncomplicated communication and social situations in Italian. Sustain a general conversation and understand longer connected discourse on topics dealing with different times and places.
- Students will develop competence consistent with the "Intermediate" range of the ACTFL Proficiency Guidelines.http://actflproficiencyguidelines2012.org/
- Students will read texts dealing with descriptions and narration, while complex structures may still interfere with understanding.

ITAL 202 : Intermediate Italian 2. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ITAL 201; or instructor's consent.

DESCRIPTION: Final course for GE Foreign Language requirement (except for returned missionaries); extensive reading in Italian literature and culture.

**Course Outcomes**

- Develop a critical approach to Italian literature through a second-year proficiency level in Italian, analyzing a selection of literary works (listed in the syllabus) within their historical and cultural context.
- Apply the fundamentals of literary interpretation to the texts we discuss.
- Improve oral and written skills in Italian, particularly reading and listening comprehension, written production, and oral expression. Linguistic expected outcome for successful students will target approximately the "Intermediate" range on the ACTFL Proficiency scale.

ITAL 211R : Second-Year Conversation. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Ital 102 or equivalent.
NOTE: May be taken concurrently with Ital 201.

**Course Outcomes**

- Students will describe and narrate in present, past and future times in the context of paragraph-level speech, and initiate and maintain conversations about autobiographical and concrete topics by asking and responding to questions and coping with gaps in knowledge.
- Speak using an appropriate variety of vocabulary related to autobiographical and concrete topics.

### 300-Level Courses

ITAL 311R : Third-Year Conversation. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Ital 211R or instructor's consent.
NOTE: May be taken concurrently with Ital 321 or 340.

**Course Outcomes**

- Students will describe and narrate in present, past and future times in the context of paragraph-level speech about autobiographical and concrete topics, current events, plots of books or movies and state opinion.
- Speak using an appropriate variety of vocabulary related to autobiographical and concrete topics as well as to current events and plots of books or movies.

ITAL 317 : (Fren-Ital) French and Italian Cinema. (3:3:2)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Background for understanding and appreciating the best of motion picture art in France and Italy. Includes components of critical theory essential for analyzing film. Language of instruction is English; no knowledge of French or Italian required.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Identify major filmmakers, and cinematic movements in the history of French and Italian cinema, with particular attention to the socio-historical situations that engendered creation.
- Explore the essential aspects of cinema as an artistic medium and master the technical and critical terminology necessary to intelligently discuss the creative process.
- Develop critical skills for aesthetic judgment in applying acquired techincal knowledge to the films of individual filmmakers from these two traditions.
- Analyze cinema as an art form and "read" individual films in terms of the specificity of an artistic, authorial message.

ITAL 321 : Advanced Grammar. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Ital 202 or equivalent.
DESCRIPTION: Intensive review of grammar; vocabulary building.

**Course Outcomes**

- Show control of Italian morphology and increase vocabulary knowledge
- Handle linguistic tasks and social situations in Italian with confidence, and communicate on topics of current public and personal interest.
- Read and comment on short stories and a short novel in Italian.
- Students will develop functional abilities consistent with the "Advanced" range of the official ACTFL Proficiency Guidelines.http://actflproficiencyguidelines2012.org/

ITAL 322 : Advanced Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Ital 321 or concurrent enrollment.
DESCRIPTION: Italian syntax and composition.

**Course Outcomes**

- Write about personal experiences, narrative and descriptions of a factual nature. Students will show some difficulty supporting points of view in written discourse.
- Show control of the morphology and the most frequently used syntactic structures, e.g., common-word order patterns, coordination, subordination. It is expected that some students will make errors in producing complex sentences.
- Students will develop functional abilities consistent with the "Advanced mid" or "Advanced high" and some "Superior" ratings of the ACTFL Proficiency Guidelines. http://actflproficiencyguidelines2012.org/

ITAL 326 : Italian Phonetics and Pronunciation. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: ITAL 321
DESCRIPTION: General rules of pronunciation. Introduction to history of Italian language.

**Course Outcomes**

- Critically discuss how the Italian language has developed from Latin to modern Italian and distinguish between different language samples, from archaic to the most recent.
- Apply phonetics to improve pronunciation. Transcribe words and paragraphs into the International Phonetic Alphabet.

ITAL 340 : Introduction to Italian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter
RECOMMENDED: Ital 321 and 322.
DESCRIPTION: Basic literary concepts and terms coupled with readings of Italian works from various genres and periods.
NOTE: Capstone course for GE Languages of Learning requirement for returned missionaries.

**Course Outcomes**

- Read, understand, and analyze the Italian literary texts in the syllabus
- Identify the poetic devices included in the "poetry section" of the syllabus and describe their function within the texts discussed in class
- Acquire and implement research skills for the study of Italian literature in order to create two original analytical papers
- Write and speak clearly and effectively in Italian to the Advanced-level range on the ACTFL scale

ITAL 399R : Academic Internship: Italian Language Field Experience. (.5-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Program coordinator's consent.
DESCRIPTION: On-the-job experience in Italian.

**Course Outcomes**

- Articulate an analytical knowledge of the foreign culture and of its people, as related specifically to the working field(s) of their chosen internship(s).
- Describe the active role of the LDS Church in Italy, by comparing and contrasting it with other local religious faiths, specifically observing the cultural variations in religious expression(s).
- Demonstrate achieved improvement in language proficiency, as assessed by pre-departure and post-internship tests.

**400-Level Courses**

ITAL 411R : Fourth-Year Conversation. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent or Italian 311.

**Course Outcomes**

- Initiate and maintain fluent conversations in Italian, and cope with gaps in knowledge in contexts related to concrete topics and in some professional contexts.

ITAL 420 : Italian Civilization from the Beginning to 1600. (3:3:0)

WHEN TAUGHT: Winter
RECOMMENDED: Ital 340.
DESCRIPTION: Survey of history, music, architecture, literature, and arts that shaped the Italian culture and civilization from the beginning through the Renaissance.
NOTE: Fulfills GE Arts elective.

**Course Outcomes**

- Become familiar with the major intellectual and artistic traditions of Italy from the Etruscan period to the Renaissance by identifying the chronology and main characteristics of each period listed in the syllabus.
- Apply vocabulary, grammar, theory, and history to the texts, music, artifacts, and works of art listed in the syllabus to discover, interpret, and evaluate multiple meanings.
- Develop critical skills and informed aesthetic judgment to discuss and analyze the music, architecture, and works of art listed in the syllabus, paying particular attention to their historical or social setting and their place in shaping culture.
- Locate and evaluate resources relevant to course assignments and apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations, and communicate findings coherently both orally and in writing).

ITAL 421 : Italian Civilization from 1600 to the Modern Era. (3:3:0)

WHEN TAUGHT: Winter
RECOMMENDED: Ital 340.
DESCRIPTION: Survey of institutions, fine arts, and great writers that shaped the history of Italy from the Baroque period to the modern era.
NOTE: Fulfills GE Arts elective.

**Course Outcomes**

- Become familiar with the major intellectual and artistic traditions of Italy from the Baroque Period to modern times by identifying the chronology and main characteristics of each period listed in the syllabus.
- Apply critical concepts, theory, and history to the texts, music, artifacts, and works of art listed in the syllabus to discover, interpret, and evaluate their multiple meanings.
- Develop critical skills and informed aesthetic judgment to discuss and analyze the music, architecture, and works of art listed in the syllabus, paying particular attention to their historical or social setting and their place in shaping culture.
- Locate and evaluate resources relevant to course assignments and apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations), and communicate findings coherently both orally and in writing).

ITAL 441 : Italian Literature of the Late Middle Ages and Renaissance. (3:3:0)

PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the “Advanced Low” level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, and demonstrate knowledge of appropriate bibliographic literary databases, such as the MLA’s. Moreover, students will be throughly familiar with the MLA 7th style for their writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. Successful students will be prepared to analyze and critique the main literary currents and authors of Italy’s late Middle Ages and the Renaissance.

ITAL 442 : Italian Literature of the Baroque and Enlightenment Periods. (3:3:0)

PREREQUISITE: ITAL 340

**Course Outcomes**

- Read, understand, and analyze all Italian literature selections listed in the syllabus.
- By the end of the semester, successful students will have written a critical and analytical paper on a topic of their choice, incorporating existing peer-reviewed research and adding their own assessment and originalideas to the discourse.
- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at the “Advanced” level in speaking, listening, writing, and reading on the ACTFL Proficiency scale.

ITAL 443 : Italian Literature of the Romantic Period. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the “Advanced Low” level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, and demonstrate knowledge of appropriate bibliographic literary databases, such as the MLA’s. Moreover, students will be throughly familiar with the MLA 7th style for their writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. They will analyze and critique the three main lines of Italian Romanticism: political, religious, and existential/philosophical.

ITAL 444 : Italian Literature of the Twentieth Century. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the “Advanced Low” level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, demonstrate knowledge of appropriate bibliographic literary databases, such as the MLA’s, and properly use the most up-to-date MLA style for writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. Successful students will be prepared to analyze and critique the main literary currents and authors of Italy’s 20th and 21st Centuries.

ITAL 460 : Dante's *Divine Comedy*. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ITAL 340

DESCRIPTION: Intensive examination of Dante's major opus.

**Course Outcomes**

- By the end of this semester, successful students will be able to discuss any of the cantos listed in this syllabus from a linguistic, theological, historical and critical point of view.
- By the end of the semester, successful students will have written a critical and analytical paper, incorporating existing peer-reviewed research on their topic and adding their own assessment and original ideas to the discourse. Their written linguistic ability will place in the "Advanced Low" (ACTFL scale) level, with the help of the Italian Writing Lab tutor.
- Successful students will be fully familiar with MLA 7th style, and with the MLA bibliographical database.

ITAL 490R : Individual Study in Italian. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.
DESCRIPTION: Assignments to fit individual needs of the advanced student.
NOTE: Not accepted for major or minor.

**Course Outcomes**

- Formulate and express in writing critical arguments on a specialized topic reflecting an understanding of primary and secondary sources.

ITAL 491 : Senior Oral Proficiency Evaluation and Senior Portfolio. (.5:0:0)

WHEN TAUGHT: Fall; Winter
NOTE: Should be completed the semester of graduation.

**Course Outcomes**

- Establish an oral proficiency rating by taking the Oral Proficiency Interview.
- Identify and revise your best papers from Italian courses.
- Write a reflection paper on the experience of graduating in Italian and the future implications on your life and career.

ITAL 495R : Senior Seminar in Italian. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ITAL 340
DESCRIPTION: In-depth study of a limited area of literature, culture, or criticism; content varies; requires research and writing.

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus.Successful students will place at least at the "Advanced Low" level in Italian speaking, listening, writing, and reading on the ACTFL Proficiency scale
- Locate and evaluate primary and secondary sources on a specialized topic.
- Articulate and defend an analytical research paper.
- Acquire basic skills for reading and transcribing manuscript documents written in Italian from the Early Modern period.

ITAL 499R : Honors Thesis. (.5-6:0:0)

**Course Outcomes**

- Develop advanced skills in research techniques and academic writing and produce an acceptable Honors thesis.

**Back to French and Italian Department Home**

College of Humanities Home

French and Italian Department Home

French

Majors

- BA in French
- BA in French Studies (secondary major program)
- BA in French Teaching

Minors

- French
- French Teaching

Language Certificate

- French

Course Information

- French (Fren) Courses

Italian

Majors

- BA in Italian
- BA in Italian Studies (secondary major program)

Minors

- Italian

Language Certificate

- Italian

Course Information

- Italian (Ital) Courses

Faculty

# French and Italian Faculty

Show All
Hide All

## Professors

Cropper, Corry L.

**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1993
MA, University of Illinois, Urbana, 1995
PhD, University of Illinois, Urbana, 1998

LeBras, Yvon Roger

**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Professor
**DEGREES:** BA, University of Rennes, France, 1970
MA, Brigham Young University, 1972
MA, University of Rennes, France, 1972
PhD, Laval University, Canada, 1992

Sprenger, Scott M.

**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Professor
**DEGREES:** BA, University of Washington, 1983
MA, Johns Hopkins University, 1990
PhD, Emory University, 1995

## Associate Professors

Klein, Ilona

**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Associate Professor
**DEGREES:** Dottore in Lingue e Letterature Straniere Moderne, Universita La Sapienza, Rome, Italy, 1981
MA, University of Wisconsin, Madison, 1982
PhD, University of Wisconsin, Madison, 1986

Lee, Daryl

**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, Yale University, 1993
PhD, Yale University, 1999

Olivier, Marc Louis

**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1991
MA, University of Washington, 1993
PhD, University of Washington, 1999

Sprenger, Anca Mitroi

**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Associate Professor
**DEGREES:** BA, University of Bucharest, Romania, 1984
DEA, University of Paris, France, 1991
PhD, University of Southern California, 1997

Unlandt, Nicolaas Gerard Wilhelmus

**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Associate Professor
**DEGREES:** BA, University of Amsterdam, Netherlands, 1983
MA, University of Amsterdam, Netherlands, 1985
PhD, University of Amsterdam, Netherlands, 1993

## Assistant Professors

Erickson, Robert Gammell

**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1971
MA, Middlebury College, 1975
PhD, Brigham Young University, 2000

Flood, Christopher M.

**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2005
MA, Brigham Young University, 2007
CPhil, University of California, Los Angeles, 2011
PhD, University of California, Los Angeles, 2013

Hariguchi, Jennifer

**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, University of Virginia, 1997
PhD, University of Chicago, 2010

Hudson, Robert James

**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2004
MA, Brigham Young University, 2005
PhD, University of California, Los Angeles, 2008

## Teaching Professors

Noble, Cinzia D.

**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Teaching Professor
**DEGREES:** BA, Brigham Young University, 1978
Dott in Lettere Classiche, G. D'Annunzio, Italy, 1979

Thompson, Chantal P.

**COLLEGE:** Humanities
**DEPARTMENT:** French and Italian
**RANK:** Teaching Professor
**DEGREES:** BA, Brigham Young University, 1970
MA, Brigham Young University, 1972

College of Humanities Home

German and Russian Department Home

German

Majors

BA in German
Emphases:
- Linguistics
- Literature/Film/Culture

- BA in German Studies (secondary major program)
- BA in German Teaching

Minors

- German
- German Teaching

Language Certificate

- German

Course Information

- German (Germ) Courses

Russian

Majors

- BA in Russian

Minors

- Russian
- Russian Teaching

Language Certificate

- Russian

Course Information

- Russian (Russ) Courses

Faculty

# German and Russian

Michelle Stott James, Chair
3112 JFSB, (801) 422-4923

College of Humanities Advisement Center
1175 JFSB, (801) 422-4789

## Admission to Degree Program

All degree programs in the Department of German and Russian are open enrollment. However, special limitations apply for teaching majors.

## The Discipline

Students of foreign language and literature develop fluency in another language as well as sensitivity to their own language and cultural heritage, to the contributions and diversity of other peoples, and to the advantages of an international perspective.

## Career Opportunities

Experience with the intellectual, artistic, and spiritual expressions of other cultures and of their own culture helps students qualify for advanced study at graduate and professional schools, especially in linguistics, literature, language teaching methodology, library science, humanities, business, law, and medicine. Those who accept employment on completion of the BA degree frequently serve in international business, in education, or in a government agency.

## General Information

The Department of German and Russian strongly recommends that StDev 317, a 1-credit-hour course, be taken at the end of the sophomore year or the beginning of the junior year. Because liberal arts degrees provide preparation in a variety of useful fields rather than a single career track, this course is recommended to help liberal arts students focus on specific educational and occupational goals and to identify the career options or educational opportunities available to them. The course will introduce them to the resources needed for accessing information about graduate schools, internships, careers, and career development. Students will learn basic employment strategies, including the steps necessary for obtaining employment related to their own specialty.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in German**
**Linguistics Emphasis** (Program Outcomes)
**Literature Emphasis** (Program Outcomes)
**BA in German Studies (secondary major program)** (Program Outcomes)
**BA in German Teaching** (Program Outcomes)
**BA in Russian** (Program Outcomes)

**Minor in German**
**Minor in German Teaching**
**Minor in Russian**
**Minor in Russian Teaching**

**Certificate in German**
**Certificate in Russian**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MA in Second Language Teaching (SLaT)

For more information see the BYU 2014–2015 Graduate Catalog.

College of Humanities Home

German and Russian Department Home

German

Majors

BA in German
Emphases:
- Linguistics
- Literature/Film/Culture

- BA in German Studies (secondary major program)
- BA in German Teaching

Minors

- German
- German Teaching

Language Certificate

- German

Course Information

- German (Germ) Courses

Russian

Majors

- BA in Russian

Minors

- Russian
- Russian Teaching

Language Certificate

- Russian

Course Information

- Russian (Russ) Courses

Faculty

# German

## General Information

1. Beginning German courses (101, 102, 201, 202) will be waived for students having comparable German training or experience, including German 330. Consult department for information about placement examinations.
2. All students will download a portfolio packet when they enroll in their first class in the German section. This portfolio will travel with the students as they progress from course to course through the degree program. It will serve as a checklist to guide them through their course of study, will record their language proficiency, and will also be a repository for all papers and creative work produced by the student in the department. The completed portfolio will be reviewed in Germ 400R in conjunction with the Senior Proficiency Exam.
3. *300-Level German Placement Test*: Before students register for Germ 301, 302, or 303, they must take the 300-Level German Placement Test. This test will determine the appropriate language course for each student. All majors and minors are required to take 302 and 303. Based upon test results, some students will be placed in Germ 301, which counts towards completion of the major or minor elective requirement, in order to strengthen their language skills before they enroll in 302 and 303.
4. A senior capstone paper is required for graduation.
5. Germ 400R is designed to help students of all levels who desire additional skill in speaking, etc.
6. In their final year, graduating seniors must register for 1 credit hour of Germ 400R in conjunction with the senior proficiency examination (offered fall and winter only). Portfolios should be completed and will be reviewed at the time of this exam.
7. Students planning graduate studies in German should begin a second foreign language.

### Language Residency Programs

1. **German-language Study Abroad (Germ 201, 202, 211R, 344, 311R; 302 or 330).** An opportunity for developing language proficiency as well as for becoming better acquainted with the history and culture of Europe. Spring and summer terms. Prerequisite: Germ 102 or equivalent.
2. **German Internship Program (Germ 211R/311R, IAS 397R; Germ 399R or IAS 399R).** The BYU German program is pleased to offer a broad range of short-term internship opportunities in German-speaking countries. Students receive individual help to find and prepare for a work experience that will improve their German-language skills and provide a meaningful context for their academic studies. Completion of Germ 202, or an approved equivalent, with at least a B+ grade is required.
3. **Foreign Language Student Residence (Germ 211R, 311R).** An opportunity to live with other students who have pledged to use only German within the house and with head residents who are native speakers of German. Enrollment in a German class in addition to 211R and 311R is required while living in the house. Prerequisite: Germ 102 or equivalent.
4. **German-Speaking LDS Mission or Other Extended German-Speaking Residency.** Advanced students enroll in Germ 330 and, if desired, complete examinations for Germ 101, 102, 201, and 4 hours of 311R.
5. **Study at a German University.** The department strongly recommends that students spend their junior year at a German university taking courses that will apply toward the major. Universities in Germany charge no tuition, so, even though living costs are generally higher, with careful planning and modest financial support, most students find they can study at "Provo parity," that is, for about the same amount as a year of study in Provo. For advice about how to enroll and what financial support is available, contact the department office.

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German and Russian Department Home

German

Majors

BA in German
Emphases:
- Linguistics
- Literature/Film/Culture

- BA in German Studies (secondary major program)
- BA in German Teaching

Minors

- German
- German Teaching

Language Certificate

- German

Course Information

- German (Germ) Courses

Russian

Majors

- BA in Russian

Minors

- Russian
- Russian Teaching

Language Certificate

- Russian

Course Information

- Russian (Russ) Courses

Faculty

# BA in German: Linguistics Emphasis (36–55 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. See General Information section.
2. The German and Russian Department requires a minimum of 18 hours of upper-division major credit to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
3. Complete the following Level 1 courses (may be waived with equivalent experience including Germ 330):

GERM 101 : First-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.
NOTE: For those who have had no German.

**Course Outcomes**
There are no course outcomes available

GERM 102 : First-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: C grade or better in Germ 101 or equivalent.
DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.

**Course Outcomes**
There are no course outcomes available

4. Complete the following Level 2 courses (may be waived with equivalent experience including Germ 330):

GERM 201 : Second-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: C grade or better in Germ 102 or equivalent.
DESCRIPTION: Reading, writing, grammar, culture, listening, and speaking.

**Course Outcomes**
There are no course outcomes available

GERM 202 : Second-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: C grade or better in Germ 201 or equivalent.
DESCRIPTION: Culminating course for Languages of Learning requirement emphasizing culture and literature. Continued writing, grammar, listening, and speaking.
NOTE: Prerequisite to all 300- and 400-level courses. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

5. Complete three hours of one of the following (or equivalent):

GERM 211R : Intermediate Conversation. (1-5:ARR:ARR)
PREREQUISITE: Germ 102 or equivalent experience.
DESCRIPTION: Intensive vocabulary building and conversation practice. Can be fulfilled through language residency program.

**Course Outcomes**
No outcomes are available at this time.

GERM 311R : Advanced Conversation. (1-5:ARR:ARR)

PREREQUISITE: Germ 211R or equivalent experience.

NOTE: Intensive vocabulary building and conversation practice. Can be fulfilled through language residency program.

**Course Outcomes**

There are no course outcomes available

6. Complete the following Level 3 courses:

GERM 302 : Advanced German Language 1. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Germ 301 and/or an "advanced" score on the 300-Level German Placement Test (administered in Germ 202 or 330).

RECOMMENDED: Germ 301, 330 if major language exam score is "intermediate" or lower; Study Abroad in Berlin or Vienna.

DESCRIPTION: Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.

NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**

There are no course outcomes available

GERM 303 : Advanced German Language 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GERM 302

RECOMMENDED: Germ 330; Study Abroad in Berlin or Vienna.

DESCRIPTION: Continuation of Germ 302. Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.

NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**

There are no course outcomes available

GERM 330 : Cultural History of German-Speaking Peoples. (3:3:1.5)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Germ 202 or equivalent experience.

DESCRIPTION: Culture, with listening, speaking, reading, writing, and grammar as secondary emphases. Includes International Cinema.

NOTE: Entry course for returned missionaries or others with equivalent German language experience. Required course for obtaining language credit by examination (Germ 101, 102, 201, 311R). Prerequisite to all 400-level courses. Culminating course for Languages of Learning requirement.

**Course Outcomes**

There are no course outcomes available

GERM 343 : Introduction to Literary Analysis. (3:3:.5)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Germ 302, 303, 330, 340.

DESCRIPTION: Close reading of texts; examining various critical theories and their application to German prose, drama, poetry, and film. Preparation for 440R - 445R sequence. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

GERM 344 : Introduction to Phonetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GERM 330

RECOMMENDED: Germ 301, 302, 303.

DESCRIPTION: Perfecting listening and speaking skills through applying phonetics and acoustic analysis; practicing speaking and listening.

**Course Outcomes**

There are no course outcomes available

7. Complete the following or other approved advanced writing course:

GERM 340 : Writing About Literature. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall

DESCRIPTION: Methods of literary interpretation. Reading, writing, and research skills integral to the literary

analysis expected in German major or minor courses.
NOTE: Fills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**
There are no course outcomes available

8. Complete the following:
   GERM 450 : History of the German Language. (3:3:0)
   WHEN TAUGHT: Fall
   PREREQUISITE: GERM 302 & GERM 303 & GERM 344
   DESCRIPTION: Linguistic survey of the German language from Indo-European to modern times, including phonology, morphology, syntax, and lexicon.

   **Course Outcomes**
   There are no course outcomes available

   GERM 460 : Structure of Modern German. (3:3:0)
   WHEN TAUGHT: Winter
   PREREQUISITE: GERM 302 & GERM 303 & GERM 344
   DESCRIPTION: Structural and socio-linguistic study of contemporary German.

   **Course Outcomes**
   There are no course outcomes available

   GERM 497R : Senior Seminar in German Language. (3:3:0)
   WHEN TAUGHT: Fall
   PREREQUISITE: Senior status.
   DESCRIPTION: Culminating senior-level course in which acquired knowledge and critical skills are brought to bear on a selected language topic. In-depth capstone paper on one aspect of topic.

   **Course Outcomes**
   There are no course outcomes available

   **Note:** Germ 497R must be a topic related to advanced German linguistics.

9. Complete eight additional hours of pro-seminars and/or courses numbered 315 or higher, 5 hours of which must be approved linguistics courses such as second language acquisition, dialectology, Middle High German, or Old Saxon.

10. Final German proficiency examination: complete the following during the last two semesters before graduation (not offered spring or summer):
    GERM 400R : Fourth-Year Proficiency Tutorial. (1-3:ARR:ARR)
    WHEN TAUGHT: Fall; Winter
    DESCRIPTION: Individualized skill building in listening, speaking, reading, writing, and grammar. Open to students of all levels. For graduating seniors, completed portfolios reviewed, and final proficiency examination administered.
    NOTE: Required for one credit in one of final two semesters for graduating seniors.

    **Course Outcomes**
    There are no course outcomes available

    (1 hour required).

    **Note:** A capstone paper will be required.

*Hours include courses that may fulfill university core requirements.

## Show all German (Germ) Courses

College of Humanities Home

German and Russian Department Home

German

Majors

BA in German
Emphases:
- Linguistics
- Literature/Film/Culture

- BA in German Studies (secondary major program)
- BA in German Teaching

Minors

- German
- German Teaching

Language Certificate

- German

Course Information

- German (Germ) Courses

Russian

Majors

- BA in Russian

Minors

- Russian
- Russian Teaching

Language Certificate

- Russian

Course Information

- Russian (Russ) Courses

Faculty

# BA in German: Literature/Film/Culture Emphasis (39-55 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. See General Information section.
2. The German and Russian Department requires a minimum of 18 hours of upper-division major credit to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
3. Complete the following Level 1 courses (may be waived with equivalent experience including Germ 330):

   GERM 101 : First-Year German. (4:5:1)
   WHEN TAUGHT: Fall; Winter; Spring
   DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.
   NOTE: For those who have had no German.

   **Course Outcomes**
   There are no course outcomes available

   GERM 102 : First-Year German. (4:5:1)
   WHEN TAUGHT: Fall; Winter; Summer
   PREREQUISITE: C grade or better in Germ 101 or equivalent.
   DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.

   **Course Outcomes**
   There are no course outcomes available

4. Complete the following Level 2 courses (may be waived with equivalent experience including Germ 330):

   GERM 201 : Second-Year German. (4:5:1)
   WHEN TAUGHT: Fall; Winter; Spring
   PREREQUISITE: C grade or better in Germ 102 or equivalent.
   DESCRIPTION: Reading, writing, grammar, culture, listening, and speaking.

   **Course Outcomes**
   There are no course outcomes available

   GERM 202 : Second-Year German. (4:5:1)
   WHEN TAUGHT: Fall; Winter; Summer
   PREREQUISITE: C grade or better in Germ 201 or equivalent.
   DESCRIPTION: Culminating course for Languages of Learning requirement emphasizing culture and literature. Continued writing, grammar, listening, and speaking.
   NOTE: Prerequisite to all 300- and 400-level courses. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

   **Course Outcomes**
   There are no course outcomes available

5. Complete three hours of one of the following (or equivalent):

   GERM 211R : Intermediate Conversation. (1-5:ARR:ARR)
   PREREQUISITE: Germ 102 or equivalent experience.
   DESCRIPTION: Intensive vocabulary building and conversation practice. Can be fulfilled through language residency program.

   **Course Outcomes**
   No outcomes are available at this time.

GERM 311R : Advanced Conversation. (1-5:ARR:ARR)

PREREQUISITE: Germ 211R or equivalent experience.

NOTE: Intensive vocabulary building and conversation practice. Can be fulfilled through language residency program.

**Course Outcomes**

There are no course outcomes available

6. Complete the following Level 3 courses:

GERM 302 : Advanced German Language 1. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Germ 301 and/or an "advanced" score on the 300-Level German Placement Test (administered in Germ 202 or 330).

RECOMMENDED: Germ 301, 330 if major language exam score is "intermediate" or lower; Study Abroad in Berlin or Vienna.

DESCRIPTION: Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.

NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**

There are no course outcomes available

GERM 303 : Advanced German Language 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GERM 302

RECOMMENDED: Germ 330; Study Abroad in Berlin or Vienna.

DESCRIPTION: Continuation of Germ 302. Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.

NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**

There are no course outcomes available

GERM 330 : Cultural History of German-Speaking Peoples. (3:3:1.5)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Germ 202 or equivalent experience.

DESCRIPTION: Culture, with listening, speaking, reading, writing, and grammar as secondary emphases. Includes International Cinema.

NOTE: Entry course for returned missionaries or others with equivalent German language experience. Required course for obtaining language credit by examination (Germ 101, 102, 201, 311R). Prerequisite to all 400-level courses. Culminating course for Languages of Learning requirement.

**Course Outcomes**

There are no course outcomes available

GERM 343 : Introduction to Literary Analysis. (3:3:.5)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Germ 302, 303, 330, 340.

DESCRIPTION: Close reading of texts; examining various critical theories and their application to German prose, drama, poetry, and film. Preparation for 440R - 445R sequence. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

GERM 344 : Introduction to Phonetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GERM 330

RECOMMENDED: Germ 301, 302, 303.

DESCRIPTION: Perfecting listening and speaking skills through applying phonetics and acoustic analysis; practicing speaking and listening.

**Course Outcomes**

There are no course outcomes available

7. Complete the following or other approved advanced writing course:

GERM 340 : Writing About Literature. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall

DESCRIPTION: Methods of literary interpretation. Reading, writing, and research skills integral to the literary

analysis expected in German major or minor courses.
NOTE: Fills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**
There are no course outcomes available

8. Complete 17 additional hours:

- Six hours must be seminar credits from the following:
GERM 440R : German Literary Periods and Movements. (1-5:Arr.:0)
WHEN TAUGHT: Fall
RECOMMENDED: Germ 302, 303, 330, 340, 343.
DESCRIPTION: In-depth study of a period or movement such as medieval, Renaissance, baroque, eighteenth century, romanticism, classicism, realism, fin-de-siecle Vienna, naturalism, expressionism, post-war, or contemporary.

**Course Outcomes**
There are no course outcomes available

- Six additional hours must be seminar courses from the following:
GERM 440R : German Literary Periods and Movements. (1-5:Arr.:0)
WHEN TAUGHT: Fall
RECOMMENDED: Germ 302, 303, 330, 340, 343.
DESCRIPTION: In-depth study of a period or movement such as medieval, Renaissance, baroque, eighteenth century, romanticism, classicism, realism, fin-de-siecle Vienna, naturalism, expressionism, post-war, or contemporary.

**Course Outcomes**
There are no course outcomes available

GERM 441R : Studies in German Literary Genres. (1-5:Arr.:0)
RECOMMENDED: Germ 302, 303, 330, 340, 343.
DESCRIPTION: In-depth study of a genre such as drama, novel, novella, lyric, or film.

**Course Outcomes**
There are no course outcomes available

GERM 442R : Major German Authors. (1-5:Arr.:0)
WHEN TAUGHT: Winter
RECOMMENDED: Germ 302, 303, 330, 340, 343.
DESCRIPTION: In-depth study of one author such as Lessing, Goethe, B.V. Arnim, Kleist, Storm, Rilke, Brecht, Mann, Kafka, or Bachmann.

**Course Outcomes**
There are no course outcomes available

GERM 443R : Studies in Literary Theory. (1-5:Arr.:0)
RECOMMENDED: Germ 302, 303, 330, 340, 343.
DESCRIPTION: In-depth study of primary texts by contemporary literary theorists. May include topics such as Frankfurter school, feminist criticism, reader response, or post-structuralism.

**Course Outcomes**
There are no course outcomes available

GERM 444R : Interdisciplinary Studies. (1-5:Arr.:0)
RECOMMENDED: Germ 302, 303, 330, 340, 343.
DESCRIPTION: Studies linking German literature, film, and the arts within German culture or across national boundaries.

**Course Outcomes**
No outcomes are available at this time.

GERM 445R : Special Topics in German Cultural Studies. (1-5:Arr.:0)
WHEN TAUGHT: Fall
RECOMMENDED: Germ 302, 303, 330, 340, 343.
DESCRIPTION: German cultural studies courses of a non-traditional nature, as determined by the faculty.

**Course Outcomes**
There are no course outcomes available

GERM 497R : Senior Seminar in German Language. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Senior status.

DESCRIPTION: Culminating senior-level course in which acquired knowledge and critical skills are brought to bear on a selected language topic. In-depth capstone paper on one aspect of topic.

**Course Outcomes**

There are no course outcomes available

- Five remaining elective hours may be from selected German courses numbered 215 or higher.

9. Final German proficiency examination: complete the following during the last two semesters before graduation (not offered spring or summer):

GERM 400R : Fourth-Year Proficiency Tutorial. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Individualized skill building in listening, speaking, reading, writing, and grammar. Open to students of all levels. For graduating seniors, completed portfolios reviewed, and final proficiency examination administered.

NOTE: Required for one credit in one of final two semesters for graduating seniors.

**Course Outcomes**

There are no course outcomes available

(1 hour required).

**Note:** A capstone paper will be required.

*Hours include courses that may fulfill university core requirements.

## Show all German (Germ) Courses

College of Humanities Home

German and Russian Department Home

German

Majors

BA in German
Emphases:
- Linguistics
- Literature/Film/Culture

- BA in German Studies (secondary major program)
- BA in German Teaching

Minors

- German
- German Teaching

Language Certificate

- German

Course Information

- German (Germ) Courses

Russian

Majors

- BA in Russian

Minors

- Russian
- Russian Teaching

Language Certificate

- Russian

Course Information

- Russian (Russ) Courses

Faculty

# BA in German Studies (secondary major program) (31–47 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Students must complete the requirements for a primary major in another field
2. Complete the following Level 1 courses (may be waived with equivalent experience including Germ 330):

GERM 101 : First-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.
NOTE: For those who have had no German.

**Course Outcomes**
There are no course outcomes available

GERM 102 : First-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: C grade or better in Germ 101 or equivalent.
DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.

**Course Outcomes**
There are no course outcomes available

3. Complete the following Level 2 courses (may be waived with equivalent experience including Germ 330):

GERM 201 : Second-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: C grade or better in Germ 102 or equivalent.
DESCRIPTION: Reading, writing, grammar, culture, listening, and speaking.

**Course Outcomes**
There are no course outcomes available

GERM 202 : Second-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: C grade or better in Germ 201 or equivalent.
DESCRIPTION: Culminating course for Languages of Learning requirement emphasizing culture and literature. Continued writing, grammar, listening, and speaking.
NOTE: Prerequisite to all 300- and 400-level courses. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

4. Complete three hours of one of the following:

GERM 211R : Intermediate Conversation. (1-5:ARR:ARR)
PREREQUISITE: Germ 102 or equivalent experience.
DESCRIPTION: Intensive vocabulary building and conversation practice. Can be fulfilled through language residency program.

**Course Outcomes**
No outcomes are available at this time.

GERM 311R : Advanced Conversation. (1-5:ARR:ARR)
PREREQUISITE: Germ 211R or equivalent experience.

NOTE: Intensive vocabulary building and conversation practice. Can be fulfilled through language residency program.

**Course Outcomes**

There are no course outcomes available

Or equivalent residency (mission, Study Abroad, internship, German language residence).

5. Complete the following Level 3 courses:

GERM 302 : Advanced German Language 1. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Germ 301 and/or an "advanced" score on the 300-Level German Placement Test (administered in Germ 202 or 330).
RECOMMENDED: Germ 301, 330 if major language exam score is "intermediate" or lower; Study Abroad in Berlin or Vienna.
DESCRIPTION: Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.
NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**

There are no course outcomes available

GERM 303 : Advanced German Language 2. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: GERM 302
RECOMMENDED: Germ 330; Study Abroad in Berlin or Vienna.
DESCRIPTION: Continuation of Germ 302. Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.
NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**

There are no course outcomes available

GERM 330 : Cultural History of German-Speaking Peoples. (3:3:1.5)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Germ 202 or equivalent experience.
DESCRIPTION: Culture, with listening, speaking, reading, writing, and grammar as secondary emphases. Includes International Cinema.
NOTE: Entry course for returned missionaries or others with equivalent German language experience. Required course for obtaining language credit by examination (Germ 101, 102, 201, 311R). Prerequisite to all 400-level courses. Culminating course for Languages of Learning requirement.

**Course Outcomes**

There are no course outcomes available

GERM 343 : Introduction to Literary Analysis. (3:3:.5)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
RECOMMENDED: Germ 302, 303, 330, 340.
DESCRIPTION: Close reading of texts; examining various critical theories and their application to German prose, drama, poetry, and film. Preparation for 440R - 445R sequence. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

GERM 344 : Introduction to Phonetics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: GERM 330
RECOMMENDED: Germ 301, 302, 303.
DESCRIPTION: Perfecting listening and speaking skills through applying phonetics and acoustic analysis; practicing speaking and listening.

**Course Outcomes**

There are no course outcomes available

6. Complete the following or other approved advanced writing course:

GERM 340 : Writing About Literature. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall
DESCRIPTION: Methods of literary interpretation. Reading, writing, and research skills integral to the literary analysis expected in German major or minor courses.
NOTE: Fills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

There are no course outcomes available

7. Complete nine additional hours from courses numbered Germ 315 or higher. At least three of these hours must be courses from the following:

GERM 440R : German Literary Periods and Movements. (1-5:Arr.:0)

WHEN TAUGHT: Fall

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: In-depth study of a period or movement such as medieval, Renaissance, baroque, eighteenth century, romanticism, classicism, realism, fin-de-siecle Vienna, naturalism, expressionism, post-war, or contemporary.

**Course Outcomes**

There are no course outcomes available

GERM 441R : Studies in German Literary Genres. (1-5:Arr.:0)

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: In-depth study of a genre such as drama, novel, novella, lyric, or film.

**Course Outcomes**

There are no course outcomes available

GERM 442R : Major German Authors. (1-5:Arr.:0)

WHEN TAUGHT: Winter

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: In-depth study of one author such as Lessing, Goethe, B.V. Arnim, Kleist, Storm, Rilke, Brecht, Mann, Kafka, or Bachmann.

**Course Outcomes**

There are no course outcomes available

GERM 443R : Studies in Literary Theory. (1-5:Arr.:0)

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: In-depth study of primary texts by contemporary literary theorists. May include topics such as Frankfurter school, feminist criticism, reader response, or post-structuralism.

**Course Outcomes**

There are no course outcomes available

GERM 444R : Interdisciplinary Studies. (1-5:Arr.:0)

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: Studies linking German literature, film, and the arts within German culture or across national boundaries.

**Course Outcomes**

No outcomes are available at this time.

GERM 445R : Special Topics in German Cultural Studies. (1-5:Arr.:0)

WHEN TAUGHT: Fall

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: German cultural studies courses of a non-traditional nature, as determined by the faculty.

**Course Outcomes**

There are no course outcomes available

GERM 497R : Senior Seminar in German Language. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Senior status.

DESCRIPTION: Culminating senior-level course in which acquired knowledge and critical skills are brought to bear on a selected language topic. In-depth capstone paper on one aspect of topic.

**Course Outcomes**

There are no course outcomes available

8. Final German proficiency examination: complete the following during one of the last two semesters before graduation (not offered spring or summer):

GERM 400R : Fourth-Year Proficiency Tutorial. (1-3:ARR:ARR)

WHEN Fall; Winter

TAUGHT:

DESCRIPTION: Individualized skill building in listening, speaking, reading, writing, and grammar. Open to students of all levels. For graduating seniors, completed portfolios reviewed, and final proficiency examination administered.

NOTE: Required for one credit in one of final two semesters for graduating seniors.

**Course Outcomes**

There are no course outcomes available

1 hour required

**Note:** A capstone paper will be required

*Hours include courses that may fulfill university core requirements.

## Show all German (Germ) Courses

College of Humanities Home

German and Russian Department Home

German

Majors

BA in German
Emphases:
- Linguistics
- Literature/Film/Culture

- BA in German Studies (secondary major program)
- BA in German Teaching

Minors

- German
- German Teaching

Language Certificate

- German

Course Information

- German (Germ) Courses

Russian

Majors

- BA in Russian

Minors

- Russian
- Russian Teaching

Language Certificate

- Russian

Course Information

- Russian (Russ) Courses

Faculty

# BA in German Teaching (63–79 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

1. See General Information section.
2. The German and Russian Department requires a minimum of 18 hours of upper-division major credit to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
3. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
4. A teaching minor in another subject is strongly recommended. Teaching opportunities in public schools may be significantly reduced without a second teaching subject that a teaching minor provides.
5. Declare the major at the Humanities Advisement Center and contact the German teaching major advisor to complete a German proficiency examination. A minimum initial rating of *intermediate - mid* is recommended.
6. Complete the following Level 1 courses (may be waived with equivalent experience including Germ 330):

GERM 101 : First-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.
NOTE: For those who have had no German.

**Course Outcomes**
There are no course outcomes available

GERM 102 : First-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: C grade or better in Germ 101 or equivalent.
DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.

**Course Outcomes**
There are no course outcomes available

7. Complete the following Level 2 courses (may be waived with equivalent experience including Germ 330):

GERM 201 : Second-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: C grade or better in Germ 102 or equivalent.
DESCRIPTION: Reading, writing, grammar, culture, listening, and speaking.

**Course Outcomes**
There are no course outcomes available

GERM 202 : Second-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: C grade or better in Germ 201 or equivalent.
DESCRIPTION: Culminating course for Languages of Learning requirement emphasizing culture and literature. Continued writing, grammar, listening, and speaking.
NOTE: Prerequisite to all 300- and 400-level courses. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

8. Complete three hours of one of the following (or equivalent):

GERM 211R : Intermediate Conversation. (1-5:ARR:ARR)

PREREQUISITE: Germ 102 or equivalent experience.

DESCRIPTION: Intensive vocabulary building and conversation practice. Can be fulfilled through language residency program.

**Course Outcomes**

No outcomes are available at this time.

GERM 311R : Advanced Conversation. (1-5:ARR:ARR)

PREREQUISITE: Germ 211R or equivalent experience.

NOTE: Intensive vocabulary building and conversation practice. Can be fulfilled through language residency program.

**Course Outcomes**

There are no course outcomes available

9. Complete the following Level 3 courses:

GERM 302 : Advanced German Language 1. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Germ 301 and/or an "advanced" score on the 300-Level German Placement Test (administered in Germ 202 or 330).

RECOMMENDED: Germ 301, 330 if major language exam score is "intermediate" or lower; Study Abroad in Berlin or Vienna.

DESCRIPTION: Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.

NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**

There are no course outcomes available

GERM 303 : Advanced German Language 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GERM 302

RECOMMENDED: Germ 330; Study Abroad in Berlin or Vienna.

DESCRIPTION: Continuation of Germ 302. Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.

NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**

There are no course outcomes available

GERM 330 : Cultural History of German-Speaking Peoples. (3:3:1.5)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Germ 202 or equivalent experience.

DESCRIPTION: Culture, with listening, speaking, reading, writing, and grammar as secondary emphases. Includes International Cinema.

NOTE: Entry course for returned missionaries or others with equivalent German language experience. Required course for obtaining language credit by examination (Germ 101, 102, 201, 311R). Prerequisite to all 400-level courses. Culminating course for Languages of Learning requirement.

**Course Outcomes**

There are no course outcomes available

GERM 343 : Introduction to Literary Analysis. (3:3:.5)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Germ 302, 303, 330, 340.

DESCRIPTION: Close reading of texts; examining various critical theories and their application to German prose, drama, poetry, and film. Preparation for 440R - 445R sequence. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

GERM 344 : Introduction to Phonetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GERM 330

RECOMMENDED: Germ 301, 302, 303.

DESCRIPTION: Perfecting listening and speaking skills through applying phonetics and acoustic analysis; practicing speaking and listening.

**Course Outcomes**

There are no course outcomes available

GERM 377 : Methods in Teaching German. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GERM 303 & GERM 344 & FLANG 276

DESCRIPTION: Developing meaningful and engaging instruction for secondary students in German; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

There are no course outcomes available

GERM 378 : Practicum in Teaching German. (1:1:2)

WHEN TAUGHT: Fall

PREREQUISITE: GERM 303 & GERM 344 & FLANG 276; concurrent enrollment in Germ 377.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students in German; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

There are no course outcomes available

**Note:** Germ 377 must be taken concurrently with Germ 378 fall semester and prior to student teaching; however, Germ 377 and 378 may be waived for students who have taken a methods course for another language.

10. Complete the following or other approved advanced writing course:

GERM 340 : Writing About Literature. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall

DESCRIPTION: Methods of literary interpretation. Reading, writing, and research skills integral to the literary analysis expected in German major or minor courses.

NOTE: Fills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

There are no course outcomes available

11. Complete one course from the following:

GERM 450 : History of the German Language. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GERM 302 & GERM 303 & GERM 344

DESCRIPTION: Linguistic survey of the German language from Indo-European to modern times, including phonology, morphology, syntax, and lexicon.

**Course Outcomes**

There are no course outcomes available

GERM 460 : Structure of Modern German. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GERM 302 & GERM 303 & GERM 344

DESCRIPTION: Structural and socio-linguistic study of contemporary German.

**Course Outcomes**

There are no course outcomes available

12. Complete 10 additional hours of pro-seminars and/or courses numbered 315 or higher.

13. Complete a senior capstone paper. (The teacher work sample completed during student teaching serves as the capstone paper.)

14. Complete an ACTFL OPI exam with a minimum rating of *Advanced-Low* before applying to student teach. Contact the Center for Language Studies, 3086 JFSB, to schedule. This requirement may also be satisfied during Germ 400R.

15. Final German proficiency examination: Complete the following during the last two semesters before graduation (not offered spring or summer).

GERM 400R : Fourth-Year Proficiency Tutorial. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Individualized skill building in listening, speaking, reading, writing, and grammar. Open to students of all levels. For graduating seniors, completed portfolios reviewed, and final proficiency examination administered.

NOTE: Required for one credit in one of final two semesters for graduating seniors.

**Course Outcomes**

There are no course outcomes available

(1 hour required).

16. Complete an ETS Praxis exam in German prior to applying for graduation and certification. Contact Education Student Services, 350 MCKB.

17. Complete the Professional Education Component:
    - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

FLANG 276 : Exploration of Teaching Foreign Languages. (4:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Field-based exposure to practices, demands, and issues associated with teaching foreign languages in public secondary schools.

**Course Outcomes**

- Determine if pursuing a personal career in foreign language teaching in public secondary schools is the correct decision.
- Have a developing awareness of what foreign-language students should know and be able to do and of good foreign-language teaching practice.
- Discuss the public purposes of education, related social and political issues, and the benefits of speaking a foreign language.
- Articulate personal motivations for becoming a teacher, as well as recognize potential strengths and weaknesses as a teacher.

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or HIth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This

includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.

DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

**Note:** FBI fingerprint and background clearance must be completed before enrollment in FLang 276.

- Complete 12 hours from one of the following:

GERM 476 : Secondary Student Teaching. (12:Arr.:Arr.)

WHEN TAUGHT: Winter

DESCRIPTION: Capstone, field-based, semester-long, full-time experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

GERM 496R : Academic Internship: German Teaching. (12:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval. Requires a major GPA of 2.85. At least a C- grade in Germ 377.

DESCRIPTION: Capstone, field-based, year-long, full-time experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

## Show all German (Germ) Courses

College of Humanities Home

German and Russian Department Home

German

Majors

BA in German
Emphases:
- Linguistics
- Literature/Film/Culture

- BA in German Studies (secondary major program)
- BA in German Teaching

Minors

- German
- German Teaching

Language Certificate

- German

Course Information

- German (Germ) Courses

Russian

Majors

- BA in Russian

Minors

- Russian
- Russian Teaching

Language Certificate

- Russian

Course Information

- Russian (Russ) Courses

Faculty

# Minor in German (18–34 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following prerequisite courses (may be waived with equivalent experience including Germ 330):

GERM 101 : First-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.
NOTE: For those who have had no German.

**Course Outcomes**
There are no course outcomes available

GERM 102 : First-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: C grade or better in Germ 101 or equivalent.
DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.

**Course Outcomes**
There are no course outcomes available

GERM 201 : Second-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: C grade or better in Germ 102 or equivalent.
DESCRIPTION: Reading, writing, grammar, culture, listening, and speaking.

**Course Outcomes**
There are no course outcomes available

GERM 202 : Second-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: C grade or better in Germ 201 or equivalent.
DESCRIPTION: Culminating course for Languages of Learning requirement emphasizing culture and literature. Continued writing, grammar, listening, and speaking.
NOTE: Prerequisite to all 300- and 400-level courses. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

2. Complete the following:

GERM 302 : Advanced German Language 1. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Germ 301 and/or an "advanced" score on the 300-Level German Placement Test (administered in Germ 202 or 330).
RECOMMENDED: Germ 301, 330 if major language exam score is "intermediate" or lower; Study Abroad in Berlin or Vienna.
DESCRIPTION: Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.
NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**
There are no course outcomes available

GERM 303 : Advanced German Language 2. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: GERM 302
RECOMMENDED: Germ 330; Study Abroad in Berlin or Vienna.
DESCRIPTION: Continuation of Germ 302. Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.
NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**

There are no course outcomes available

GERM 330 : Cultural History of German-Speaking Peoples. (3:3:1.5)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Germ 202 or equivalent experience.
DESCRIPTION: Culture, with listening, speaking, reading, writing, and grammar as secondary emphases. Includes International Cinema.
NOTE: Entry course for returned missionaries or others with equivalent German language experience. Required course for obtaining language credit by examination (Germ 101, 102, 201, 311R). Prerequisite to all 400-level courses. Culminating course for Languages of Learning requirement.

**Course Outcomes**

There are no course outcomes available

3. Complete one course from the following:

GERM 343 : Introduction to Literary Analysis. (3:3:.5)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
RECOMMENDED: Germ 302, 303, 330, 340.
DESCRIPTION: Close reading of texts; examining various critical theories and their application to German prose, drama, poetry, and film. Preparation for 440R - 445R sequence. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

GERM 344 : Introduction to Phonetics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: GERM 330
RECOMMENDED: Germ 301, 302, 303.
DESCRIPTION: Perfecting listening and speaking skills through applying phonetics and acoustic analysis; practicing speaking and listening.

**Course Outcomes**

There are no course outcomes available

4. Complete 6 additional hours of pro-seminars and/or courses numbered Germ 215 or higher. At least three of these hours must be approved literature or culture courses such as advanced literature seminars, advanced critical theory, German film, and other courses related to culture, theory, and literary scholarship.

*Hours include courses that may fulfill university core requirements.

## Show all German (Germ) Courses

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German and Russian Department Home

German

Majors

BA in German
Emphases:
- Linguistics
- Literature/Film/Culture

- BA in German Studies (secondary major program)
- BA in German Teaching

Minors

- German
- German Teaching

Language Certificate

- German

Course Information

- German (Germ) Courses

Russian

Majors

- BA in Russian

Minors

- Russian
- Russian Teaching

Language Certificate

- Russian

Course Information

- Russian (Russ) Courses

Faculty

# Minor in German Teaching (20–36 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. Declare the minor at the Humanities Advisement Center and contact the German teaching major advisor to complete a German proficiency examination. A minimum initial rating of *intermediate - mid* is recommended.
2. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
3. Complete the following prerequisite courses (may be waived with equivalent experience including Germ 330):

GERM 101 : First-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.
NOTE: For those who have had no German.

**Course Outcomes**
There are no course outcomes available

GERM 102 : First-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: C grade or better in Germ 101 or equivalent.
DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.

**Course Outcomes**
There are no course outcomes available

GERM 201 : Second-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: C grade or better in Germ 102 or equivalent.
DESCRIPTION: Reading, writing, grammar, culture, listening, and speaking.

**Course Outcomes**
There are no course outcomes available

GERM 202 : Second-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: C grade or better in Germ 201 or equivalent.
DESCRIPTION: Culminating course for Languages of Learning requirement emphasizing culture and literature. Continued writing, grammar, listening, and speaking.
NOTE: Prerequisite to all 300- and 400-level courses. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

4. Complete the following:

GERM 302 : Advanced German Language 1. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Germ 301 and/or an "advanced" score on the 300-Level German Placement Test (administered in Germ 202 or 330).
RECOMMENDED: Germ 301, 330 if major language exam score is "intermediate" or lower; Study Abroad in Berlin

or Vienna.

DESCRIPTION: Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.

NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**

There are no course outcomes available

GERM 303 : Advanced German Language 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GERM 302

RECOMMENDED: Germ 330; Study Abroad in Berlin or Vienna.

DESCRIPTION: Continuation of Germ 302. Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.

NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**

There are no course outcomes available

GERM 330 : Cultural History of German-Speaking Peoples. (3:3:1.5)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Germ 202 or equivalent experience.

DESCRIPTION: Culture, with listening, speaking, reading, writing, and grammar as secondary emphases. Includes International Cinema.

NOTE: Entry course for returned missionaries or others with equivalent German language experience. Required course for obtaining language credit by examination (Germ 101, 102, 201, 311R). Prerequisite to all 400-level courses. Culminating course for Languages of Learning requirement.

**Course Outcomes**

There are no course outcomes available

GERM 344 : Introduction to Phonetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GERM 330

RECOMMENDED: Germ 301, 302, 303.

DESCRIPTION: Perfecting listening and speaking skills through applying phonetics and acoustic analysis; practicing speaking and listening.

**Course Outcomes**

There are no course outcomes available

GERM 377 : Methods in Teaching German. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GERM 303 & GERM 344 & FLANG 276

DESCRIPTION: Developing meaningful and engaging instruction for secondary students in German; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

There are no course outcomes available

GERM 378 : Practicum in Teaching German. (1:1:2)

WHEN TAUGHT: Fall

PREREQUISITE: GERM 303 & GERM 344 & FLANG 276; concurrent enrollment in Germ 377.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students in German; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

There are no course outcomes available

**Note:** Germ 377 must be taken concurrently with Germ 378 fall semester and prior to student teaching; however, Germ 377 and 378 may be waived for students who have taken a methods course for another language.

5. Complete 3 additional hours of pro-seminars and/or courses numbered 315 or higher.
6. **Complete an ACTFL OPI exam** with a minimum rating of *Advanced-Low* before applying to student teach. Contact the Center for Language Studies, 3086 JFSB, to schedule. This requirement may also be satisfied during Germ 400R if taken early enough.
7. **Final German proficiency examination:** Complete the following during the last two semesters before graduation (not offered spring or summer):

GERM 400R : Fourth-Year Proficiency Tutorial. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Individualized skill building in listening, speaking, reading, writing, and grammar. Open to students of all levels. For graduating seniors, completed portfolios reviewed, and final proficiency examination administered.

NOTE: Required for one credit in one of final two semesters for graduating seniors.

**Course Outcomes**

There are no course outcomes available

(1 hour required).

**Note:** A capstone paper will be required.

8. Complete an ETS Praxis exam in German prior to applying for graduation and certification. Contact Education Student Services, 350 MCKB.

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BA in German
Emphases:
- Linguistics
- Literature/Film/Culture

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- BA in German Teaching

Minors

- German
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Language Certificate

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Course Information

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Russian

Majors

- BA in Russian

Minors

- Russian
- Russian Teaching

Language Certificate

- Russian

Course Information

- Russian (Russ) Courses

Faculty

# German Language Certificate (9 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This Language Certificate program is administered by the Center for Language Studies (3086 JFSB), http://languagecertificate.byu.edu.*

Any matriculated (degree-seeking) BYU student who meets the proficiency and course requirements may earn the German Language Certificate. The proficiency requirement is met through the nationally recognized ACTFL Oral and Writing Proficiency Exams. Qualifying students will be awarded a certificate on one of three levels based on the following:

1. Advanced Certificate: An ACTFL "Advanced" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
2. Mastery Certificate: An ACTFL "Advanced High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
3. Professional Certificate: An ACTFL "Superior" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.

## Required Courses:

**Note:** Students who have completed all of the coursework required for a language major or a language minor will also have satisfied the coursework requirement for the language certificate.

1. Language - complete one course from the following:

GERM 301 : Intermediate German. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Germ 202 and/or a score of "Intermediate" or lower on the 300-Level German Placement Test.
RECOMMENDED: Germ 101, 102, 201, 202.
DESCRIPTION: Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar. Geared toward "high-intermediate" level language learner.
NOTE: Counts as an elective towards the German major or minor.

**Course Outcomes**
There are no course outcomes available

GERM 302 : Advanced German Language 1. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Germ 301 and/or an "advanced" score on the 300-Level German Placement Test (administered in Germ 202 or 330).
RECOMMENDED: Germ 301, 330 if major language exam score is "intermediate" or lower; Study Abroad in Berlin or Vienna.
DESCRIPTION: Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.
NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**
There are no course outcomes available

GERM 303 : Advanced German Language 2. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: GERM 302
RECOMMENDED: Germ 330; Study Abroad in Berlin or Vienna.
DESCRIPTION: Continuation of Germ 302. Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.
NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**
There are no course outcomes available

GERM 344 : Introduction to Phonetics. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: GERM 330
RECOMMENDED: Germ 301, 302, 303.

DESCRIPTION: Perfecting listening and speaking skills through applying phonetics and acoustic analysis; practicing speaking and listening.

**Course Outcomes**

There are no course outcomes available

2. Civilization:

GERM 330 : Cultural History of German-Speaking Peoples. (3:3:1.5)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Germ 202 or equivalent experience.

DESCRIPTION: Culture, with listening, speaking, reading, writing, and grammar as secondary emphases. Includes International Cinema.

NOTE: Entry course for returned missionaries or others with equivalent German language experience. Required course for obtaining language credit by examination (Germ 101, 102, 201, 311R). Prerequisite to all 400-level courses. Culminating course for Languages of Learning requirement.

**Course Outcomes**

There are no course outcomes available

3. Literature:

GERM 343 : Introduction to Literary Analysis. (3:3:.5)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Germ 302, 303, 330, 340.

DESCRIPTION: Close reading of texts; examining various critical theories and their application to German prose, drama, poetry, and film. Preparation for 440R - 445R sequence. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

Students who successfully complete a certificate will receive an official document verifying their level of achievement. The certificate will be listed on the university transcript.

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Majors

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- Literature/Film/Culture

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- German Teaching

Language Certificate
- German

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Russian

Majors
- BA in Russian

Minors
- Russian
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Language Certificate
- Russian

Course Information
- Russian (Russ) Courses

Faculty

# German (Germ)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

GERM 101 : First-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.
NOTE: For those who have had no German.

**Course Outcomes**
There are no course outcomes available

GERM 102 : First-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: C grade or better in Germ 101 or equivalent.
DESCRIPTION: Listening, speaking, reading, writing, grammar, and culture.

**Course Outcomes**
There are no course outcomes available

GERM 115 : Pro-Seminar 1. (1:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction to German cultural studies, mentored research, and professional skills development.

**Course Outcomes**
No outcomes are available at this time.

### 200-Level Courses

GERM 200R : Second-Year Proficiency Tutorial. (1-3:ARR:ARR)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Germ 102 or equivalent.
DESCRIPTION: Individualized skill building in listening, speaking, reading, writing, and grammar.
NOTE: For students in Germ 102, 201, and 202 who require additional tutorial assistance.

**Course Outcomes**
There are no course outcomes available

GERM 201 : Second-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: C grade or better in Germ 102 or equivalent.
DESCRIPTION: Reading, writing, grammar, culture, listening, and speaking.

**Course Outcomes**
There are no course outcomes available

GERM 202 : Second-Year German. (4:5:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: C grade or better in Germ 201 or equivalent.
DESCRIPTION: Culminating course for Languages of Learning requirement emphasizing culture and literature. Continued writing, grammar, listening, and speaking.
NOTE: Prerequisite to all 300- and 400-level courses. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GERM 211R : Intermediate Conversation. (1-5:ARR:ARR)

PREREQUISITE: Germ 102 or equivalent experience.

DESCRIPTION: Intensive vocabulary building and conversation practice. Can be fulfilled through language residency program.

**Course Outcomes**

No outcomes are available at this time.

GERM 215 : Pro-Seminar 2. (1-3:Arr:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction to mentored scholarly research in German cultural studies. How to apply for ORCA grants, Fulbright and other fellowships. Continued professional skills development.

**Course Outcomes**

No outcomes are available at this time.

GERM 217 : (Germ-Scand) German and Scandinavian Cinema. (3:3:3)

WHEN TAUGHT: Fall Odd Yrs.

RECOMMENDED: A first-year writing course.

DESCRIPTION: Background for understanding and appreciating the best of motion picture art in Germany and Scandinavia.

NOTE: Language of instruction is English; no knowledge of German or Scandinavian languages is required. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

**300-Level Courses**

GERM 300R : Third-Year Proficiency Tutorial. (1-3:ARR:ARR)

PREREQUISITE: Germ 202 or equivalent.

DESCRIPTION: Individualized skill building in listening, speaking, reading, writing, and grammar.

NOTE: For students in Germ 301 and higher who require additional tutorial assistance.

**Course Outcomes**

There are no course outcomes available

GERM 301 : Intermediate German. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Germ 202 and/or a score of "Intermediate" or lower on the 300-Level German Placement Test.

RECOMMENDED: Germ 101, 102, 201, 202.

DESCRIPTION: Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar. Geared toward "high-intermediate" level language learner.

NOTE: Counts as an elective towards the German major or minor.

**Course Outcomes**

There are no course outcomes available

GERM 302 : Advanced German Language 1. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Germ 301 and/or an "advanced" score on the 300-Level German Placement Test (administered in Germ 202 or 330).

RECOMMENDED: Germ 301, 330 if major language exam score is "intermediate" or lower; Study Abroad in Berlin or Vienna.

DESCRIPTION: Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.

NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**

There are no course outcomes available

GERM 303 : Advanced German Language 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GERM 302

RECOMMENDED: Germ 330; Study Abroad in Berlin or Vienna.

DESCRIPTION: Continuation of Germ 302. Integration of different aspects of language learning including speaking, listening, culture, writing, reading, pronunciation, vocabulary, and grammar.

NOTE: Required for German major or minor. Geared toward the "advanced" level language learner.

**Course Outcomes**

There are no course outcomes available

GERM 311R : Advanced Conversation. (1-5:ARR:ARR)

PREREQUISITE: Germ 211R or equivalent experience.

NOTE: Intensive vocabulary building and conversation practice. Can be fulfilled through language residency program.

**Course Outcomes**

There are no course outcomes available

GERM 315 : Directed Research in Lit/Film/Culture 1. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Mentored research building toward honors thesis, capstone paper, or publishable paper. Continued opportunity to work on grant and fellowship applications. Professional skills development.

**Course Outcomes**

There are no course outcomes available

GERM 316 : Directed Research in Linguistics 1. (1-3:Arr:Arr)

DESCRIPTION: Introduction to mentored scholarly research in German linguistic studies. Focus on gathering and analyzing data. Continued professional skills development.

**Course Outcomes**

There are no course outcomes available

GERM 330 : Cultural History of German-Speaking Peoples. (3:3:1.5)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Germ 202 or equivalent experience.

DESCRIPTION: Culture, with listening, speaking, reading, writing, and grammar as secondary emphases. Includes International Cinema.

NOTE: Entry course for returned missionaries or others with equivalent German language experience. Required course for obtaining language credit by examination (Germ 101, 102, 201, 311R). Prerequisite to all 400-level courses. Culminating course for Languages of Learning requirement.

**Course Outcomes**

There are no course outcomes available

GERM 340 : Writing About Literature. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall

DESCRIPTION: Methods of literary interpretation. Reading, writing, and research skills integral to the literary analysis expected in German major or minor courses.

NOTE: Fills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

There are no course outcomes available

GERM 343 : Introduction to Literary Analysis. (3:3:.5)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Germ 302, 303, 330, 340.

DESCRIPTION: Close reading of texts; examining various critical theories and their application to German prose, drama, poetry, and film. Preparation for 440R - 445R sequence. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

GERM 344 : Introduction to Phonetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GERM 330

RECOMMENDED: Germ 301, 302, 303.

DESCRIPTION: Perfecting listening and speaking skills through applying phonetics and acoustic analysis; practicing speaking and listening.

**Course Outcomes**

There are no course outcomes available

GERM 345R : Field Studies in German. (1-6:Arr:Arr)

PREREQUISITE: Study abroad, internship, or direct enrollment only.

RECOMMENDED: Germ 102.

DESCRIPTION: Field studies to help develop mastery of study abroad specific skills such as research data gathering, ethnographic observation, interviews, as well as intensive understanding of art and architectural history, drama and musical performances, investigations of cultural differences, etc.

**Course Outcomes**

There are no course outcomes available

GERM 377 : Methods in Teaching German. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GERM 303 & GERM 344 & FLANG 276

DESCRIPTION: Developing meaningful and engaging instruction for secondary students in German; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

There are no course outcomes available

GERM 378 : Practicum in Teaching German. (1:1:2)

WHEN TAUGHT: Fall

PREREQUISITE: GERM 303 & GERM 344 & FLANG 276; concurrent enrollment in Germ 377.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students in German; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

There are no course outcomes available

GERM 399R : Academic Internship: German Work. (.5-9:ARR:ARR)

DESCRIPTION: On-the-job ten-week summer language experience in German-speaking countries. Report required.

NOTE: Not applicable to German major or minor.

**Course Outcomes**

There are no course outcomes available

**400-Level Courses**

GERM 400R : Fourth-Year Proficiency Tutorial. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Individualized skill building in listening, speaking, reading, writing, and grammar. Open to students of all levels. For graduating seniors, completed portfolios reviewed, and final proficiency examination administered.

NOTE: Required for one credit in one of final two semesters for graduating seniors.

**Course Outcomes**

There are no course outcomes available

GERM 415 : Directed Research in Lit/Film/Culture 2. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Mentored research leading to completion of capstone paper, honors thesis, ORCA paper, or other publishable papers. Review of portfolio. Direction in submitting papers for publication, reading papers at conferences. Continued professional skills development, including how to apply for graduate school and completion of Fulbright and other fellowship applications.

**Course Outcomes**

There are no course outcomes available

GERM 416 : Directed Research in Linguistics 2. (1-3:Arr:Arr)

DESCRIPTION: Introduction to mentored scholarly research in German linguistic studies. Focus on conducting linguistic research and writing about the results of linguistic studies. Continued professional development skills.

**Course Outcomes**

There are no course outcomes available

GERM 440R : German Literary Periods and Movements. (1-5:Arr.:0)

WHEN TAUGHT: Fall

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: In-depth study of a period or movement such as medieval, Renaissance, baroque, eighteenth century, romanticism, classicism, realism, fin-de-siecle Vienna, naturalism, expressionism, post-war, or contemporary.

**Course Outcomes**

There are no course outcomes available

GERM 441R : Studies in German Literary Genres. (1-5:Arr.:0)

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: In-depth study of a genre such as drama, novel, novella, lyric, or film.

**Course Outcomes**

There are no course outcomes available

GERM 442R : Major German Authors. (1-5:Arr.:0)

WHEN TAUGHT: Winter

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: In-depth study of one author such as Lessing, Goethe, B.V. Arnim, Kleist, Storm, Rilke, Brecht, Mann, Kafka, or Bachmann.

**Course Outcomes**

There are no course outcomes available

GERM 443R : Studies in Literary Theory. (1-5:Arr.:0)

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: In-depth study of primary texts by contemporary literary theorists. May include topics such as Frankfurter school, feminist criticism, reader response, or post-structuralism.

**Course Outcomes**

There are no course outcomes available

GERM 444R : Interdisciplinary Studies. (1-5:Arr.:0)

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: Studies linking German literature, film, and the arts within German culture or across national boundaries.

**Course Outcomes**

No outcomes are available at this time.

GERM 445R : Special Topics in German Cultural Studies. (1-5:Arr.:0)

WHEN TAUGHT: Fall

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: German cultural studies courses of a non-traditional nature, as determined by the faculty.

**Course Outcomes**

There are no course outcomes available

GERM 450 : History of the German Language. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GERM 302 & GERM 303 & GERM 344

DESCRIPTION: Linguistic survey of the German language from Indo-European to modern times, including phonology, morphology, syntax, and lexicon.

**Course Outcomes**

There are no course outcomes available

GERM 460 : Structure of Modern German. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GERM 302 & GERM 303 & GERM 344

DESCRIPTION: Structural and socio-linguistic study of contemporary German.

**Course Outcomes**

There are no course outcomes available

GERM 476 : Secondary Student Teaching. (12:Arr.:Arr.)

WHEN TAUGHT: Winter

DESCRIPTION: Capstone, field-based, semester-long, full-time experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

GERM 490R : Special Studies in German. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

NOTE: Variable credit for individual or group study as approved for special circumstances. Not applicable to German major or minor.

**Course Outcomes**

There are no course outcomes available

GERM 496R : Academic Internship: German Teaching. (12:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval. Requires a major GPA of 2.85. At least a C- grade in Germ 377.

DESCRIPTION: Capstone, field-based, year-long, full-time experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

GERM 497R : Senior Seminar in German Language. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Senior status.

DESCRIPTION: Culminating senior-level course in which acquired knowledge and critical skills are brought to bear on a selected language topic. In-depth capstone paper on one aspect of topic.

**Course Outcomes**

There are no course outcomes available

GERM 498R : Preparing for Professional/Graduate School. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Junior or senior status.

DESCRIPTION: Preparation for professional schools and graduate programs. Focuses upon the rigors of the application process, developing relevant skills, adn becoming conversant with current intellectual discourses.

**Course Outcomes**

No outcomes are available at this time.

GERM 499R : Honors Thesis. (.5-6:ARR:ARR)

**Course Outcomes**

There are no course outcomes available

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Course Information

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Faculty

# BA in Russian (50–85 hours*)

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Hide All Course Descriptions

## General Information

**Important Note for Returned Russian-Speaking Missionaries:** Register for third-year Russian classes. Russ 330 is recommended. Russ 202 will be waived as a requirement for Russian majors and should not be taken except when remedial work is necessary and permission is obtained from the section leader. Credit for Russ 101, 102, 201, and 211 is available through a test given as part of Russ 330. Returned missionaries must complete Russ 330 and talk with the Russian section head before declaring a major.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following preparatory courses (may be waived for students with sufficient proficiency in the language):

RUSS 101 : First-Year Russian, Part 1. (5:5:1)
WHEN TAUGHT: Fall; Winter; Spring

**Course Outcomes**
There are no course outcomes available

RUSS 102 : First-Year Russian, Part 2. (5:5:1)
WHEN TAUGHT: Winter; Summer

**Course Outcomes**
There are no course outcomes available

RUSS 201 : Second-Year Russian, Part 1. (5:5:1)
WHEN TAUGHT: Fall
PREREQUISITE: Russ 102 or instructor's consent, based on prior Russian language experience.
DESCRIPTION: Grammar review and conversation.

**Course Outcomes**
There are no course outcomes available

RUSS 202 : Second-Year Russian, Part 2. (5:5:1)
WHEN TAUGHT: Winter
PREREQUISITE: Russ 201 or instructor's consent.
DESCRIPTION: Grammar review and discussion in Russian of both expository and literary readings.
NOTE: Culminating course for Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

2. Complete the following major courses:

RUSS 321 : Third-Year Russian Part 1. (2:2:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Russ 202 or equivalent.
DESCRIPTION: Grammar and composition, case government, listening and speaking skills.

**Course Outcomes**
There are no course outcomes available

RUSS 322 : Third-Year Russian Part 2. (2:2:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: Russ 202 or equivalent.

DESCRIPTION: Grammar and composition, case government, listening and speaking skills.

**Course Outcomes**

There are no course outcomes available

RUSS 323 : Russian Phonology and Morphology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: RUSS 321

DESCRIPTION: Perfecting speaking and listening skills through phonetics and applied speaking and listening techniques. Better understanding and using the structures of Russian through studying morphology and historical phonology.

**Course Outcomes**

There are no course outcomes available

RUSS 330 : Cultural History of Russia. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Russ 202 or foreign residence experience.

NOTE: Required course for obtaining language credit by examination (Russ 101, 102, 201, 211R). Culminating course for Languages of Learning requirement. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

RUSS 340 : Masterpieces of the Russian Novel in English. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Survey of Russian novels by such authors as Pushkin, Tolstoy, Dostoevsky, and Pasternak.

**Course Outcomes**

There are no course outcomes available

RUSS 421 : Fourth-Year Russian, Part 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: RUSS 321 & RUSS 322 & RUSS 330

DESCRIPTION: Contemporary language and culture.

**Course Outcomes**

There are no course outcomes available

RUSS 422 : Fourth-Year Russian, Part 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: RUSS 321 & RUSS 322 & RUSS 330

DESCRIPTION: The structure of Russian.

**Course Outcomes**

There are no course outcomes available

RUSS 441 : Masterpieces of Russian Literature 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: RUSS 321 & RUSS 322 & RUSS 340

DESCRIPTION: Survey of shorter masterpieces in Russian.

**Course Outcomes**

There are no course outcomes available

RUSS 442 : Masterpieces of Russian Literature 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: RUSS 321 & RUSS 322 & RUSS 340

DESCRIPTION: Survey of shorter masterpieces in Russian.

**Course Outcomes**

There are no course outcomes available

RUSS 492R : Senior Seminar: Passages and Conclusions. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: RUSS 441; or RUSS 442

DESCRIPTION: In-depth study of a limited area of literature or language. Content varies; requires research and writing.

**Course Outcomes**
There are no course outcomes available

3. Complete one course from the following:

RUSS 341 : Dostoevsky's Major Works in Translation. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Survey of Dostoevsky's major works in English translation.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

RUSS 342 : Tolstoy's Major Works in Translation. (3:3:0)
WHEN TAUGHT: Winter
DESCRIPTION: Survey of Tolstoy's major works in English translation.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

RUSS 343 : Masterpieces of Russian Film. (3:3:1)
WHEN TAUGHT: Winter
PREREQUISITE: RUSS 330
DESCRIPTION: Developing listening comprehension and speaking skills through discussing Russian films. Includes International Cinema.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

4. Complete a substantial program of study that complements the student's educational and professional goals, i.e., 1) a secondary major or 2) a substantial minor or equivalent program and an internship. A variety of internship opportunities are available on campus, locally, or abroad. This program should be described and justified in a letter to the Russian section leader, and approved by the section, no later than the year before graduation.

**Note:** In addition to completing other Russian course work, it is expected that majors who have not spent an extended period in Russia will live for at least a semester in the Russian Student Foreign Language Residence *and* complete the BYU or approved equivalent Study Abroad program in Russia.

*Hours include courses that may fulfill university core requirements.

## Show all Russian (Russ) Courses

College of Humanities Home

German and Russian Department Home

German

Majors

BA in German
Emphases:
- Linguistics
- Literature/Film/Culture

- BA in German Studies (secondary major program)
- BA in German Teaching

Minors

- German
- German Teaching

Language Certificate

- German

Course Information

- German (Germ) Courses

Russian

Majors

- BA in Russian

Minors

- Russian
- Russian Teaching

Language Certificate

- Russian

Course Information

- Russian (Russ) Courses

Faculty

# Minor in Russian (12–32 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed only for students of Russian who have had no missionary-level residency experience in Russia.*

## Program Requirements

1. Complete the following prerequisite courses (may be waived for students with sufficient proficiency in the language):

RUSS 101 : First-Year Russian, Part 1. (5:5:1)
WHEN TAUGHT: Fall; Winter; Spring

**Course Outcomes**
There are no course outcomes available

RUSS 102 : First-Year Russian, Part 2. (5:5:1)
WHEN TAUGHT: Winter; Summer

**Course Outcomes**
There are no course outcomes available

RUSS 201 : Second-Year Russian, Part 1. (5:5:1)
WHEN TAUGHT: Fall
PREREQUISITE: Russ 102 or instructor's consent, based on prior Russian language experience.
DESCRIPTION: Grammar review and conversation.

**Course Outcomes**
There are no course outcomes available

RUSS 202 : Second-Year Russian, Part 2. (5:5:1)
WHEN TAUGHT: Winter
PREREQUISITE: Russ 201 or instructor's consent.
DESCRIPTION: Grammar review and discussion in Russian of both expository and literary readings.
NOTE: Culminating course for Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

2. Complete the following with the BYU Russia Study Abroad program or an approved equivalent program:

RUSS 211 : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: Russ 201 or foreign residence experience.
DESCRIPTION: Intermediate listening comprehension and speaking skills.
NOTE: Offered only as credit by examination upon completion of Russ 330 (maximum 1 hour) or through Study Abroad experience in Russian (1-5 hours).

**Course Outcomes**
There are no course outcomes available

RUSS 301 : Intermediate Russian on Study Abroad. (2:2:0)
OFFERED: Russian Study Abroad only.
PREREQUISITE: RUSS 202
DESCRIPTION: Grammar and composition, case government, listening and speaking skills.

**Course Outcomes**
There are no course outcomes available

RUSS 330 : Cultural History of Russia. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Russ 202 or foreign residence experience.

NOTE: Required course for obtaining language credit by examination (Russ 101, 102, 201, 211R). Culminating course for Languages of Learning requirement. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

RUSS 490R : Special Studies in Russian. (.5-3:ARR:0)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Variable credit for individual or group study as approved for special circumstances.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

## Show all Russian (Russ) Courses

College of Humanities Home

German and Russian Department Home

German

Majors

BA in German
Emphases:
- Linguistics
- Literature/Film/Culture

- BA in German Studies (secondary major program)
- BA in German Teaching

Minors

- German
- German Teaching

Language Certificate

- German

Course Information

- German (Germ) Courses

Russian

Majors

- BA in Russian

Minors

- Russian
- Russian Teaching

Language Certificate

- Russian

Course Information

- Russian (Russ) Courses

Faculty

# Minor in Russian Teaching (17–32 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

**Note:** Before declaring a Russian teaching minor, candidates must consult with the section leader.

## Program Requirements

1. Register with the secretary in the department office.
2. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
3. Complete the following prerequisite courses (may be waived for students with sufficient proficiency in the language):

RUSS 101 : First-Year Russian, Part 1. (5:5:1)
WHEN TAUGHT: Fall; Winter; Spring

**Course Outcomes**
There are no course outcomes available

RUSS 102 : First-Year Russian, Part 2. (5:5:1)
WHEN TAUGHT: Winter; Summer

**Course Outcomes**
There are no course outcomes available

RUSS 201 : Second-Year Russian, Part 1. (5:5:1)
WHEN TAUGHT: Fall
PREREQUISITE: Russ 102 or instructor's consent, based on prior Russian language experience.
DESCRIPTION: Grammar review and conversation.

**Course Outcomes**
There are no course outcomes available

4. Complete the following:

RUSS 202 : Second-Year Russian, Part 2. (5:5:1)
WHEN TAUGHT: Winter
PREREQUISITE: Russ 201 or instructor's consent.
DESCRIPTION: Grammar review and discussion in Russian of both expository and literary readings.
NOTE: Culminating course for Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

(see Note for Returned Russian-speaking Missionaries)
If 202 was waived, take 441 or 442.

RUSS 330 : Cultural History of Russia. (3:3:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Russ 202 or foreign residence experience.
NOTE: Required course for obtaining language credit by examination (Russ 101, 102, 201, 211R). Culminating course for Languages of Learning requirement. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

RUSS 340 : Masterpieces of the Russian Novel in English. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Survey of Russian novels by such authors as Pushkin, Tolstoy, Dostoevsky, and Pasternak.

**Course Outcomes**

There are no course outcomes available

5. Complete one course from the following:

RUSS 321 : Third-Year Russian Part 1. (2:2:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Russ 202 or equivalent.

DESCRIPTION: Grammar and composition, case government, listening and speaking skills.

**Course Outcomes**

There are no course outcomes available

RUSS 322 : Third-Year Russian Part 2. (2:2:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: Russ 202 or equivalent.

DESCRIPTION: Grammar and composition, case government, listening and speaking skills.

**Course Outcomes**

There are no course outcomes available

6. Complete a foreign language methodology course as approved by the Russian section head. Course must be taken prior to student teaching.
7. Before applying to student teach in the major, complete the Oral Proficiency Interview (OPI) examination with a minimum level of *Intermediate-High* in order to be granted Utah state licensure.

*Hours include courses that may fulfill university core requirements.

## Show all Russian (Russ) Courses

College of Humanities Home

German and Russian Department Home

German

Majors

BA in German
Emphases:
- Linguistics
- Literature/Film/Culture

- BA in German Studies (secondary major program)
- BA in German Teaching

Minors

- German
- German Teaching

Language Certificate

- German

Course Information

- German (Germ) Courses

Russian

Majors

- BA in Russian

Minors

- Russian
- Russian Teaching

Language Certificate

- Russian

Course Information

- Russian (Russ) Courses

Faculty

# Russian Language Certificate (9 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This Language Certificate program is administered by The Center for Language Studies (3086 JFSB), http://languagecertificate.byu.edu.*

Any matriculated (degree-seeking) BYU student who meets the proficiency and course requirements may earn the Russian Language Certificate. The proficiency requirement is met through the nationally recognized ACTFL Oral and Writing Proficiency Exams. Qualifying students will be awarded a certificate on one of three levels based on the following:

1. Advanced Certificate: An ACTFL "Advanced" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
2. Mastery Certificate: An ACTFL "Advanced High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
3. Professional Certificate: An ACTFL "Superior" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.

## Required Courses:

**Note:** Students who have completed all of the coursework required for a language major or a language minor will also have satisfied the coursework requirement for the language certificate.

1. Language - complete one course from the following:

RUSS 321 : Third-Year Russian Part 1. (2:2:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: Russ 202 or equivalent.
DESCRIPTION: Grammar and composition, case government, listening and speaking skills.

**Course Outcomes**
There are no course outcomes available

RUSS 322 : Third-Year Russian Part 2. (2:2:0)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: Russ 202 or equivalent.
DESCRIPTION: Grammar and composition, case government, listening and speaking skills.

**Course Outcomes**
There are no course outcomes available

RUSS 323 : Russian Phonology and Morphology. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: RUSS 321
DESCRIPTION: Perfecting speaking and listening skills through phonetics and applied speaking and listening techniques. Better understanding and using the structures of Russian through studying morphology and historical phonology.

**Course Outcomes**
There are no course outcomes available

2. Civilization - complete one course from the following:

RUSS 330 : Cultural History of Russia. (3:3:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Russ 202 or foreign residence experience.
NOTE: Required course for obtaining language credit by examination (Russ 101, 102, 201, 211R). Culminating course for Languages of Learning requirement. Includes International Cinema.

**Course Outcomes**
There are no course outcomes available

RUSS 343 : Masterpieces of Russian Film. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: RUSS 330

DESCRIPTION: Developing listening comprehension and speaking skills through discussing Russian films. Includes International Cinema.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

3. Literature - complete one course from the following:

RUSS 340 : Masterpieces of the Russian Novel in English. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Survey of Russian novels by such authors as Pushkin, Tolstoy, Dostoevsky, and Pasternak.

**Course Outcomes**

There are no course outcomes available

RUSS 341 : Dostoevsky's Major Works in Translation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Survey of Dostoevsky's major works in English translation.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

RUSS 342 : Tolstoy's Major Works in Translation. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Survey of Tolstoy's major works in English translation.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

Students who successfully complete a certificate will receive an official document verifying their level of achievement. The certificate will be listed on the university transcript.

College of Humanities Home

German and Russian Department Home

German

Majors

BA in German
Emphases:
- Linguistics
- Literature/Film/Culture

- BA in German Studies (secondary major program)
- BA in German Teaching

Minors

- German
- German Teaching

Language Certificate

- German

Course Information

- German (Germ) Courses

Russian

Majors

- BA in Russian

Minors

- Russian
- Russian Teaching

Language Certificate

- Russian

Course Information

- Russian (Russ) Courses

Faculty

# Russian (Russ)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

RUSS 101 : First-Year Russian, Part 1. (5:5:1)
WHEN TAUGHT: Fall; Winter; Spring

**Course Outcomes**
There are no course outcomes available

RUSS 102 : First-Year Russian, Part 2. (5:5:1)
WHEN TAUGHT: Winter; Summer

**Course Outcomes**
There are no course outcomes available

RUSS 199R : Academic Internship. (.5-3:ARR:ARR)
PREREQUISITE: Department chair's and internship coordinator's consent.
DESCRIPTION: On-the-job experience evaluated by supervisor and posted on student's transcript. Report required
NOTE: Not applicable to major or minor.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

RUSS 201 : Second-Year Russian, Part 1. (5:5:1)
WHEN TAUGHT: Fall
PREREQUISITE: Russ 102 or instructor's consent, based on prior Russian language experience.
DESCRIPTION: Grammar review and conversation.

**Course Outcomes**
There are no course outcomes available

RUSS 202 : Second-Year Russian, Part 2. (5:5:1)
WHEN TAUGHT: Winter
PREREQUISITE: Russ 201 or instructor's consent.
DESCRIPTION: Grammar review and discussion in Russian of both expository and literary readings.
NOTE: Culminating course for Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

RUSS 211 : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: Russ 201 or foreign residence experience.
DESCRIPTION: Intermediate listening comprehension and speaking skills.
NOTE: Offered only as credit by examination upon completion of Russ 330 (maximum 1 hour) or through Study Abroad experience in Russian (1-5 hours).

**Course Outcomes**
There are no course outcomes available

**300-Level Courses**

RUSS 301 : Intermediate Russian on Study Abroad. (2:2:0)

OFFERED: Russian Study Abroad only.
PREREQUISITE: RUSS 202
DESCRIPTION: Grammar and composition, case government, listening and speaking skills.

**Course Outcomes**

There are no course outcomes available

RUSS 321 : Third-Year Russian Part 1. (2:2:0)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: Russ 202 or equivalent.
DESCRIPTION: Grammar and composition, case government, listening and speaking skills.

**Course Outcomes**

There are no course outcomes available

RUSS 322 : Third-Year Russian Part 2. (2:2:0)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: Russ 202 or equivalent.
DESCRIPTION: Grammar and composition, case government, listening and speaking skills.

**Course Outcomes**

There are no course outcomes available

RUSS 323 : Russian Phonology and Morphology. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: RUSS 321
DESCRIPTION: Perfecting speaking and listening skills through phonetics and applied speaking and listening techniques. Better understanding and using the structures of Russian through studying morphology and historical phonology.

**Course Outcomes**

There are no course outcomes available

RUSS 330 : Cultural History of Russia. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Russ 202 or foreign residence experience.
NOTE: Required course for obtaining language credit by examination (Russ 101, 102, 201, 211R). Culminating course for Languages of Learning requirement. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

RUSS 340 : Masterpieces of the Russian Novel in English. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
DESCRIPTION: Survey of Russian novels by such authors as Pushkin, Tolstoy, Dostoevsky, and Pasternak.

**Course Outcomes**

There are no course outcomes available

RUSS 341 : Dostoevsky's Major Works in Translation. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: Survey of Dostoevsky's major works in English translation.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

RUSS 342 : Tolstoy's Major Works in Translation. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Survey of Tolstoy's major works in English translation.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

RUSS 343 : Masterpieces of Russian Film. (3:3:1)

WHEN TAUGHT: Winter
PREREQUISITE: RUSS 330
DESCRIPTION: Developing listening comprehension and speaking skills through discussing Russian films. Includes International Cinema.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

RUSS 399R : Academic Internship. (.5-9:0:0)
PREREQUISITE: RUSS 202; department's consent.
DESCRIPTION: On-the-job experience in Russian-related areas. Report required.
NOTE: Not applicable to any Russian major or minor.

**Course Outcomes**
There are no course outcomes available

### 400-Level Courses

RUSS 421 : Fourth-Year Russian, Part 1. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: RUSS 321 & RUSS 322 & RUSS 330
DESCRIPTION: Contemporary language and culture.

**Course Outcomes**
There are no course outcomes available

RUSS 422 : Fourth-Year Russian, Part 2. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: RUSS 321 & RUSS 322 & RUSS 330
DESCRIPTION: The structure of Russian.

**Course Outcomes**
There are no course outcomes available

RUSS 441 : Masterpieces of Russian Literature 1. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: RUSS 321 & RUSS 322 & RUSS 340
DESCRIPTION: Survey of shorter masterpieces in Russian.

**Course Outcomes**
There are no course outcomes available

RUSS 442 : Masterpieces of Russian Literature 2. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: RUSS 321 & RUSS 322 & RUSS 340
DESCRIPTION: Survey of shorter masterpieces in Russian.

**Course Outcomes**
There are no course outcomes available

RUSS 490R : Special Studies in Russian. (.5-3:ARR:0)
PREREQUISITE: Instructor's consent.
DESCRIPTION: Variable credit for individual or group study as approved for special circumstances.

**Course Outcomes**
There are no course outcomes available

RUSS 492R : Senior Seminar: Passages and Conclusions. (2:2:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: RUSS 441; or RUSS 442
DESCRIPTION: In-depth study of a limited area of literature or language. Content varies; requires research and writing.

**Course Outcomes**
There are no course outcomes available

RUSS 499R : Honors Thesis. (.5-6:ARR:ARR)

**Course Outcomes**

There are no course outcomes available

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to German and Russian Department Home**

College of Humanities Home

German and Russian Department Home

German

Majors

BA in German
Emphases:
- Linguistics
- Literature/Film/Culture

- BA in German Studies (secondary major program)
- BA in German Teaching

Minors

- German
- German Teaching

Language Certificate

- German

Course Information

- German (Germ) Courses

Russian

Majors

- BA in Russian

Minors

- Russian
- Russian Teaching

Language Certificate

- Russian

Course Information

- Russian (Russ) Courses

Faculty

# German and Russian Faculty

Show All
Hide All

## Professors

Hart, David Kay
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1973
MA, University of Washington, 1975
PhD, University of Washington, 1979

Kelling, Hans-Wilhelm
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1958
MA, Stanford University, 1960
PhD, Stanford University, 1967

## Associate Professors

Bown, Jennifer Marks
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1991
MA, Ohio State University, 1993
MEd, Ohio State University, 1999
PhD, Ohio State University, 2004

Brewer, Cindy Patey
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1991
PhD, University of Utah, 1998

Brown, N. Anthony
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BA, Southern Methodist University, 1998
MA, Bryn Mawr College, 2002
PhD, Bryn Mawr College, 2004

James, Michelle Stott
**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BA, Weber State College, 1978
MA, University of Utah, 1981
PhD, University of Utah, 1987

Kelly, Michael Ray

**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1978
MA, Ohio State University, 1990
PhD, Ohio State University, 1996

Lundberg, Grant H.

**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, University of Kansas, 1994
PhD, University of Kansas, 1999

McFarland, Robert B.

**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, Brigham Young University, 1995
PhD, University of California, Berkeley, 2000

Smith, Laura Catharine

**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Associate Professor
**DEGREES:** BA, Queen's University, Kingston (Canada), 1994
BEd, Queens University, Kingston (Canada), 1995
MA, University of Calgary, 1997
MA, University of Wisconsin, Madison, 2000
PhD, University of Wisconsin, Madison, 2004

## Assistant Professors

Bell, Teresa R.

**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1992
PhD, University of Arizona, 2001

Clement, Christian Rolf

**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Assistant Professor
**DEGREES:** BA, Hamburg College of Music and Dance, 1998
BA, University of Hamburg, 1999
MA, University of Hamburg, 2001
PhD, University of Utah, 2005

Purves, Mark Richard

**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2001
MA, University of Virginia, 2004
PhD, University of Virginia, 2007

Spencer, Thomas Robert

**COLLEGE:** Humanities
**DEPARTMENT:** German and Russian
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2000
MA, University of North Carolina, Chapel Hill, 2003
PhD, University of North Carolina, Chapel Hill, 2008

# Associate Teaching Professor

Solovieva, Raissa V.

**COLLEGE:** Humanities

**DEPARTMENT:** German and Russian

**RANK:** Associate Teaching Professor

**DEGREES:** BA, Tomsk State University, Russia, 1971
MA, Novosibirsk State University, Russia, 1982
PhD, Kharkov State University, Ukraine, 1987

**College of Humanities Home**

**Humanities, Classics, and Comparative Literature Department Home**

**Interdisciplinary Humanities**

**Major**

- BA in Interdisciplinary Humanities

**Minor**

- Humanities

**Course Information**

- Interdisciplinary Humanities (IHum) Courses

**Classics**

**Majors**

BA in Classical Studies

Emphases:

- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

**Minors**

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

**Course Information**

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

**Comparative Literature**

**Majors**

- BA in Comparative Literature

**Course Information**

- Comparative Literature (CmLit) Courses

**Scandinavian Studies**

**Minors**

- Scandinavian Studies

**Language Certificates**

- Danish
- Finnish
- Norwegian
- Swedish

**Course Information**

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Humanities, Classics, and Comparative Literature

George Handley, Chair
3008B JFSB, (801) 422-7151

College of Humanities Advisement Center
1175 JFSB, (801) 422-4789

## Admission to Degree Program

All degree programs in the Department of Humanities, Classics, and Comparative Literature are open enrollment. However, special limitations apply for teaching majors.

## General Information

The Department of Humanities, Classics, and Comparative Literature strongly recommends that StDev 317, a 1-credit-hour course, be taken at the end of the sophomore year or the beginning of the junior year. Because liberal arts degrees provide preparation in a variety of useful fields rather than a single career track, this course is recommended to help liberal arts students focus on specific educational and occupational goals and to identify the career options or educational opportunities available to them. The course will introduce them to the resources needed for accessing information about graduate schools, internships, careers, and career development. Students will learn basic employment strategies, including the steps necessary for obtaining employment related to their own specialty.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

### Humanities

**BA in Interdisciplinary Humanities** (Program Outcomes)

**Minor in Humanities**

### Classics

**BA in Classical Studies**

- **Classical Civilization Emphasis** (Program Outcomes)
- **Classics Emphasis** (Program Outcomes)
- **Greek Emphasis** (Program Outcomes)
- **Latin Emphasis** (Program Outcomes)

**BA in Latin Teaching** (Program Outcomes)

**Minor in Classical Studies (Greek option)**
**Minor in Classical Studies (Latin option)**
**Minor in Latin Teaching**

### Comparative Literature

**BA in Comparative Literature** (Program Outcomes)

### Scandinavian Studies

**Minor in Scandinavian Studies**

Students should see their college advisement center for help or information concerning the undergraduate programs.

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


# Graduate Programs and Degrees

MA in Comparative Studies

For more information see the BYU 2014–2015 Graduate Catalog.

**College of Humanities Home**

**Humanities, Classics, and Comparative Literature Department Home**

**Interdisciplinary Humanities**

**Major**

- BA in Interdisciplinary Humanities

**Minor**

- Humanities

**Course Information**

- Interdisciplinary Humanities (IHum) Courses

**Classics**

**Majors**

BA in Classical Studies

Emphases:

- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

**Minors**

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

**Course Information**

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

**Comparative Literature**

**Majors**

- BA in Comparative Literature

**Course Information**

- Comparative Literature (CmLit) Courses

**Scandinavian Studies**

**Minors**

- Scandinavian Studies

**Language Certificates**

- Danish
- Finnish
- Norwegian
- Swedish

**Course Information**

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Humanities

## The Discipline

The term *humanities* refers to the study of human intellectual and artistic creativity and the record of human experience as seen in the arts. It is an interdisciplinary major drawing from history, fine arts, literature, intellectual history, music, foreign languages, etc. In this major the student focuses on the arts as modes of human expression and how the arts combine to give a unique view of what it has meant to be human through the ages—and how they continue to influence us today. Besides teaching the interrelatedness of the arts, the study of humanities emphasizes the relationships between the arts and other aspects of human culture and society.

The major offers students unusual latitude in developing a broad and full program in the liberal arts, as well as developing skills in reasoning, language, writing, and library use—all essential elements for later independent learning as well as for functioning well in society.

## Career Opportunities

The interdisciplinary nature of the major makes it an excellent preparation for graduate work in humanistic disciplines and professional schools and also for a wide range of employment, including secondary teaching. Humanities graduates going directly into the work force commonly find professional employment in education, business, government, tourism, and civil or foreign service. Those going on to graduate school usually work toward the doctorate or attend professional programs in such disciplines as library science, law, business, public administration, and medicine.

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**

**College of Humanities Home**

**Humanities, Classics, and Comparative Literature Department Home**

**Interdisciplinary Humanities**

**Major**
- BA in Interdisciplinary Humanities

**Minor**
- Humanities

**Course Information**
- Interdisciplinary Humanities (IHum) Courses

**Classics**

**Majors**

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

**Minors**
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

**Course Information**
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

**Comparative Literature**

**Majors**
- BA in Comparative Literature

**Course Information**
- Comparative Literature (CmLit) Courses

**Scandinavian Studies**

**Minors**
- Scandinavian Studies

**Language Certificates**
- Danish
- Finnish
- Norwegian
- Swedish

**Course Information**
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# BA in Interdisciplinary Humanities (55–86 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following:

IHUM 250 : Introduction to Interdisciplinary Humanities. (3:3:.5)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Major literary, artistic, and musical forms and their use in the interdisciplinary study of aesthetics and culture and intellectual history. May include International Cinema.

**Course Outcomes**
There are no course outcomes available

IHUM 280R : Sophomore Seminar in Interdisciplinary Humanities. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Focused topics exploring ethical, moral, and epistemological issues in the study of the humanities.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

: Sophomore Seminar: Humanities and the Sacred.
**Course Outcomes**

: Sophomore Seminar: Humanities and Law.
**Course Outcomes**

: Sophomore Seminar: Humanities and Popular Culture.
**Course Outcomes**

: Sophomore Seminar: Humanities and the Environment.
**Course Outcomes**

: Sophomore Seminar: Humanities and Science.
**Course Outcomes**

2. Complete the following historical foundation courses:

- IHUM 201 : Western Humanities 1: Antiquity to Renaissance. (3:3:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Western civilization from Greek antiquity to Renaissance from perspective of traditional humanistic values reflected in its arts and ideas. Examines fundamental questions about human experience, formative events in history, and value of important literary and artistic texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

*and*
IHUM 202 : Western Humanities 2: Renaissance to the Present. (3:3:0)
OFFERED: Honors also.

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Western civilization from Renaissance to present from perspective of traditional humanistic values reflected in its arts and ideas. Examines fundamental questions about human experience, formative events in history, and value of important literary and artistic texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

- CL CV 110 : Introduction to Greek and Roman Literature. (3:3:0)
  OFFERED: Honors also.
  WHEN TAUGHT: Fall; Winter
  DESCRIPTION: Homer's *Iliad*, Sophocles' *Oedipus the King*, Vergil's *Aeneid*, and other important works of the Greeks and Romans.
  NOTE: All readings in English. Honors also.

  **Course Outcomes**
  There are no course outcomes available

*or*
CL CV 241 : Greek and Roman Mythology. (3:3:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Greek and Roman gods, heroes, and myths, emphasizing literature but also giving attention to representations in the visual arts.

**Course Outcomes**
There are no course outcomes available

: Honors Greek and Roman Mythology.

**Course Outcomes**

- IHUM 240 : Introduction to the Humanities of Asia. (3:3:0)
  WHEN TAUGHT: Fall; Winter; Spring
  DESCRIPTION: Major arts of Asian cultures in their historical, religious, and philosophical settings.
  NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

  **Course Outcomes**
  There are no course outcomes available

*or*
IHUM 242 : Introduction to the Humanities of the Islamic World. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Major arts of Islamic cultures in their historical, religious, and philosophical settings.

**Course Outcomes**
There are no course outcomes available

- And two courses from the following:
  IHUM 260 : Humanities of Latin America. (3:3:0)
  WHEN TAUGHT: Fall; Winter
  DESCRIPTION: Achievements of Latin American culture regarding art, philosophy, literature, and music from the pre-Columbian era to the present.

  **Course Outcomes**
  There are no course outcomes available

  IHUM 261 : Introduction to American Humanities 1: Colonial Era Through 1876. (3:3:0)
  OFFERED: Honors also.
  WHEN TAUGHT: Fall; Winter; Spring
  DESCRIPTION: Value systems reflected in the arts and ideas of the United States from the colonial era to 1876.

  **Course Outcomes**
  There are no course outcomes available

IHUM 262 : Introduction to American Humanities 2: 1877 to the Present. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Value systems reflected in the arts and ideas of the United States from 1877 to the present.

**Course Outcomes**

There are no course outcomes available

: Honors American Humanities 2: 1877 to the Present.

**Course Outcomes**

3. Complete one upper-division foreign language course in literature selected from the approved course list available in the College of Humanities Advisement Center.

4. Complete the following:

IHUM 350 : Interpretation of Literature and the Arts. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: ENGL 311; or PHIL 300; IHum 201 and 202 and 250. At least three of the remaining historical foundation courses (item 3 under major requirements).
DESCRIPTION: Understanding and writing about literature and at least one of the other arts; critical theory.
NOTE: Should be taken junior year.

**Course Outcomes**

There are no course outcomes available

IHUM 370 : Contemporary Issues in the Humanities. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: IHUM 201 & IHUM 202 & IHUM 250; Engl 311.
DESCRIPTION: Methods and practices of the discipline. Developing and executing research programs. Writing thoughtful, well-informed and sophisticated papers. Introduction to significant and pressing cultural issues such as globalization, media and the arts, memory and history, among others.

**Course Outcomes**

There are no course outcomes available

5. Complete the following:

IHUM 390R : Junior Seminar in the Interdisciplinary Humanities: Movements, Periods, and Areas. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: IHUM 250
DESCRIPTION: Topics could cover significant movements, periods, areas, and genres in a cultural history of the arts. Obtaining a deep understanding of the arts and the values articulated within a particular historical era. The use of concepts usch as history, context, area, and genre in the study of the arts.

**Course Outcomes**

There are no course outcomes available

6. Work with the IHum internship coordinator and a mentoring professor to complete one to three credit hours of the following or its equivalent:

IHUM 399R : Academic Internship. (1-9:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: IHUM 350; 12 hours of historical foundation courses in humanities. Humanities major or minor status.
DESCRIPTION: Combined study-work experience related to the humanities major (museums, government agencies, publishing firms, etc.).

**Course Outcomes**

There are no course outcomes available

7. Complete 12 hours in one of the following tracks as approved by a faculty advisor. At least 6 of the 12 hours must be from upper-division courses.

a. Art History:

ARTHC 304 : Greek Art. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: History and appreciation of Greek art, with consideration of formative cultures.

**Course Outcomes**
There are no course outcomes available

ARTHC 306 : Roman Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art and architecture of the Etruscans and Romans.

**Course Outcomes**
There are no course outcomes available

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**
There are no course outcomes available

ARTHC 320 : Italian Renaissance. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Art and architecture in Italy from 1200 to 1580.

**Course Outcomes**
There are no course outcomes available

ARTHC 325 : Northern Renaissance Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Fifteenth- and sixteenth-century art in northern Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 330 : Southern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: History of baroque painting, sculpture, and architecture in Italy, Spain, and France.

**Course Outcomes**
There are no course outcomes available

ARTHC 335 : Northern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Baroque painting in Flanders and Holland.

**Course Outcomes**
There are no course outcomes available

ARTHC 340 : Nineteenth-Century European Art. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Nineteenth-century art in Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 345 : American Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: American painting and sculpture from colonial through modern times.

**Course Outcomes**
There are no course outcomes available

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter

PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 355 : Contemporary Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical evaluation of trends in art since 1945.

**Course Outcomes**
There are no course outcomes available

ARTHC 365 : American Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Major figures, monuments, and movements in American architecture from colonial period through "Gilded Age."

**Course Outcomes**
No outcomes are available at this time.

ARTHC 367 : Modern Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Critical review of roots and evolution of modern architecture.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 375 : Japanese Art and Architecture. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Japanese art and architecture from its neolithic origins through the dawn of the modern age. Literary, social, and religious contexts considered.

**Course Outcomes**
No outcomes are available at this time.

ARTHC 380 : Northern Mesoamerican Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of Mexico from antiquity to present.

**Course Outcomes**
There are no course outcomes available

ARTHC 382 : Southern Mesoamerican Art. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Survey of art and architecture of southern Mexico and central America from antiquity to present.

**Course Outcomes**
There are no course outcomes available

ARTHC 490R : Special Topics and Readings in Art History. (1-6:ARR:ARR)
DESCRIPTION: Topics of specific student interest, centered on strengths of visiting faculty, BYU Study Abroad Program, or other significant art history projects.

**Course Outcomes**
There are no course outcomes available

VAEDU 397 : Issues in Contemporary Art, Aesthetics, and Criticism. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Overview of issues in contemporary art, aesthetics, and art criticism.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
No outcomes are available at this time.

b. English:
ELANG 324 : History of the English Language. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: ELang 223 or Ling 201, or concurrent enrollment.
DESCRIPTION: Basic changes from Old English to modern English, including modern American dialects.

**Course Outcomes**

- Students will be able to trace the general phonemic, morphological, syntactic, and semantic changes of English in relation to the major periods of Old English, Middle English, Early Modern English, and Present-Day English.
- Students will be able to identify some of the appropriate linguistic tools and resources that are available to answer specific questions about the history and development of the English language.
- Students will be able to explain the important social and political factors as well as linguistic processes that have influenced the development of the English language and some of its varieties, including the current standard variety.
- Students will be able to apply course concepts and information to the assessment and interpretation of authentic historical texts.

ENGL 291 : British Literary History 1. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in early English literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 292 : British Literary History 2. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in later English literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 293 : American Literary History. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in American literature as illustrated through representative texts.

**Course Outcomes**

There are no course outcomes available

ENGL 300R : English Literature in a Cultural Setting. (.5-6:ARR:ARR)

WHEN TAUGHT: Contact Department.
NOTE: For Study Abroad students only.

**Course Outcomes**

- Students will identify and define significant characteristics of the literature from each period of British literary history that we study.
- Students will display in several short essays detailed knowledge of the author, time period, and literary text for each of the sites we visit in Britain.
- Students will demonstrate their knowledge of the historical relations among the texts we study by preparing a timeline that features both the birth date and the death date of each author and the composition and publication dates of their works.

ENGL 322 : History and Criticism of Rhetoric. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Historical study of rhetorical theory and criticism, emphasizing both classical and contemporary practice.

**Course Outcomes**

- Students will be able to identify issues debated in the history of rhetoric and trace how positions in the debates change among various theorists and time periods.
- Students will be able to explain why rhetoric one of the single most formative elements in the development of Western civilization, particularly in shaping its educational, political, social, and religious institutions.
- Students will be able to explain and apply principles from rhetorical theories to explicate, evaluate, and create effective spoken and written texts.

ENGL 333 : The English Novel. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 292 & ENGL 295; or ENGL 294 & ENGL 295; Engl 291. (Engl 293 may also be a prerequisite option.)

DESCRIPTION: Novels selected according to time period or theme from the past three centuries.

**Course Outcomes**

- Analyze selected British novels in order to create a foundation for the further study of literature.
- Explain the general formal and historical development of the British novel and define a coherent approach to the study of British novels.
- Form a research strategy appropriate to the study of British novels, independently locate relevant digital and print sources, and draw upon these sources to develop a focused and effective written argument about a British novel(s).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 336 : The American Novel. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 293 & ENGL 295; or ENGL 294 & ENGL 295; Engl 291. (Engl 292 may also be a prerequisite option.)

DESCRIPTION: Representative novels of the American tradition from the late eighteenth century to the present.

**Course Outcomes**

- Analyze selected American novels in order to create a foundation for the further study of literature.
- Explain the general formal and historical development of the American novel and define a coherent approach to the study of American novels.
- Form a research strategy appropriate to the study of American novels, independently locate relevant digital and print sources, and draw upon these sources to develop a focused and effective written argument about an American novel(s).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 337R : Advanced Studies in Genre. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Advanced studies in fiction, drama, poetry, or creative nonfiction.

**Course Outcomes**

- Read critically and analyze selected literary texts selected with a specific genre focus (poetry, drama, personal essay, etc.).
- Form a research strategy appropriate to the texts and genre studied in the course, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument about the texts studied.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 338 : Literary Studies of the Bible. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295

DESCRIPTION: Scholarly engagement with the aesthetic forms and cultural context of Biblical texts.

**Course Outcomes**

There are no course outcomes available

ENGL 341 : English Drama: Beginnings to 1800, Excluding Shakespeare. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295

DESCRIPTION: Selected plays from medieval, Tudor, Stuart, Restoration, and 18th-century drama.

**Course Outcomes**

- Understand in general, and in several details, the development of drama in England, and, in your writing, intelligently discuss major developments, continuities, or turning points.
- Demonstrate a sure knowledge of the plays we read, and be able to interpret those plays.
- Explain the significance of specific passages and elements of each play.
- Relate selected theoretical ideas to your understanding of the plays we read.

ENGL 343 : Modern English and American Drama. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

**Course Outcomes**

- Read critically and analyze selected dramatic texts along with critical and/or interpretative texts.
- Form a research strategy appropriate to the study of drama, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument about the texts studied.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

: Modern British Drama.

**Course Outcomes**

: Modern American Drama.

**Course Outcomes**

ENGL 345 : Literature and Film. (3:3:.5)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Emphasis on film as an interpretation of texts. Includes International Cinema.

**Course Outcomes**

- Analyze a written text/film set using an appropriate and well-defined scholarly approach.
- Write a research paper using proper MLA guidelines that is situated in the context of recent scholarship in the field.
- Identify and describe major and minor works, authors, and directors associated with this course.
- Form a research strategy. Independently identify and locate relevant print and digital sources, and incorporate these sources into a well-formed argument.

ENGL 355 : (EngI-ClCv) Greek and Roman Classics and the English Tradition. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Major works by such authors as Homer, the Greek and Roman tragedians, Thucydides, Vergil, and Petronius in English translation, emphasizing their influence on English and American literature.

**Course Outcomes**

- Read critically and analyze selected classical texts in translation in the context of English literature.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 356 : Myth, Legend, and Folktales. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Major mythic and legendary works that provide background for the literary tradition.

**Course Outcomes**

- Students will be able to read critically and analyze major and selected minor texts and trends in myth, legend, and folktale over time and place.
- Students will be able to form research strategies and write critical and informational papers that reflect their use and application of these topics.
- Students final project will be polished, competent, formal writing, free from distracting errors in mechanics, syntax. Formatting will be in accordance with MLA formatting and citation guidelines.
- Students will be able to critically identify the commonalities and difference in myth, legend, and folktale.
- Students will be able to research, prepare, and present a topic related to the class study of the class.
- Students will be able to articulate and write responses to assigned readings.
- Students will produce two research papers; one on literary folkloristics, and one of their choice related to the class study.

ENGL 358R : Ethnic Literatures. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Study of literary texts representative of a thoughtfully focused dimension of a given ethnic group.

**Course Outcomes**

There are no course outcomes available

: Native American Literature.

**Course Outcomes**

: African American Literature.

**Course Outcomes**

: Asian American Literature.

**Course Outcomes**

: Latino/a American Literature.

**Course Outcomes**

: Jewish American Literature. (0::)

**Course Outcomes**

ENGL 359 : The Short Story. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Critical study of American, English, and European short stories, emphasizing those of the twentieth century.

**Course Outcomes**

- Analyze selected short stories to develop the skills of literary criticism.
- Explain the conventions and historical development of the short story genre.
- Form a research strategy appropriate to the study of short stories by independently locating relevant print and digital sources and drawing upon these sources to develop a focused and effective written argument about selected short stories
- Produce a polished research paper following MLA formatting and citation guidelines

ENGL 360 : American Literature to 1800. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from the colonial and early national periods.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the colonial and early national periods of American literature.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 361 : American Literature 1800 - 1865. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1800 to 1865.

**Course Outcomes**

There are no course outcomes available

ENGL 362 : American Literature 1865 - 1914. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1865 to 1914.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1865 to 1914.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 363 : American Literature 1914 - 1960. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Major and selected minor writers and literary trends from 1914 to 1960.

**Course Outcomes**

- Read critically and analyze major and selected minor texts and literary trends from the period of 1914 to 1960.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 364 : Literature and Cultures of the American West. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Literature and cultural representations of the American West and the frontier.

**Course Outcomes**

- Read critically and analyze in the context of appropriate literary and cultural theories major and selected minor texts and associated with the American West.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the literature and cultures of the American West.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 365 : American Literature 1960 to Present. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1960 to the present.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1960 to the present.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 366 : Studies in Poetry. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Topics vary.

**Course Outcomes**

There are no course outcomes available

ENGL 368 : Literature of the Latter-day Saints. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Fiction, poetry, drama, folklore, personal essay, and other literature emerging from the LDS experience and expressing various perspectives on it.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the material studied in the class.
- Identify, locate, read critically, and analyze major and selected minor texts and associated with the Latter-Day Saints.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 371 : British Literature to 1500: The Medieval Period. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Principal works, mainly in translation, from Britain's medieval period.

**Course Outcomes**

- Read critically and analyze principal works, mainly in translation, from Britain's medieval period (to 1500).
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 372 : British Literature 1500 - 1603: The Early Renaissance. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Drama, poetry, and prose of the early Renaissance.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose of Britain's early Renaissance period (1500 to 1603).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 373 : British Literature 1660 - 1789: The Enlightenment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Poetry, prose, and drama of the Restoration and eighteenth century.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose of Britain's Restoration period and eighteenth century (1660 to 1789).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 374 : British Literature 1789 - 1832: The Romantic Period. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Poetry, prose, and drama from Britain's Romantic period.

**Course Outcomes**

There are no course outcomes available

ENGL 375 : British Literature 1832-1900: The Victorian Period. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Poetry, prose, and drama from Britain's Victorian period.

**Course Outcomes**

- Read critically and analyze the drama, poetry, and prose of Britain's Victorian period (1832 to 1900).
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 376 : British Literature 1900 - 1950: The Modern Period. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Poetry, prose, and drama from Britain's modernist period.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose of Britain's Modern period (1900 to 1950).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 380 : British Literature 1950 - Present: The Contemporary Period. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Poetry, prose, and drama from Britain and the Commonwealth since 1950.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose from Britain and the Commonwealth since 1950.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 381 : Chaucer. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 291 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Intensive study of Chaucer's literature and language from medieval and modern perspectives.

**Course Outcomes**

- Explain the historical and literary contexts, genres and themes, and ethical dimensions of Chaucer's representative works.
- Demonstrate familiarity with key secondary scholarship about and critical perspectives of Chaucer's works.
- Develop reading fluency in Middle English.
- Develop reading strategies that explore how texts are constructed to present a set of argument (historical, aestheic, etc) and use those critical reading skills to interpret the texts' concerns and to trace interrelationships among them.
- Perform scholarly research on Chaucer's works by identifying and evaluating relevant primary and secondary sources, by formulating arguments conversant with these sources, and by articulating

those arguments in formal academic writing.

ENGL 382 : Shakespeare. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 291 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Intensive reading, discussion, and (in some sections) viewing of plays from the comedy, tragedy, romance, and history genres.
NOTE: For English majors and minors.

**Course Outcomes**

There are no course outcomes available

ENGL 383 : Milton. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 291 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Analysis of poetry and selected prose, including detailed study of such work as *Paradise Lost, Paradise Regained*, and *Samson Agonistes*.

**Course Outcomes**

- Explain the historical and literary contexts, genres and themes, and ethical dimensions of Milton's representative works.
- Demonstrate familiarity with key secondary scholarship about and critical perspectives of Milton's works.
- Perform scholarly research on the major author's works by identifying and evaluating relevant primary and secondary sources, by formulating arguments conversant with these sources, and by articulating those arguments in formal academic writing.
- Develop reading strategies that explore how texts are constructed to present a set of arguments (historical, aesthetic, etc) and use those critical reading skills to interpret the texts' concerns and to trace interrelationships among them.

ENGL 384R : Major Authors. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.
DESCRIPTION: Topics vary.

**Course Outcomes**

There are no course outcomes available

: Early British Authors.

**Course Outcomes**

: Later British Authors.

**Course Outcomes**

: American Authors.

**Course Outcomes**

ENGL 385 : British Literature 1603 - 1660: The Late Renaissance. (3:3:0)

WHEN TAUGHT: Winter Contact Department; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Drama, poetry, and prose of the late Renaissance.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze Britain's drama, poetry, and prose written between 1603 and 1660.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 391 : Introduction to Folklore. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Major types of folklore (e.g., myth, legend, folktale, folksong, custom, and belief); practical experience in collecting folklore.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Create and share a persuasive analysis of folklore texts in context by using "logical reasoning and critical analysis."
- Identify and remember three categories of folklore, four types of folk narrative, and eight folk groups.
- Produce several brief folkloristic observations, and document those observations using

established formats.
- Understand some methods of recording and archiving local traditions using "moral discrimination, creative imagination, and independent thought."
- Explain the choices and forces that help perpetuate or extinguish traditional practices, both locally and globally.
- Identify the shaping functions and theory of folklore.
- Produce a focused fieldwork project which includes, among other requirements, an essay, collection, and consent forms created according to the William A.Wilson Folklore Archive.

ENGL 392 : American Folklore. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251
DESCRIPTION: American folk art and literature and the historical and cultural circumstances from which they developed.

**Course Outcomes**

- Document folklore using established formats and understand some methods of recording and archiving local traditions in order to "analyze rigorously" American texts and artifacts in context and in terms of how "the American experience has been, and continues to be, constructed and transmitted."
- Identify and remember 3 categories of folklore; 4 types of folk narrative; 8 folk groups.
- Relate worldview with the performance of traditions, comparing similarities and differences of groups with differing worldviews and obtaining a wider view of American history and diversity.
- Reason intelligently in oral and written discourse while allowing that traditions are meaningful to participants in places and times different from your present circumstances.
- Work independently to connect folklore studies with other course work and life experiences and goals.
- Get excited about personal, group, and aesthetic dynamics in the performance of traditions and "question ethically" the choices and forces that help perpetuate or extinguish traditional practices, both locally and globally.

ENGL 393R : Studies in Folklore. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 391
DESCRIPTION: Focused themes and topics in folklore. Topics may include regional or transnational folklore, folklore genres, folk groups, ethnographic research, cross-disciplinary issues, and history of folklore studies.

**Course Outcomes**

There are no course outcomes available

ENGL 395R : Studies in Literature. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Topics vary.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the material studied in the class.
- Identify, locate, read critically, and analyze major and selected minor texts and associated with the literature of the class theme.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 396 : Studies in Women's Literature. (3:3:0)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Female-authored literary texts and literary theory concerning women.
NOTE: A core class for the women's studies minor.

**Course Outcomes**

- Read critically and analyze selected literary texts representative of the general history or of a thoughtfully focused dimension of women's literature.
- Demonstrate a knowledge of the history, nature, aesthetics, and broadly defined thematic concerns of the literature at the center of the course.
- Compare and contrast women's literature in question with larger or "mainstream" British or American literature.
- Form an appropriate research strategy, independently locate relevant digital and print sources, and draw upon these to develop a focused and effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 420 : Literature for Adolescents. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 295; or instructor permission.
DESCRIPTION: Wide range of literature written for or read by teenagers.
NOTE: Required before student teaching.

**Course Outcomes**

- Students will become familiar with a broad range of Young Adult books, authors, and genre.
- Students will become familiar with a broad range of Young Adult books, authors, and genre.
- Students will learn how to select appropriate quality YA books for classroom, school, and personal use.
- Students will demonstrate an in-depth knowledge of at least one YA author and his/her work.

ENGL 451 : Literary Theory and Criticism 1: The Critical Tradition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.
DESCRIPTION: Historical survey from Plato to the early twentieth century.

**Course Outcomes**

- Students will analyze and demonstrate a sound knowledge of a selection of primary and secondary documents related to the historical development of literary theory.
- Students will form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Students will produce a substansive term paper focused on the historical development of literary theory that includes polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 452 : Literary Theory and Criticism 2: Contemporary Criticism. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 295; Engl 291, Engl 295; and either Engl 292 & 293 or Engl 294.
DESCRIPTION: Introduction to issues in twentieth-century literary criticism.

**Course Outcomes**

- Students will analyze and demonstrate a sound knowledge of a selection of primary and secondary documents related to contemporary literary theory.
- Students will form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Students will produce a substansive term paper focused on contemporary literary theory that includes polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

c. Environmental Humanities:

ANTHR 300 : Biological Anthropology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Relationships between human biology, environment, social structure, and culture. Concepts and data on race, primates, evolution, population genetics, growth, and sociobiology.

**Course Outcomes**

- Develop an understanding of the relationships between human biology, environment, social structure.
- Collect data on race, primates, evolution, population genetics, growth, and sociobiology.

BIO 130 : Biology. (4:3:1)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: General biology course with laboratory for biology majors. Introduction to disciplines in the life sciences including methods for scientific inquiry, biochemical dynamics, cell structure and function, evolutionary theory, bioenergetics, and ecological interactions.

**Course Outcomes**

- Students will demonstrate basic literacy in the language of science and an understanding of the foundational theories of biology (i.e., be able to formulate appropriate hypotheses and predictions to test specific biological phenomena and use appropriate vocabulary to do so) o Atomic Molecular Theoryo Cell Theoryo Theories of Photosynthesis, Fermentation, and Cellular Respirationo Cell Division and Meiotic Theorieso Chromosomal and Mendelian Theories of Inheritanceo Watson and Crick's Theory of DNA Structure and Replicationo Protein Synthesis Theoryo Darwin's Theory of Natural Selectiono Hardy-Weinberg Theoryo Ecosystem Theoryo Population Growth Theoryo Competitive Exclusion and Behavioral Theory
- Students will demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process.
- Students willappreciate the excitement of discovery that has accompanied important scientific developments.
- Students will demonstrate how scientific methodology can be used to analyze real-world science-related problems.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public-policy science issues that affect their community.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.
- Students will be able to reflect rationally upon the interface between science and religion.
- Students will demonstrate sound scientific reasoning ability.

BIO 220A : Biological Diversity: Animals. (4:3:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PDBIO 120; or BIO 130
DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in invertebrates and vertebrates. Laboratory included.

**Course Outcomes**

- Students will be able to discuss the broad patterns of the evolution of the clade Animalia, emphasizing the relationships among major sub-clades (phyla), the unique biological attributes that define these clades, and the novel changes in morphology over major transitions (unicellular to multicellular; acoelomate to pseudocoelomate to coelomate body plans, bilaterial vs radial symmetry, origins of exoskeletons, gill slits, notochord, crania & vertebral columns, etc.).
- Students will develop the skills necessary to understand the terminology of phylogenetic systematics and methods used to recover the “tree of life”, the logic behind the hierarchy (i.e., the only possible outcome of the process of “descent with modification”), and critically apply evolutionary reasoning, including the use of phylogeny and tree-thinking, to formulate and test hypotheses that explain biological diversity.
- Students will have the intellectual tools to continue to explore related topics with confidence and understanding throughout their lives, and a deeper appreciation for the diversity of life on earth.

BIO 220B : Biological Diversity: Plants. (4:3:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PDBIO 120; or BIO 130
DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in fungi, algae, and principal groups of land plants. Laboratory included.

**Course Outcomes**

- Students will be able to discuss differences between cyanobacteria, algae, bryophytes, non-seed vascular plants, gymnosperms, flowering plants, and fungi with repsect to their lifecycles, characteristic morphologies, and biological roles.
- Students will develop the skills necessary to understand and critically apply evolutionary logic including the use of phylogeny and tree-thinking to formulate and test hypotheses that explain biological diversity
- Students will be able to continue to explore related topics with confidence and understanding throughout their lives.

BIO 350 : Ecology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PDBIO 120; or BIO 130
DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth.

**Course Outcomes**

- Understand the major physical processes that form and characterize the biosphere, including global scale energy flow, the carbon cycle, climate, and soil formation.
- Understand the processes that drive major levels of organization of the biotic world, including energetics in the ecosystem, population dynamics, and species interactions.
- Understand the importance of writing as a way of synthesizing and solidifying critical thought.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Understand the importance of ecology to issues regarding human well-being
- See the connectivity and relevance of ecology to other fields of study

BIO 370 : Bioethics. (2:1:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Introductory biology course.
DESCRIPTION: In-depth lecture and small group discussion of varied bioethical issues. LDS Church positions emphasized when appropriate.

**Course Outcomes**

- Students will understand the ethical and philosophical underpinnings of bioethics and to develop ethical intuitions on bioethical issues.
- Students will learn the terminology, vocabulary, and objectives of bioethics.
- Students will understand the tools and approaches needed to make a bioethical decision and to communicate that decision in rationally informed ways.
- Students will understand the bioethical primary literature, to understand how to read case studies, and familiarity with the major issues being discussed in bioethics today.

ENGL 317R : Writing Creative Nonfiction. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 218R; or instructor's consent.
DESCRIPTION: Creations of style and technique in prose nonfiction; discipline and practice of the writer.

**Course Outcomes**

- Demonstrate effort and discipline in crafting creative nonfiction and display a knowledge of its conventions.

- Read creative nonfiction models analytically, with an eye to authorial intention and technique and be able to articulate the same.
- Use correct grammar, punctuation, and an appropriate style in creative nonfiction.
- Write a variety of essays using literary models and following explicit instructions from the teacher.
- Revise intelligently, edit carefully, and share one's work with others in the class.

ENGL 364 : Literature and Cultures of the American West. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Literature and cultural representations of the American West and the frontier.

**Course Outcomes**

- Read critically and analyze in the context of appropriate literary and cultural theories major and selected minor texts and associated with the American West.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the literature and cultures of the American West.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

HIST 290 : Nature and History: The Earth's Environmental Past. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Human historical interactions with animals, plants, and landscapes. Global histories of climate, population, whaling, fossil fuels, the car, animal rights, suburban sprawl, eco-theology, environmentalism, ecotourism, etc.

**Course Outcomes**

- Students will become academically conversant with the major historical developments in our global relationship with nature.
- Students will be able to analyze and evaluate the content and meaning of primary sources, and through critical interpretation, draw reasonable conclusions.
- Students will be able to formulate historical questions and answer them by careful and systematic research in primary and secondary sources.
- Students will be able to write history that is coherent and persuasive by following discipline's norms for writing and careful documentation.

PWS 100 : Living with Plants. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to principles of plant function and diversity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a fundamental knowledge of basic principles and concepts of plant biology (i.e., structure, function, and diversity)
- Cultivate an appreciation for the central importance of plants in the way our world and human society functions
- Provide a conceptual framework of how plants influence the environment
- Practice using the scientific method to better understand plant-environment interactions
- Improve verbal and written communication

PWS 101 : Cultural History of Medicinal Plants. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: A global perspective of how medicinal plants have shaped cultural history and how they are used to treat illness and disease. Issues relating to conservation, natural history, biodiversity, and cultural diversity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- 1. Explain and interpret a global history of how indigenous people can use plants to treat illnesses and disease.2. Understand and explain the differences between injurious, remedial, and psychoactive plants.3. Explain the difference between the Western philosophy of traditional medicine and local indigenous practices for treating illnesses and disease.4. Analyze and interpret a dose response curve.5. Define and explain the meaning of an LD-50 and LC-50.6. Diagram the history behind commercially available cancer chemotherapeutic drugs that are of plant origin, including the drug name, species of plant it was extracted from, acute and delayed toxicity, and major contraindications.7. Explain the limitations and myths associated with the herbal industry.8. Read and interpret peer reviewed literature on studies designed to show how human health has improved by using herbal remedies.9. Explain why it is important to preserve and protect sensitive habitat such as the tropical rainforests, which contain a wealth of biological information related to future drugs as yet undiscovered.10. Analyze the differences and similarities of how cultures of the world treat illnesses and disease

d. Foreign Literature:

Course work for the Foreign Literature track must consist of upper-division courses from foreign language departments, chosen in consultation with the track's faculty advisor.

e. History:

HIST 231 : Introduction to East Asian History. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Major themes in the history, thought, and culture of Asian societies from antiquity to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, and social developments in the history of China, Korea, and Japan from antiquity to the present
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meaning and significance of historical events on contemporary identity and foreign relations.
- Students will be able to analyze historical arguments.

HIST 238 : Ancient Near East to 330 BC. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Ancient cultures of the Near East (Egypt, Mesopotamia, Syro-Palestine, Anatolia, Iran) from the beginnings of civilization to the conquests of Alexander the Great.

**Course Outcomes**

- Students will gain a historical consciousness of the Ancient Near East by demonstrating a critical literacy of major developments in Ancient Near East history, key historical terms, primary sources, and narratives of Ancient Near East history up to Alexander.
- Students will develop an ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions about ancient Near East primary sources.
- Students will develop use of the historical method of research effectively by skillfully and honestly using primary and secondary sources in the formation of answers to major questions surrounding the narratives of the ancient Near East
- Students will develop their writing ability through a range of pre-writing and writing assignments.

HIST 239 : Ancient Near East, 330 BC - 640 AD. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Cultures and empires of the Near East (Persia, Hellenistic kingdoms, Judaism, early Christianity, Rome, and Byzantium) from Alexander the Great to the Arab conquests.

**Course Outcomes**

- Gain a firsthand understanding of the Hellenistic and Christian Near East through studying and analyzing primary sources, using a template of (suggested) questions
- Understand basic issues of faith and reason, as they relate to Christianity and Judaism in the formative period of the former
- Master an early Christian primary source well enough to present, as a group, its gist, meaning, and significance
- Understand how the political and social changes in the Eastern Mediterranean in the Hellenistic period contributed to the development of science, technology, philosophy, and religion
- Understand the basic historical issues surrounding the origin of Christianity
- Understand the development of the Christian Roman Empire (Byzantium)

HIST 240 : Middle East History to 1800. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: History of the Middle East from the rise of of Islam until 1800.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, cultural and religious developments in the Islamic Near East between approximately AD 640-1800.
- Students will be able to analyze and interpret translations of primary source documents from the Islamic Near East.
- Students will be able to analyze historical questions and place them in a historiographical context..

HIST 241 : Middle East History from 1800. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: History of the Middle East in the modern period form 1800; rise of nation states, relationship with West, role of Islam.

**Course Outcomes**

- Gain a historical consciousness by demonstrating a knowledge of major developments in Middle East and world history and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions by using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.
- Demonstrate how faith and reason intersect.

HIST 242R : (Hist-NES 347R) Arab and Islamic Civilization. (1-2:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Social science/humanities core course covering Arab and Islamic civilization; historical evolution of Middle East to present. Overview of modern Palestinian society.

NOTE: Elective credit for major and minor in Near Eastern Studies. Offered at the Jerusalem Center for Near Eastern Studies only. Does not receive GE credit.

**Course Outcomes**

No outcomes are available at this time.

HIST 243R : (Hist-NES 349R) Jewish Civilization. (1-2:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Social science/humanities core course; broad introduction to Jewish self-understanding and history, focusing on relationships among people, faith, and land.

NOTE: Elective credit for major and minor. Offered at the Jerusalem Center for Near Eastern Studies only. Does not receive GE credit.

**Course Outcomes**

No outcomes are available at this time.

HIST 244 : Jewish History: A.D. 70 to the Present. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Jewish diaspora, Jewish life in Moslem and Christian countries; Jewish religious movements; development of Zionism; Jewish communities in modern Israel and the United States.

**Course Outcomes**

- Gain a historical consciousness by demonstrating an understanding of major developments in Jewish and history, and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately and distinguish between questionable and valid historical assertions.
- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using interdisciplinary prinary and secondary sources.
- Skillfully integrate sources into a coherent argument expressed through a clear, well-written style and throrough oral communication.
- Recognize anti-Semitic arguments.
- Gain an understanding of the complexities of modern Jewish identity.
- Appreciate the contribution of Jewish people to the world.

HIST 247 : (Hist-ClCv 304) Greek History. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Political, economic, social, and intellectual history of Greece from Mycenaean times to the Hellenistic period.

**Course Outcomes**

- Successful students will be exposed to selections of Greek literature and be able to evaluate those texts as sources for Greek history; critical skills will be improved by the careful treatment of historiographical texts.
- Successful students will consider available primary sources of information for ancient Greek history and be able to evaluate the reliability of those sources.
- Successful students will discuss critical theories that are relevant to the texts treated in class and be able to evaluate and judge the rhetorical complexities facing the various authors discussed and how those authors resolved those complexities as they composed their historical narratives.
- Successful students will be able to locate the historical texts treated in class in the context of Classical literature generally and of ancient historiography specifically.
- Successful students will demonstrate a basic understanding of Greek History from the Bronze Age to the Hellenistic Age

HIST 248 : (Hist-ClCv 307) Roman History. (3:3:0)

DESCRIPTION: Political, economic, social, and intellectual history of Rome from the foundation of the city to Constantine.

**Course Outcomes**

- Successful students will be exposed to selections of Latin and Greek literature and be able to evaluate those texts as sources for Roman history; students' critical skills will be improved by the careful treatment of historiographical texts.
- Successful students will consider available primary sources of information for ancient Roman history and be able to evaluate the reliability of those sources
- Successful students will discuss critical theories that are relevant to the texts treated in class and be able to evaluate the rhetorical complexities facing the various authors discussed and how those authors resolved those complexities as they composed their historical narratives.
- Successful students will demonstrate a basic knowledge of Roman history from the Regal period to the decline of the Roman Empire.
- Successful students will be able to locate the historical texts treated in class in the context of Classical literature generally and of ancient historiography specifically.

HIST 251 : Conquest and Colonization of Latin America. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Pre-Columbian civilizations, Iberian exploration and conquest of the New World, and colonial development of Hispanic and Portuguese America from 1492 to 1823.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, religious, and cultural characteristics of Spanish and Portuguese colonialism in the Americas between 1492 and 1825.
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills.
- Students will analyze historical questions and place them in historiographical context.

HIST 252 : Modern Latin America. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: National period (1810 to present): independence, institutional development, culture, and inter-American relations.

**Course Outcomes**

- Students will be exposed to the major economic, political, and cultural shifts that shaped the "modern" Latin American state in the nineteenth and twentieth century, as well as its variants, notably the cult of caudillo rule and its twentieth century offshoots
- Students will become conversant with major theoretical arguments and approaches to Latin American history in the contemporary era.
- Students will gain oral proficiency in discussing historiographical and thematic issues in modern Latin America during weekly discussion.
- Students will either broaden their understanding of literature on one topic in Latin American history by way of an intensive literature survey or deepen their knowledge on a particular topic in Latin American history by way of an original research paper.
- Students will make connections between cultural and polotico-economic issues by way of a wide variety of course readings that expose students to literature, as well as traditional historical themes.

HIST 290 : Nature and History: The Earth's Environmental Past. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Human historical interactions with animals, plants, and landscapes. Global histories of climate, population, whaling, fossil fuels, the car, animal rights, suburban sprawl, eco-theology, environmentalism, ecotourism, etc.

**Course Outcomes**

- Students will become academically conversant with the major historical developments in our global relationship with nature.
- Students will be able to analyze and evaluate the content and meaning of primary sources, and through critical interpretation, draw reasonable conclusions.
- Students will be able to formulate historical questions and answer them by careful and systematic research in primary and secondary sources.
- Students will be able to write history that is coherent and persuasive by following discipline's norms for writing and careful documentation.

HIST 291 : History of Science. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Graeco-Islamic scientific tradition. Ideas, practice, and social impact from Greek, Islamic, and Medieval European civilizations and science to eve of Scientific Revolution. Examines cross-cultural exchange, transformation of ideas.

**Course Outcomes**

- Understand how science developed out of ancient thought disciplines
- Understand the continuity of Greek-style scientific thinking through Arabic/Islamic and Latin/Christian civilizations
- Grasp the overall development of science as an intellectual and social practice, from pre-Greek times, down through the Scientific “Revolution” and to the modern period.
- To question the reality of a Scientific “Revolution”
- To gain a hand-on understanding of the ancient practices of astronomy/astrology, and understand how they drove much other scientific research
- To master one topic or technology from the pre- Scientific “Revolution” period

HIST 292 : Food and History. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: History of tomatoes, potatoes, sugar, and spice. How food and foodways engage broader historical questions and illuminate aspects of human cultures.

**Course Outcomes**

- Students will be able to discuss the theoretical underpinnings of the study of food, and will be able to discuss key aspects of the impact of food on human history.
- Students will refine and improve historical research, writing and analytical skills.
- Students will refine and improve oral presentation skills.

HIST 293 : World War II: A Global Perspective, 1939-1945. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Causes, flow, and consequences of World War II emphasizing the American experience at home and abroad.

**Course Outcomes**

- Students will be able to explain and analyze the history and memory of the global conflict of 1939 to 1945.
- Students will be able to analyze and interpret primary and secondary source documents.
- Students will be able to interpret and discuss the meanings and history and memory.
- Students will be able to formulate historical arguments based on primary sources and place them in a historiographical context.

HIST 300 : The Early Middle Ages. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Decline of Rome and the early formative stages of early medieval civilization; analysis of political, economic, and social changes from A.D. 285 to 950.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in the Early Middle Ages.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers

HIST 301 : The Late Middle Ages. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Europe from 950 to 1350; maturation of medieval civilization; failure of German, success of French leadership; economic, religious, cultural, intellectual trends.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in the Late Middle Ages.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers

HIST 302 : The Italian Renaissance. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Major political, social, and cultural events in Italy from 1200 to 1530, emphasizing concept of the Renaissance in modern historiography.

**Course Outcomes**

- Students will understand and be able to analyze the major political, economic, social, and religious developments in Italian Renaissance history
- Students will be able to trace the historiographical evolution of the Italian Renaissance and analyze historical questions within this historiographical context
- Students will refine and improve historical research, writing and analytical skills

HIST 303 : The Reformation: Age of Turmoil. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Sixteenth-century religious upheaval; ideological, cultural, political, and socioeconomic struggles to mid-seventeenth century.

**Course Outcomes**

- Students will be able to explain and analyze the major religious developments in Europe during the Reformation (1500-1700).
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze and interpret secondary source documents
- Students will be able to interpret and debate the meanings and historical value of primary and secondary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 304 : The Expansion of Europe, 1400-1800. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Early voyages of discovery and the actions of Europeans in the wider world from about 1400 to 1800.

**Course Outcomes**

There are no course outcomes available

HIST 305 : The Age of Enlightenment. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Developments in Europe from 1650 to the French Revolution, emphasizing political thought, science, and philosophy in the Enlightenment.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, intellectual, and cultural developments in Europe between 1650 and 1815.
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills
- Students will analyze historical questions and place them in historiographical context
- Students will understand the ideas central to the Enlightenment.

HIST 306 : Nineteenth-Century Europe. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Political, economic, social, and intellectual history of Europe from 1815 to 1914.

**Course Outcomes**

- Students will understand and be able to explain and analyze the international affairs and the political, intellectual, social, and economic history of Europe from 1815-1914
- Students will understand how to use and will be able to analyze and interpret primary source documents.
- Students will be able to review, critique, and evaluate historiographical works from a variety of European nations, as well as analyze historical questions and place them in a historiographical context.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts.

HIST 307 : Europe Since 1914. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: International affairs and political and economic history of major European countries (including Russia) from World War I to the present.

**Course Outcomes**

- Students will understand and be able to explain and analyze the international affairs and the political, cultural, military, social, and economic history of Europe from the two world wars until the present
- Students will understand how to use and will be able to analyze and interpret primary source documents.
- Students will be able to review, critique, and evaluate historiographical works.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to analyze and discuss current events from more than one national viewpoint.

HIST 310 : European Economic History. (3:3:0)

WHEN TAUGHT: Spring Odd Yrs.

DESCRIPTION: Economic development of Europe from antiquity to the early twentieth century; impact of the economy on social and political institutions.

**Course Outcomes**

- Students will acquire content knowledge about the economic history of Europe from antiquity to the present
- Students will master the skills necessary to summarize, evaluate, and critique historical arguments.
- Students will understand the way evidence is used to construct historical arguments.
- Students will pose historical questions and support them with appropriate evidence
- Students will gain experience collaborating with each other in formulating and carrying out a research project using historical research skills.

HIST 312 : History of Ideas. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Interrelationship of influential ideas and historical events from the end of the eighteenth century to the present.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Recognize the usefulness, but also the problematic nature of historical periodization.
- Develop interdisciplinary, synthetic, thinking skills, particularly in being able to see history in cultural artifacts and then identify and place these into discursive contexts.
- Relate and trace how ideas continue to influence societies and their institutions
- Awaken in you the realization of how certain modes of modern thought that you might have taken for granted as having existed "forever" can be seen as developments in response to specific historical circumstances.

- Explain how ideas, when extended to their logical conclusions, may challenge your personal world view and consider, as well as articulate, how to resolve such conflicts.
- Write an intellectual history research paper.
- Identify broadly how different approaches to intellectual history operate, e.g. Lovejoy, Cambridge School (Skinner), Berlin, Koselleck, Strauss, etc.

HIST 314 : European Fascisms, 1914 to Present. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Political, cultural, and social bases of fascist movements, especially in Italy, Germany, and Spain. Rise to power, family policies, warfare, propaganda, racism, genocide, neofascisms.

**Course Outcomes**

- Students will understand and be able to explain and analyze the origins, impacts, foreign policy, theories, and legacy of Fascism, Nazism, and other competing political ideologies
- Students will understand how to use and will be able to analyze and interpret primary source documents and secondary historiographical works.
- Students will understand how to research and write.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 315 : European Jews and the Holocaust. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Attempted genocide of European Jews by Hitler's Third Reich; motives, methods, and implications.

**Course Outcomes**

- Study the genocide of European Jews by Hitler's Third Reich and to explore the motives, methods, and implications of this, as well as the fundamental questions thrown into relief by it.
- Analyze key issues that informed the Holocaust, the context and processees related to it, and to engage with the debates ignited by its legacy. Further develop proficiency in using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Foster specific skills of critical thinking, argumentative and narrative writing, as well as careful reading. Analyze historical questions and issues clearly, assess historical information accurately and distinguish between questionable and valid historical assertions.
- Skillfully integrate data into coherent arguments expressed through a clear, well-written style in exams, papers, and class discussion.

HIST 319 : The Family in Europe. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Nature and development of marriage and family life and structure from the ancient to modern era.

NOTE: Independent Study also.

**Course Outcomes**

- Students will be able to understand and explain major trends in European family life, relationships, and law between 1100 and the present
- Students will be able to analyze and synthesize historiography of family history
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another.
- Students will interpret important shifts or trends in the experience of family functions and relationships and their connections with the law. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends.
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate historical experiences and historiographic interpretations

HIST 320 : Society in Europe. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Common life in Europe from 1500 to the present: family problems, social customs, marriage, superstition, death, diet, work, hardships, migration, and childhood.

**Course Outcomes**

- Students will be able to explain and analyze themes and trends in European social history in both the early modern and modern periods.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze and interpret secondary source documents
- Students will be able to interpret and debate the meanings and historical value of primary and secondary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 322 : English History to 1689. (3:3:0)

OFFERED: Independent Study also.

DESCRIPTION: Political, social, and cultural developments from prehistoric times to the Glorious Revolution. Medieval, Tudor, and Stuart periods.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments inengland to 1689.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 323 : English History Since 1689. (3:3:0)

DESCRIPTION: Emergence of Britain as a great colonial and industrial power, as well as more recent decline of Britain's influence. Emphasis also on cultural developments.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in England Since 1689.
- Students will be able to analyze and interpret primary source documents
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 324 : France. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: French history from Roman times to the present, emphasizing the French Revolution, Napoleon, and subsequent developments.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in French history between approximately 700 and 1950.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 325 : Spain. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Political, social, and economic factors in Spanish history from Roman times to present. Emphasis on Reconquest, Golden Age, and Civil War.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, intellectual, and cultural developments in Spain from Roman times to the late twentieth century
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills.
- Students will analyze historical questions and place them in historiographical context.

HIST 327 : Italy in the Modern World Since 1848. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Political, social, economic, and cultural history of Italians and the Italian peninsula in Europe and the world, including nationalism, church and state, migration, Mafia, fascism, and European union.

**Course Outcomes**

- Students will understand and be able to explain and analyze contemporary Italian history, including themes of economic development, state formation, fascism, internationalism, and church/state relations.
- Students will understand and will be able to analyze and interpret primary source documents and secondary historiographical works.
- Students will understand how to research and write.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to present a topic and argument in class with multimedia and discussion

HIST 328 : Modern Germany. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, military, economic and cultural development of Germany during the nineteenth and twentieth centuries.

**Course Outcomes**

- Understand how historians interpret the German past.
- Alert you to how historians construct their narratives.
- Read and dismantle primary and secondary sources.
- Synthesize material from interdisciplinary sources.
- Show essay skills by writing timed essays on a set of primary and secondary sources.
- Demonstrate your ability to use primary sources in a research project.

HIST 330 : Tsarist Russia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Political, economic, social, and cultural trends and events in Russian history to 1917.

**Course Outcomes**

There are no course outcomes available

HIST 331 : Soviet Union and Post-Soviet Russia. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: History of the Soviet Union and post-Soviet developments in Russia and other successor states; governing structures and ideology and the relationship between state and society.

**Course Outcomes**

There are no course outcomes available

HIST 332 : Scandinavian History. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Political, social, religious, cultural, and economic factors in Denmark, Finland, Iceland, Norway, and Sweden from Viking era to present highly developed society.

**Course Outcomes**

- Students will be able to learn about Scandinavian history from prehistoric times through to the Viking Age, Middle Ages/Renaissance to the Era of Swedish Great Power Politics and Great Northern War, in the 1600s and early 1700s.
- Students will be able to learn about the big picture of Scandinavian history from the period of the Napoleonic Wars (esp. Napoleon's erstwhile general, Bernadotte, later King of Sweden-Norway), Industrialization of the North, nationalistic movements and periods of Swedish-Norwegian and russo-Finnish union, through the World Wars and establishment of the Modern Welfare state (since the 1920s)

HIST 335 : Crusades. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Age of Holy Wars in the eastern Mediterranean and Near East, 1050-1300. Focus on both Europe and Near East.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, cultural and religious developments during the crusades, c. AD 1050-1300
- Students will be able to analyze and interpret translations of primary source documents from the age of the Crusades.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 340 : Traditional China. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: From a loose federation of Neolithic societies, Chinese civilization emerges as East Asia's dominant political and cultural force; developments to ca. 1500.

**Course Outcomes**

- Students will be able to explain and analyze the major social, political, economic, intellectual and cultural developments in the history of Early China (ca. 5000 BC–220 AD
- Students will demonstrate a basic geographical knowledge of China, including significant geological features and major historical cities Moreover, they will be able to discuss how geographical and environmental realities have impacted historical development.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve.

HIST 341 : China Since 1200. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Economic and political foundations of modernity during high Imperial China; challenge of new order from the West; rise of Chinese nationalism, revolution, and development to the present.

**Course Outcomes**

There are no course outcomes available

HIST 343 : Traditional Japan. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, social, religious, and cultural developments to ca. 1700.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history until around 1600.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 344 : Modern Japan. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Main themes in Japanese history from Tokugawa times to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history from approximately 1600 to the present.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 347 : Chinese Cultural History. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Methods and approaches of the cultural historian; in-depth investigation of a selected topic in Chinese cultural history. Topics may include women, Silk Roads, material culture, etc.

**Course Outcomes**

- Students will be able to explain and understand the methods and approaches of the cultural historian through an investigation of select topics in Chinese cultural history.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve

HIST 349 : History of Asian Religions and Thought. (3:3:0)

DESCRIPTION: Major themes in religion, philosophy, and ideas in Asia.

**Course Outcomes**

- Students will be able to understand and analyze key concepts in Chinese thought and religion as well as the logic behind core beliefs and practices
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions.

HIST 355 : History of Argentina. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Rise of modern Argentina from colonial times, focusing on the dynamic political, economic, social, and cultural developments since independence.

**Course Outcomes**

- Learn and understand more about the historical processes that have shaped the nation of Argentina from colonial times up to the present.
- To be able to discuss and explain those processes through the written and spoken word with clarity, persuasiveness, and proper use of evidence
- To write a well written, organized, and developed term paper using the critical thinking and writing skills of a historian
- To be able to read primary sources and discuss their utility in constructing historical arguments.

HIST 356 : Brazil. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: From 1500 to present, emphasizing relationship between colonial patterns and twentieth-century reality and dilatory transformation of Brazil's political and economic culture.

**Course Outcomes**

- Students will become academically conversant in the major social, economic, and cultural developments of Brazil's history since 1500.
- Students will be able to analyze and evaluate the content and meaning of primary sources, and through critical interpretation, draw reasonable conclusions.
- Students will be able to formulate original historical questions and answer them by careful and systematic research in primary and secondary sources.
- Students will be able to write history that is coherent and persuasive by following discipline's norms for writing and careful documentation.

HIST 357 : The Indian in Latin American History. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: History of Latin American Indians from preconquest days to the present; achievements,

contributions, and problems.

**Course Outcomes**

- Students will be able to explain and analyze the political, economic, social, religious, and cultural structures of the Mayas, Aztecs, and Incas, how they were transformed by the Spanish conquest, and how they developed in reaction to European colonialism.
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills.
- Students will analyze historical questions and place them in historiographical context.

HIST 358 : Gender and History in Latin America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: How gender roles have been defined legally, socially, and culturally in Latin America from the colonial period to the present, emphasizing the nineteenth and twentieth centuries.

**Course Outcomes**

- To understand how gender relations and gender roles developed in Latin America from colonial times to the present.
- To be able to discuss and explain those developments through the written and spoken word with clarity, persuasiveness, and proper use of evidence.
- To write a well written, organized, and developed term paper using the critical thinking and writing skills of a historian.
- To be able to read primary sources and discuss their utility in constructing historical arguments.

HIST 359 : Inter-American Relations. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Decline of Europe's American empires, legacies bequeathed to the new republics by their European heritage, and how those legacies have affected relations among the various American republics.

**Course Outcomes**

- Students will gain an understanding of the major historiographical schools of thought in Inter-American relations
- Students will gain an in-depth understanding of at least one major figure in Inter-American relations each term the class is taught by way of reading primary sources and writing about the legacy of that individual.
- Students will be exposed to a variety of thematic approaches to Inter-American relations, including gender, health and the environment, culture, tourism, film, and literature. It is expected that these alternatives to traditional diplomatic relations will inform their selection of a research topic for the course.
- Students will write a research paper focusing on one of the thematic approaches presented in class and informed by primary sources, as well as secondary literature, in order to arrive at a stronger understanding of Inter-American relations.
- Students will obtain a stronger cross-cultural understanding of Inter-American relations by debating and discussing issues, informed by our class readings, during our weekly discussions. At times students will be asked to embrace perspectives that they may not entirely agree with or understand.
- Students will become conversant with the watershed events of the Haitian Revolution, the Latin American Revolutions, the Spanish American War, the Cuban Revolution, and the Washington Consensus,and why they have been critical to the tenor of Inter-American Relations.

HIST 360 : American West to 1900. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: The American West as a place of great diversity. Topics include Native American societies, European colonization, explorations, the fur trade, overland migrations, Indian relations, mining, settlement, and the environment.

**Course Outcomes**

- Students will be able to explain and interpret major developments and historical terms in the history of the American West before 1900.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.

HIST 361 : The American West Since 1900. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Pivotal developments in the twentieth-century West, including urbanization, Sun Belt migration, political protest, labor history, Native American history, immigration, water policy, tourism, military-industrial complex, Hollywood.

**Course Outcomes**

- Students will be able to explain and interpret major developments and historical terms in the history of the American West since 1900.
- Students will be able to interpret primary documents and use evidence from those documents to support historical assertions and interpretive generalizations.
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.

HIST 363 : The Spanish Frontier in North America. (3:3:0)

DESCRIPTION: Spanish exploration, occupation, and institutions of northern Mexico, the American southwest, and Florida, 1521-1821; Mexican period to 1848.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in the history of the Spanish and Mexican northern frontier in North America between approximately 1492 and 2011
- Students will be able to analyze and interpret primary source documents
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.

HIST 364 : Utah. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Contributions of Native Americans, explorers, mountain men, miners, government officials, Mormons, and other groups in the nineteenth century. Impact of national movements, various peoples, politics, economics, and social and cultural change in the twentieth century.

**Course Outcomes**

There are no course outcomes available

HIST 365 : American South. (3:3:0)

DESCRIPTION: Political, economic, and cultural history of the southern states from colonial times to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, cultural, religious, and intellectual developments in the history of the American South from European contact to the present
- Students will able to analyze an important historical question in the history of the South.
- Students will be able to research, analyze, and integrate primary and secondary sources into a coherent and well-written argument.
- Students will be able to isolate the theses and supporting arguments of secondary sources on the history of the South.
- Students will be able to analyze primary sources on the history of the South.

HIST 366 : Slavery and the Slave Trade in Africa and the Atlantic World. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Major social, political, economic, and cultural developments in the history of slavery in Africa and the Americas between the 15th and 19th centuries, taking the lands and the people of the Atlantic Ocean region as a geographical unit.

**Course Outcomes**

- Students will be able to explain and analyze the major social, political, economic, and cultural developments in the history of slavery in the Atlantic World between the 15th and 19th centuries.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions.
- History teaching majors will start to apply information and ideas from the course to future teaching.

HIST 367 : Slavery in the United States. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Historical themes and developments of slavery in the U.S.

**Course Outcomes**

- Students will be able to explain and analyze the major social, political, economic, and cultural developments in the history of slavery in North America from the 17th century through 1865
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions.
- History teaching majors will start to apply information and ideas from the course to future teaching.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 368 : Sport, Society, and American Culture. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Development of sports in American society, emphasizing ethnic and racial groups, social classes, gender, gambling, politics, and social mobility.

**Course Outcomes**

- Students will be able to explain the major social, cultural, and historical developments in American sport history.
- Students will be able to evaluate the relationship between sports and race, class, and gender

issues in American history.
- Students will understand the major historiographical debates in American sport history.

HIST 370 : Colonial America. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Establishment, growth, and development of the American colonies to 1763.

**Course Outcomes**

- Students will demonstrate an understanding of the major events and issues in colonial American history and historiography.
- Students will be able to identify, evaluate and locate appropriate primary and secondary sources for colonial American history.
- Students will be able to create and support an argument based on a major issue in colonial American historiography, using primary and secondary sources.
- Students will be able to identify and critically respond to the argument of a historical monograph.

HIST 371 : Revolutionary America. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Causes and consequences of the American Revolution, the confederation era, and the framing of the Constitution.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in Revolutionary America.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 373 : Civil War Era, 1848-1877. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Causes of the war, major military events (leaders, campaigns, soldiers), war on the home fronts, why the South lost, Reconstruction, the legacy of the war.

**Course Outcomes**

- Students will be able to explain and analyze the main themes and developments of the Civil War and Reconstruction, as well as their roots and legacy.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions.
- History teaching majors will start to apply information and ideas from the course to future teaching.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 374 : U.S. History from 1890 to 1945. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: HIST 220 & HIST 221

DESCRIPTION: Political, economic, and social movements and ideas that trace rise of U.S. as a world power in first half of twentieth century.

**Course Outcomes**

- Students will be able to explain and interpret major developments and historical terms in the history of the United States between 1890 and 1945.
- Students will be able to interpret primary documents and use evidence from those documents to support historical assertions and interpretive generalizations
- Students will hone their ability to skillfully and honestly evaluate historical arguments in secondary sources.

HIST 376 : U.S. History from 1945 to 2000. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Movements and ideas that shaped society, politics, economy, and diplomacy of the United States from 1945 to 2000.

**Course Outcomes**

- Students will be able to explain and analyze the major political, social, diplomatic, economic, cultural, and constitutional developments in U.S. history from 1945 to the present.
- Students will be able to analyze, interpret, and debate the meanings and historical significance of primary source documents.
- Students will be able to produce an original, analytical, and primary source based historical essay examining a key issue, theme, or individual from U.S. history since 1945.

HIST 378 : American Family History. (3:3:0)

DESCRIPTION: History of American families from colonial period to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major intellectual, economic, religious, social, cultural, and political developments affecting changes in American families of various races, classes, and regions from 1607 to the present.
- Students will be able to analyze an important historical question in the history of American families
- Students will be able to research, analyze, and integrate primary and secondary sources into a coherent and well-written argument.
- Students will be able to isolate the theses and supporting arguments of secondary sources on the history of American families.

HIST 379 : U.S. Religious History to 1860. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Religious developments from colonial times to 1860.

**Course Outcomes**

There are no course outcomes available

HIST 380 : U.S. Religious History Since 1860. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Examines religious people, institutions, beliefs, and practices in U.S. history since the Civil War.

**Course Outcomes**

There are no course outcomes available

HIST 382 : Mormonism in the American Experience. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Social, economic, political, intellectual, and religious environment in which Mormonism flourished; contributions of Mormon men and women to American culture and history.

**Course Outcomes**

- Students will be able to summarize and assess key aspects of how Mormonism has been situated in the larger cultural and religious geography of America
- Students will learn how particular primary sources provide key building blocks in prominent interpretations of the place of Mormonism in American history
- Students will become acquainted with, and learn to assess the academic conversation concerning Mormonism
- Students will enhance their verbal communication skills through participation in class discussion.

HIST 384 : United States Women's History. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Survey course of women's experience in American culture and society from the Puritans to the present.

**Course Outcomes**

- Students will be able to explain and analyze the experiences of women in America from the colonial period to the present, the ways that ideas about gender have shaped American life, and significant issues and debates in U.S. Women's history.
- Students will be able to analyze, interpret, and evaluate primary sources.
- Students will be able to interpret and debate the meanings and historical value of primary sources with their peers.
- Students will be able to analyze and create historical questions and place them in a historiographical context.
- Students will demonstrate proficiency in using historical methods of research and in integrating data into a coherent argument expressed through a clear, well-written style.
- Students will be able to apply their understanding of American women's history to current issues and events.

HIST 385 : Latinos in the United States. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: The place of Latin Americans within the context of U.S. history. The growth and development of the largest Latino communities from pre-colonial times to present day and how Latinos may influence future policies within the U.S.

**Course Outcomes**

- Students will learn the history of Latinos in this country beginning with the circumstances which brought them to this country, the ways they have integrated or resisted integration, and the efforts they have made to claim their rights as citizens.
- Students will learn to interpret the documents and rhetoric of this community which will help them understand the intellectual, cultural and political thought of Latinos over the last 100 years.
- Students will learn the current state of Latino social and cultural integration in the Utah community.
- Students will learn to write a major essay on the history of Latinos in order to understand the literature as well as the primary sources available on this community.

HIST 386 : Nineteenth-Century American Indian History. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: History of various Indian tribes, their cultures, and their relationships with European nations and the United States, including military campaigns.

**Course Outcomes**

- Students will be understand and appreciate Indian history and cultures, employ historical research skills effectively, and apply appropriate methods and theories to the study of Indian history and contemporary Native American issues.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.
- Recognize important ideas of Indian and non-Indian cultural traditions and how LDS Native Americans have balanced their intellectual pursuits, their faith, and their culture.
- Learn to communicate effectively both orally and in writing about Native American topics
- Have meaningful interactions with Indian communities, individuals, and organizations to provide outreach and to help address contemporary challenges

HIST 387 : Twentieth-Century American Indian History. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Sociocultural factors that affect twentieth-century native Americans in both urban and reservation settings, including current challenges facing Indian communities.

**Course Outcomes**

- Students will be understand and appreciate Indian history and cultures, employ historical research skills effectively, and apply appropriate methods and theories to the study of Indian history and contemporary Native American issues.
- Students will be able to interpret primary sources and use evidence from those documents to support historical assertions and interpretive generalizations.
- Students will be able to skillfully and honestly evaluate historical arguments in secondary sources.
- Recognize important ideas of Indian and non-Indian cultural traditions and how LDS Native Americans have balanced their intellectual pursuits, their faith, and their culture
- Learn to communicate effectively both orally and in writing about Native American topics.
- Have meaningful interactions with Indian communities, individuals, and organizations to provide outreach and to help address contemporary challenges.

HIST 388 : Indians in Colonial America. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: North American Indian culture, Indian/European interactions, demographic, social, political factors among Indians prior to contact with Europeans through colonization and the American Revolutionary War.

**Course Outcomes**

- Students will demonstrate an understanding of the major issues and events in colonial Native American historiography and their modern-day consequences.
- Students will be able to identify, evaluate and locate appropriate primary sources for colonial Native American history
- Students will be able to use primary sources to support an argument based on a major issue in colonial Native American historiography.
- Students will be able to identify and critically respond to the arguments of historical monographs.

HIST 390R : Special Topics in History. (.5-3:Arr:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Presented by visiting or regular faculty. Varied topics include oral history, demographics, psychohistory, Christianity in history, family history research, etc.

**Course Outcomes**

There are no course outcomes available

: Family History Research.

**Course Outcomes**

: Family History Research in Ireland. (.5-3:Arr:Arr)

**Course Outcomes**

: Family History Research in the Netherlands.

**Course Outcomes**

: Advanced Southern European Family History Research.

**Course Outcomes**

: Advanced British Family History Research.

**Course Outcomes**

: Native American Family History Research. (.5-3:Arr:Arr)

**Course Outcomes**

HIST 391 : U.S. in Vietnam, 1945-1975. (3:3:0)

DESCRIPTION: U.S. involvement in the wars in Vietnam from both a domestic and international perspective, focusing on the conflict independently and in context of the broader Cold War.

**Course Outcomes**

- Students will be able to explain and analyze political, social, cultural, diplomatic, and military developments; short- and long-term influences; and ramifications or "lessons" deriving from the U.S. experience during the Vietnam War from 1945 to 1975 from both a domestic and international perspective.
- Students will be able to analyze, interpret, and debate the meanings and historical significance of primary source documents.
- Students will be able to produce an original, analytical, and primary source based historical essay examining a key issue, theme, or individual from the U.S. experience in Vietnam.

HIST 392 : U.S. Constitutional History. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Constitutional traditions and constitution making, federalism, and constitutional notions of political equity and social justice, from the colonial period to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments that led to the U.S. Constitution
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 393 : U.S. Foreign Relations. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: U.S. diplomatic history from the American revolution to the present; examines major themes and critical events within both domestic and international contexts.

**Course Outcomes**

- Students will be able to explain and analyze the major themes and problems in the making, implementation, and evolution of U.S. foreign relations from 1776 to the present.
- Students will be able to analyze, interpret, and debate the meanings and historical significance of primary source documents.
- Students will be able to produce an original, analytical, and primary source based historical essay examining a key issue, theme, or individual from the history of U.S. foreign relations.

f. Media Arts (Film):

TMA 477R : Issues in Media Arts. (3:5:0)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 291, 292; media arts major status.

DESCRIPTION: In-depth study of key media arts issues, within context of gospel principles.

**Course Outcomes**

- 1. Explore the ways this significant media arts issue developed over time.
- 2. Clarify definitions and practical functioning of significant concepts and paradigms.
- 3. Analyze key texts and their relationship to culture in relationship to key concerns.
- 4. Consider ethical and spiritual implcations of the issue.
- Collaboratively identify and share information on current relating to the specific issue.

TMA 492R : Media Arts Genres. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Intensive analysis of a single major traditional media genre (i.e., western, musical, sitcom, or melodrama) with consideration of contextual, subtextual, and textual issues.

**Course Outcomes**

- to listen to a ton of lectures, read a ton of stories, and see a ton of films relating to a given genre. We will also learn about some of the social and historical factors that have informed narratives within that genre, as well as some of their many and evolving styles and conventions.
- Explore a specific genre as a microcosm of larger aesthetic and social development of popular cultural artifacts.
- Identify schoalrly material related to genre study.
- Consider the relationship of text, subtext, and context in genre film.
- Analyze the significance of conventions and themes both diachronically and synchronically.

TMA 494 : Transcendence: Religion and Film. (3:6:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 291; or TMA 292; media arts major or minor status.

DESCRIPTION: Historical, stylistic, and thematic survey of approaches to religious and spiritual subject matter in film.

**Course Outcomes**

- consider the history and nature of transcendence in cinema, it's operation in particular films, and the permutations of relationships between transcendence/spirituality and film.
- explore and further articulate their personal paradigm of transcendence and film especially in its operation in specific cinematic texts
- develop "experimental criticism" skills (as identified by C.S. Lewis), examining a text's impact on spectators and its relationship to the intent of its creators.
- establish familiarity with the some of the scholarly literature on religion/values and film.

TMA 497 : Media as a Mirror of Our Times. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Interdisciplinary approach to media texts as aesthetic and historical documents expressing a people, place, and time.

**Course Outcomes**

- Student will explore media text as cultural and historical documents reflecting social values and anxieties.Students will utilizeInterdisciplinaryapproaches to analyze media texts aesthetically as determined by culture. Close reading of a variety of text will allow students to develop a methodology to understand the role of film text and subtext as well as context.

TMA 498R : Special Topics in Media Arts. (3:3:3)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 291 or 292; media arts major or minor status.

DESCRIPTION: Consideration of compelling issues in media arts practice, theory, history, and criticism.

**Course Outcomes**

- In-depth textual, contextual, and subtextual analyses of a compelling topic in media arts
- Paradigmatic exploration of emerging media arts issues in practice, theory and history.
- Thoughtful consideration of aesthetic and historical implications of special media arts topics
- Consideration of representative texts of the media arts special topic.

A maximum of one course from the following may be substituted for one of the TMA approved courses above:

CMLIT 450R : Literature and Cinema. (3:3:0)

PREREQUISITE: CmLit 310 or concurrent enrollment.

DESCRIPTION: Interrelations of national literatures and figures and of literature with other areas of knowledge (art, history, law, psychology, music, etc.). Topics vary.

**Course Outcomes**

There are no course outcomes available

ENGL 345 : Literature and Film. (3:3:.5)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Emphasis on film as an interpretation of texts. Includes International Cinema.

**Course Outcomes**

- Analyze a written text/film set using an appropriate and well-defined scholarly approach.
- Write a research paper using proper MLA guidelines that is situated in the context of recent scholarship in the field.
- Identify and describe major and minor works, authors, and directors associated with this course.
- Form a research strategy. Independently identify and locate relevant print and digital sources, and incorporate these sources into a well-formed argument.

FREN 317 : (Fren-Ital) French and Italian Cinema. (3:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Background for understanding and appreciating the best of motion picture art in France and Italy. Includes components of critical theory essential for analyzing film. Language of instruction is English; no knowledge of French or Italian required.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Identify the major filmmakers and cinematic movements in the history of French and Italian cinema, with particular attention to the socio-historical contexts that shaped their creation.
- Explore the essential aspects of cinema as an artistic medium and master the technical and critical terminology necessary to intelligently discuss the creative process.

GERM 217 : (Germ-Scand) German and Scandinavian Cinema. (3:3:3)

WHEN TAUGHT: Fall Odd Yrs.

RECOMMENDED: A first-year writing course.

DESCRIPTION: Background for understanding and appreciating the best of motion picture art in Germany and Scandinavia.

NOTE: Language of instruction is English; no knowledge of German or Scandinavian languages is required. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

ITAL 317 : (Fren-Ital) French and Italian Cinema. (3:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Background for understanding and appreciating the best of motion picture art in France and Italy. Includes components of critical theory essential for analyzing film. Language of instruction is English; no knowledge of French or Italian required.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Identify major filmmakers, and cinematic movements in the history of French and Italian cinema, with particular attention to the socio-historical situations that engendered creation.
- Explore the essential aspects of cinema as an artistic medium and master the technical and critical terminology necessary to intelligently discuss the creative process.
- Develop critical skills for aesthetic judgment in applying acquired techincal knowledge to the films of individual filmmakers from these two traditions.
- Analyze cinema as an art form and "read" individual films in terms of the specificity of an artistic, authorial message.

RUSS 343 : Masterpieces of Russian Film. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: RUSS 330

DESCRIPTION: Developing listening comprehension and speaking skills through discussing Russian films. Includes International Cinema.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

SCAND 217 : (Scand-Germ) German and Scandinavian Cinema. (3:3:3)

WHEN TAUGHT: Fall

RECOMMENDED: A first-year writing course.

DESCRIPTION: Background for understanding and appreciating the best of motion picture art in Germany and Scandinavia.

NOTE: Language of instruction is English; no knowledge of German or Scandinavian languages is required. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

SPAN 438 : Hispanic Cinema. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 339

DESCRIPTION: Introduction to study of film; background in appreciating best of motion picture art in Spain and Spanish America.

NOTE: Previous experience with film useful but not required.

**Course Outcomes**

- Students will demonstrate a mastery of basic tools of film analysis through the study of a variety of films from the various film industries from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstate the ability to speak and write in Spanish about film with a reasonable degree of grammatical correctness and fluency.

g. Philosophy:

PHIL 110 : Introduction to Philosophy. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Articulating, assessing, and defending fundamental positions on topics such as reason, knowledge, science, education, ethics, politics, and religion.

**Course Outcomes**

- Become acquainted with important figures, topics, and issues in the history of philosophy.
- Learn to read and discuss critically philosophical texts.
- Write a clear and cogent philosophical essay.
- Learn to integrate philosophical skills and practices with religious convictions, while cultivating a respect for contrary points of view.

PHIL 210 : Science and Civilization 1. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall
DESCRIPTION: History of Civilization from Greek antiquity to scientific revolution; methods in early science and their philosophical significance; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Know about the development of scientific ideas and practices in their cultural context, including the major figures and methods of science from antiquity to 1500.
- Read, analyze, and critically summarize a book-length study of science.
- Learn to integrate philosophical skills and practices with religious convictions, while cultivating a respect for contrary points of view.

PHIL 211 : Science and Civilization 2. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Winter
DESCRIPTION: History of Civilization from scientific revolution to present; concepts and methods in modern science and their philosophical significance; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

PHIL 213 : Introduction to Ethics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department
DESCRIPTION: Nature and justification of moral standards, beliefs, and decisions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Know basic concepts, figures, texts, and issues of moral philosophy; know basic normative theories in ethics, including deontology, utilitarianism, virtue theory, subjectivism, relativism, divine command theory, natural law, social contract theory, and care ethics.
- Learn how to apply normative theories to ethical problems, questions, and situations.
- Learn how to integrate philosophical skills and practices with religious convictions, while cultivating a respect for contrary points of view.

PHIL 214 : Introduction to the Philosophy of Art. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: The experience of beauty in nature, in literature, and in the arts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Know basic concepts, theories, figures, texts, and issues in Western philosophy of art and beauty.
- Learn how to use the philosophy of art and theories of taste to appreciate and critique individual works of art.
- Practice philosophical analysis and argument orally and in writing; write a clear and cogent essay on the philosophy of art and beauty.

PHIL 215 : Introduction to the Philosophy of Religion. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Existence and nature of God, God's foreknowledge and man's free will, faith, immortality, and religious experience and language.

**Course Outcomes**

- Know central problems in philosophy of religion, and traditional responses to those problems; know central figures and texts in philosophy of religion.
- Know and evaluate major arguments for God's existence, and learn how to examine the role of reason and evidence in religious belief.
- Practice philosophical analysis and argument orally and in writing; write a clear and cogent essay on the philosophy of religion.

PHIL 320R : Studies in Ancient Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Phil 201.
DESCRIPTION: Selected figures or topics.

**Course Outcomes**
There are no course outcomes available

: Topics in Greek Philosophy.
**Course Outcomes**

: Pre-Socratics.
**Course Outcomes**

: Socrates.
**Course Outcomes**

: Plato.
**Course Outcomes**

: Aristotle.
**Course Outcomes**

: Neo-Platonism.
**Course Outcomes**

: Plotinus.
**Course Outcomes**

: Stoicism.
**Course Outcomes**

: Greek Ethics.
**Course Outcomes**

: Greek Science.
**Course Outcomes**

: Greek Metaphysics.
**Course Outcomes**

: Greek Logic.
**Course Outcomes**

: Greek Political Theory.
**Course Outcomes**

: Greek Epistemology.
**Course Outcomes**

: Greek Philosophy of Religion.
**Course Outcomes**

: Helenistic Philosophy.
**Course Outcomes**

: Church Fathers.
**Course Outcomes**

: Chinese Philosophy.
**Course Outcomes**

: Hindu Philosophy.
**Course Outcomes**

: Buddhism.
**Course Outcomes**

PHIL 330R : Studies in Medieval Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Phil 201.
DESCRIPTION: Selected figures or topics.

**Course Outcomes**
No outcomes are available at this time.

: Topics in Medieval Philosophy.
**Course Outcomes**

: Augustine.
**Course Outcomes**

: Anselm.
**Course Outcomes**

: Averroes.
**Course Outcomes**

: Bonaventure.
**Course Outcomes**

: Maimonides.
**Course Outcomes**

: Aquinas.
**Course Outcomes**

: Duns Scotus.
**Course Outcomes**

: William of Ockham.
**Course Outcomes**

: Boethius.
**Course Outcomes**

: Medieval Jewish Philosophers.
**Course Outcomes**

: Medieval Arabic Philosophers.
**Course Outcomes**

: Medieval Ethics.
**Course Outcomes**

: Medieval Science.
**Course Outcomes**

: Medieval Epistemology.
**Course Outcomes**

: Medieval Metaphysics.
**Course Outcomes**

: Medieval Logic.
**Course Outcomes**

: Medieval Political Theory.
**Course Outcomes**

: Medieval Philosophy and Religion.
**Course Outcomes**

: Meister Eckhart.
**Course Outcomes**

PHIL 340R : Studies in Modern Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Phil 202.
DESCRIPTION: Selected figures or topics.

**Course Outcomes**
There are no course outcomes available

: Topics in Modern Philosophy.
**Course Outcomes**

: Continental Rationalism.
**Course Outcomes**

: Descartes.
**Course Outcomes**

: Spinoza.
**Course Outcomes**

: Leibniz.
**Course Outcomes**

: British Empiricism.
**Course Outcomes**

: Hobbes.
**Course Outcomes**

: Locke.
**Course Outcomes**

: Descartes and Locke.
**Course Outcomes**

: Berkeley.
**Course Outcomes**

: Hume.
**Course Outcomes**

: Kant.
**Course Outcomes**

: Hegel.
**Course Outcomes**

: Schopenhauer.
**Course Outcomes**

: German Idealism.
**Course Outcomes**

: Nietzsche.
**Course Outcomes**

: Nietzsche and Freud.
**Course Outcomes**

: Kierkegaard.
**Course Outcomes**

: Utilitarianism.
**Course Outcomes**

: Modern Political Theory.
**Course Outcomes**

: Bentham.
**Course Outcomes**

: J. S. Mill.

**Course Outcomes**

: Pragmatism.

**Course Outcomes**

: Peirce.

**Course Outcomes**

: William James.

**Course Outcomes**

: Dewey.

**Course Outcomes**

: Bergson.

**Course Outcomes**

: Alexander.

**Course Outcomes**

: Bradley.

**Course Outcomes**

: Bosanquet.

**Course Outcomes**

: British Idealism.

**Course Outcomes**

PHIL 350R : Studies in Contemporary Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 202.

DESCRIPTION: Selected figures or topics.

**Course Outcomes**

There are no course outcomes available

: Topics in Contemporary Philosophy.

**Course Outcomes**

: Philosophy of Social Science.

**Course Outcomes**

: Philosophy of History.

**Course Outcomes**

: Philosophy of Psychology.

**Course Outcomes**

: Philosophy of Theology.

**Course Outcomes**

: Philosophy and Film.

**Course Outcomes**

: Philosophy and Literature.

**Course Outcomes**

: Philosophy of Architecture.

**Course Outcomes**

: Contemporary Analytical Philosophy.

**Course Outcomes**

: Contemporary Political Theory.

**Course Outcomes**

: Russell.

**Course Outcomes**

: Moore.

**Course Outcomes**

: Frege.

**Course Outcomes**

: Truth.

**Course Outcomes**

: Wittgenstein.

**Course Outcomes**

: Whitehead.

**Course Outcomes**

: Logical Positivism.

**Course Outcomes**

: Continental Philosophy.

**Course Outcomes**

: Existentialism.

**Course Outcomes**

: Hermeneutics.

**Course Outcomes**

: Phenomenology.

**Course Outcomes**

: Philosophy of Cognitive Science.

**Course Outcomes**

: Ricoeur.

**Course Outcomes**

: Husserl.

**Course Outcomes**

: Heidegger.

**Course Outcomes**

: Sartre.

**Course Outcomes**

: Levinas.

**Course Outcomes**

: Merleau-Ponty.

**Course Outcomes**

: Gadamer.

**Course Outcomes**

: Dufrenne.

**Course Outcomes**

: Derrida.

**Course Outcomes**

: Foucault.

**Course Outcomes**

: Marion.

**Course Outcomes**

: Contemporary French Philosophy.

**Course Outcomes**

: Oakeshott.

**Course Outcomes**

: Philosophy of Logic.

**Course Outcomes**

: Lyotard. (0::)

**Course Outcomes**

: Ordinary Language Philosophy.

**Course Outcomes**

PHIL 413R : Topics in Ethics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Phil 300.
RECOMMENDED: Phil 213.
DESCRIPTION: Select topics, figures, problems, and theories in ethics. Topics include meta-ethics, deontology, consequentialism, virtue theory, applied ethics, ethical argumentation.

**Course Outcomes**

There are no course outcomes available

: Objectivity, Subjectivity, and Relativism.

**Course Outcomes**

: Meta-ethics.

**Course Outcomes**

: Skepticism.

**Course Outcomes**

: Deontology.

**Course Outcomes**

: Consequentialism.

**Course Outcomes**

: Virtue Theory.

**Course Outcomes**

: Medical Ethics.

**Course Outcomes**

: Environmental Ethics.

**Course Outcomes**

: Media and Cyber Ethics.

**Course Outcomes**

: Ethics of War and Peace.

**Course Outcomes**

: Moral Psychology.

**Course Outcomes**

: Applied Ethics.

**Course Outcomes**

: The Good Life.

**Course Outcomes**

: Theoretical Foundations of Business Ethics.

**Course Outcomes**

: Ethical Argumentation.

**Course Outcomes**

PHIL 414R : Topics in the Advanced Philosophy of Art, Architecture, Music, and Film. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Phil 300.
DESCRIPTION: Topics and figures in the philosophy of art, architecture, music, and film.

**Course Outcomes**

There are no course outcomes available

PHIL 415 : Philosophy of Religion. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Phil 300.
DESCRIPTION: Selected figures or problems.

**Course Outcomes**

- Understand at an advanced level key concepts, theories, and issues in the philosophy of religion.
- Read and critically discuss figures and texts in the philosophy of religion.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of religion.
- Be able to explain the practice and value of philosophy of religion.

PHIL 416 : Philosophy of Law. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Phil 300.
DESCRIPTION: The relation between natural and enacted law; theories of punishment; utilitarian and nonutilitarian theories of law; liberty.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in the philosophy of law.
- Read and critically discuss figures and texts in the philosophy of law.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of law.
- Be able to explain the practice and value of philosophy of law.

PHIL 420 : Philosophy of Language. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department
PREREQUISITE: Phil 300.
DESCRIPTION: Meaning and reference, synonymy, metaphor, exemplification, translation; linguistic, artistic, and perceptual symbol systems.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in the philosophy of language.
- Read and critically discuss figures and texts in the philosophy of language.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of language.
- Be able to explain the practice and value of philosophy of language.

PHIL 421 : Metaphysics. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department
PREREQUISITE: Phil 300.
DESCRIPTION: Basic categories of being: appearance and reality, law, causality, space, time, eternity, deity.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in metaphysics.
- Read and critically discuss figures and texts in metaphysics.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on metaphysics.
- Be able to explain the practice and value of metaphysics.

PHIL 422 : Epistemology. (3:3:0)

WHEN TAUGHT: Winter; Summer Contact Department
PREREQUISITE: Phil 300.
DESCRIPTION: Meaning, limits, and justification of knowledge.

**Course Outcomes**

- Know and understand central issues and concepts in epistemology, including possible answers to questions like: What is knowledge? What is the extent of our knowledge? What is justified belief?
- Know major theories, figures, and texts in epistemology.
- Read and critically discuss figures and texts in epistemology.

- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on epistemology.
- Be able to explain the practice and value of epistemology.

PHIL 423 : History and Philosophy of Science. (3:3:0)

PREREQUISITE: Phy S 100 or instructor's consent; Phil 300.

DESCRIPTION: Scientific explanation, concepts, and models. Philosophical assumptions and criteria for theory selection, as exemplified by historical development of basic ideas in science.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in the history and philosophy of Western science from antiquity to the contemporary era.
- Read and critically discuss figures and texts in the philosophy of science.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of science.
- Be able to explain the practice and value of philosophy of science.

h. Theatre:

1. Complete 9 hours from the following:

TMA 301 : Contemporary Performance Practices. (2:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: TMA 115; Theatre arts studies major status.

DESCRIPTION: Advanced studies in performance theory and practice.

**Course Outcomes**

There are no course outcomes available

TMA 377C : Theatre Methods and Instruction: Applied Theatre. (2:2:1)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Practicing contemporary theatre-in-education (TIE) methods to be employed in practical secondary education settings.

**Course Outcomes**

- Successful students in this course will be able to facilitate the devising process for Theatre in Education (TIE) and Theatre of the Oppressed (TO) experiences.
- Successful students in this course will be able to create and facilitate Applied Theatre performances and workshops.

TMA 380 : Dramaturgy 1. (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115; or instructor's consent.

DESCRIPTION: Research and apply hands-on theatrical skills in four critical studies areas: literary management, production dramaturgy, new play development, educational outreach.

**Course Outcomes**

There are no course outcomes available

TMA 395 : Dramatic Literature 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre arts studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through Western literary theories, emphasizing performance.

**Course Outcomes**

- Students will synthesize linguistic theory and the social theories and great works of dramatic literature through reading, writing, discussion, film viewing.
- Students will create socially conscious, ideologically-grounded performances that respond both to their world views and contemporary issues in critical theory.
- Students will create cogent, compelling, and mechanically writing for the Humanities in a variety of different mediums—informal responses, production reviews, persuasive essays, and critical analyses.

TMA 396 : Dramatic Literature 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre arts studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through global literary theories, emphasizing performance.

**Course Outcomes**

- Students will synthesize linguistic theory and the social theories and great works of dramatic literature through reading, writing, discussion, film viewing.
- Students will create socially conscious, ideologically-grounded performances that respond both to their world views and contemporary issues in critical theory.
- Students will create cogent, compelling, and mechanically writing for the Humanities in a variety of different mediums—informal responses, production reviews, persuasive essays, and critical analyses.

TMA 443R : Writer/Dramaturg/Actor Workshop. (3:6:1)

WHEN TAUGHT: Fall

PREREQUISITE: TMA 115 and instructor's consent.

DESCRIPTION: Collaborative workshop developing new stage and screenplays through exercises, discussion, and writing. Scripts selected competitively; public readings at end of course.

**Course Outcomes**

- Students will develop the ability to objectively explore the merits of a new script and to identify strengths and weakness in new scripts.
- Students will develop the ability to thoughtfully and accurately express their opinions in constrictive ways and to workshop this feedback appropriately.
- Students will develop the ability to evaluate and appropriately apply feedback on their new scripts and to effectively rewrite their new scripts.

TMA 485R : Production Dramaturgy. (1-3:2:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: TMA 380 and instructor's consent.

DESCRIPTION: Experience as lead dramaturg for main-stage productions; building casebooks and overseeing audience education efforts. Rehearsal and production meeting attendance required.

**Course Outcomes**

- Students will generate research, conceptual, and textual support as needed and requested by the production team.
- Students will collaborate as a member of a production team and will collaborate with other dramaturgs in their production experiences.
- Students will process, document, and archive their production dramaturgy experience by creating a production casebook.

2. Complete 3 hours from either the list above or from the following:

DANCE 359R : Special Topics and Issues. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: DANCE 243R & DANCE 244R & DANCE 261

DESCRIPTION: Seminar with rotating topics and issues selected from: dance and health, dance and identity, dance and technology, and dance philosophy and aesthetics.

**Course Outcomes**

- PHOTOSHOP OBJECTIVES&1. Students will demonstrate competency in the Photoshop interface.
- 2.Students will acquire knowledge in the use of the key commands.
- 3. Students will apply knowledge of the toning and selection tools to re-touch dance photos.
- 4.Students will create a complex image using layers, digital filters and blending modes.
- 5.Students will construct a dance concert poster.
- LOGIC EXPRESS OBJECTIVES1. Students will demonstrate competency in the Logic Express interface.
- 2.Students will acquire knowledge in the use of key commands
- 3.Students will create background music for a slideshows and video.
- 4.Students will understand and apply audio effects techniques when mixing and exporting music.
- 5.Students will demonstrate audio editing techniques to cut pre-recorded music.
- FINAL EXPRESS OBJECTIVES:1. Students will demonstrate competency in the Final Cut interface.
- 2. Students will acquire knowledge in the use of key commands.
- 3. Students will understand the Final Cut workflow.
- 4. Students will demonstrate knowledge of video editing.
- 5. Students will analyze and color correct video.
- 6.Students will create a solo dance on video.
- 7.Students will create a group dance on video.
- iDVD OBJECTIVES1.Students will demonstrate competency in the iDVD interface.
- 2.Students will Understand the iDVD workflow.
- .Students will Create and author a DVD.

: Dance and Identity.

**Course Outcomes**

: Dance and Health Issues.

**Course Outcomes**

: Dance Philosophy and Aesthetics.

**Course Outcomes**

ENGL 341 : English Drama: Beginnings to 1800, Excluding Shakespeare. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295

DESCRIPTION: Selected plays from medieval, Tudor, Stuart, Restoration, and 18th-century drama.

**Course Outcomes**

- Understand in general, and in several details, the development of drama in England, and, in your writing, intelligently discuss major developments, continuities, or turning points.
- Demonstrate a sure knowledge of the plays we read, and be able to interpret those plays.
- Explain the significance of specific passages and elements of each play.
- Relate selected theoretical ideas to your understanding of the plays we read.

ENGL 343 : Modern English and American Drama. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

**Course Outcomes**

- Read critically and analyze selected dramatic texts along with critical and/or interpretative texts.
- Form a research strategy appropriate to the study of drama, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument about the texts studied.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

: Modern British Drama.

**Course Outcomes**

: Modern American Drama.

**Course Outcomes**

GREEK 434 : Sophocles and Euripides. (3:3:0)

PREREQUISITE: GREEK 301

**Course Outcomes**

There are no course outcomes available

JAPAN 351 : Japanese Literature in Translation--Seventeenth Through Nineteenth Centuries. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 1600 through 1900 (Edo and Meiji periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of early modern Japanese literature orally and in writing. A writing sample will be included in individual student portfolio.
- Students will demonstrate their understanding of key literary works and genres in early modern Japanese literature in verbal and written forms.

SPAN 456R : Spanish American Drama. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Twentieth-century theatre from Spanish America and Brazil.

**Course Outcomes**

There are no course outcomes available

8. Complete six hours of the following capstone course (take twice):

IHUM 490R : Seminar in the Humanities. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: IHum 350 or concurrent enrollment.

RECOMMENDED: IHum 370.

DESCRIPTION: Interdisciplinary study of problems and major figures in the humanities. Topics vary.

**Course Outcomes**

There are no course outcomes available

(Prerequisite: IHum 250, 350. Recommended: IHum 370.)

*Hours include courses that may fulfill university core requirements.

**Show all Interdisciplinary Humanities (IHum) Courses**

**College of Humanities Home**

**Humanities, Classics, and Comparative Literature Department Home**

**Interdisciplinary Humanities**

**Major**
- BA in Interdisciplinary Humanities

**Minor**
- Humanities

**Course Information**
- Interdisciplinary Humanities (IHum) Courses

**Classics**

**Majors**

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

**Minors**
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

**Course Information**
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

**Comparative Literature**

**Majors**
- BA in Comparative Literature

**Course Information**
- Comparative Literature (CmLit) Courses

**Scandinavian Studies**

**Minors**
- Scandinavian Studies

**Language Certificates**
- Danish
- Finnish
- Norwegian
- Swedish

**Course Information**
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Minor in Humanities (18 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

IHUM 201 : Western Humanities 1: Antiquity to Renaissance. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Western civilization from Greek antiquity to Renaissance from perspective of traditional humanistic values reflected in its arts and ideas. Examines fundamental questions about human experience, formative events in history, and value of important literary and artistic texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

IHUM 202 : Western Humanities 2: Renaissance to the Present. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Western civilization from Renaissance to present from perspective of traditional humanistic values reflected in its arts and ideas. Examines fundamental questions about human experience, formative events in history, and value of important literary and artistic texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

IHUM 250 : Introduction to Interdisciplinary Humanities. (3:3:.5)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Major literary, artistic, and musical forms and their use in the interdisciplinary study of aesthetics and culture and intellectual history. May include International Cinema.

**Course Outcomes**
There are no course outcomes available

IHUM 350 : Interpretation of Literature and the Arts. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: ENGL 311; or PHIL 300; IHum 201 and 202 and 250. At least three of the remaining historical foundation courses (item 3 under major requirements).
DESCRIPTION: Understanding and writing about literature and at least one of the other arts; critical theory.
NOTE: Should be taken junior year.

**Course Outcomes**
There are no course outcomes available

2. Complete one course from the following:

IHUM 240 : Introduction to the Humanities of Asia. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Major arts of Asian cultures in their historical, religious, and philosophical settings.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


IHUM 242 : Introduction to the Humanities of the Islamic World. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Major arts of Islamic cultures in their historical, religious, and philosophical settings.

**Course Outcomes**
There are no course outcomes available

IHUM 260 : Humanities of Latin America. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Achievements of Latin American culture regarding art, philosophy, literature, and music from the pre-Columbian era to the present.

**Course Outcomes**
There are no course outcomes available

IHUM 261 : Introduction to American Humanities 1: Colonial Era Through 1876. (3:3:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Value systems reflected in the arts and ideas of the United States from the colonial era to 1876.

**Course Outcomes**
There are no course outcomes available

IHUM 262 : Introduction to American Humanities 2: 1877 to the Present. (3:3:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Value systems reflected in the arts and ideas of the United States from 1877 to the present.

**Course Outcomes**
There are no course outcomes available

: Honors American Humanities 2: 1877 to the Present.

**Course Outcomes**

3. Complete one enrollment of the following:
   IHUM 490R : Seminar in the Humanities. (3:3:0)
   WHEN TAUGHT: Fall; Winter; Spring
   PREREQUISITE: IHum 350 or concurrent enrollment.
   RECOMMENDED: IHum 370.
   DESCRIPTION: Interdisciplinary study of problems and major figures in the humanities. Topics vary.

   **Course Outcomes**
   There are no course outcomes available

4. Complete the GE Advanced Languages requirement using the foreign language option. (Please note that ASL does not meet this requirement for the humanities minor. For the rationale, see item 5 under humanities major.)

*Hours include courses that may fulfill university core requirements.

## Show all Humanities (Hum) Courses

College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major

- BA in Interdisciplinary Humanities

Minor

- Humanities

Course Information

- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors

- BA in Comparative Literature

Course Information

- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors

- Scandinavian Studies

Language Certificates

- Danish
- Finnish
- Norwegian
- Swedish

Course Information

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Interdisciplinary Humanities (IHum)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

IHUM 101 : An Introduction to the Humanities. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Study of the arts emphasizing forms and relationships, the development of critical skills, and an awareness of traditional humanistic values.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

IHUM 201 : Western Humanities 1: Antiquity to Renaissance. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Western civilization from Greek antiquity to Renaissance from perspective of traditional humanistic values reflected in its arts and ideas. Examines fundamental questions about human experience, formative events in history, and value of important literary and artistic texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

IHUM 202 : Western Humanities 2: Renaissance to the Present. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Western civilization from Renaissance to present from perspective of traditional humanistic values reflected in its arts and ideas. Examines fundamental questions about human experience, formative events in history, and value of important literary and artistic texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

IHUM 240 : Introduction to the Humanities of Asia. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Major arts of Asian cultures in their historical, religious, and philosophical settings.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

IHUM 242 : Introduction to the Humanities of the Islamic World. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Major arts of Islamic cultures in their historical, religious, and philosophical settings.

**Course Outcomes**
There are no course outcomes available

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


IHUM 250 : Introduction to Interdisciplinary Humanities. (3:3:.5)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Major literary, artistic, and musical forms and their use in the interdisciplinary study of aesthetics and culture and intellectual history. May include International Cinema.

**Course Outcomes**

There are no course outcomes available

IHUM 260 : Humanities of Latin America. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Achievements of Latin American culture regarding art, philosophy, literature, and music from the pre-Columbian era to the present.

**Course Outcomes**

There are no course outcomes available

IHUM 261 : Introduction to American Humanities 1: Colonial Era Through 1876. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Value systems reflected in the arts and ideas of the United States from the colonial era to 1876.

**Course Outcomes**

There are no course outcomes available

IHUM 262 : Introduction to American Humanities 2: 1877 to the Present. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Value systems reflected in the arts and ideas of the United States from 1877 to the present.

**Course Outcomes**

There are no course outcomes available

: Honors American Humanities 2: 1877 to the Present.

**Course Outcomes**

IHUM 270R : European Humanities and the Arts. (.5-6:ARR:ARR)

OFFERED: Study Abroad only.

**Course Outcomes**

No outcomes are available at this time.

IHUM 280R : Sophomore Seminar in Interdisciplinary Humanities. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Focused topics exploring ethical, moral, and epistemological issues in the study of the humanities.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Sophomore Seminar: Humanities and the Sacred.

**Course Outcomes**

: Sophomore Seminar: Humanities and Law.

**Course Outcomes**

: Sophomore Seminar: Humanities and Popular Culture.

**Course Outcomes**

: Sophomore Seminar: Humanities and the Environment.

**Course Outcomes**

: Sophomore Seminar: Humanities and Science.

**Course Outcomes**

IHUM 290R : Special Studies in the Humanities. (.5-3:0:0)

**Course Outcomes**

No outcomes are available at this time.

### 300-Level Courses

IHUM 350 : Interpretation of Literature and the Arts. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ENGL 311; or PHIL 300; IHum 201 and 202 and 250. At least three of the remaining historical foundation courses (item 3 under major requirements).

DESCRIPTION: Understanding and writing about literature and at least one of the other arts; critical theory.

NOTE: Should be taken junior year.

**Course Outcomes**

There are no course outcomes available

IHUM 370 : Contemporary Issues in the Humanities. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IHUM 201 & IHUM 202 & IHUM 250; Engl 311.

DESCRIPTION: Methods and practices of the discipline. Developing and executing research programs. Writing thoughtful, well-informed and sophisticated papers. Introduction to significant and pressing cultural issues such as globalization, media and the arts, memory and history, among others.

**Course Outcomes**

There are no course outcomes available

IHUM 390R : Junior Seminar in the Interdisciplinary Humanities: Movements, Periods, and Areas. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IHUM 250

DESCRIPTION: Topics could cover significant movements, periods, areas, and genres in a cultural history of the arts. Obtaining a deep understanding of the arts and the values articulated within a particular historical era. The use of concepts usch as history, context, area, and genre in the study of the arts.

**Course Outcomes**

There are no course outcomes available

IHUM 399R : Academic Internship. (1-9:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IHUM 350; 12 hours of historical foundation courses in humanities. Humanities major or minor status.

DESCRIPTION: Combined study-work experience related to the humanities major (museums, government agencies, publishing firms, etc.).

**Course Outcomes**

There are no course outcomes available

### 400-Level Courses

IHUM 490R : Seminar in the Humanities. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: IHum 350 or concurrent enrollment.

RECOMMENDED: IHum 370.

DESCRIPTION: Interdisciplinary study of problems and major figures in the humanities. Topics vary.

**Course Outcomes**

There are no course outcomes available

IHUM 495R : Directed Readings. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Contract and instructor's consent.

**Course Outcomes**

There are no course outcomes available

IHUM 499R : Honors Thesis. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

There are no course outcomes available

## Graduate Courses

For 500- and 600-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Humanities, Classics, and Comparative Literature Department Home**

College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major

- BA in Interdisciplinary Humanities

Minor

- Humanities

Course Information

- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies

Emphases:

- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors

- BA in Comparative Literature

Course Information

- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors

- Scandinavian Studies

Language Certificates

- Danish
- Finnish
- Norwegian
- Swedish

Course Information

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Classics

## The Discipline

**Classical Studies** examine ancient Greek and Roman cultures—their languages, literature, history, religion, art, and philosophy.

The major offers essential knowledge of philology, ancient history, archaeology, biblical studies, and the literary and cultural tradition of Western Europe, as well as traditional grounding in the Classics. Students acquire important foreign-language study skills that include careful reading, thoughtful writing, and persuasive speaking. Latin is the mother language not only of Italian, French, Spanish, and Portuguese, but in a real sense of English as well. Its study will especially enhance one's understanding of English vocabulary, grammar, and rhetorical structure.

**Greek and Roman History.** Classics has the responsibility for staffing and administering offerings in Greek and Roman history. Courses in these fields are offered under Classical Civilization, Classics, Greek, and Latin. Some of these courses are cross-listed with history, and several may count toward a history major. See the History section of this catalog for details.

**Classical Civilization.** Classical Civilization courses presuppose no knowledge of the Greek or Latin languages and are open to all students. They are especially recommended for those who want to understand the ancient traditions underlying modern culture.

## Career Opportunities

Majors in Classical Studies find employment in a variety of fields, including business, education, library science, tourism, and civil and foreign service. They are also excellent candidates for graduate work in other humanities-related disciplines and professional schools (law, business, and medicine).

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**

**College of Humanities Home**

**Humanities, Classics, and Comparative Literature Department Home**

**Interdisciplinary Humanities**

**Major**
- BA in Interdisciplinary Humanities

**Minor**
- Humanities

**Course Information**
- Interdisciplinary Humanities (IHum) Courses

**Classics**

**Majors**

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

**Minors**
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

**Course Information**
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

**Comparative Literature**

**Majors**
- BA in Comparative Literature

**Course Information**
- Comparative Literature (CmLit) Courses

**Scandinavian Studies**

**Minors**
- Scandinavian Studies

**Language Certificates**
- Danish
- Finnish
- Norwegian
- Swedish

**Course Information**
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# BA in Classical Studies: Classical Civilization Emphasis (42–45 hours*)

Show All Course Descriptions
Hide All Course Descriptions

Emphasizes Classical Civilization, with work in either Greek or Latin language.

## Program Requirements | View MAP | View Program Outcomes

1. Complete one course from the following:

CL CV 110 : Introduction to Greek and Roman Literature. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Homer's *Iliad*, Sophocles' *Oedipus the King*, Vergil's *Aeneid*, and other important works of the Greeks and Romans.
NOTE: All readings in English. Honors also.

**Course Outcomes**
There are no course outcomes available

CL CV 201 : The Classical Tradition 1: Antiquity to the Renaissance. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall
DESCRIPTION: Civilization from Greek and Roman antiquity to the Italian Renaissance, emphasizing Greco-Roman culture--its institutions, literature, arts, and ideas.

**Course Outcomes**
There are no course outcomes available

: Honors Classical Tradition 1: Antiquity to Renaissance.

**Course Outcomes**

2. Complete the following:

CL CV 241 : Greek and Roman Mythology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Greek and Roman gods, heroes, and myths, emphasizing literature but also giving attention to representations in the visual arts.

**Course Outcomes**
There are no course outcomes available

: Honors Greek and Roman Mythology.

**Course Outcomes**

CL CV 304 : (Cl Cv-Hist 247) Greek History. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Political, economic, social, and intellectual history of Greece from Mycenaean times to the Hellenistic period.

**Course Outcomes**
There are no course outcomes available

CL CV 307 : (ClCv-Hist 248) Roman History. (3:3:0)

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


WHEN TAUGHT: Fall
DESCRIPTION: Political, economic, social, and intellectual history of Rome from the foundation of the city to Constantine.

**Course Outcomes**
There are no course outcomes available

3. Complete one course from the following:

CL CV 245 : Golden Age of Greece. (3:3:0)
WHEN TAUGHT: Winter Odd Yrs.
DESCRIPTION: History of Civilization, culture, and daily life of Greece as indicated through its literature, art, history, and archaeology.
NOTE: All readings in English. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

CL CV 246 : Golden Age of Rome. (3:3:0)
WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: History of Civilization, culture, and daily life of Rome as indicated through its literature, art, history, and archaeology.
NOTE: All readings in English. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

4. Complete the following:

CLSCS 397 : Pro-Seminar in Classical Studies. (2:2:0)
WHEN TAUGHT: Fall
PREREQUISITE: LATIN 201; or GREEK 201
RECOMMENDED: Latin 302 or Greek 301.
DESCRIPTION: Mechanics of researching and writing analytical papers in classical studies. Sectional and adjunct professors present seminal sub-disciplines and model research methods. Specialized library resources taught in practicum. Tutorials with faculty underpin focused research questions.

**Course Outcomes**
There are no course outcomes available

CLSCS 497 : Exit Examination in Classical Literature. (1:1:0)
WHEN TAUGHT: Winter
PREREQUISITE: CLSCS 397; at least one course in Latin or Greek at 400-level.
RECOMMENDED: Coursework above 400-level in Latin and/or Greek.
DESCRIPTION: Capstone essay culminates undergraduate experience in posing, researching, and writing in consultation with an advisor. Oral exam tests familiarity with a standardized reading list of classical texts. Attendance at weekly lectures expands familiarity with broad questions in classical scholarship.

**Course Outcomes**
There are no course outcomes available

5. Complete one of the following options:
   - Complete the following:

GREEK 101 : First-Year Greek (First Semester). (4:4:0)
WHEN TAUGHT: Fall

**Course Outcomes**
There are no course outcomes available

GREEK 102 : First-Year Greek (Second Semester). (4:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: GREEK 101; or departmental approval.

**Course Outcomes**
There are no course outcomes available

GREEK 201 : Intermediate Greek. (4:4:0)
WHEN TAUGHT: Fall

PREREQUISITE: GREEK 102; or departmental approval.
DESCRIPTION: Readings from Xenophon with review and continuation of grammar.

**Course Outcomes**
There are no course outcomes available

GREEK 301 : Classical Greek Poetry: Homer's *Iliad*. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: GREEK 201

**Course Outcomes**
There are no course outcomes available

GREEK 302 : Classical Greek Prose. (3:3:3)
WHEN TAUGHT: Winter
PREREQUISITE: GREEK 201
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

- Complete the following:
  1. Complete one of the following options:

**Either**

LATIN 101 : First-Year Latin (First Semester). (4:4:0)
WHEN TAUGHT: Fall

**Course Outcomes**
There are no course outcomes available

LATIN 102 : First-Year Latin (Second Semester). (4:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: LATIN 101; or departmental approval.

**Course Outcomes**
There are no course outcomes available

**Or**

LATIN 111 : Beginning Latin Accelerated. (5:5:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Equivalent of combined Latin 101, 102.
NOTE: Prepares students for Latin 201.

**Course Outcomes**
There are no course outcomes available

  2. Complete the following:

LATIN 201 : Intermediate Latin. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: LATIN 102; or LATIN 111; or departmental approval.
DESCRIPTION: Readings from Caesar, with a review and continuation of grammar.

**Course Outcomes**
There are no course outcomes available

LATIN 301 : Classical Latin Poetry. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: LATIN 201
DESCRIPTION: Selections from Vergil's *Aeneid* and Ovid's *Metamorphoses*.

**Course Outcomes**
There are no course outcomes available

LATIN 302 : Classical Latin Prose. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: LATIN 201
DESCRIPTION: Readings in Cicero's Catilinarian orations and Sallust's *Catiline*.

**Course Outcomes**
There are no course outcomes available

**Note 1:** Greek 101, 102 and Latin 101, 102, 111 may be waived with equivalent language experience.

**Note 2:** In both languages the 302 course is the prerequisite for all 400-level prose courses in the same language and the 301 courses is the prerequisite for all 400-level poetry courses in the same language. Concurrent enrollment will be permitted only in rare and special cases and must have the approval both of the classics section head and of the instructor of the 400-level course concerned.

6. Complete six hours from the following in the same language as above:

GREEK 411R : Greek New Testament and Early Christian Greek Texts. (3:3:0)
PREREQUISITE: GREEK 311; Greek 302 or concurrent enrollment.
DESCRIPTION: Topics include Greek New Testament, the transmission and translation of New Testament manuscripts, and selections from other early Christian Greek writings.

**Course Outcomes**
There are no course outcomes available

: Synoptic Gospels.
**Course Outcomes**

: Luke-Acts.
**Course Outcomes**

: Pauline Epistles.
**Course Outcomes**

: Apocalypse.
**Course Outcomes**

: Johannine Writings.
**Course Outcomes**

: New Testament Apocrypha.
**Course Outcomes**

: Apostolic Fathers.
**Course Outcomes**

: Pre-Nicene Fathers.
**Course Outcomes**

: Post-Nicene Fathers.
**Course Outcomes**

GREEK 430 : Herodotus. (3:3:0)
PREREQUISITE: GREEK 302

**Course Outcomes**
No outcomes are available at this time.

GREEK 431 : Homer's *Odyssey*. (3:3:0)
PREREQUISITE: GREEK 301

**Course Outcomes**
There are no course outcomes available

GREEK 433 : Thucydides. (3:3:0)
PREREQUISITE: GREEK 302

**Course Outcomes**
There are no course outcomes available

GREEK 434 : Sophocles and Euripides. (3:3:0)
PREREQUISITE: GREEK 301

**Course Outcomes**
There are no course outcomes available

GREEK 435 : Greek Lyric Poetry. (3:3:0)
PREREQUISITE: GREEK 301

**Course Outcomes**
No outcomes are available at this time.

GREEK 436 : Plato. (3:3:0)
PREREQUISITE: GREEK 302
DESCRIPTION: Reading and analysis of Greek text of selected dialogues by Plato (e.g., *The Republic, Meno, Protagoras)*.

**Course Outcomes**
No outcomes are available at this time.

GREEK 437 : Attic Orators. (3:3:0)
PREREQUISITE: GREEK 302

**Course Outcomes**
No outcomes are available at this time.

GREEK 490R : Topics in Greek Literature. (.5-3:3:0)
DESCRIPTION: Topics vary.

**Course Outcomes**
There are no course outcomes available

LATIN 411R : Latin Vulgate and Early Christian Latin Texts. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Topics include Latin Vulgate and selections from other early Christian Latin texts.

**Course Outcomes**
No outcomes are available at this time.

LATIN 430 : Livy. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Selections from Livy's *Ab Urbe Condita*.

**Course Outcomes**
There are no course outcomes available

LATIN 431 : Vergil. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
There are no course outcomes available

LATIN 432 : Ovid. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
No outcomes are available at this time.

LATIN 433 : Cicero. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Selections from the works of Cicero.

**Course Outcomes**
No outcomes are available at this time.

LATIN 434 : Plautus and Terence. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
There are no course outcomes available

LATIN 435 : Catullus. (3:3:0)

PREREQUISITE: LATIN 301

**Course Outcomes**
No outcomes are available at this time.

LATIN 436 : Tragedy and Epic of the Early Empire. (3:3:0)
PREREQUISITE: LATIN 301
DESCRIPTION: Selections from Seneca, Lucan, and the Flavian epic poets.

**Course Outcomes**
No outcomes are available at this time.

LATIN 437 : The Latin Epistle. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Letters of Cicero, Seneca, Pliny, and the later tradition.

**Course Outcomes**
There are no course outcomes available

LATIN 438 : Horace. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
No outcomes are available at this time.

LATIN 439 : Tacitus. (3:3:0)
PREREQUISITE: LATIN 302

**Course Outcomes**
No outcomes are available at this time.

LATIN 440 : Roman Satire. (3:3:0)
PREREQUISITE: LATIN 301
DESCRIPTION: Selections from Horace, Petronius, and Juvenal.

**Course Outcomes**
No outcomes are available at this time.

LATIN 441 : Medieval Latin. (3:3:0)
PREREQUISITE: LATIN 301 & LATIN 302
DESCRIPTION: Study of particular periods (e.g., Carolingian renaissance, twelfth-century renaissance) or genres (e.g., historiography, epic, autobiography), or survey of medieval Latin.

**Course Outcomes**
No outcomes are available at this time.

LATIN 490R : Topics in Latin Literature. (.5-3:3:0)
DESCRIPTION: Topics vary.

**Course Outcomes**
There are no course outcomes available

**Note:** Greek 411R and Latin 411R may be taken only once.

7. Complete one course from the following options:
CL CV 261 : Greek and Roman Civilization and Literature in Film. (3:3:0)
DESCRIPTION: Literature and civilization of ancient Greece and Rome as depicted in modern film with attendant problems of accuracy and historicity.

**Course Outcomes**
There are no course outcomes available

CL CV 310 : Classical Archaeology. (3:3:0)
DESCRIPTION: Major excavations and antiquities of the Mediterranean region illustrating Greco-Roman history.

**Course Outcomes**
No outcomes are available at this time.

CL CV 340R : Topics in Classical Literature and Civilization. (3:3:0)

DESCRIPTION: Classical literary genres; rhetorical, philosophical, and historical writings; relationships of art and literature; or the classical tradition in the Middle Ages and Renaissance. Topics vary.

**Course Outcomes**

There are no course outcomes available

: Greek Historians.

**Course Outcomes**

: Roman Historians.

**Course Outcomes**

: Latin Literature in Middle America.

**Course Outcomes**

: Troy in Art and Literature.

**Course Outcomes**

: Early Rome.

**Course Outcomes**

: Classic Historiography.

**Course Outcomes**

: Greek Tragedy.

**Course Outcomes**

: Greek Political Thought.

**Course Outcomes**

: Women in Antiquity.

**Course Outcomes**

: Greek Ethical Thought.

**Course Outcomes**

: Roman Religion.

**Course Outcomes**

: The Etruscans.

**Course Outcomes**

:

**Course Outcomes**

: Roman Art and Culture.

**Course Outcomes**

: Augustan Rome.

**Course Outcomes**

: Christianity and the Empire.

**Course Outcomes**

CL CV 355 : (ClCv-Engl) Greek and Roman Classics and the English Tradition. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Major works by such authors as Homer, the Greek and Roman tragedians, Thucydides, Vergil, and Petronius in English translation, emphasizing their influence on English and American literature.

**Course Outcomes**

There are no course outcomes available

CLSCS 420 : Ancient Literary Criticism. (3:3:0)

PREREQUISITE: GREEK 302; or LATIN 302

DESCRIPTION: Survey emphasizing both chief works of the tradition and their practical application to reading of Greek and Latin authors.

**Course Outcomes**

No outcomes are available at this time.

CLSCS 430R : (Clscs-Hist) Topics in Greek and Roman History. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Cl Cv 304-Hist 247 and Greek 201 (Greek topics) or Cl Cv 307-Hist 248 and Latin 201 (Roman topics).

DESCRIPTION: Topics vary (e.g., rise of the Greek city-state, Greek political thought, classical historiography, Rome and the Etruscans, imperial Rome).

**Course Outcomes**

There are no course outcomes available

: Greek City-State.

**Course Outcomes**

: Classical Historiography.

**Course Outcomes**

: Hellenistic World.

**Course Outcomes**

: Rome and Etruscans.

**Course Outcomes**

: Rise of Rome.

**Course Outcomes**

: Roman Revolution.

**Course Outcomes**

: Imperial Rome.

**Course Outcomes**

: Roman Politics.

**Course Outcomes**

: Roman Religion.

**Course Outcomes**

: Augustan Rome.

**Course Outcomes**

: Archaic Greece.

**Course Outcomes**

: Athens: Rise and Fall.

**Course Outcomes**

: 4th Century Greece.

**Course Outcomes**

: Late Roman Empire.

**Course Outcomes**

: World of New Testament.

**Course Outcomes**

: Early Christianity.

**Course Outcomes**

: Julio-Claudians.

**Course Outcomes**

CLSCS 490R : Seminar in Classics. (3:3:0)

DESCRIPTION: Combined topics in Greek and Latin (e.g., comparative epic poetry, classical tradition of criticism, Euripides and Seneca). Topics vary.

**Course Outcomes**

No outcomes are available at this time.

*Hours include courses that may fulfill university core requirements.

## Show all Classical Civilization (Cl Cv) Courses

College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major
- BA in Interdisciplinary Humanities

Minor
- Humanities

Course Information
- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors
- BA in Comparative Literature

Course Information
- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors
- Scandinavian Studies

Language Certificates
- Danish
- Finnish
- Norwegian
- Swedish

Course Information
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# BA in Classical Studies: Classics Emphasis (50–66 hours*)

Show All Course Descriptions
Hide All Course Descriptions

Emphasizes Greek and Latin literature and language, with some work in Classical Civilization.

## Program Requirements | View MAP | View Program Outcomes

1. Complete one course from the following:

CL CV 110 : Introduction to Greek and Roman Literature. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Homer's *Iliad*, Sophocles' *Oedipus the King*, Vergil's *Aeneid*, and other important works of the Greeks and Romans.
NOTE: All readings in English. Honors also.

**Course Outcomes**

There are no course outcomes available

CL CV 201 : The Classical Tradition 1: Antiquity to the Renaissance. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall
DESCRIPTION: Civilization from Greek and Roman antiquity to the Italian Renaissance, emphasizing Greco-Roman culture--its institutions, literature, arts, and ideas.

**Course Outcomes**

There are no course outcomes available

: Honors Classical Tradition 1: Antiquity to Renaissance.

**Course Outcomes**

CL CV 241 : Greek and Roman Mythology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Greek and Roman gods, heroes, and myths, emphasizing literature but also giving attention to representations in the visual arts.

**Course Outcomes**

There are no course outcomes available

: Honors Greek and Roman Mythology.

**Course Outcomes**

2. Complete the following:

GREEK 101 : First-Year Greek (First Semester). (4:4:0)

WHEN TAUGHT: Fall

**Course Outcomes**

There are no course outcomes available

GREEK 102 : First-Year Greek (Second Semester). (4:4:0)

WHEN TAUGHT: Winter
PREREQUISITE: GREEK 101; or departmental approval.

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


**Course Outcomes**
There are no course outcomes available

GREEK 201 : Intermediate Greek. (4:4:0)
WHEN TAUGHT: Fall
PREREQUISITE: GREEK 102; or departmental approval.
DESCRIPTION: Readings from Xenophon with review and continuation of grammar.

**Course Outcomes**
There are no course outcomes available

GREEK 301 : Classical Greek Poetry: Homer's *Iliad*. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: GREEK 201

**Course Outcomes**
There are no course outcomes available

GREEK 302 : Classical Greek Prose. (3:3:3)
WHEN TAUGHT: Winter
PREREQUISITE: GREEK 201
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

**Note:** Greek 101, 102 may be waived with equivalent language experience.

3. Complete one of the following options:

**Either**

LATIN 101 : First-Year Latin (First Semester). (4:4:0)
WHEN TAUGHT: Fall

**Course Outcomes**
There are no course outcomes available

LATIN 102 : First-Year Latin (Second Semester). (4:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: LATIN 101; or departmental approval.

**Course Outcomes**
There are no course outcomes available

**Or**

LATIN 111 : Beginning Latin Accelerated. (5:5:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Equivalent of combined Latin 101, 102.
NOTE: Prepares students for Latin 201.

**Course Outcomes**
There are no course outcomes available

**Note:** Latin 101, 102 or 111 may be waived with equivalent language experience.

4. Complete the following:

LATIN 201 : Intermediate Latin. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: LATIN 102; or LATIN 111; or departmental approval.
DESCRIPTION: Readings from Caesar, with a review and continuation of grammar.

**Course Outcomes**
There are no course outcomes available

LATIN 301 : Classical Latin Poetry. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: LATIN 201
DESCRIPTION: Selections from Vergil's *Aeneid* and Ovid's *Metamorphoses*.

**Course Outcomes**

There are no course outcomes available

LATIN 302 : Classical Latin Prose. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: LATIN 201

DESCRIPTION: Readings in Cicero's Catilinarian orations and Sallust's *Catiline*.

**Course Outcomes**

There are no course outcomes available

**Note:** In both languages the 302 course is the prerequisite for all 400-level prose courses in the same language and the 301 course is the prerequisite for all 400-level poetry courses in the same language. Concurrent enrollment will be permitted only in rare and special cases and must have the approval both of the classics section head and of the instructor of the 400-level course concerned.

5. Complete one course from the following:

CL CV 245 : Golden Age of Greece. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: History of Civilization, culture, and daily life of Greece as indicated through its literature, art, history, and archaeology.

NOTE: All readings in English. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

CL CV 246 : Golden Age of Rome. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: History of Civilization, culture, and daily life of Rome as indicated through its literature, art, history, and archaeology.

NOTE: All readings in English. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

6. Complete the following:

CL CV 304 : (Cl Cv-Hist 247) Greek History. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Political, economic, social, and intellectual history of Greece from Mycenaean times to the Hellenistic period.

**Course Outcomes**

There are no course outcomes available

CL CV 307 : (ClCv-Hist 248) Roman History. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Political, economic, social, and intellectual history of Rome from the foundation of the city to Constantine.

**Course Outcomes**

There are no course outcomes available

CLSCS 397 : Pro-Seminar in Classical Studies. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: LATIN 201; or GREEK 201

RECOMMENDED: Latin 302 or Greek 301.

DESCRIPTION: Mechanics of researching and writing analytical papers in classical studies. Sectional and adjunct professors present seminal sub-disciplines and model research methods. Specialized library resources taught in practicum. Tutorials with faculty underpin focused research questions.

**Course Outcomes**

There are no course outcomes available

CLSCS 497 : Exit Examination in Classical Literature. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: CLSCS 397; at least one course in Latin or Greek at 400-level.

RECOMMENDED: Coursework above 400-level in Latin and/or Greek.

DESCRIPTION: Capstone essay culminates undergraduate experience in posing, researching, and writing in

consultation with an advisor. Oral exam tests familiarity with a standardized reading list of classical texts. Attendance at weekly lectures expands familiarity with broad questions in classical scholarship.

**Course Outcomes**

There are no course outcomes available

7. Complete one course from the following:

GREEK 401 : Greek Prose Composition. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: GREEK 302; or concurrent enrollment.

DESCRIPTION: Exercises in composing Greek prose.

**Course Outcomes**

There are no course outcomes available

LATIN 401 : Latin Prose Composition. (3:3:0)

WHEN TAUGHT: Winter Contact Department

PREREQUISITE: LATIN 302; or concurrent enrollment.

**Course Outcomes**

There are no course outcomes available

8. Complete three additional courses (at least one Greek and one Latin) from the following:

Any 400-level courses in Greek or Latin.

CLSCS 420 : Ancient Literary Criticism. (3:3:0)

PREREQUISITE: GREEK 302; or LATIN 302

DESCRIPTION: Survey emphasizing both chief works of the tradition and their practical application to reading of Greek and Latin authors.

**Course Outcomes**

No outcomes are available at this time.

CLSCS 430R : (Clscs-Hist) Topics in Greek and Roman History. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Cl Cv 304-Hist 247 and Greek 201 (Greek topics) or Cl Cv 307-Hist 248 and Latin 201 (Roman topics).

DESCRIPTION: Topics vary (e.g., rise of the Greek city-state, Greek political thought, classical historiography, Rome and the Etruscans, imperial Rome).

**Course Outcomes**

There are no course outcomes available

: Greek City-State.

**Course Outcomes**

: Classical Historiography.

**Course Outcomes**

: Hellenistic World.

**Course Outcomes**

: Rome and Etruscans.

**Course Outcomes**

: Rise of Rome.

**Course Outcomes**

: Roman Revolution.

**Course Outcomes**

: Imperial Rome.

**Course Outcomes**

: Roman Politics.

**Course Outcomes**

: Roman Religion.

**Course Outcomes**

: Augustan Rome.

**Course Outcomes**

: Archaic Greece.

**Course Outcomes**

: Athens: Rise and Fall.

**Course Outcomes**

: 4th Century Greece.

**Course Outcomes**

: Late Roman Empire.

**Course Outcomes**

: World of New Testament.

**Course Outcomes**

: Early Christianity.

**Course Outcomes**

: Julio-Claudians.

**Course Outcomes**

CLSCS 490R : Seminar in Classics. (3:3:0)

DESCRIPTION: Combined topics in Greek and Latin (e.g., comparative epic poetry, classical tradition of criticism, Euripides and Seneca). Topics vary.

**Course Outcomes**

No outcomes are available at this time.

CL CV 340R : Topics in Classical Literature and Civilization. (3:3:0)

DESCRIPTION: Classical literary genres; rhetorical, philosophical, and historical writings; relationships of art and literature; or the classical tradition in the Middle Ages and Renaissance. Topics vary.

**Course Outcomes**

There are no course outcomes available

: Greek Historians.

**Course Outcomes**

: Roman Historians.

**Course Outcomes**

: Latin Literature in Middle America.

**Course Outcomes**

: Troy in Art and Literature.

**Course Outcomes**

: Early Rome.

**Course Outcomes**

: Classic Historiography.

**Course Outcomes**

: Greek Tragedy.

**Course Outcomes**

: Greek Political Thought.

**Course Outcomes**

: Women in Antiquity.

**Course Outcomes**

: Greek Ethical Thought.

**Course Outcomes**

: Roman Religion.

**Course Outcomes**

: The Etruscans.

**Course Outcomes**

:

**Course Outcomes**

: Roman Art and Culture.

**Course Outcomes**

: Augustan Rome.

**Course Outcomes**

: Christianity and the Empire.

**Course Outcomes**

**Note:** Greek 411R, Latin 411R, and Cl Cv 340R may be counted only once each toward graduation.

*Hours include courses that may fulfill university core requirements.

## Show all Classics (Clscs) Courses

**College of Humanities Home**

**Humanities, Classics, and Comparative Literature Department Home**

**Interdisciplinary Humanities**

**Major**
- BA in Interdisciplinary Humanities

**Minor**
- Humanities

**Course Information**
- Interdisciplinary Humanities (IHum) Courses

**Classics**

**Majors**

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

**Minors**
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

**Course Information**
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

**Comparative Literature**

**Majors**
- BA in Comparative Literature

**Course Information**
- Comparative Literature (CmLit) Courses

**Scandinavian Studies**

**Minors**
- Scandinavian Studies

**Language Certificates**
- Danish
- Finnish
- Norwegian
- Swedish

**Course Information**
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# BA in Classical Studies: Greek Emphasis (37–45 hours*)

Show All Course Descriptions
Hide All Course Descriptions

Emphasizes Greek language and literature, with some work in Greek civilization.

## Program Requirements | View MAP | View Program Outcomes

1. Complete one course from the following:

CL CV 110 : Introduction to Greek and Roman Literature. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Homer's *Iliad*, Sophocles' *Oedipus the King*, Vergil's *Aeneid*, and other important works of the Greeks and Romans.
NOTE: All readings in English. Honors also.

**Course Outcomes**
There are no course outcomes available

CL CV 201 : The Classical Tradition 1: Antiquity to the Renaissance. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall
DESCRIPTION: Civilization from Greek and Roman antiquity to the Italian Renaissance, emphasizing Greco-Roman culture--its institutions, literature, arts, and ideas.

**Course Outcomes**
There are no course outcomes available

: Honors Classical Tradition 1: Antiquity to Renaissance.

**Course Outcomes**

CL CV 241 : Greek and Roman Mythology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Greek and Roman gods, heroes, and myths, emphasizing literature but also giving attention to representations in the visual arts.

**Course Outcomes**
There are no course outcomes available

: Honors Greek and Roman Mythology.

**Course Outcomes**

2. Complete the following:

CL CV 245 : Golden Age of Greece. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
DESCRIPTION: History of Civilization, culture, and daily life of Greece as indicated through its literature, art, history, and archaeology.
NOTE: All readings in English. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


CL CV 304 : (Cl Cv-Hist 247) Greek History. (3:3:0)
WHEN TAUGHT: Winter
DESCRIPTION: Political, economic, social, and intellectual history of Greece from Mycenaean times to the Hellenistic period.

**Course Outcomes**
There are no course outcomes available

CLSCS 397 : Pro-Seminar in Classical Studies. (2:2:0)
WHEN TAUGHT: Fall
PREREQUISITE: LATIN 201; or GREEK 201
RECOMMENDED: Latin 302 or Greek 301.
DESCRIPTION: Mechanics of researching and writing analytical papers in classical studies. Sectional and adjunct professors present seminal sub-disciplines and model research methods. Specialized library resources taught in practicum. Tutorials with faculty underpin focused research questions.

**Course Outcomes**
There are no course outcomes available

CLSCS 497 : Exit Examination in Classical Literature. (1:1:0)
WHEN TAUGHT: Winter
PREREQUISITE: CLSCS 397; at least one course in Latin or Greek at 400-level.
RECOMMENDED: Coursework above 400-level in Latin and/or Greek.
DESCRIPTION: Capstone essay culminates undergraduate experience in posing, researching, and writing in consultation with an advisor. Oral exam tests familiarity with a standardized reading list of classical texts. Attendance at weekly lectures expands familiarity with broad questions in classical scholarship.

**Course Outcomes**
There are no course outcomes available

GREEK 101 : First-Year Greek (First Semester). (4:4:0)
WHEN TAUGHT: Fall

**Course Outcomes**
There are no course outcomes available

GREEK 102 : First-Year Greek (Second Semester). (4:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: GREEK 101; or departmental approval.

**Course Outcomes**
There are no course outcomes available

GREEK 201 : Intermediate Greek. (4:4:0)
WHEN TAUGHT: Fall
PREREQUISITE: GREEK 102; or departmental approval.
DESCRIPTION: Readings from Xenophon with review and continuation of grammar.

**Course Outcomes**
There are no course outcomes available

GREEK 301 : Classical Greek Poetry: Homer's *Iliad*. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: GREEK 201

**Course Outcomes**
There are no course outcomes available

GREEK 302 : Classical Greek Prose. (3:3:3)
WHEN TAUGHT: Winter
PREREQUISITE: GREEK 201
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GREEK 401 : Greek Prose Composition. (3:3:0)
WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: GREEK 302; or concurrent enrollment.

DESCRIPTION: Exercises in composing Greek prose.

**Course Outcomes**

There are no course outcomes available

**Note 1:** Greek 101, 102 may be waived with equivalent language experience.

**Note 2:** The Greek 302 course is the prerequisite for all 400-level Greek prose courses and the Greek 301 course is the prerequisite for all 400-level Greek poetry courses. Concurrent enrollment will be permitted only in rare and special cases and must have the approval both of the classics section head and of the instructor of the 400-level course concerned.

3. Complete 12 hours from the following:

CL CV 340R : Topics in Classical Literature and Civilization. (3:3:0)

DESCRIPTION: Classical literary genres; rhetorical, philosophical, and historical writings; relationships of art and literature; or the classical tradition in the Middle Ages and Renaissance. Topics vary.

**Course Outcomes**

There are no course outcomes available

: Greek Historians.

**Course Outcomes**

: Roman Historians.

**Course Outcomes**

: Latin Literature in Middle America.

**Course Outcomes**

: Troy in Art and Literature.

**Course Outcomes**

: Early Rome.

**Course Outcomes**

: Classic Historiography.

**Course Outcomes**

: Greek Tragedy.

**Course Outcomes**

: Greek Political Thought.

**Course Outcomes**

: Women in Antiquity.

**Course Outcomes**

: Greek Ethical Thought.

**Course Outcomes**

: Roman Religion.

**Course Outcomes**

: The Etruscans.

**Course Outcomes**

:

**Course Outcomes**

: Roman Art and Culture.

**Course Outcomes**

: Augustan Rome.

**Course Outcomes**

: Christianity and the Empire.

**Course Outcomes**

CLSCS 420 : Ancient Literary Criticism. (3:3:0)

PREREQUISITE: GREEK 302; or LATIN 302
DESCRIPTION: Survey emphasizing both chief works of the tradition and their practical application to reading of Greek and Latin authors.

**Course Outcomes**
No outcomes are available at this time.

CLSCS 430R : (Clscs-Hist) Topics in Greek and Roman History. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Cl Cv 304-Hist 247 and Greek 201 (Greek topics) or Cl Cv 307-Hist 248 and Latin 201 (Roman topics).
DESCRIPTION: Topics vary (e.g., rise of the Greek city-state, Greek political thought, classical historiography, Rome and the Etruscans, imperial Rome).

**Course Outcomes**
There are no course outcomes available

: Greek City-State.
**Course Outcomes**

: Classical Historiography.
**Course Outcomes**

: Hellenistic World.
**Course Outcomes**

: Rome and Etruscans.
**Course Outcomes**

: Rise of Rome.
**Course Outcomes**

: Roman Revolution.
**Course Outcomes**

: Imperial Rome.
**Course Outcomes**

: Roman Politics.
**Course Outcomes**

: Roman Religion.
**Course Outcomes**

: Augustan Rome.
**Course Outcomes**

: Archaic Greece.
**Course Outcomes**

: Athens: Rise and Fall.
**Course Outcomes**

: 4th Century Greece.
**Course Outcomes**

: Late Roman Empire.
**Course Outcomes**

: World of New Testament.
**Course Outcomes**

: Early Christianity.
**Course Outcomes**

: Julio-Claudians.
**Course Outcomes**

CLSCS 490R : Seminar in Classics. (3:3:0)

DESCRIPTION: Combined topics in Greek and Latin (e.g., comparative epic poetry, classical tradition of criticism, Euripides and Seneca). Topics vary.

**Course Outcomes**

No outcomes are available at this time.

GREEK 411R : Greek New Testament and Early Christian Greek Texts. (3:3:0)

PREREQUISITE: GREEK 311; Greek 302 or concurrent enrollment.

DESCRIPTION: Topics include Greek New Testament, the transmission and translation of New Testament manuscripts, and selections from other early Christian Greek writings.

**Course Outcomes**

There are no course outcomes available

: Synoptic Gospels.

**Course Outcomes**

: Luke-Acts.

**Course Outcomes**

: Pauline Epistles.

**Course Outcomes**

: Apocalypse.

**Course Outcomes**

: Johannine Writings.

**Course Outcomes**

: New Testament Apocrypha.

**Course Outcomes**

: Apostolic Fathers.

**Course Outcomes**

: Pre-Nicene Fathers.

**Course Outcomes**

: Post-Nicene Fathers.

**Course Outcomes**

GREEK 430 : Herodotus. (3:3:0)

PREREQUISITE: GREEK 302

**Course Outcomes**

No outcomes are available at this time.

GREEK 431 : Homer's *Odyssey*. (3:3:0)

PREREQUISITE: GREEK 301

**Course Outcomes**

There are no course outcomes available

GREEK 433 : Thucydides. (3:3:0)

PREREQUISITE: GREEK 302

**Course Outcomes**

There are no course outcomes available

GREEK 434 : Sophocles and Euripides. (3:3:0)

PREREQUISITE: GREEK 301

**Course Outcomes**

There are no course outcomes available

GREEK 435 : Greek Lyric Poetry. (3:3:0)

PREREQUISITE: GREEK 301

**Course Outcomes**
No outcomes are available at this time.

GREEK 436 : Plato. (3:3:0)
PREREQUISITE: GREEK 302
DESCRIPTION: Reading and analysis of Greek text of selected dialogues by Plato (e.g., *The Republic, Meno, Protagoras)*.

**Course Outcomes**
No outcomes are available at this time.

GREEK 437 : Attic Orators. (3:3:0)
PREREQUISITE: GREEK 302

**Course Outcomes**
No outcomes are available at this time.

GREEK 490R : Topics in Greek Literature. (.5-3:3:0)
DESCRIPTION: Topics vary.

**Course Outcomes**
There are no course outcomes available

**Note:** Greek 411R or Cl Cv 340R may be taken only once each.

*Hours include courses that may fulfill university core requirements.

## Show all Greek (Greek) Courses

College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major
- BA in Interdisciplinary Humanities

Minor
- Humanities

Course Information
- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors
- BA in Comparative Literature

Course Information
- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors
- Scandinavian Studies

Language Certificates
- Danish
- Finnish
- Norwegian
- Swedish

Course Information
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# BA in Classical Studies: Latin Emphasis (37–45 hours*)

Show All Course Descriptions
Hide All Course Descriptions

Emphasizes Latin language and literature, with some work in Roman civilization.

## Program Requirements | View MAP | View Program Outcomes

1. Complete one course from the following:

CL CV 110 : Introduction to Greek and Roman Literature. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Homer's *Iliad*, Sophocles' *Oedipus the King*, Vergil's *Aeneid*, and other important works of the Greeks and Romans.
NOTE: All readings in English. Honors also.

**Course Outcomes**
There are no course outcomes available

CL CV 201 : The Classical Tradition 1: Antiquity to the Renaissance. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall
DESCRIPTION: Civilization from Greek and Roman antiquity to the Italian Renaissance, emphasizing Greco-Roman culture--its institutions, literature, arts, and ideas.

**Course Outcomes**
There are no course outcomes available

: Honors Classical Tradition 1: Antiquity to Renaissance.

**Course Outcomes**

CL CV 241 : Greek and Roman Mythology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Greek and Roman gods, heroes, and myths, emphasizing literature but also giving attention to representations in the visual arts.

**Course Outcomes**
There are no course outcomes available

: Honors Greek and Roman Mythology.

**Course Outcomes**

2. Complete the following:

CL CV 246 : Golden Age of Rome. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: History of Civilization, culture, and daily life of Rome as indicated through its literature, art, history, and archaeology.
NOTE: All readings in English. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


CL CV 307 : (ClCv-Hist 248) Roman History. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Political, economic, social, and intellectual history of Rome from the foundation of the city to Constantine.

**Course Outcomes**
There are no course outcomes available

3. Complete one of the following options:

**Either**

LATIN 101 : First-Year Latin (First Semester). (4:4:0)
WHEN TAUGHT: Fall

**Course Outcomes**
There are no course outcomes available

LATIN 102 : First-Year Latin (Second Semester). (4:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: LATIN 101; or departmental approval.

**Course Outcomes**
There are no course outcomes available

**Or**

LATIN 111 : Beginning Latin Accelerated. (5:5:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Equivalent of combined Latin 101, 102.
NOTE: Prepares students for Latin 201.

**Course Outcomes**
There are no course outcomes available

**Note:** Latin 101, 102, 111 may be waived with equivalent language experience.

4. Complete the following:

LATIN 201 : Intermediate Latin. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: LATIN 102; or LATIN 111; or departmental approval.
DESCRIPTION: Readings from Caesar, with a review and continuation of grammar.

**Course Outcomes**
There are no course outcomes available

LATIN 301 : Classical Latin Poetry. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: LATIN 201
DESCRIPTION: Selections from Vergil's *Aeneid* and Ovid's *Metamorphoses*.

**Course Outcomes**
There are no course outcomes available

LATIN 302 : Classical Latin Prose. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: LATIN 201
DESCRIPTION: Readings in Cicero's Catilinarian orations and Sallust's *Catiline*.

**Course Outcomes**
There are no course outcomes available

LATIN 401 : Latin Prose Composition. (3:3:0)
WHEN TAUGHT: Winter Contact Department
PREREQUISITE: LATIN 302; or concurrent enrollment.

**Course Outcomes**
There are no course outcomes available

CLSCS 397 : Pro-Seminar in Classical Studies. (2:2:0)
WHEN TAUGHT: Fall
PREREQUISITE: LATIN 201; or GREEK 201
RECOMMENDED: Latin 302 or Greek 301.

DESCRIPTION: Mechanics of researching and writing analytical papers in classical studies. Sectional and adjunct professors present seminal sub-disciplines and model research methods. Specialized library resources taught in practicum. Tutorials with faculty underpin focused research questions.

**Course Outcomes**

There are no course outcomes available

CLSCS 497 : Exit Examination in Classical Literature. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: CLSCS 397; at least one course in Latin or Greek at 400-level.

RECOMMENDED: Coursework above 400-level in Latin and/or Greek.

DESCRIPTION: Capstone essay culminates undergraduate experience in posing, researching, and writing in consultation with an advisor. Oral exam tests familiarity with a standardized reading list of classical texts. Attendance at weekly lectures expands familiarity with broad questions in classical scholarship.

**Course Outcomes**

There are no course outcomes available

**Note:** The Latin 302 course is the prerequisite for all 400-level Latin prose courses and the Latin 301 course is the prerequisite for all 400-level Latin poetry courses. Concurrent enrollment will be permitted only in rare and special cases and must have the approval both of the classics section head and of the instructor of the 400-level course concerned.

5. Complete 12 hours from the following:

CL CV 340R : Topics in Classical Literature and Civilization. (3:3:0)

DESCRIPTION: Classical literary genres; rhetorical, philosophical, and historical writings; relationships of art and literature; or the classical tradition in the Middle Ages and Renaissance. Topics vary.

**Course Outcomes**

There are no course outcomes available

: Greek Historians.

**Course Outcomes**

: Roman Historians.

**Course Outcomes**

: Latin Literature in Middle America.

**Course Outcomes**

: Troy in Art and Literature.

**Course Outcomes**

: Early Rome.

**Course Outcomes**

: Classic Historiography.

**Course Outcomes**

: Greek Tragedy.

**Course Outcomes**

: Greek Political Thought.

**Course Outcomes**

: Women in Antiquity.

**Course Outcomes**

: Greek Ethical Thought.

**Course Outcomes**

: Roman Religion.

**Course Outcomes**

: The Etruscans.

**Course Outcomes**

:

**Course Outcomes**

: Roman Art and Culture.

**Course Outcomes**

: Augustan Rome.

**Course Outcomes**

: Christianity and the Empire.

**Course Outcomes**

CLSCS 420 : Ancient Literary Criticism. (3:3:0)

PREREQUISITE: GREEK 302; or LATIN 302

DESCRIPTION: Survey emphasizing both chief works of the tradition and their practical application to reading of Greek and Latin authors.

**Course Outcomes**

No outcomes are available at this time.

CLSCS 430R : (Clscs-Hist) Topics in Greek and Roman History. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Cl Cv 304-Hist 247 and Greek 201 (Greek topics) or Cl Cv 307-Hist 248 and Latin 201 (Roman topics).

DESCRIPTION: Topics vary (e.g., rise of the Greek city-state, Greek political thought, classical historiography, Rome and the Etruscans, imperial Rome).

**Course Outcomes**

There are no course outcomes available

: Greek City-State.

**Course Outcomes**

: Classical Historiography.

**Course Outcomes**

: Hellenistic World.

**Course Outcomes**

: Rome and Etruscans.

**Course Outcomes**

: Rise of Rome.

**Course Outcomes**

: Roman Revolution.

**Course Outcomes**

: Imperial Rome.

**Course Outcomes**

: Roman Politics.

**Course Outcomes**

: Roman Religion.

**Course Outcomes**

: Augustan Rome.

**Course Outcomes**

: Archaic Greece.

**Course Outcomes**

: Athens: Rise and Fall.

**Course Outcomes**

: 4th Century Greece.

**Course Outcomes**

: Late Roman Empire.

**Course Outcomes**

: World of New Testament.

**Course Outcomes**

: Early Christianity.

**Course Outcomes**

: Julio-Claudians.

**Course Outcomes**

CLSCS 490R : Seminar in Classics. (3:3:0)

DESCRIPTION: Combined topics in Greek and Latin (e.g., comparative epic poetry, classical tradition of criticism, Euripides and Seneca). Topics vary.

**Course Outcomes**

No outcomes are available at this time.

LATIN 411R : Latin Vulgate and Early Christian Latin Texts. (3:3:0)

PREREQUISITE: LATIN 302

DESCRIPTION: Topics include Latin Vulgate and selections from other early Christian Latin texts.

**Course Outcomes**

No outcomes are available at this time.

LATIN 430 : Livy. (3:3:0)

PREREQUISITE: LATIN 302

DESCRIPTION: Selections from Livy's *Ab Urbe Condita*.

**Course Outcomes**

There are no course outcomes available

LATIN 431 : Vergil. (3:3:0)

PREREQUISITE: LATIN 301

**Course Outcomes**

There are no course outcomes available

LATIN 432 : Ovid. (3:3:0)

PREREQUISITE: LATIN 301

**Course Outcomes**

No outcomes are available at this time.

LATIN 433 : Cicero. (3:3:0)

PREREQUISITE: LATIN 302

DESCRIPTION: Selections from the works of Cicero.

**Course Outcomes**

No outcomes are available at this time.

LATIN 434 : Plautus and Terence. (3:3:0)

PREREQUISITE: LATIN 301

**Course Outcomes**

There are no course outcomes available

LATIN 435 : Catullus. (3:3:0)

PREREQUISITE: LATIN 301

**Course Outcomes**

No outcomes are available at this time.

LATIN 436 : Tragedy and Epic of the Early Empire. (3:3:0)

PREREQUISITE: LATIN 301

DESCRIPTION: Selections from Seneca, Lucan, and the Flavian epic poets.

**Course Outcomes**

No outcomes are available at this time.

LATIN 437 : The Latin Epistle. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Letters of Cicero, Seneca, Pliny, and the later tradition.

**Course Outcomes**
There are no course outcomes available

LATIN 438 : Horace. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
No outcomes are available at this time.

LATIN 439 : Tacitus. (3:3:0)
PREREQUISITE: LATIN 302

**Course Outcomes**
No outcomes are available at this time.

LATIN 440 : Roman Satire. (3:3:0)
PREREQUISITE: LATIN 301
DESCRIPTION: Selections from Horace, Petronius, and Juvenal.

**Course Outcomes**
No outcomes are available at this time.

LATIN 441 : Medieval Latin. (3:3:0)
PREREQUISITE: LATIN 301 & LATIN 302
DESCRIPTION: Study of particular periods (e.g., Carolingian renaissance, twelfth-century renaissance) or genres (e.g., historiography, epic, autobiography), or survey of medieval Latin.

**Course Outcomes**
No outcomes are available at this time.

LATIN 490R : Topics in Latin Literature. (.5-3:3:0)
DESCRIPTION: Topics vary.

**Course Outcomes**
There are no course outcomes available

**Note:** Latin 411R and Cl Cv 340R may be taken only once each.

*Hours include courses that may fulfill university core requirements.

## Show all Latin (Latin) Courses

College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major
- BA in Interdisciplinary Humanities

Minor
- Humanities

Course Information
- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors
- BA in Comparative Literature

Course Information
- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors
- Scandinavian Studies

Language Certificates
- Danish
- Finnish
- Norwegian
- Swedish

Course Information
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# BA in Latin Teaching
# (62–70 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
2. A teaching minor in another subject is strongly recommended. Teaching opportunities in public schools may be significantly reduced without a second teaching subject that a teaching minor provides.
3. Complete the following:

CL CV 246 : Golden Age of Rome. (3:3:0)
WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: History of Civilization, culture, and daily life of Rome as indicated through its literature, art, history, and archaeology.
NOTE: All readings in English. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

CL CV 307 : (ClCv-Hist 248) Roman History. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Political, economic, social, and intellectual history of Rome from the foundation of the city to Constantine.

**Course Outcomes**
There are no course outcomes available

4. Complete one of the following options:

**Either**

LATIN 101 : First-Year Latin (First Semester). (4:4:0)
WHEN TAUGHT: Fall

**Course Outcomes**
There are no course outcomes available

LATIN 102 : First-Year Latin (Second Semester). (4:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: LATIN 101; or departmental approval.

**Course Outcomes**
There are no course outcomes available

**Or**

LATIN 111 : Beginning Latin Accelerated. (5:5:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Equivalent of combined Latin 101, 102.
NOTE: Prepares students for Latin 201.

**Course Outcomes**
There are no course outcomes available

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


**Note:** Latin 101, 102, 111 may be waived with equivalent language experience.

5. Complete the following:

LATIN 201 : Intermediate Latin. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: LATIN 102; or LATIN 111; or departmental approval.
DESCRIPTION: Readings from Caesar, with a review and continuation of grammar.

**Course Outcomes**
There are no course outcomes available

LATIN 301 : Classical Latin Poetry. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: LATIN 201
DESCRIPTION: Selections from Vergil's *Aeneid* and Ovid's *Metamorphoses*.

**Course Outcomes**
There are no course outcomes available

LATIN 302 : Classical Latin Prose. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: LATIN 201
DESCRIPTION: Readings in Cicero's Catilinarian orations and Sallust's *Catiline*.

**Course Outcomes**
There are no course outcomes available

LATIN 377 : Secondary Teaching Procedures. (3:3:1)
WHEN TAUGHT: Fall; Winter; Spring Contact Department
PREREQUISITE: SC ED 276R & LATIN 301; or SC ED 276R & LATIN 302
DESCRIPTION: Skills mastery, hearing, speaking, reading, writing, and identification of teacher-pupil activities required for conceptual learning. Lectures, demonstrations, and application of linguistic techniques to practical classroom requirements.

**Course Outcomes**
No outcomes are available at this time.

LATIN 378 : Practicum in Teaching Latin. (1:0:3)
PREREQUISITE: Latin 377 or concurrent enrollment.
DESCRIPTION: Applying methods learned in Latin 377 in the classroom.

**Course Outcomes**
No outcomes are available at this time.

LATIN 401 : Latin Prose Composition. (3:3:0)
WHEN TAUGHT: Winter Contact Department
PREREQUISITE: LATIN 302; or concurrent enrollment.

**Course Outcomes**
There are no course outcomes available

**Note:** The Latin 302 course is the prerequisite for all 400-level Latin prose courses and the Latin 301 course is the prerequisite for all 400-level Latin poetry courses. Concurrent enrollment will be permitted only in rare and special cases and must have the approval both of the classics section head and of the instructor of the 400-level course concerned.

6. Complete one course from the following:

CL CV 110 : Introduction to Greek and Roman Literature. (3:3:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Homer's *Iliad*, Sophocles' *Oedipus the King*, Vergil's *Aeneid*, and other important works of the Greeks and Romans.
NOTE: All readings in English. Honors also.

**Course Outcomes**
There are no course outcomes available

CL CV 201 : The Classical Tradition 1: Antiquity to the Renaissance. (3:3:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall

DESCRIPTION: Civilization from Greek and Roman antiquity to the Italian Renaissance, emphasizing Greco-Roman culture--its institutions, literature, arts, and ideas.

**Course Outcomes**

There are no course outcomes available

: Honors Classical Tradition 1: Antiquity to Renaissance.

**Course Outcomes**

CL CV 241 : Greek and Roman Mythology. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Greek and Roman gods, heroes, and myths, emphasizing literature but also giving attention to representations in the visual arts.

**Course Outcomes**

There are no course outcomes available

: Honors Greek and Roman Mythology.

**Course Outcomes**

7. Complete 12 hours from the following:

CLSCS 420 : Ancient Literary Criticism. (3:3:0)

PREREQUISITE: GREEK 302; or LATIN 302

DESCRIPTION: Survey emphasizing both chief works of the tradition and their practical application to reading of Greek and Latin authors.

**Course Outcomes**

No outcomes are available at this time.

CLSCS 430R : (Clscs-Hist) Topics in Greek and Roman History. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Cl Cv 304-Hist 247 and Greek 201 (Greek topics) or Cl Cv 307-Hist 248 and Latin 201 (Roman topics).

DESCRIPTION: Topics vary (e.g., rise of the Greek city-state, Greek political thought, classical historiography, Rome and the Etruscans, imperial Rome).

**Course Outcomes**

There are no course outcomes available

: Greek City-State.

**Course Outcomes**

: Classical Historiography.

**Course Outcomes**

: Hellenistic World.

**Course Outcomes**

: Rome and Etruscans.

**Course Outcomes**

: Rise of Rome.

**Course Outcomes**

: Roman Revolution.

**Course Outcomes**

: Imperial Rome.

**Course Outcomes**

: Roman Politics.

**Course Outcomes**

: Roman Religion.

**Course Outcomes**

: Augustan Rome.

**Course Outcomes**

: Archaic Greece.

**Course Outcomes**

: Athens: Rise and Fall.

**Course Outcomes**

: 4th Century Greece.

**Course Outcomes**

: Late Roman Empire.

**Course Outcomes**

: World of New Testament.

**Course Outcomes**

: Early Christianity.

**Course Outcomes**

: Julio-Claudians.

**Course Outcomes**

CLSCS 490R : Seminar in Classics. (3:3:0)

DESCRIPTION: Combined topics in Greek and Latin (e.g., comparative epic poetry, classical tradition of criticism, Euripides and Seneca). Topics vary.

**Course Outcomes**

No outcomes are available at this time.

LATIN 411R : Latin Vulgate and Early Christian Latin Texts. (3:3:0)

PREREQUISITE: LATIN 302

DESCRIPTION: Topics include Latin Vulgate and selections from other early Christian Latin texts.

**Course Outcomes**

No outcomes are available at this time.

LATIN 430 : Livy. (3:3:0)

PREREQUISITE: LATIN 302

DESCRIPTION: Selections from Livy's *Ab Urbe Condita*.

**Course Outcomes**

There are no course outcomes available

LATIN 431 : Vergil. (3:3:0)

PREREQUISITE: LATIN 301

**Course Outcomes**

There are no course outcomes available

LATIN 432 : Ovid. (3:3:0)

PREREQUISITE: LATIN 301

**Course Outcomes**

No outcomes are available at this time.

LATIN 433 : Cicero. (3:3:0)

PREREQUISITE: LATIN 302

DESCRIPTION: Selections from the works of Cicero.

**Course Outcomes**

No outcomes are available at this time.

LATIN 434 : Plautus and Terence. (3:3:0)

PREREQUISITE: LATIN 301

**Course Outcomes**

There are no course outcomes available

LATIN 435 : Catullus. (3:3:0)

PREREQUISITE: LATIN 301

**Course Outcomes**

No outcomes are available at this time.

LATIN 436 : Tragedy and Epic of the Early Empire. (3:3:0)

PREREQUISITE: LATIN 301

DESCRIPTION: Selections from Seneca, Lucan, and the Flavian epic poets.

**Course Outcomes**

No outcomes are available at this time.

LATIN 437 : The Latin Epistle. (3:3:0)

PREREQUISITE: LATIN 302

DESCRIPTION: Letters of Cicero, Seneca, Pliny, and the later tradition.

**Course Outcomes**

There are no course outcomes available

LATIN 438 : Horace. (3:3:0)

PREREQUISITE: LATIN 301

**Course Outcomes**

No outcomes are available at this time.

LATIN 439 : Tacitus. (3:3:0)

PREREQUISITE: LATIN 302

**Course Outcomes**

No outcomes are available at this time.

LATIN 440 : Roman Satire. (3:3:0)

PREREQUISITE: LATIN 301

DESCRIPTION: Selections from Horace, Petronius, and Juvenal.

**Course Outcomes**

No outcomes are available at this time.

LATIN 441 : Medieval Latin. (3:3:0)

PREREQUISITE: LATIN 301 & LATIN 302

DESCRIPTION: Study of particular periods (e.g., Carolingian renaissance, twelfth-century renaissance) or genres (e.g., historiography, epic, autobiography), or survey of medieval Latin.

**Course Outcomes**

No outcomes are available at this time.

LATIN 490R : Topics in Latin Literature. (.5-3:3:0)

DESCRIPTION: Topics vary.

**Course Outcomes**

There are no course outcomes available

**Note:** Latin 411R may be taken only once.

8. Complete the Professional Education Component:
   - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

FLANG 276 : Exploration of Teaching Foreign Languages. (4:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Field-based exposure to practices, demands, and issues associated with teaching foreign languages in public secondary schools.

**Course Outcomes**

- Determine if pursuing a personal career in foreign language teaching in public secondary schools is the correct decision.
- Have a developing awareness of what foreign-language students should know and be able to do and of good foreign-language teaching practice.
- Discuss the public purposes of education, related social and political issues, and the benefits of speaking a foreign language.
- Articulate personal motivations for becoming a teacher, as well as recognize potential strengths and weaknesses as a teacher.

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.

DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

**Note:** FBI fingerprint and background clearance must be completed before enrollment in FLang 276.

- Complete 12 hours from one of the following:

SC ED 476R : Secondary Student-Teaching. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will put into practice the theories they have learned in content and pedagogy courses including planning lessons, assessing students of all abilities and cultural backgrounds, using a variety of instructional strategies, and collaborating with other teachers and with the community.

: Secondary Student Teaching - Art.

**Course Outcomes**

: Secondary Student Teaching - Foreign Language. (12:ARR:ARR)

**Course Outcomes**

: Secondary Student Teaching - French.

**Course Outcomes**

: Secondary Student Teaching - Mathematics.

**Course Outcomes**

: Secondary Student Teaching - Physical Science.

**Course Outcomes**

: Secondary Student Teaching - Social Science.

**Course Outcomes**

: Secondary Student Teaching - Spanish.

**Course Outcomes**

SC ED 496R : Academic Internship: Secondary Education. (12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will demonstrate that they can teach, manage, and assess content area knowledge and skills in the 7-12 classroom.
- Foster relationships with school colleagues, parents, and the larger community.

: Academic Internship: Social Sciences.

**Course Outcomes**

: Academic Internship: English.

**Course Outcomes**

: Academic Internship: Mathematics.

**Course Outcomes**

: Academic Internship: Biological Sciences.

**Course Outcomes**

: Academic Internship: Physical Sciences.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

**Show all Latin (Latin) Courses**

College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major
- BA in Interdisciplinary Humanities

Minor
- Humanities

Course Information
- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors
- BA in Comparative Literature

Course Information
- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors
- Scandinavian Studies

Language Certificates
- Danish
- Finnish
- Norwegian
- Swedish

Course Information
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Minor in Classical Studies (Greek option) (22–30 hours)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete 16 hours of course work in Greek beyond Greek 102.

   **Note:** The Greek 302 course is the prerequisite for all 400-level Greek prose courses and the Greek 301 course is the prerequisite for all 400-level Greek poetry courses. Concurrent enrollment will be permitted only in rare and special cases and must have the approval both of the classics section head and of the instructor of the 400-level course concerned.

2. Complete six hours of course work in Greek, Classical Civilization, or Classics.

   **Note:** Greek 411R may be taken only once.

### Show all Classics (Clscs) Courses

### Show all Classical Civilization (Cl Cv) Courses

### Show all Greek (Greek) Courses

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**

College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major

- BA in Interdisciplinary Humanities

Minor

- Humanities

Course Information

- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors

- BA in Comparative Literature

Course Information

- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors

- Scandinavian Studies

Language Certificates

- Danish
- Finnish
- Norwegian
- Swedish

Course Information

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Minor in Classical Studies (Latin option) (22–30 hours)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete 16 hours of course work in Latin beyond Latin 102 or 111.

   **Note:** The Latin 302 course is the prerequisite for all 400-level Latin prose courses and the Latin 301 course is the prerequisite for all 400-level Latin poetry courses. Concurrent enrollment will be permitted only in rare and special cases and must have the approval both of the classics section head and of the instructor of the 400-level course concerned.

2. Complete six hours of course work in Latin, Classical Civilization, or Classics.

   **Note:** Latin 411R may be taken only once.

## Show all Classics (Clscs) Courses

## Show all Classical Civilization (Cl Cv) Courses

## Show all Latin (Latin) Courses

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**

College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major
- BA in Interdisciplinary Humanities

Minor
- Humanities

Course Information
- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies

Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors
- BA in Comparative Literature

Course Information
- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors
- Scandinavian Studies

Language Certificates
- Danish
- Finnish
- Norwegian
- Swedish

Course Information
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Minor in Latin Teaching (23–31 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete one of the following options:

**Either**

LATIN 101 : First-Year Latin (First Semester). (4:4:0)
WHEN TAUGHT: Fall

**Course Outcomes**
There are no course outcomes available

LATIN 102 : First-Year Latin (Second Semester). (4:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: LATIN 101; or departmental approval.

**Course Outcomes**
There are no course outcomes available

**Or**

LATIN 111 : Beginning Latin Accelerated. (5:5:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Equivalent of combined Latin 101, 102.
NOTE: Prepares students for Latin 201.

**Course Outcomes**
There are no course outcomes available

**Note:** Latin 101, 102, 111 may be waived with equivalent language experience.

3. Complete the following:

LATIN 201 : Intermediate Latin. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: LATIN 102; or LATIN 111; or departmental approval.
DESCRIPTION: Readings from Caesar, with a review and continuation of grammar.

**Course Outcomes**
There are no course outcomes available

LATIN 301 : Classical Latin Poetry. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: LATIN 201
DESCRIPTION: Selections from Vergil's *Aeneid* and Ovid's *Metamorphoses*.

**Course Outcomes**
There are no course outcomes available

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


LATIN 302 : Classical Latin Prose. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: LATIN 201
DESCRIPTION: Readings in Cicero's Catilinarian orations and Sallust's *Catiline*.

**Course Outcomes**
There are no course outcomes available

LATIN 377 : Secondary Teaching Procedures. (3:3:1)
WHEN TAUGHT: Fall; Winter; Spring Contact Department
PREREQUISITE: SC ED 276R & LATIN 301; or SC ED 276R & LATIN 302
DESCRIPTION: Skills mastery, hearing, speaking, reading, writing, and identification of teacher-pupil activities required for conceptual learning. Lectures, demonstrations, and application of linguistic techniques to practical classroom requirements.

**Course Outcomes**
No outcomes are available at this time.

LATIN 378 : Practicum in Teaching Latin. (1:0:3)
PREREQUISITE: Latin 377 or concurrent enrollment.
DESCRIPTION: Applying methods learned in Latin 377 in the classroom.

**Course Outcomes**
No outcomes are available at this time.

LATIN 401 : Latin Prose Composition. (3:3:0)
WHEN TAUGHT: Winter Contact Department
PREREQUISITE: LATIN 302; or concurrent enrollment.

**Course Outcomes**
There are no course outcomes available

**Note:** The Latin 302 course is the prerequisite for all 400-level Latin prose courses and the Latin 301 course is the prerequisite for all 400-level Latin poetry courses. Concurrent enrollment will be permitted only in rare and special cases and must have the approval both of the classics section head and of the instructor of the 400-level course concerned.

4. Complete six hours from the following:

LATIN 411R : Latin Vulgate and Early Christian Latin Texts. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Topics include Latin Vulgate and selections from other early Christian Latin texts.

**Course Outcomes**
No outcomes are available at this time.

LATIN 430 : Livy. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Selections from Livy's *Ab Urbe Condita*.

**Course Outcomes**
There are no course outcomes available

LATIN 431 : Vergil. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
There are no course outcomes available

LATIN 433 : Cicero. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Selections from the works of Cicero.

**Course Outcomes**
No outcomes are available at this time.

LATIN 434 : Plautus and Terence. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
There are no course outcomes available

LATIN 435 : Catullus. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
No outcomes are available at this time.

LATIN 436 : Tragedy and Epic of the Early Empire. (3:3:0)
PREREQUISITE: LATIN 301
DESCRIPTION: Selections from Seneca, Lucan, and the Flavian epic poets.

**Course Outcomes**
No outcomes are available at this time.

LATIN 437 : The Latin Epistle. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Letters of Cicero, Seneca, Pliny, and the later tradition.

**Course Outcomes**
There are no course outcomes available

LATIN 438 : Horace. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
No outcomes are available at this time.

LATIN 439 : Tacitus. (3:3:0)
PREREQUISITE: LATIN 302

**Course Outcomes**
No outcomes are available at this time.

LATIN 440 : Roman Satire. (3:3:0)
PREREQUISITE: LATIN 301
DESCRIPTION: Selections from Horace, Petronius, and Juvenal.

**Course Outcomes**
No outcomes are available at this time.

LATIN 441 : Medieval Latin. (3:3:0)
PREREQUISITE: LATIN 301 & LATIN 302
DESCRIPTION: Study of particular periods (e.g., Carolingian renaissance, twelfth-century renaissance) or genres (e.g., historiography, epic, autobiography), or survey of medieval Latin.

**Course Outcomes**
No outcomes are available at this time.

LATIN 490R : Topics in Latin Literature. (.5-3:3:0)
DESCRIPTION: Topics vary.

**Course Outcomes**
There are no course outcomes available

**Note 1:** One course from Cl Cv 246, 307, 340R, 362, or Clscs 430R may be substituted.

**Note 2:** Latin 411R may be taken only once.

*Hours include courses that may fulfill university core requirements.

## Show all Latin (Latin) Courses

College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major

- BA in Interdisciplinary Humanities

Minor

- Humanities

Course Information

- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies

Emphases:

- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors

- BA in Comparative Literature

Course Information

- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors

- Scandinavian Studies

Language Certificates

- Danish
- Finnish
- Norwegian
- Swedish

Course Information

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Classical Civilization (Cl Cv)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

CL CV 110 : Introduction to Greek and Roman Literature. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Homer's *Iliad*, Sophocles' *Oedipus the King*, Vergil's *Aeneid*, and other important works of the Greeks and Romans.
NOTE: All readings in English. Honors also.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

CL CV 201 : The Classical Tradition 1: Antiquity to the Renaissance. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall
DESCRIPTION: Civilization from Greek and Roman antiquity to the Italian Renaissance, emphasizing Greco-Roman culture--its institutions, literature, arts, and ideas.

**Course Outcomes**
There are no course outcomes available

: Honors Classical Tradition 1: Antiquity to Renaissance.

**Course Outcomes**

CL CV 202 : The Classical Tradition 2: Reformation to Modern. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Winter
DESCRIPTION: Civilization from the Reformation to the twentieth century, emphasizing the heritage of Greco-Roman culture--its institutions, literature, arts, and ideas.

**Course Outcomes**
No outcomes are available at this time.

: Honors Classical Tradition 2: Reformation to Modern.

**Course Outcomes**

CL CV 241 : Greek and Roman Mythology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Greek and Roman gods, heroes, and myths, emphasizing literature but also giving attention to representations in the visual arts.

**Course Outcomes**
There are no course outcomes available

: Honors Greek and Roman Mythology.

**Course Outcomes**

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


CL CV 245 : Golden Age of Greece. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: History of Civilization, culture, and daily life of Greece as indicated through its literature, art, history, and archaeology.

NOTE: All readings in English. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

CL CV 246 : Golden Age of Rome. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: History of Civilization, culture, and daily life of Rome as indicated through its literature, art, history, and archaeology.

NOTE: All readings in English. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

CL CV 261 : Greek and Roman Civilization and Literature in Film. (3:3:0)

DESCRIPTION: Literature and civilization of ancient Greece and Rome as depicted in modern film with attendant problems of accuracy and historicity.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

CL CV 304 : (Cl Cv-Hist 247) Greek History. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Political, economic, social, and intellectual history of Greece from Mycenaean times to the Hellenistic period.

**Course Outcomes**

There are no course outcomes available

CL CV 307 : (ClCv-Hist 248) Roman History. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Political, economic, social, and intellectual history of Rome from the foundation of the city to Constantine.

**Course Outcomes**

There are no course outcomes available

CL CV 310 : Classical Archaeology. (3:3:0)

DESCRIPTION: Major excavations and antiquities of the Mediterranean region illustrating Greco-Roman history.

**Course Outcomes**

No outcomes are available at this time.

CL CV 340R : Topics in Classical Literature and Civilization. (3:3:0)

DESCRIPTION: Classical literary genres; rhetorical, philosophical, and historical writings; relationships of art and literature; or the classical tradition in the Middle Ages and Renaissance. Topics vary.

**Course Outcomes**

There are no course outcomes available

: Greek Historians.

**Course Outcomes**

: Roman Historians.

**Course Outcomes**

: Latin Literature in Middle America.

**Course Outcomes**

: Troy in Art and Literature.

**Course Outcomes**

: Early Rome.

**Course Outcomes**

: Classic Historiography.

**Course Outcomes**

: Greek Tragedy.

**Course Outcomes**

: Greek Political Thought.

**Course Outcomes**

: Women in Antiquity.

**Course Outcomes**

: Greek Ethical Thought.

**Course Outcomes**

: Roman Religion.

**Course Outcomes**

: The Etruscans.

**Course Outcomes**

:

**Course Outcomes**

: Roman Art and Culture.

**Course Outcomes**

: Augustan Rome.

**Course Outcomes**

: Christianity and the Empire.

**Course Outcomes**

CL CV 355 : (ClCv-Engl) Greek and Roman Classics and the English Tradition. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Major works by such authors as Homer, the Greek and Roman tragedians, Thucydides, Vergil, and Petronius in English translation, emphasizing their influence on English and American literature.

**Course Outcomes**

There are no course outcomes available

CL CV 363 : Judaism and Christianity in the Classical Near East. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Historical and cultural contexts of early Judaism and Christianity; analysis of major Jewish and Christian texts produced in classical Near East; methodological emphasis.

**Course Outcomes**

There are no course outcomes available

CL CV 399R : Acadmic Internship in Classics. (1-9:0:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: 12 hours of classics course work (Latin, Greek, classical civilization, classcis) at the 300-level and above; classical studies major status.

DESCRIPTION: Combined study-work experience related to classical studies majors (museums, libraries, international universities and centers, publishers, etc.).

**Course Outcomes**

No outcomes are available at this time.

: Museum Internship - Classics.

**Course Outcomes**

: Library Internship - Classics.

**Course Outcomes**

: Scholarly Internship - Classics.

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**College of Humanities Home**

**Humanities, Classics, and Comparative Literature Department Home**

**Interdisciplinary Humanities**

**Major**
- BA in Interdisciplinary Humanities

**Minor**
- Humanities

**Course Information**
- Interdisciplinary Humanities (IHum) Courses

**Classics**

**Majors**

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

**Minors**
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

**Course Information**
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

**Comparative Literature**

**Majors**
- BA in Comparative Literature

**Course Information**
- Comparative Literature (CmLit) Courses

**Scandinavian Studies**

**Minors**
- Scandinavian Studies

**Language Certificates**
- Danish
- Finnish
- Norwegian
- Swedish

**Course Information**
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Classical Greek (Greek)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

GREEK 101 : First-Year Greek (First Semester). (4:4:0)
WHEN TAUGHT: Fall

**Course Outcomes**
There are no course outcomes available

GREEK 102 : First-Year Greek (Second Semester). (4:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: GREEK 101; or departmental approval.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

GREEK 201 : Intermediate Greek. (4:4:0)
WHEN TAUGHT: Fall
PREREQUISITE: GREEK 102; or departmental approval.
DESCRIPTION: Readings from Xenophon with review and continuation of grammar.

**Course Outcomes**
There are no course outcomes available

### 300-Level Courses

GREEK 301 : Classical Greek Poetry: Homer's *Iliad*. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: GREEK 201

**Course Outcomes**
There are no course outcomes available

GREEK 302 : Classical Greek Prose. (3:3:3)
WHEN TAUGHT: Winter
PREREQUISITE: GREEK 201
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GREEK 311 : New Testament in Greek: Gospels. (3:3:0)
PREREQUISITE: GREEK 201

**Course Outcomes**
There are no course outcomes available

### 400-Level Courses

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


GREEK 401 : Greek Prose Composition. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: GREEK 302; or concurrent enrollment.

DESCRIPTION: Exercises in composing Greek prose.

**Course Outcomes**

There are no course outcomes available

GREEK 411R : Greek New Testament and Early Christian Greek Texts. (3:3:0)

PREREQUISITE: GREEK 311; Greek 302 or concurrent enrollment.

DESCRIPTION: Topics include Greek New Testament, the transmission and translation of New Testament manuscripts, and selections from other early Christian Greek writings.

**Course Outcomes**

There are no course outcomes available

: Synoptic Gospels.

**Course Outcomes**

: Luke-Acts.

**Course Outcomes**

: Pauline Epistles.

**Course Outcomes**

: Apocalypse.

**Course Outcomes**

: Johannine Writings.

**Course Outcomes**

: New Testament Apocrypha.

**Course Outcomes**

: Apostolic Fathers.

**Course Outcomes**

: Pre-Nicene Fathers.

**Course Outcomes**

: Post-Nicene Fathers.

**Course Outcomes**

GREEK 430 : Herodotus. (3:3:0)

PREREQUISITE: GREEK 302

**Course Outcomes**

No outcomes are available at this time.

GREEK 431 : Homer's *Odyssey*. (3:3:0)

PREREQUISITE: GREEK 301

**Course Outcomes**

There are no course outcomes available

GREEK 433 : Thucydides. (3:3:0)

PREREQUISITE: GREEK 302

**Course Outcomes**

There are no course outcomes available

GREEK 434 : Sophocles and Euripides. (3:3:0)

PREREQUISITE: GREEK 301

**Course Outcomes**

There are no course outcomes available

GREEK 435 : Greek Lyric Poetry. (3:3:0)
PREREQUISITE: GREEK 301

**Course Outcomes**
No outcomes are available at this time.

GREEK 436 : Plato. (3:3:0)
PREREQUISITE: GREEK 302
DESCRIPTION: Reading and analysis of Greek text of selected dialogues by Plato (e.g., *The Republic, Meno, Protagoras)*.

**Course Outcomes**
No outcomes are available at this time.

GREEK 437 : Attic Orators. (3:3:0)
PREREQUISITE: GREEK 302

**Course Outcomes**
No outcomes are available at this time.

GREEK 490R : Topics in Greek Literature. (.5-3:3:0)
DESCRIPTION: Topics vary.

**Course Outcomes**
There are no course outcomes available

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Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major

- BA in Interdisciplinary Humanities

Minor

- Humanities

Course Information

- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors

- BA in Comparative Literature

Course Information

- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors

- Scandinavian Studies

Language Certificates

- Danish
- Finnish
- Norwegian
- Swedish

Course Information

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Classical Latin (Latin)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

LATIN 101 : First-Year Latin (First Semester). (4:4:0)
WHEN TAUGHT: Fall

**Course Outcomes**
There are no course outcomes available

LATIN 102 : First-Year Latin (Second Semester). (4:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: LATIN 101; or departmental approval.

**Course Outcomes**
There are no course outcomes available

LATIN 111 : Beginning Latin Accelerated. (5:5:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Equivalent of combined Latin 101, 102.
NOTE: Prepares students for Latin 201.

**Course Outcomes**
There are no course outcomes available

LATIN 121 : Latin for Genealogists. (3:3:0)

**Course Outcomes**
There are no course outcomes available

LATIN 123 : Premedical Latin and Greek. (2:2:0)
NOTE: For premedical and predental students and students in the physical and natural sciences (usually taught in the evening).

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

LATIN 201 : Intermediate Latin. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: LATIN 102; or LATIN 111; or departmental approval.
DESCRIPTION: Readings from Caesar, with a review and continuation of grammar.

**Course Outcomes**
There are no course outcomes available

### 300-Level Courses

LATIN 301 : Classical Latin Poetry. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: LATIN 201

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


DESCRIPTION: Selections from Vergil's *Aeneid* and Ovid's *Metamorphoses*.

**Course Outcomes**
There are no course outcomes available

LATIN 302 : Classical Latin Prose. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: LATIN 201
DESCRIPTION: Readings in Cicero's Catilinarian orations and Sallust's *Catiline*.

**Course Outcomes**
There are no course outcomes available

LATIN 377 : Secondary Teaching Procedures. (3:3:1)
WHEN TAUGHT: Fall; Winter; Spring Contact Department
PREREQUISITE: SC ED 276R & LATIN 301; or SC ED 276R & LATIN 302
DESCRIPTION: Skills mastery, hearing, speaking, reading, writing, and identification of teacher-pupil activities required for conceptual learning. Lectures, demonstrations, and application of linguistic techniques to practical classroom requirements.

**Course Outcomes**
No outcomes are available at this time.

LATIN 378 : Practicum in Teaching Latin. (1:0:3)
PREREQUISITE: Latin 377 or concurrent enrollment.
DESCRIPTION: Applying methods learned in Latin 377 in the classroom.

**Course Outcomes**
No outcomes are available at this time.

**400-Level Courses**

LATIN 401 : Latin Prose Composition. (3:3:0)
WHEN TAUGHT: Winter Contact Department
PREREQUISITE: LATIN 302; or concurrent enrollment.

**Course Outcomes**
There are no course outcomes available

LATIN 411R : Latin Vulgate and Early Christian Latin Texts. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Topics include Latin Vulgate and selections from other early Christian Latin texts.

**Course Outcomes**
No outcomes are available at this time.

LATIN 430 : Livy. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Selections from Livy's *Ab Urbe Condita*.

**Course Outcomes**
There are no course outcomes available

LATIN 431 : Vergil. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
There are no course outcomes available

LATIN 432 : Ovid. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
No outcomes are available at this time.

LATIN 433 : Cicero. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Selections from the works of Cicero.

**Course Outcomes**
No outcomes are available at this time.

LATIN 434 : Plautus and Terence. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
There are no course outcomes available

LATIN 435 : Catullus. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
No outcomes are available at this time.

LATIN 436 : Tragedy and Epic of the Early Empire. (3:3:0)
PREREQUISITE: LATIN 301
DESCRIPTION: Selections from Seneca, Lucan, and the Flavian epic poets.

**Course Outcomes**
No outcomes are available at this time.

LATIN 437 : The Latin Epistle. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Letters of Cicero, Seneca, Pliny, and the later tradition.

**Course Outcomes**
There are no course outcomes available

LATIN 438 : Horace. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
No outcomes are available at this time.

LATIN 439 : Tacitus. (3:3:0)
PREREQUISITE: LATIN 302

**Course Outcomes**
No outcomes are available at this time.

LATIN 440 : Roman Satire. (3:3:0)
PREREQUISITE: LATIN 301
DESCRIPTION: Selections from Horace, Petronius, and Juvenal.

**Course Outcomes**
No outcomes are available at this time.

LATIN 441 : Medieval Latin. (3:3:0)
PREREQUISITE: LATIN 301 & LATIN 302
DESCRIPTION: Study of particular periods (e.g., Carolingian renaissance, twelfth-century renaissance) or genres (e.g., historiography, epic, autobiography), or survey of medieval Latin.

**Course Outcomes**
No outcomes are available at this time.

LATIN 490R : Topics in Latin Literature. (.5-3:3:0)
DESCRIPTION: Topics vary.

**Course Outcomes**
There are no course outcomes available

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Interdisciplinary Humanities

Major

- BA in Interdisciplinary Humanities

Minor

- Humanities

Course Information

- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies

Emphases:

- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors

- BA in Comparative Literature

Course Information

- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors

- Scandinavian Studies

Language Certificates

- Danish
- Finnish
- Norwegian
- Swedish

Course Information

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Classics (Clscs)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 300-Level Courses

CLSCS 397 : Pro-Seminar in Classical Studies. (2:2:0)

WHEN TAUGHT: Fall
PREREQUISITE: LATIN 201; or GREEK 201
RECOMMENDED: Latin 302 or Greek 301.
DESCRIPTION: Mechanics of researching and writing analytical papers in classical studies. Sectional and adjunct professors present seminal sub-disciplines and model research methods. Specialized library resources taught in practicum. Tutorials with faculty underpin focused research questions.

**Course Outcomes**

There are no course outcomes available

### 400-Level Courses

CLSCS 420 : Ancient Literary Criticism. (3:3:0)

PREREQUISITE: GREEK 302; or LATIN 302
DESCRIPTION: Survey emphasizing both chief works of the tradition and their practical application to reading of Greek and Latin authors.

**Course Outcomes**

No outcomes are available at this time.

CLSCS 430R : (Clscs-Hist) Topics in Greek and Roman History. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Cl Cv 304-Hist 247 and Greek 201 (Greek topics) or Cl Cv 307-Hist 248 and Latin 201 (Roman topics).
DESCRIPTION: Topics vary (e.g., rise of the Greek city-state, Greek political thought, classical historiography, Rome and the Etruscans, imperial Rome).

**Course Outcomes**

There are no course outcomes available

: Greek City-State.

**Course Outcomes**

: Classical Historiography.

**Course Outcomes**

: Hellenistic World.

**Course Outcomes**

: Rome and Etruscans.

**Course Outcomes**

: Rise of Rome.

**Course Outcomes**

: Roman Revolution.

**Course Outcomes**

: Imperial Rome.

**Course Outcomes**

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


: Roman Politics.

**Course Outcomes**

: Roman Religion.

**Course Outcomes**

: Augustan Rome.

**Course Outcomes**

: Archaic Greece.

**Course Outcomes**

: Athens: Rise and Fall.

**Course Outcomes**

: 4th Century Greece.

**Course Outcomes**

: Late Roman Empire.

**Course Outcomes**

: World of New Testament.

**Course Outcomes**

: Early Christianity.

**Course Outcomes**

: Julio-Claudians.

**Course Outcomes**

CLSCS 490R : Seminar in Classics. (3:3:0)

DESCRIPTION: Combined topics in Greek and Latin (e.g., comparative epic poetry, classical tradition of criticism, Euripides and Seneca). Topics vary.

**Course Outcomes**

No outcomes are available at this time.

CLSCS 497 : Exit Examination in Classical Literature. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: CLSCS 397; at least one course in Latin or Greek at 400-level.

RECOMMENDED: Coursework above 400-level in Latin and/or Greek.

DESCRIPTION: Capstone essay culminates undergraduate experience in posing, researching, and writing in consultation with an advisor. Oral exam tests familiarity with a standardized reading list of classical texts. Attendance at weekly lectures expands familiarity with broad questions in classical scholarship.

**Course Outcomes**

There are no course outcomes available


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College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major

- BA in Interdisciplinary Humanities

Minor

- Humanities

Course Information

- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies

Emphases:

- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors

- BA in Comparative Literature

Course Information

- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors

- Scandinavian Studies

Language Certificates

- Danish
- Finnish
- Norwegian
- Swedish

Course Information

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Comparative Literature

## The Discipline

Comparative Literature is the study of literature in its totality. The Comparative Literature major not only acquaints students with literary study beyond the confines of any particular national tradition but also with the relationship between literature and other areas of knowledge. Combining the synthesizing skills and knowledge related to individual national literatures, the comparative literature major utilizes a wide range of linguistic and philosophical knowledge unique to an undergraduate program. Pursued as a major, the field offers students unusual latitude in developing a broad and full program in the liberal arts, as well as developing competence in reasoning, language, writing, and research—essential for later independent learning.

## Career Opportunities

Comparative Literature majors are well prepared for graduate programs in languages and literature and for employment in the foreign service, library science, business, education, and tourism. In addition, comparative literature is an outstanding preprofessional major for those interested in law, public administration, management, and medicine.

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**

**College of Humanities Home**

**Humanities, Classics, and Comparative Literature Department Home**

**Interdisciplinary Humanities**

**Major**
- BA in Interdisciplinary Humanities

**Minor**
- Humanities

**Course Information**
- Interdisciplinary Humanities (IHum) Courses

**Classics**

**Majors**

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

**Minors**
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

**Course Information**
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

**Comparative Literature**

**Majors**
- BA in Comparative Literature

**Course Information**
- Comparative Literature (CmLit) Courses

**Scandinavian Studies**

**Minors**
- Scandinavian Studies

**Language Certificates**
- Danish
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**Course Information**
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# BA in Comparative Literature (37–57 hours*)

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## Program Requirements | View MAP | View Program Outcomes

1. Acquire a thorough knowledge of two language traditions relevant to individual program of study (one of these may be English for students who emphasize the Anglo-American literary tradition)(approximately 16–32 hours). Competence will normally be demonstrated in course work, but an examination may be required. If planning advanced work in comparative literature, students should gain reading knowledge of both an additional modern language and a classical language.

2. Complete a reading list (determined in consultation with a faculty advisor) and submit a writing portfolio. During the final semester enroll in CmLit 497 to complete a written examination on the reading list and to have the portfolio reviewed.

   CmLit 201 & 202 or CmLit 211 & 212 are strongly recommended, in part because the reading list core consists of texts treated in these courses. Students who do not complete a literature-based civilization sequence are at a disadvantage in working systematically through the list.

3. Course configuration must be approved by department advisor.

4. Complete the following:

   CMLIT 310 : Introduction to Literary Analysis and Comparative Literature. (3:3:0)
   PREREQUISITE: Reading knowledge of at least one foreign language.
   DESCRIPTION: Methods of literary analysis, emphasizing basic issues of comparative literature and prosody and other problems related to foreign language texts.

   **Course Outcomes**
   There are no course outcomes available

   CMLIT 342 : Asian Literary Traditions. (3:3:0)
   DESCRIPTION: Comparative analysis of Asian literary works spanning several traditions.

   **Course Outcomes**
   There are no course outcomes available

   CMLIT 497 : Reading List Examination. (1:1:0)
   PREREQUISITE: CMLIT 310 & CMLIT 342; Three 400-level seminars.

   **Course Outcomes**
   There are no course outcomes available

   **Note:** CmLit 310 and reading knowledge of at least one foreign language are prerequisite to all upper-division comparative literature courses. In addition, completion of 342 and three comparative literature 400-level seminars is prerequisite to 497.

5. Complete five courses from the following:

   CMLIT 420R : Studies in Periods and Movements. (3:3:0)
   PREREQUISITE: CmLit 310 or Hum 350 or concurrent enrollment.
   DESCRIPTION: Topics vary.

   **Course Outcomes**
   There are no course outcomes available

   : Medieval Literature.
   **Course Outcomes**

   : Renaissance Literature.
   **Course Outcomes**

   : Neoclassicism.
   **Course Outcomes**

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


: Romanticism.

**Course Outcomes**

: Realism.

**Course Outcomes**

: Symbolism.

**Course Outcomes**

: 20th-Century Literature.

**Course Outcomes**

: Classics and Early America.

**Course Outcomes**

: 17th-Century Literature.

**Course Outcomes**

: Modernism.

**Course Outcomes**

: 12th-Century Renaissance.

**Course Outcomes**

: 18th-Century Literature.

**Course Outcomes**

: Postmodernism.

**Course Outcomes**

CMLIT 430R : Studies in Literary Genres. (3:3:0)

PREREQUISITE: CmLit 310 or concurrent enrollment.

DESCRIPTION: Various genres (e.g., novel, epic, tragedy) and problems of genre. Topics vary.

**Course Outcomes**

No outcomes are available at this time.

: Lyric.

**Course Outcomes**

: Tragedy.

**Course Outcomes**

:

**Course Outcomes**

: Novel.

**Course Outcomes**

: Comedy.

**Course Outcomes**

: The Romance.

**Course Outcomes**

: Poetry and Poetics.

**Course Outcomes**

:

**Course Outcomes**

CMLIT 440R : Studies in Themes and Types. (3:3:0)

PREREQUISITE: CmLit 310 or concurrent enrollment.

DESCRIPTION: Major literary themes (e.g., Faust, Don Juan, Ulysses, Arthur), types, motifs, and problems of literary typology. Topics vary.

**Course Outcomes**

There are no course outcomes available

: Faust Theme.

**Course Outcomes**

: Ulysses Theme.

**Course Outcomes**

: Arthurian Literature.

**Course Outcomes**

: Don Juan Theme.

**Course Outcomes**

CMLIT 450R : Studies in Literary Relations. (3:3:0)

PREREQUISITE: CmLit 310 or concurrent enrollment.

DESCRIPTION: Interrelations of national literatures and figures and of literature with other areas of knowledge (art, history, law, psychology, music, etc.). Topics vary.

**Course Outcomes**

There are no course outcomes available

: Philosophy and Literature.

**Course Outcomes**

: Literature and History.

**Course Outcomes**

: Symbolism.

**Course Outcomes**

: Literature and Music.

**Course Outcomes**

: Wagner and Wagnerism.

**Course Outcomes**

: Literature and Myth.

**Course Outcomes**

: Vergil, Augustine, and Dante.

**Course Outcomes**

: Literature and Politics.

**Course Outcomes**

: Literature and Cinema.

**Course Outcomes**

: Literature of Sensibility.

**Course Outcomes**

: East-West Relations.

**Course Outcomes**

: Asian Literature Traditions.

**Course Outcomes**

: U.S. and Carribean Literature.

**Course Outcomes**

CMLIT 460R : Studies in Literary Theory. (3:3:0)

PREREQUISITE: CmLit 310 or concurrent enrollment.

DESCRIPTION: Topics vary.

**Course Outcomes**

There are no course outcomes available

: Classical Rhetoric and Criticism.

**Course Outcomes**

: Practical Criticism.

**Course Outcomes**

: Historical Literary Theory.

**Course Outcomes**

: Contemporary Theory.

**Course Outcomes**

:

**Course Outcomes**

6. Complete one of the following options:

**Either** complete a literature course in Greek or Latin

**Or** complete one course from the following:

CL CV 110 : Introduction to Greek and Roman Literature. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Homer's *Iliad*, Sophocles' *Oedipus the King*, Vergil's *Aeneid*, and other important works of the Greeks and Romans.
NOTE: All readings in English. Honors also.

**Course Outcomes**

There are no course outcomes available

CL CV 241 : Greek and Roman Mythology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Greek and Roman gods, heroes, and myths, emphasizing literature but also giving attention to representations in the visual arts.

**Course Outcomes**

There are no course outcomes available

: Honors Greek and Roman Mythology.

**Course Outcomes**

CL CV 355 : (ClCv-Engl) Greek and Roman Classics and the English Tradition. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: Major works by such authors as Homer, the Greek and Roman tragedians, Thucydides, Vergil, and Petronius in English translation, emphasizing their influence on English and American literature.

**Course Outcomes**

There are no course outcomes available

7. The following courses deal with texts in the original language. These courses must be in addition to previous requirements. Although English courses may be taken, courses must be taken in at least one other language as well. Complete 12 hours from the following:

ARAB 424R : Modern Arabic Literature. (2:2:0)

WHEN TAUGHT: Winter
DESCRIPTION: Readings in modern Arabic literature.

**Course Outcomes**

- Students will demonstrate their knowledge and understanding of major works and genres in verbal and written forms.
- Students will demonstrate their understanding of the major issues of Modern Arabic Literature.
- Students will demonstrate an ability to understand and analyze the linguistic features of important Arabic literary texts.

ARAB 425R : Classical Arabic Texts. (2:2:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Quran, Hadith, Sira, Adab.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of premodern literature.
- Students will demonstrate their knowledge and understanding of major works and genres.
- Students will be able to analyze and discuss the influence of the pre-modern language on present-day Arabic.

ARAB 531R : Advanced Topics in Arabic. (.5-3:5:0)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Advanced studies in Arabic language and literature.

**Course Outcomes**

There are no course outcomes available

CHIN 441 : Classical and Literary Chinese. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Chin 301 or equivalent.

DESCRIPTION: Introduction to syntax and stylistic patterns.

**Course Outcomes**

- Explain the use of the common grammatical particles and patterns essential in mastering the intricacies and subtleties of "classical" Chinese prose (see Chinese major expected learning outcome 3).
- Discuss and apply the meanings and usages of the standard vocabulary of classical Chinese (see Chinese major expected learning outcome 3).
- Summarize the thought of each important early thinker (see Chinese major expected learning outcome 3).

CHIN 442 : Classical and Literary Chinese. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHIN 441

DESCRIPTION: Introduction to syntax and stylistic patterns.

**Course Outcomes**

- Read, analyze, and discuss documentary Chinese prose (see Chinese major expected learning outcome 3).
- Compare and contrast the literary craftsmanship exhibited by the writers of documentary Chinese and discuss traditional Chinese history, literature, and religion (see Chinese major expected learning outcome 3).
- Explain the use of the basic grammatical particles introduced in Chin 441, learn some more advanced ones, and practice using them in new contexts (see Chinese major expected learning outcome 3).

CHIN 443 : Modern Chinese Literature. (3:3:0)

PREREQUISITE: Chin 321 or 322.

DESCRIPTION: Authors, themes, and writing styles of the period 1915--1949. Texts in Chinese.

**Course Outcomes**

- Read, analyze, and discuss Chinese literary texts from the modern (1900-1949) period in Chinese (see Chinese major expected learning outcomes 2 and 3).
- Discuss modern Chinese literary texts in Chinese with fluency and increasing sophistication, demonstrating facility for expressing subjective judgments on literature and other abstract topics in Chinese (see Chinese major expected learning outcomes 1-3).
- Analyze and discuss modern Chinese literary genres, works and authors in their social, historical, and religious contexts (see Chinese major expected learning outcome 3).

CHIN 444 : Contemporary Chinese Literature. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Chin 321 or 322.

DESCRIPTION: Contemporary literature of Taiwan and the PRC. Texts in Chinese.

**Course Outcomes**

- Read, analyze, and write about Chinese literary texts from the contemporary (1949-present) period in Chinese (see Chinese major expected learning outcomes 2 and 3).
- Discuss contemporary Chinese literary texts in Chinese with fluency and increasing sophistication, demonstrating facility for expressing subjective judgments on literature and other abstract topics in Chinese (see Chinese major expected learning outcomes 1 and 3).
- Analyze and discuss contemporary Chinese literary genres, works and authors in their social, historical, and religious contexts (see Chinese major expected learning outcome 3).

CHIN 445R : Chinese Poetry. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: CHIN 343 & CHIN 441

DESCRIPTION: Readings in Chinese poetry. Topics vary from classical and modern poetry. Various themes and genres introduced, emphasizing shi poetry. Texts in Chinese.

**Course Outcomes**

There are no course outcomes available

DANSH 340 : Danish Literature. (3:3:.5)

WHEN TAUGHT: Winter Odd Yrs.

RECOMMENDED: Dansh 321 or equivalent experience.

DESCRIPTION: Readings in Danish literature; introduction to basic literary concepts. Includes International Cinema.

NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

DUTCH 340 : Introduction to Dutch Literature. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Dutch 201 or foreign residence.

DESCRIPTION: Readings from the best Dutch literature. Introduction to basic literary concepts.

NOTE: Entry course for returned missionaries or others of equivalent language experience. Required course for obtaining language credit by examination. May fulfill the GE Languages of Learning requirement.

**Course Outcomes**

There are no course outcomes available

ENGL 333 : The English Novel. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 292 & ENGL 295; or ENGL 294 & ENGL 295; Engl 291. (Engl 293 may also be a prerequisite option.)

DESCRIPTION: Novels selected according to time period or theme from the past three centuries.

**Course Outcomes**

- Analyze selected British novels in order to create a foundation for the further study of literature.
- Explain the general formal and historical development of the British novel and define a coherent approach to the study of British novels.
- Form a research strategy appropriate to the study of British novels, independently locate relevant digital and print sources, and draw upon these sources to develop a focused and effective written argument about a British novel(s).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 336 : The American Novel. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: ENGL 293 & ENGL 295; or ENGL 294 & ENGL 295; Engl 291. (Engl 292 may also be a prerequisite option.)

DESCRIPTION: Representative novels of the American tradition from the late eighteenth century to the present.

**Course Outcomes**

- Analyze selected American novels in order to create a foundation for the further study of literature.
- Explain the general formal and historical development of the American novel and define a coherent approach to the study of American novels.
- Form a research strategy appropriate to the study of American novels, independently locate relevant digital and print sources, and draw upon these sources to develop a focused and effective written argument about an American novel(s).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 337R : Advanced Studies in Genre. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Advanced studies in fiction, drama, poetry, or creative nonfiction.

**Course Outcomes**

- Read critically and analyze selected literary texts selected with a specific genre focus (poetry, drama, personal essay, etc.).
- Form a research strategy appropriate to the texts and genre studied in the course, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument about the texts studied.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 341 : English Drama: Beginnings to 1800, Excluding Shakespeare. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295

DESCRIPTION: Selected plays from medieval, Tudor, Stuart, Restoration, and 18th-century drama.

**Course Outcomes**

- Understand in general, and in several details, the development of drama in England, and, in your writing, intelligently discuss major developments, continuities, or turning points.
- Demonstrate a sure knowledge of the plays we read, and be able to interpret those plays.
- Explain the significance of specific passages and elements of each play.
- Relate selected theoretical ideas to your understanding of the plays we read.

ENGL 343 : Modern English and American Drama. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

**Course Outcomes**

- Read critically and analyze selected dramatic texts along with critical and/or interpretative texts.
- Form a research strategy appropriate to the study of drama, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument about the texts studied.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

: Modern British Drama.

**Course Outcomes**

: Modern American Drama.

**Course Outcomes**

ENGL 355 : (Engl-ClCv) Greek and Roman Classics and the English Tradition. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Major works by such authors as Homer, the Greek and Roman tragedians, Thucydides, Vergil, and Petronius in English translation, emphasizing their influence on English and American literature.

**Course Outcomes**

- Read critically and analyze selected classical texts in translation in the context of English literature.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 358R : Ethnic Literatures. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ENGL 251 & ENGL 295

DESCRIPTION: Study of literary texts representative of a thoughtfully focused dimension of a given ethnic group.

**Course Outcomes**

There are no course outcomes available

: Native American Literature.

**Course Outcomes**

: African American Literature.

**Course Outcomes**

: Asian American Literature.

**Course Outcomes**

: Latino/a American Literature.

**Course Outcomes**

: Jewish American Literature. (0::)

**Course Outcomes**

ENGL 359 : The Short Story. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Critical study of American, English, and European short stories, emphasizing those of the twentieth century.

**Course Outcomes**

- Analyze selected short stories to develop the skills of literary criticism.
- Explain the conventions and historical development of the short story genre.
- Form a research strategy appropriate to the study of short stories by independently locating relevant print and digital sources and drawing upon these sources to develop a focused and effective written argument about selected short stories

- Produce a polished research paper following MLA formatting and citation guidelines

ENGL 360 : American Literature to 1800. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from the colonial and early national periods.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the colonial and early national periods of American literature.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 361 : American Literature 1800 - 1865. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1800 to 1865.

**Course Outcomes**

There are no course outcomes available

ENGL 362 : American Literature 1865 - 1914. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1865 to 1914.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1865 to 1914.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 363 : American Literature 1914 - 1960. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1914 to 1960.

**Course Outcomes**

- Read critically and analyze major and selected minor texts and literary trends from the period of 1914 to 1960.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 364 : Literature and Cultures of the American West. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Literature and cultural representations of the American West and the frontier.

**Course Outcomes**

- Read critically and analyze in the context of appropriate literary and cultural theories major and selected minor texts and associated with the American West.
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the literature and cultures of the American West.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 365 : American Literature 1960 to Present. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 293 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Major and selected minor writers and literary trends from 1960 to the present.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze major and selected minor texts and literary trends from the period of 1960 to the present.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 366 : Studies in Poetry. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Topics vary.

**Course Outcomes**

There are no course outcomes available

ENGL 368 : Literature of the Latter-day Saints. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Fiction, poetry, drama, folklore, personal essay, and other literature emerging from the LDS experience and expressing various perspectives on it.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument pertinent to the material studied in the class.
- Identify, locate, read critically, and analyze major and selected minor texts and associated with the Latter-Day Saints.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 371 : British Literature to 1500: The Medieval Period. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Principal works, mainly in translation, from Britain's medieval period.

**Course Outcomes**

- Read critically and analyze principal works, mainly in translation, from Britain’s medieval period (to 1500).
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 372 : British Literature 1500 - 1603: The Early Renaissance. (3:3:0)
WHEN TAUGHT: Fall Contact Department; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Drama, poetry, and prose of the early Renaissance.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose of Britain’s early Renaissance period (1500 to 1603).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 373 : British Literature 1660 - 1789: The Enlightenment. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Poetry, prose, and drama of the Restoration and eighteenth century.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose of Britain’s Restoration period and eighteenth century (1660 to 1789).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 374 : British Literature 1789 - 1832: The Romantic Period. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Poetry, prose, and drama from Britain's Romantic period.

**Course Outcomes**

There are no course outcomes available

ENGL 375 : British Literature 1832-1900: The Victorian Period. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295

DESCRIPTION: Poetry, prose, and drama from Britain's Victorian period.

**Course Outcomes**

- Read critically and analyze the drama, poetry, and prose of Britain's Victorian period (1832 to 1900).
- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 376 : British Literature 1900 - 1950: The Modern Period. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Poetry, prose, and drama from Britain's modernist period.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose of Britain's Modern period (1900 to 1950).
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 380 : British Literature 1950 - Present: The Contemporary Period. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 292 & ENGL 295; or ENGL 251 & ENGL 294 & ENGL 295
DESCRIPTION: Poetry, prose, and drama from Britain and the Commonwealth since 1950.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze the drama, poetry, and prose from Britain and the Commonwealth since 1950.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 381 : Chaucer. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 291 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Intensive study of Chaucer's literature and language from medieval and modern perspectives.

**Course Outcomes**

- Explain the historical and literary contexts, genres and themes, and ethical dimensions of Chaucer's representative works.
- Demonstrate familiarity with key secondary scholarship about and critical perspectives of Chaucer's works.
- Develop reading fluency in Middle English.
- Develop reading strategies that explore how texts are constructed to present a set of argument (historical, aestheic, etc) and use those critical reading skills to interpret the texts' concerns and to trace interrelationships among them.
- Perform scholarly research on Chaucer's works by identifying and evaluating relevant primary and secondary sources, by formulating arguments conversant with these sources, and by articulating those arguments in formal academic writing.

ENGL 382 : Shakespeare. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 291 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Intensive reading, discussion, and (in some sections) viewing of plays from the comedy, tragedy, romance, and history genres.
NOTE: For English majors and minors.

**Course Outcomes**

There are no course outcomes available

ENGL 383 : Milton. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 291 & ENGL 295; Either Engl 292 & 293, or Engl 294.
DESCRIPTION: Analysis of poetry and selected prose, including detailed study of such work as *Paradise Lost, Paradise Regained*, and *Samson Agonistes*.

**Course Outcomes**

- Explain the historical and literary contexts, genres and themes, and ethical dimensions of Milton's representative works.
- Demonstrate familiarity with key secondary scholarship about and critical perspectives of Milton's works.
- Perform scholarly research on the major author's works by identifying and evaluating relevant primary and secondary sources, by formulating arguments conversant with these sources, and by articulating those arguments in formal academic writing.

- Develop reading strategies that explore how texts are constructed to present a set of arguments (historical, aesthetic, etc) and use those critical reading skills to interpret the texts' concerns and to trace interrelationships among them.

ENGL 384R : Major Authors. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.
DESCRIPTION: Topics vary.

**Course Outcomes**

There are no course outcomes available

: Early British Authors.

**Course Outcomes**

: Later British Authors.

**Course Outcomes**

: American Authors.

**Course Outcomes**

ENGL 385 : British Literature 1603 - 1660: The Late Renaissance. (3:3:0)

WHEN TAUGHT: Winter Contact Department; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251 & ENGL 291 & ENGL 295
DESCRIPTION: Drama, poetry, and prose of the late Renaissance.

**Course Outcomes**

- Form a research strategy, independently locate relevant digital and print sources, and draw upon these to develop an effective written argument.
- Read critically and analyze Britain's drama, poetry, and prose written between 1603 and 1660.
- Produce polished, competent, formal writing, free from distracting errors in mechanics, syntax, and formatting, and in accordance with MLA formatting and citation guidelines.

ENGL 390R : Transnational/Transatlantic Literature. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295; Engl 291; either Engl 292 & 293, or Engl 294.
DESCRIPTION: Period-specific courses using transnational models for literary analysis. Read selected texts in a transatlantic context and in the light of applicable theoretical approaches. Identify and locate appropriate research sources for the study of transatlantic literatures. Incorporate these sources into a research paper and other possible assignments. Produce polished writing free from distracting errors and in accordance with MLA formatting and citation guidelines.

**Course Outcomes**

There are no course outcomes available

FINN 340 : Finnish Literature. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
RECOMMENDED: Finn 321 or equivalent experience.
DESCRIPTION: Readings in Finnish literature; introduction to basic literary concepts. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

FREN 452R : Studies in Period, Movement, and Theme. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Fren 340.
DESCRIPTION: Various periods and movements (e.g., medieval, classicism, romanticism) or themes (e.g., Arthur, Faust). Topics vary.

**Course Outcomes**

- Evaluate and contextualize a particular period, movement, or theme in French or Francophone studies and justify the limitations of its definitions.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 453R : Studies in Genre. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Fren 340.
DESCRIPTION: In-depth study of various genres (e.g., epic, novel, lyric, film) and problems of genre in French.

**Course Outcomes**

- Evaluate basic concepts of a particular genre and explain the limitations of generic categorizations.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 454R : Studies in Author. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Fren 340.

DESCRIPTION: In-depth study of major French or Francophone authors (e.g., Rabelais, Moliere, Diderot, Balzac).

**Course Outcomes**

- Evaluate and contextualize the unique contributions of a particular author.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 455R : Studies in Literary Theory. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Fren 340.

DESCRIPTION: In-depth study of primary texts by contemporary literary theorists (e.g., Barthes, Genette, structuralism, etc.). Language of instruction is English.

**Course Outcomes**

- Apply theoretical models to various cultural artifacts and practices
- Investigate a variety of theoretical models for the analysis of literature and cultural phenomena.
- Demonstrate improved language ability
- Write at least one substantive research paper that effectively incorporates secondary sources.

FREN 456R : Francophone Studies. (3:3:0)

PREREQUISITE: Fren 340.

DESCRIPTION: Readings from major French-speaking writers from countries outside France, such as Canada, Africa, and the Caribbean.

**Course Outcomes**

- Analyze and compare the cultures and practices that create African Francophone identities.
- Analyze and interpret literary texts of the French-speaking world.

GERM 440R : German Literary Periods and Movements. (1-5:Arr.:0)

WHEN TAUGHT: Fall

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: In-depth study of a period or movement such as medieval, Renaissance, baroque, eighteenth century, romanticism, classicism, realism, fin-de-siecle Vienna, naturalism, expressionism, post-war, or contemporary.

**Course Outcomes**

There are no course outcomes available

GERM 441R : Studies in German Literary Genres. (1-5:Arr.:0)

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: In-depth study of a genre such as drama, novel, novella, lyric, or film.

**Course Outcomes**

There are no course outcomes available

GERM 442R : Major German Authors. (1-5:Arr.:0)

WHEN TAUGHT: Winter

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: In-depth study of one author such as Lessing, Goethe, B.V. Arnim, Kleist, Storm, Rilke, Brecht, Mann, Kafka, or Bachmann.

**Course Outcomes**

There are no course outcomes available

GERM 443R : Studies in Literary Theory. (1-5:Arr.:0)

RECOMMENDED: Germ 302, 303, 330, 340, 343.

DESCRIPTION: In-depth study of primary texts by contemporary literary theorists. May include topics such as Frankfurter school, feminist criticism, reader response, or post-structuralism.

**Course Outcomes**

There are no course outcomes available

GERM 498R : Preparing for Professional/Graduate School. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Junior or senior status.

DESCRIPTION: Preparation for professional schools and graduate programs. Focuses upon the rigors of the application process, developing relevant skills, adn becoming conversant with current intellectual discourses.

**Course Outcomes**

No outcomes are available at this time.

GREEK 411R : Greek New Testament and Early Christian Greek Texts. (3:3:0)

PREREQUISITE: GREEK 311; Greek 302 or concurrent enrollment.

DESCRIPTION: Topics include Greek New Testament, the transmission and translation of New Testament manuscripts, and selections from other early Christian Greek writings.

**Course Outcomes**

There are no course outcomes available

: Synoptic Gospels.

**Course Outcomes**

: Luke-Acts.

**Course Outcomes**

: Pauline Epistles.

**Course Outcomes**

: Apocalypse.

**Course Outcomes**

: Johannine Writings.

**Course Outcomes**

: New Testament Apocrypha.

**Course Outcomes**

: Apostolic Fathers.

**Course Outcomes**

: Pre-Nicene Fathers.

**Course Outcomes**

: Post-Nicene Fathers.

**Course Outcomes**

GREEK 430 : Herodotus. (3:3:0)

PREREQUISITE: GREEK 302

**Course Outcomes**

No outcomes are available at this time.

GREEK 431 : Homer's *Odyssey*. (3:3:0)

PREREQUISITE: GREEK 301

**Course Outcomes**

There are no course outcomes available

GREEK 433 : Thucydides. (3:3:0)

PREREQUISITE: GREEK 302

**Course Outcomes**

There are no course outcomes available

GREEK 434 : Sophocles and Euripides. (3:3:0)

PREREQUISITE: GREEK 301

**Course Outcomes**

There are no course outcomes available

GREEK 435 : Greek Lyric Poetry. (3:3:0)
PREREQUISITE: GREEK 301

**Course Outcomes**
No outcomes are available at this time.

GREEK 436 : Plato. (3:3:0)
PREREQUISITE: GREEK 302
DESCRIPTION: Reading and analysis of Greek text of selected dialogues by Plato (e.g., *The Republic, Meno, Protagoras)*.

**Course Outcomes**
No outcomes are available at this time.

GREEK 437 : Attic Orators. (3:3:0)
PREREQUISITE: GREEK 302

**Course Outcomes**
No outcomes are available at this time.

GREEK 490R : Topics in Greek Literature. (.5-3:3:0)
DESCRIPTION: Topics vary.

**Course Outcomes**
There are no course outcomes available

HEB 331 : Readings in the Hebrew Scriptures 1. (4:5:0)
WHEN TAUGHT: Fall
PREREQUISITE: Heb 132, 201, or equivalent.
DESCRIPTION: Grammar review and vocabulary building through reading historical and prophetic books.

**Course Outcomes**
- Upon completion of this course, participants will have acquired the skills necessary to:1. Define the top 300 vocabulary words from the Hebrew Bible.2. Analyze and discuss the fundamental elements of Hebrew grammar.3. Analyze and categorize the verbal system: pa'al, piel, hiphil, hophal, niphal, pual, and hithpael.

HEB 431 : Readings in the Hebrew Scriptures 2. (4:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: HEB 331
DESCRIPTION: Readings in the poetic and wisdom literature.

**Course Outcomes**
- Upon completion of this course, participants will have acquired the skills necessary to:1. Define the top 600 vocabulary words from the Hebrew Bible.2. Analyze and discuss the fundamental elements of Hebrew grammar.3. Analyze and categorize the verbal system: pa'al, piel, hiphil, hophal, niphal, pual, and hithpael.4. Understand elemental forms of Hebrew parallelistic poetry and figures of speech.

HEB 432R : Ancient Hebrew Texts. (2:2:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: HEB 331

**Course Outcomes**
- Upon completion of this course, participants will have acquired the skills necessary to:1. Define the top 600 vocabulary words from the Hebrew Bible.2. Analyze and discuss the fundamental elements of Hebrew grammar.3. Analyze and categorize the verbal system: pa'al, piel, hiphil, hophal, niphal, pual, and hithpael.

HEB 441 : Postbiblical Hebrew: Mishnah. (2:2:0)
PREREQUISITE: HEB 331
DESCRIPTION: Introduction to the grammar of Mishnaic Hebrew. Readings from various tractates of the Mishnah.

**Course Outcomes**
- 1. Explain the fundamental differences between Biblical Hebrew and Misnaic Hebrew grammar.2. Read and translate (with the limited use of a Mishnaic Hebrew Dictionary) passages from the Mishnah.

ICLND 429 : Old Icelandic Language and Literature. (3:3:0)
WHEN TAUGHT: Winter Odd Yrs.
PREREQUISITE: Iclnd 201 or equivalent experience.
DESCRIPTION: Readings and exercises in Old Icelandic; introduction to Old Icelandic literature and its influence

on later Icelandic culture.

NOTE: Entry course for returned missionaries or others with equivalent Icelandic language experience. Required course for obtaining language credit by examination (Iclnd 101, 102, 201, 211R). Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

ITAL 441 : Italian Literature of the Late Middle Ages and Renaissance. (3:3:0)

PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the “Advanced Low” level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, and demonstrate knowledge of appropriate bibliographic literary databases, such as the MLA’s. Moreover, students will be throughly familiar with the MLA 7th style for their writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. Successful students will be prepared to analyze and critique the main literary currents and authors of Italy’s late Middle Ages and the Renaissance.

ITAL 442 : Italian Literature of the Baroque and Enlightenment Periods. (3:3:0)

PREREQUISITE: ITAL 340

**Course Outcomes**

- Read, understand, and analyze all Italian literature selections listed in the syllabus.
- By the end of the semester, successful students will have written a critical and analytical paper on a topic of their choice, incorporating existing peer-reviewed research and adding their own assessment and originalideas to the discourse.
- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at the “Advanced” level in speaking, listening, writing, and reading on the ACTFL Proficiency scale.

ITAL 443 : Italian Literature of the Romantic Period. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the “Advanced Low” level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, and demonstrate knowledge of appropriate bibliographic literary databases, such as the MLA’s. Moreover, students will be throughly familiar with the MLA 7th style for their writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. They will analyze and critique the three main lines of Italian Romanticism: political, religious, and existential/philosophical.

ITAL 444 : Italian Literature of the Twentieth Century. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ITAL 340

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus. Successful students will place at least at the “Advanced Low” level (ACTFL scale) in speaking, listening, writing, and reading in Italian. For the written expression, successful students will visit the Italian Writing Lab throughout the semester.
- Locate and evaluate primary and secondary sources on a specialized topic. Successful students will be able to complete academic research in the library and/or online, demonstrate knowledge of appropriate bibliographic literary databases, such as the MLA’s, and properly use the most up-to-date MLA style for writing assignments.
- Articulate and defend their comments in Italian, in research papers. Successful students will be able to critically comment orally and in writing on any of the literary pieces treated during in this course. They will be able to read, understand and analyze all the Italian literary selections listed in this syllabus. Successful students will be prepared to analyze and critique the main literary currents and authors of Italy’s 20th and 21st Centuries.

ITAL 460 : Dante's *Divine Comedy*. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ITAL 340

DESCRIPTION: Intensive examination of Dante's major opus.

**Course Outcomes**

- By the end of this semester, successful students will be able to discuss any of the cantos listed in this syllabus from a linguistic, theological, historical and critical point of view.
- By the end of the semester, successful students will have written a critical and analytical paper, incorporating existing peer-reviewed research on their topic and adding their own assessment and original ideas to the discourse. Their written linguistic ability will place in the "Advanced Low" (ACTFL scale) level, with the help of the Italian Writing Lab tutor.
- Successful students will be fully familiar with MLA 7th style, and with the MLA bibliographical database.

ITAL 495R : Senior Seminar in Italian. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ITAL 340

DESCRIPTION: In-depth study of a limited area of literature, culture, or criticism; content varies; requires research and writing.

**Course Outcomes**

- Formulate and express both orally and in writing critical arguments about the readings listed in the syllabus.Successful students will place at least at the "Advanced Low" level in Italian speaking, listening, writing, and reading on the ACTFL Proficiency scale
- Locate and evaluate primary and secondary sources on a specialized topic.
- Articulate and defend an analytical research paper.
- Acquire basic skills for reading and transcribing manuscript documents written in Italian from the Early Modern period.

JAPAN 441 : Introduction to Classical Japanese. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: JAPAN 321 & JAPAN 322

DESCRIPTION: Reading of premodern texts, emphasizing grammar and syntax, and showing differences from and influences on the modern idiom.

**Course Outcomes**

- Students will be able to analyze and discuss the influence of the pre-modern language on present-day Japanese.
- Students will read and analyze the content and linguistic features of important premodern literary texts. A writing sample will be included in the individual student portfolio.

JAPAN 444 : Reading Modern Japan. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 321, 322; or equivalents.

DESCRIPTION: Fictional texts from major twentieth-century authors. Texts primarily in Japanese.

**Course Outcomes**

- Students will demonstrate their ability to read and interpret modern literary texts with sophistication in both oral and written forms. A writing sample will be included in the individual student portfolio.

KOREA 340 : Korean Literature to 1900. (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 302

DESCRIPTION: Korean literature from the earliest times to 1900. Emphasis on basic literary concepts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will learn of the wide range of literary genre available in Korea prior to the 20th century.
- Students will learn at least five styles of poetry common in Korea from the Silla period to the late Joseon period, including hyangga, Chinese (Tang) poetry, sijo, gasa, and the poetry of the Yongbi-eo cheon'ga.
- Fiction, in the form of tales, legends, fables, and uniquely Korean "pansori" novels will become familiar to students in this course.

KOREA 441 : Classical Korean (Hanmun). (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 321; or CHIN 441

DESCRIPTION: Reading of premodern, documentary Sino-Korean texts, including genealogy records and the Chosŏn Dynasty Annals.

**Course Outcomes**

- Students will learn to read academic journals articles, reference works, genealogies, and other primary source documents, all of which contain Sino-Korean vocabulary.This course will assist students who work for the government or need to take advanced proficiency test to do well and excel on such tests in their future professions.

KOREA 443 : Korean Literature after 1900. (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: KOREA 302
DESCRIPTION: Literary texts from major post-1900 authors, in Korean, emphasizing reading, translating, and criticism.

**Course Outcomes**

- Students will learn of the poetry, short stories and novels of the 20th and 21st centuries.Major literature from Korea before the division in 1945, and post-division in South Korea (with a little readings of North Korean literature) will be covered.

KOREA 495 : Senior Seminar. (2:2:0)
WHEN TAUGHT: Winter
DESCRIPTION: Individual research, with seminar paper the primary objective.
NOTE: Required for Korean majors.

**Course Outcomes**

- Students will present their finest research and writing. In some cases they will develop a paper written earlier in their career; in other cases, they will start afresh -- but the outcome will be a publishable (or near-publishable) piece of excellence in writing and research.

LATIN 411R : Latin Vulgate and Early Christian Latin Texts. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Topics include Latin Vulgate and selections from other early Christian Latin texts.

**Course Outcomes**

No outcomes are available at this time.

LATIN 430 : Livy. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Selections from Livy's *Ab Urbe Condita*.

**Course Outcomes**

There are no course outcomes available

LATIN 431 : Vergil. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**

There are no course outcomes available

LATIN 432 : Ovid. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**

No outcomes are available at this time.

LATIN 433 : Cicero. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Selections from the works of Cicero.

**Course Outcomes**

No outcomes are available at this time.

LATIN 434 : Plautus and Terence. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**

There are no course outcomes available

LATIN 435 : Catullus. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**

No outcomes are available at this time.

LATIN 436 : Tragedy and Epic of the Early Empire. (3:3:0)
PREREQUISITE: LATIN 301
DESCRIPTION: Selections from Seneca, Lucan, and the Flavian epic poets.

**Course Outcomes**

No outcomes are available at this time.

LATIN 437 : The Latin Epistle. (3:3:0)
PREREQUISITE: LATIN 302
DESCRIPTION: Letters of Cicero, Seneca, Pliny, and the later tradition.

**Course Outcomes**
There are no course outcomes available

LATIN 438 : Horace. (3:3:0)
PREREQUISITE: LATIN 301

**Course Outcomes**
No outcomes are available at this time.

LATIN 439 : Tacitus. (3:3:0)
PREREQUISITE: LATIN 302

**Course Outcomes**
No outcomes are available at this time.

LATIN 440 : Roman Satire. (3:3:0)
PREREQUISITE: LATIN 301
DESCRIPTION: Selections from Horace, Petronius, and Juvenal.

**Course Outcomes**
No outcomes are available at this time.

LATIN 441 : Medieval Latin. (3:3:0)
PREREQUISITE: LATIN 301 & LATIN 302
DESCRIPTION: Study of particular periods (e.g., Carolingian renaissance, twelfth-century renaissance) or genres (e.g., historiography, epic, autobiography), or survey of medieval Latin.

**Course Outcomes**
No outcomes are available at this time.

LATIN 490R : Topics in Latin Literature. (.5-3:3:0)
DESCRIPTION: Topics vary.

**Course Outcomes**
There are no course outcomes available

NORWE 340 : Norwegian Literature. (3:3:.5)
WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Readings in Norwegian literature; introduction to basic literary concepts. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**
There are no course outcomes available

PHIL 414R : Topics in the Advanced Philosophy of Art, Architecture, Music, and Film. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Phil 300.
DESCRIPTION: Topics and figures in the philosophy of art, architecture, music, and film.

**Course Outcomes**
There are no course outcomes available

PORT 441 : Survey of Portuguese Literature. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: PORT 339
DESCRIPTION: Literary periods, genres, and great writers of Portugal.

**Course Outcomes**
- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Portuguese literature.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Portuguese literature.

- Demonstrate and apply strong understanding of the basic structures of the Portuguese language as they apply to literature.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 442 : Camoes. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PORT 441

**Course Outcomes**

- Demonstrate thorough understanding of Portuguese literary history, the context for the work of Camões and its reception.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.)
- Develop advanced skills in research techniques and academic writing.

PORT 449R : Special Topics in Portuguese Literature. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PORT 441

DESCRIPTION: Specific topics in Portuguese (Peninsular) literature. Course content will vary each semester to offer optimum exposure to all areas of Portuguese literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Portuguese Literature special topics.

PORT 451 : Survey of Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Literary periods, genres, and great writers of Brazil.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Brazilian literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literature.
- Write essays in Portuguese, including a final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 452 : Machado de Assis. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: PORT 451

**Course Outcomes**

- Demonstrate thorough understanding of Brazilian literary history, the cultural context for the work of Machado de Assis, and the reception of Machado's work.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.

PORT 453 : Twentieth-Century Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: PORT 451

**Course Outcomes**

- Demonstrate thorough understanding of twentieth-century literary history in Brazil.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.

PORT 459R : Special Topics in Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PORT 451

DESCRIPTION: Specific topics in Portuguese (Brazilian) literature. Course content will vary each semester to offer optimum exposure to all areas of Brazilian literature.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literary texts.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Develop the habits and skills for Brazilian literary study that inspire continued learning.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 461R : African Literature in Portuguese. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Modern authors from the five African nations whose official language is Portuguese: Angola, Cabo Verde, Guine Bissau, Mozambique, and the two-island republic Sao Tome and Principe. Authors include Jose Craveirinha, Mia Couto, Noemia de Sousa, Jose Tenreiro, Castro Soromenho, Luandino Vieira, Pepetala, and Baltasar Lopes, among others.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Develop the habits and skills for Luso-African literary study that inspire continued learning.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Luso-African literary texts.

PORT 462R : Literature of the Lusophone World. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Authors from the eight nations whose official language is Portuguese, plus former colonies and present regions of important Portuguese influence. These include Luso-American and Azorean writers, as well as authors from East Timor (formerly Indonesia), Goa (India), and Macau (China).

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Lusophone literary texts.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.

RUSS 441 : Masterpieces of Russian Literature 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: RUSS 321 & RUSS 322 & RUSS 340

DESCRIPTION: Survey of shorter masterpieces in Russian.

**Course Outcomes**

There are no course outcomes available

RUSS 442 : Masterpieces of Russian Literature 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: RUSS 321 & RUSS 322 & RUSS 340

DESCRIPTION: Survey of shorter masterpieces in Russian.

**Course Outcomes**

There are no course outcomes available

RUSS 490R : Special Studies in Russian. (.5-3:ARR:0)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Variable credit for individual or group study as approved for special circumstances.

**Course Outcomes**

There are no course outcomes available

RUSS 492R : Senior Seminar: Passages and Conclusions. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: RUSS 441; or RUSS 442

DESCRIPTION: In-depth study of a limited area of literature or language. Content varies; requires research and writing.

**Course Outcomes**

There are no course outcomes available

SPAN 438 : Hispanic Cinema. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 339
DESCRIPTION: Introduction to study of film; background in appreciating best of motion picture art in Spain and Spanish America.
NOTE: Previous experience with film useful but not required.

**Course Outcomes**

- Students will demonstrate a mastery of basic tools of film analysis through the study of a variety of films from the various film industries from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstate the ability to speak and write in Spanish about film with a reasonable degree of grammatical correctness and fluency.

SPAN 439R : Hispanic Theatre Production. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Director's consent
DESCRIPTION: Theory and practice of dramatic performance. Includes participation in play to be performed during semester.
NOTE: No more than 3 hours of 439R credit may count toward any degree.

**Course Outcomes**

There are no course outcomes available

SPAN 440 : Medieval Spanish Literature. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: SPAN 441
DESCRIPTION: Spanish literature from *El Cantar de Mio Cid* (1140) through *La Celestina* (1499).

**Course Outcomes**

There are no course outcomes available

SPAN 441 : Survey of Spanish Literature. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: SPAN 339
DESCRIPTION: Literary masterpieces of Spain.

**Course Outcomes**

There are no course outcomes available

SPAN 443R : Golden Age Literature. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.; Spring
PREREQUISITE: SPAN 441
DESCRIPTION: Sixteenth- and seventeenth-century Spanish literature.

**Course Outcomes**

- Students will be able to demonstrate knowledge about one or more authors from the 16th and/or 17th centuries.
- Students will be able to analyze the texts studied in terms of the historical, cultural, and literary context of the Early Modern world.
- Students will be able to describe, analyze and discuss one or more of the genres of Early Modern Spanish literature and the conventions connected with the genre(s).
- Students will strengthen their research and writing skills by producing essays about, editions of, and/or translations of 16th and 17th-century Spanish texts.
- Students will develop the skills necessary to appreciate and enjoy reading Early Modern Spanish texts.

SPAN 444 : *Don Quijote.* (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
PREREQUISITE: SPAN 441
DESCRIPTION: In-depth study of Cervantes' *El ingenioso hidalgo don Quijote de la Mancha*.

**Course Outcomes**

- Students will read Don Quijote de la Mancha in its original version, taking into account plot and character development, symbolism, cultural and literary context, literary antecedents, and subsequent influence.
- Students will comment on different strategies for reading, writing and translating (using critical vocabulary) as discussed in the Quijote, and will explain the different critical stances, including the "hard" perspective and the "soft" perspective.
- Students will trace the stylistic innovations introduced by Cervantes in the Quijote, and its intersections with other genres (e.g. theater, poetry).
- Students willanswer the question of whether el Quijote really is the first modern novel as many claim it to be. Students will identify and analyze episodes in the novel that display realism and metafiction, and

will recognize the impact the Quijote has had on the development of these modes in the subsequent development of the western novel.

SPAN 446R : Nineteenth-Century Literature. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 441

DESCRIPTION: Romanticism (1770s through 1870s) and/or the novels of Benito Perez Galdos and his contemporaries.

**Course Outcomes**

There are no course outcomes available

SPAN 448R : Twentieth-Century Spanish Literature. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: SPAN 441

DESCRIPTION: Genre (twentieth-century novel, drama, or poetry) or particular school (Generation of 1898, Generation of 1927, etc.) emphasized.

**Course Outcomes**

- Demonstrate thorough understanding of twentieth-century Spanish literary history.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to 20th-century Spanish Literature.

SPAN 449R : Special Topics in Spanish Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Summer Even Yrs.

PREREQUISITE: SPAN 441

DESCRIPTION: Specific topics in Spanish (peninsular) literature. Course content will vary each semester to offer optimum exposure to all areas of Spanish literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Spanish, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Spanish literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to special topics in Spanish Literature.

SPAN 450R : Early Spanish-American Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Winter Even Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Indigenous literature (Maya, Nahuatl, etc.) and other texts written in Spanish Colonial America through eighteenth century.

**Course Outcomes**

- Apply a variety of analytical and theoretical approaches to the study of early Spanish American writings as literature and as a reflection of the early cultures of the Spanish-speaking countries of the Americas.
- Demonstrate an ability to critically analyze early Spanish American literature through insightful in-class participation, oral presentations, and written assignments.
- Demonstrate a strong knowledge of a broad range of the important literary and historical texts of the early Spanish American period and of the historical and cultural contexts in which they were produced.

SPAN 451 : Survey of Hispanic-American Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department

PREREQUISITE: SPAN 339

DESCRIPTION: Literary masterpieces of Spanish America.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, literary theory as well as other critical and philosophical concepts which may apply to Spanish American literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Define and recognize the periods, significant authors, schools or movements of Spanish American literature.
- Recognize and value the contributions, past and present, of Spanish American literature to the cultures of its respective countries.
- Develop the habits and skills of lifelong readers of Spanish American literature.
- Demonstrate and apply a strong understanding of the basic structures of the Spanish language as they apply to literature.
- Write analytical and descriptive essays in Spanish that demonstrate an advanced knowledge of the works studied, a proper command of the Spanish language, mastery of the tools of literary criticism, and familiarity with research methodologies.

SPAN 454R : The Spanish American Novel. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Selected Spanish-American novelists such as Juan Rulfo, Gabriel Garcia Marquez, Alejo Carpentier, Mario Vargas-Llosa, etc.

**Course Outcomes**

There are no course outcomes available

SPAN 455R : Spanish-American Poetry. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Selected Spanish-American poets, movements, and national traditions.

**Course Outcomes**

- Demonstrate critical acuity in interpreting individual poems, making appropriate reference to formal poetic devices.
- Demonstrate a grasp of the historical, social, and literary contexts of the poems and poets studied.
- Express one's insights in a research paper which makes appropriate use of secondary sources.

SPAN 456R : Spanish American Drama. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Twentieth-century theatre from Spanish America and Brazil.

**Course Outcomes**

There are no course outcomes available

SPAN 458R : Hispanic-American Short Story. (3:3:0)

WHEN TAUGHT: Contact Department. Fall Odd Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Introduction and development of an important literary genre in Spanish America, including works of Jorge Luis Borges, Julio Cortazar, Juan Rulfo, Gabriel Garcia Marquez, etc.

**Course Outcomes**

- Master basic bibliographical techniques related to the short story genre.
- Demonstrate a firm grasp of the formal aspects of the short story genre.
- Gain a working knowledge of the history and principal figures of the Spanish American short story.

SPAN 459R : Special Topics in Spanish American Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Spring Even Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Specific topics in Latin American literature. Course content will vary each semester to offer optimum exposure to all areas of Latin American literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Spanish, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Spanish literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to special topics in Spanish-American Literature.

SPAN 461 : Spanish-Speaking American (Mexican-American) Literature. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Even Yrs.; Spring Contact Department; Summer Contact Department

PREREQUISITE: SPAN 451

DESCRIPTION: Spanish-English literature of the Mexican-American within the United States.

**Course Outcomes**

- Demonstrate thorough understanding of the history of Mexican-American literary history.
- Develop advanced skills in research techniques and academic writing.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Mexican-American Literature.

SWED 340 : Swedish Literature. (3:3:.5)

WHEN TAUGHT: Winter

RECOMMENDED: Swed 321 or equivalent experience.

DESCRIPTION: Readings in Swedish literature: introduction to basic literary concepts. Includes International Cinema.

NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

- Students should better know how to understand, interpret, and thoughtfully reflect upon the literature and art they will encounter in later life.
- Students should be able to insightfully analyze important literary and artistic works from Swedish cultural history and be able to communicate this analysis through articulate and well-organized written and oral presentations in Swedish. Students will also develop basic research skills.
- Students should understand key historical trends and works from Swedish culture, recognize connections between these works, and be able to relate them to the development of contemporary cultural developments.
- Students will be able to relate the ideas and issues raised by the works studied in class to their own cultural situation as well as to their experience with contemporary Swedish culture. They will reflect upon and develop an appreciation for the expression of ideas that make up Swedish cultural history and even value the expression of perspectives and opinions they do not necessarily share.

*Hours include courses that may fulfill university core requirements.

## Show all Comparative Literature (CmLit) Courses

College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major
- BA in Interdisciplinary Humanities

Minor
- Humanities

Course Information
- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors
- BA in Comparative Literature

Course Information
- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors
- Scandinavian Studies

Language Certificates
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- Norwegian
- Swedish

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- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Comparative Literature (CmLit)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 200-Level Courses

CMLIT 201 : Civilization: Literature 1. (3:3:0)

OFFERED: Honors also.

DESCRIPTION: Western civilization from antiquity to early Italian Renaissance, emphasizing socioeconomic, political, intellectual, and aesthetic developments, with primary focus on literary texts.

**Course Outcomes**

There are no course outcomes available

CMLIT 202 : Civilization: Literature 2. (3:3:0)

OFFERED: Honors also.

DESCRIPTION: Western civilization from Europe's high Renaissance to the present, emphasizing socioeconomic, political, intellectual, and aesthetic developments, with primary focus on literary texts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

CMLIT 211 : Civilization: World Literature 1. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Major world civilizations, with an emphasis on comparative study of Asian and other non-Western traditions with Western traditions, from antiquity to 1500 AD, emphasizing socioeconomic, political, intellectual, and aesthetic developments, with primary focus on literary texts.

**Course Outcomes**

There are no course outcomes available

CMLIT 212 : Civilization: World Literature 2. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Major world civilizations, with an emphasis on comparative study of Asian and other non-Western traditions with Western traditions, from 1500 AD to the present, emphasizing socioeconomic, political, intellectual, and aesthetic developments, with primary focus on literary texts.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

CMLIT 310 : Introduction to Literary Analysis and Comparative Literature. (3:3:0)

PREREQUISITE: Reading knowledge of at least one foreign language.

DESCRIPTION: Methods of literary analysis, emphasizing basic issues of comparative literature and prosody and other problems related to foreign language texts.

**Course Outcomes**

There are no course outcomes available

CMLIT 342 : Asian Literary Traditions. (3:3:0)

DESCRIPTION: Comparative analysis of Asian literary works spanning several traditions.

**Course Outcomes**

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


There are no course outcomes available

**400-Level Courses**

CMLIT 420R : Studies in Periods and Movements. (3:3:0)

PREREQUISITE: CmLit 310 or Hum 350 or concurrent enrollment.
DESCRIPTION: Topics vary.

**Course Outcomes**
There are no course outcomes available

: Medieval Literature.
**Course Outcomes**

: Renaissance Literature.
**Course Outcomes**

: Neoclassicism.
**Course Outcomes**

: Romanticism.
**Course Outcomes**

: Realism.
**Course Outcomes**

: Symbolism.
**Course Outcomes**

: 20th-Century Literature.
**Course Outcomes**

: Classics and Early America.
**Course Outcomes**

: 17th-Century Literature.
**Course Outcomes**

: Modernism.
**Course Outcomes**

: 12th-Century Renaissance.
**Course Outcomes**

: 18th-Century Literature.
**Course Outcomes**

: Postmodernism.
**Course Outcomes**

CMLIT 430R : Studies in Literary Genres. (3:3:0)

PREREQUISITE: CmLit 310 or concurrent enrollment.
DESCRIPTION: Various genres (e.g., novel, epic, tragedy) and problems of genre. Topics vary.

**Course Outcomes**
No outcomes are available at this time.

: Lyric.
**Course Outcomes**

: Tragedy.
**Course Outcomes**

:
**Course Outcomes**

: Novel.
**Course Outcomes**

: Comedy.

**Course Outcomes**

: The Romance.

**Course Outcomes**

: Poetry and Poetics.

**Course Outcomes**

:

**Course Outcomes**

CMLIT 440R : Studies in Themes and Types. (3:3:0)

PREREQUISITE: CmLit 310 or concurrent enrollment.

DESCRIPTION: Major literary themes (e.g., Faust, Don Juan, Ulysses, Arthur), types, motifs, and problems of literary typology. Topics vary.

**Course Outcomes**

There are no course outcomes available

: Faust Theme.

**Course Outcomes**

: Ulysses Theme.

**Course Outcomes**

: Arthurian Literature.

**Course Outcomes**

: Don Juan Theme.

**Course Outcomes**

CMLIT 450R : Studies in Literary Relations. (3:3:0)

PREREQUISITE: CmLit 310 or concurrent enrollment.

DESCRIPTION: Interrelations of national literatures and figures and of literature with other areas of knowledge (art, history, law, psychology, music, etc.). Topics vary.

**Course Outcomes**

There are no course outcomes available

: Philosophy and Literature.

**Course Outcomes**

: Literature and History.

**Course Outcomes**

: Symbolism.

**Course Outcomes**

: Literature and Music.

**Course Outcomes**

: Wagner and Wagnerism.

**Course Outcomes**

: Literature and Myth.

**Course Outcomes**

: Vergil, Augustine, and Dante.

**Course Outcomes**

: Literature and Politics.

**Course Outcomes**

: Literature and Cinema.

**Course Outcomes**

: Literature of Sensibility.

**Course Outcomes**

: East-West Relations.

**Course Outcomes**

: Asian Literature Traditions.

**Course Outcomes**

: U.S. and Carribean Literature.

**Course Outcomes**

CMLIT 460R : Studies in Literary Theory. (3:3:0)

PREREQUISITE: CmLit 310 or concurrent enrollment.
DESCRIPTION: Topics vary.

**Course Outcomes**

There are no course outcomes available

: Classical Rhetoric and Criticism.

**Course Outcomes**

: Practical Criticism.

**Course Outcomes**

: Historical Literary Theory.

**Course Outcomes**

: Contemporary Theory.

**Course Outcomes**

:

**Course Outcomes**

CMLIT 495R : Directed Readings. (.5-3:0:0)

**Course Outcomes**

There are no course outcomes available

CMLIT 497 : Reading List Examination. (1:1:0)

PREREQUISITE: CMLIT 310 & CMLIT 342; Three 400-level seminars.

**Course Outcomes**

There are no course outcomes available

CMLIT 499R : Honors Thesis. (.5-6:ARR:ARR)

**Course Outcomes**

There are no course outcomes available

## Graduate Courses

For 500- and 600-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Interdisciplinary Humanities**

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- BA in Interdisciplinary Humanities

**Minor**
- Humanities

**Course Information**
- Interdisciplinary Humanities (IHum) Courses

**Classics**

**Majors**

BA in Classical Studies
Emphases:
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- Classics
- Greek
- Latin

- BA in Latin Teaching

**Minors**
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**Course Information**
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**Comparative Literature**

**Majors**
- BA in Comparative Literature

**Course Information**
- Comparative Literature (CmLit) Courses

**Scandinavian Studies**

**Minors**
- Scandinavian Studies

**Language Certificates**
- Danish
- Finnish
- Norwegian
- Swedish

**Course Information**
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Minor in Scandinavian Studies (15–31 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the prerequisite courses for one of the languages listed below or have equivalent experience.
2. Complete one course from the following:

DANSH 321 : Advanced Danish. (3:3:0)
WHEN TAUGHT: Fall Even Yrs.
PREREQUISITE: Dansh 202 or equivalent experience.
DESCRIPTION: Third-year course in Danish. Developing advanced language skills in speaking, reading, listening, and writing as defined by ACTFL standards.
NOTE: Entry course for returned missionaries or others with equivalent Danish language experience. Required course for obtaining language credit by examination (Dansh 101, 102, 201, 211R).

**Course Outcomes**
There are no course outcomes available

FINN 321 : Third-Year Finnish. (3:3:0)
WHEN TAUGHT: Fall Even Yrs.
PREREQUISITE: Finn 202 or equivalent experience.
DESCRIPTION: Third-year course in Finnish. Developing intermediate language skills in speaking, reading, listening, and writing as defined by ACTFL standards.
NOTE: Entry course for returned missionaries or others with equivalent Finnish language experience. Required course for obtaining language credit by examination (Finn 101, 102, 201, 211R).

**Course Outcomes**
There are no course outcomes available

ICLND 202 : Second-Year Icelandic. (4:5:1)
WHEN TAUGHT: Winter Odd Yrs.
PREREQUISITE: ICLND 201
DESCRIPTION: Emphasis on literature and culture with continued writing, grammar, listening, and speaking.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

NORWE 321 : Advanced Norwegian. (3:3:0)
WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: Norwe 202 or equivalent experience.
DESCRIPTION: Third-year course in Norwegian. Developing advanced language skills in speaking, reading, listening, and writing as defined by ACTFL standards.
NOTE: Entry course for returned missionaries or others with equivalent Norwegian language experience. Required course for obtaining language credit by examination (Norwe 101, 102, 201, 211R).

**Course Outcomes**
There are no course outcomes available

SWED 321 : Advanced Swedish. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: Swed 202 or equivalent experience.
DESCRIPTION: Third-year course in Swedish. Developing advanced language skills in speaking, reading, listening, and writing as defined by ACTFL standards.
NOTE: Entry course for returned missionaries or others with equivalent Swedish language experience.

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


Required course for obtaining language credit by examination (Swed 101, 102, 201, 211R).

**Course Outcomes**

There are no course outcomes available

3. Complete one course from the following:

DANSH 340 : Danish Literature. (3:3:.5)

WHEN TAUGHT: Winter Odd Yrs.
RECOMMENDED: Dansh 321 or equivalent experience.
DESCRIPTION: Readings in Danish literature; introduction to basic literary concepts. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

FINN 340 : Finnish Literature. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
RECOMMENDED: Finn 321 or equivalent experience.
DESCRIPTION: Readings in Finnish literature; introduction to basic literary concepts. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

ICLND 429 : Old Icelandic Language and Literature. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
PREREQUISITE: Iclnd 201 or equivalent experience.
DESCRIPTION: Readings and exercises in Old Icelandic; introduction to Old Icelandic literature and its influence on later Icelandic culture.
NOTE: Entry course for returned missionaries or others with equivalent Icelandic language experience. Required course for obtaining language credit by examination (Iclnd 101, 102, 201, 211R). Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

NORWE 340 : Norwegian Literature. (3:3:.5)

WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Readings in Norwegian literature; introduction to basic literary concepts. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

SWED 340 : Swedish Literature. (3:3:.5)

WHEN TAUGHT: Winter
RECOMMENDED: Swed 321 or equivalent experience.
DESCRIPTION: Readings in Swedish literature: introduction to basic literary concepts. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

- Students should better know how to understand, interpret, and thoughtfully reflect upon the literature and art they will encounter in later life.
- Students should be able to insightfully analyze important literary and artistic works from Swedish cultural history and be able to communicate this analysis through articulate and well-organized written and oral presentations in Swedish. Students will also develop basic research skills.
- Students should understand key historical trends and works from Swedish culture, recognize connections between these works, and be able to relate them to the development of contemporary cultural developments.
- Students will be able to relate the ideas and issues raised by the works studied in class to their own cultural situation as well as to their experience with contemporary Swedish culture. They will reflect upon and develop an appreciation for the expression of ideas that make up Swedish cultural history and even value the expression of perspectives and opinions they do not necessarily share.

4. Complete the following:

SCAND 430 : Cultural History of Scandinavia. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Scandinavian culture from the Vikings to the present.

NOTE: Works may be read in English translation.

**Course Outcomes**

There are no course outcomes available

5. Complete six hours from the following:

HIST 332 : Scandinavian History. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Political, social, religious, cultural, and economic factors in Denmark, Finland, Iceland, Norway, and Sweden from Viking era to present highly developed society.

**Course Outcomes**

- Students will be able to learn about Scandinavian history from prehistoric times through to the Viking Age, Middle Ages/Renaissance to the Era of Swedish Great Power Politics and Great Northern War, in the 1600s and early 1700s.
- Students will be able to learn about the big picture of Scandinavian history from the period of the Napoleonic Wars (esp. Napoleon's erstwhile general, Bernadotte, later King of Sweden-Norway), Industrialization of the North, nationalistic movements and periods of Swedish-Norwegian and russo-Finnish union, through the World Wars and establishment of the Modern Welfare state (since the 1920s)

SCAND 217 : (Scand-Germ) German and Scandinavian Cinema. (3:3:3)

WHEN TAUGHT: Fall

RECOMMENDED: A first-year writing course.

DESCRIPTION: Background for understanding and appreciating the best of motion picture art in Germany and Scandinavia.

NOTE: Language of instruction is English; no knowledge of German or Scandinavian languages is required. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

SCAND 332 : Cultural History of the Vikings. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: History of art, literature, mythology, culture, and society in medieval Scandinavia.

**Course Outcomes**

There are no course outcomes available

SCAND 337 : Works of Hans Christian Andersen. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Study of the life, works, and times of Danish author Hans Christian Andersen.

**Course Outcomes**

No outcomes are available at this time.

SCAND 344R : Topics in Scandinavian Studies. (3:3:.5)

DESCRIPTION: Topic varies. Typical topics might be folklore, culture, music, film, emigration, art and design, political and economic problems, literature in translation, etc. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

SCAND 377 : Methods in Teaching Nordic Languages. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: Must have an assignment teaching a Nordic language class or instructor's consent.

DESCRIPTION: Prior or concurrent enrollment in this course required for student instructors of Nordic languages. Focuses on teaching skills specific to foreign language instruction in beginning and intermediate language courses.

**Course Outcomes**

No outcomes are available at this time.

SCAND 429 : Old Norse. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

RECOMMENDED: Knowledge of a modern Scandinavian language.

DESCRIPTION: Grammar and exercises. Readings in Old Norse literature.

NOTE: Returned missionaries from Iceland or those with equivalent experience should enroll in Iclnd 429.

**Course Outcomes**

There are no course outcomes available

(may not be taken by students who have had Iclnd 429)

SCAND 490R : Seminar in Scandinavian Studies. (.5-3:ARR:.5)

PREREQUISITE: Reading knowledge of at least one Scandinavian language.

DESCRIPTION: Topics vary. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

SCAND 491R : Directed Readings in Scandinavian. (.5-3:ARR:ARR)

RECOMMENDED: Written plan of study approved by both instructor and program coordinator.

DESCRIPTION: Directed individual study.

**Course Outcomes**

There are no course outcomes available

Up to three credit hours of the following may be used:

DANSH 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Department's consent.

DESCRIPTION: On-the-job experience in Danish.

**Course Outcomes**

No outcomes are available at this time.

FINN 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Department's consent.

DESCRIPTION: On-the-job experience in Finnish.

**Course Outcomes**

No outcomes are available at this time.

ICLND 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Department's consent.

DESCRIPTION: On-the-job experience in Icelandic.

**Course Outcomes**

No outcomes are available at this time.

NORWE 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Department's consent.

DESCRIPTION: On-the-job experience in Norwegian.

**Course Outcomes**

No outcomes are available at this time.

SWED 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Department's consent.

DESCRIPTION: On-the-job experience in Swedish.

**Course Outcomes**

There are no course outcomes available

A literature course in a language different from that taken in item 1 above:

Dansh 340.
Finn 340.
Iclnd 429 (may not be taken by students who have had Scand 429).
Norwe 340.
Swed 340.

*Hours include courses that may fulfill university core requirements.

## Show all Scandinavian (Scand) Courses

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**Minor**
- Humanities

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**Classics**

**Majors**

BA in Classical Studies
Emphases:
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**Comparative Literature**

**Majors**
- BA in Comparative Literature

**Course Information**
- Comparative Literature (CmLit) Courses

**Scandinavian Studies**

**Minors**
- Scandinavian Studies

**Language Certificates**
- Danish
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- Norwegian
- Swedish

**Course Information**
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Danish Language Certificate (9 hours)

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Hide All Course Descriptions

*This Language Certificate program is administered by the Center for Language Studies (3086 JFSB), http://languagecertificate.byu.edu.*

Any matriculated (degree-seeking) BYU student who meets the proficiency and course requirements may earn the Danish Language Certificate. The proficiency requirement is met through the nationally recognized ACTFL Oral and Writing Proficiency Exams. Qualifying students will be awarded a certificate on one of three levels based on the following:

1. Advanced Certificate: An ACTFL "Advanced" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
2. Mastery Certificate: An ACTFL "Advanced High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
3. Professional Certificate: An ACTFL "Superior" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.

## Required Courses:

**Note:** Students who have completed all of the coursework required for a language major or a language minor will also have satisfied the coursework requirement for the language certificate.

1. Language - complete the following:

   DANSH 321 : Advanced Danish. (3:3:0)

   WHEN TAUGHT: Fall Even Yrs.
   PREREQUISITE: Dansh 202 or equivalent experience.
   DESCRIPTION: Third-year course in Danish. Developing advanced language skills in speaking, reading, listening, and writing as defined by ACTFL standards.
   NOTE: Entry course for returned missionaries or others with equivalent Danish language experience. Required course for obtaining language credit by examination (Dansh 101, 102, 201, 211R).

   **Course Outcomes**
   There are no course outcomes available

2. Civilization - complete the following:

   SCAND 430 : Cultural History of Scandinavia. (3:3:0)

   WHEN TAUGHT: Winter
   DESCRIPTION: Scandinavian culture from the Vikings to the present.
   NOTE: Works may be read in English translation.

   **Course Outcomes**
   There are no course outcomes available

3. Literature - complete the following:

   DANSH 340 : Danish Literature. (3:3:.5)

   WHEN TAUGHT: Winter Odd Yrs.
   RECOMMENDED: Dansh 321 or equivalent experience.
   DESCRIPTION: Readings in Danish literature; introduction to basic literary concepts. Includes International Cinema.
   NOTE: Culminating course for GE Foreign Language requirement.

   **Course Outcomes**
   There are no course outcomes available

Students who successfully complete a certificate will receive an official document verifying their level of achievement. The certificate will be listed on the university transcript.

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**

**College of Humanities Home**

**Humanities, Classics, and Comparative Literature Department Home**

**Interdisciplinary Humanities**

**Major**
- BA in Interdisciplinary Humanities

**Minor**
- Humanities

**Course Information**
- Interdisciplinary Humanities (IHum) Courses

**Classics**

**Majors**

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

**Minors**
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

**Course Information**
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

**Comparative Literature**

**Majors**
- BA in Comparative Literature

**Course Information**
- Comparative Literature (CmLit) Courses

**Scandinavian Studies**

**Minors**
- Scandinavian Studies

**Language Certificates**
- Danish
- Finnish
- Norwegian
- Swedish

**Course Information**
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Finnish Language Certificate (9 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This Language Certificate program is administered by the Center for Language Studies (3086 JFSB), http://languagecertificate.byu.edu.*

Any matriculated (degree-seeking) BYU student who meets the proficiency and course requirements may earn the Finnish Language Certificate. The proficiency requirement is met through the nationally recognized ACTFL Oral and Writing Proficiency Exams. Qualifying students will be awarded a certificate on one of three levels based on the following:

1. Advanced Certificate: An ACTFL "Advanced" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
2. Mastery Certificate: An ACTFL "Advanced High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
3. Professional Certificate: An ACTFL "Superior" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.

## Required Courses:

**Note:** Students who have completed all of the coursework required for a language major or a language minor will also have satisfied the coursework requirement for the language certificate.

1. Language - complete the following:

   FINN 321 : Third-Year Finnish. (3:3:0)

   WHEN TAUGHT: Fall Even Yrs.
   PREREQUISITE: Finn 202 or equivalent experience.
   DESCRIPTION: Third-year course in Finnish. Developing intermediate language skills in speaking, reading, listening, and writing as defined by ACTFL standards.
   NOTE: Entry course for returned missionaries or others with equivalent Finnish language experience. Required course for obtaining language credit by examination (Finn 101, 102, 201, 211R).

   **Course Outcomes**
   There are no course outcomes available

2. Civilization - complete the following:

   SCAND 430 : Cultural History of Scandinavia. (3:3:0)

   WHEN TAUGHT: Winter
   DESCRIPTION: Scandinavian culture from the Vikings to the present.
   NOTE: Works may be read in English translation.

   **Course Outcomes**
   There are no course outcomes available

3. Literature - complete the following:

   FINN 340 : Finnish Literature. (3:3:0)

   WHEN TAUGHT: Winter Odd Yrs.
   RECOMMENDED: Finn 321 or equivalent experience.
   DESCRIPTION: Readings in Finnish literature; introduction to basic literary concepts. Includes International Cinema.
   NOTE: Culminating course for GE Foreign Language requirement.

   **Course Outcomes**
   There are no course outcomes available

Students who successfully complete a certificate will receive an official document verifying their level of achievement. The certificate will be listed on the university transcript.

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**

**College of Humanities Home**

**Humanities, Classics, and Comparative Literature Department Home**

**Interdisciplinary Humanities**

**Major**
- BA in Interdisciplinary Humanities

**Minor**
- Humanities

**Course Information**
- Interdisciplinary Humanities (IHum) Courses

**Classics**

**Majors**

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

**Minors**
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

**Course Information**
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

**Comparative Literature**

**Majors**
- BA in Comparative Literature

**Course Information**
- Comparative Literature (CmLit) Courses

**Scandinavian Studies**

**Minors**
- Scandinavian Studies

**Language Certificates**
- Danish
- Finnish
- Norwegian
- Swedish

**Course Information**
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Norwegian Language Certificate (9 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This Language Certificate program is administered by the Center for Language Studies (3086 JFSB), http://languagecertificate.byu.edu.*

Any matriculated (degree-seeking) BYU student who meets the proficiency and course requirements may earn the Norwegian Language Certificate. The proficiency requirement is met through the nationally recognized ACTFL Oral and Writing Proficiency Exams. Qualifying students will be awarded a certificate on one of three levels based on the following:

1. Advanced Certificate: An ACTFL "Advanced" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
2. Mastery Certificate: An ACTFL "Advanced High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
3. Professional Certificate: An ACTFL "Superior" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.

## Required Courses:

**Note:** Students who have completed all of the coursework required for a language major or a language minor will also have satisfied the coursework requirement for the language certificate.

1. Language - complete the following:
   NORWE 321 : Advanced Norwegian. (3:3:0)
   WHEN TAUGHT: Fall Odd Yrs.
   PREREQUISITE: Norwe 202 or equivalent experience.
   DESCRIPTION: Third-year course in Norwegian. Developing advanced language skills in speaking, reading, listening, and writing as defined by ACTFL standards.
   NOTE: Entry course for returned missionaries or others with equivalent Norwegian language experience. Required course for obtaining language credit by examination (Norwe 101, 102, 201, 211R).

   **Course Outcomes**
   There are no course outcomes available

2. Civilization - complete the following:
   SCAND 430 : Cultural History of Scandinavia. (3:3:0)
   WHEN TAUGHT: Winter
   DESCRIPTION: Scandinavian culture from the Vikings to the present.
   NOTE: Works may be read in English translation.

   **Course Outcomes**
   There are no course outcomes available

3. Literature - complete the following:
   NORWE 340 : Norwegian Literature. (3:3:.5)
   WHEN TAUGHT: Winter Even Yrs.
   DESCRIPTION: Readings in Norwegian literature; introduction to basic literary concepts. Includes International Cinema.
   NOTE: Culminating course for GE Foreign Language requirement.

   **Course Outcomes**
   There are no course outcomes available

Students who successfully complete a certificate will receive an official document verifying their level of achievement. The certificate will be listed on the university transcript.

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**

**College of Humanities Home**

**Humanities, Classics, and Comparative Literature Department Home**

**Interdisciplinary Humanities**

**Major**
- BA in Interdisciplinary Humanities

**Minor**
- Humanities

**Course Information**
- Interdisciplinary Humanities (IHum) Courses

**Classics**

**Majors**

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

**Minors**
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

**Course Information**
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

**Comparative Literature**

**Majors**
- BA in Comparative Literature

**Course Information**
- Comparative Literature (CmLit) Courses

**Scandinavian Studies**

**Minors**
- Scandinavian Studies

**Language Certificates**
- Danish
- Finnish
- Norwegian
- Swedish

**Course Information**
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Swedish Language Certificate (9 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This Language Certificate program is administered by the Center for Language Studies (3086 JFSB), http://languagecertificate.byu.edu.*

Any matriculated (degree-seeking) BYU student who meets the proficiency and course requirements may earn the Swedish Language Certificate. The proficiency requirement is met through the nationally recognized ACTFL Oral and Writing Proficiency Exams. Qualifying students will be awarded a certificate on one of three levels based on the following:

1. Advanced Certificate: An ACTFL "Advanced" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
2. Mastery Certificate: An ACTFL "Advanced High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
3. Professional Certificate: An ACTFL "Superior" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.

## Required Courses:

**Note:** Students who have completed all of the coursework required for a language major or a language minor will also have satisfied the coursework requirement for the language certificate.

1. Language - complete the following:

   SWED 321 : Advanced Swedish. (3:3:0)

   WHEN TAUGHT: Fall
   PREREQUISITE: Swed 202 or equivalent experience.
   DESCRIPTION: Third-year course in Swedish. Developing advanced language skills in speaking, reading, listening, and writing as defined by ACTFL standards.
   NOTE: Entry course for returned missionaries or others with equivalent Swedish language experience. Required course for obtaining language credit by examination (Swed 101, 102, 201, 211R).

   **Course Outcomes**
   There are no course outcomes available

2. Civilization - complete the following:

   SCAND 430 : Cultural History of Scandinavia. (3:3:0)

   WHEN TAUGHT: Winter
   DESCRIPTION: Scandinavian culture from the Vikings to the present.
   NOTE: Works may be read in English translation.

   **Course Outcomes**
   There are no course outcomes available

3. Literature - complete the following:

   SWED 340 : Swedish Literature. (3:3:.5)

   WHEN TAUGHT: Winter
   RECOMMENDED: Swed 321 or equivalent experience.
   DESCRIPTION: Readings in Swedish literature: introduction to basic literary concepts. Includes International Cinema.
   NOTE: Culminating course for GE Foreign Language requirement.

   **Course Outcomes**
   - Students should better know how to understand, interpret, and thoughtfully reflect upon the literature and art they will encounter in later life.
   - Students should be able to insightfully analyze important literary and artistic works from Swedish cultural history and be able to communicate this analysis through articulate and well-organized written and oral presentations in Swedish. Students will also develop basic research skills.
   - Students should understand key historical trends and works from Swedish culture, recognize connections between these works, and be able to relate them to the development of contemporary cultural developments.
   - Students will be able to relate the ideas and issues raised by the works studied in class to their own cultural situation as well as to their experience with contemporary Swedish culture. They will reflect upon and develop an appreciation for the expression of ideas that make up Swedish cultural history and

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


even value the expression of perspectives and opinions they do not necessarily share.

Students who successfully complete a certificate will receive an official document verifying their level of achievement. The certificate will be listed on the university transcript.

College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major

- BA in Interdisciplinary Humanities

Minor

- Humanities

Course Information

- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies

Emphases:

- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors

- BA in Comparative Literature

Course Information

- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors

- Scandinavian Studies

Language Certificates

- Danish
- Finnish
- Norwegian
- Swedish

Course Information

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Scandinavian (Scand)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 200-Level Courses

SCAND 217 : (Scand-Germ) German and Scandinavian Cinema. (3:3:3)

WHEN TAUGHT: Fall
RECOMMENDED: A first-year writing course.
DESCRIPTION: Background for understanding and appreciating the best of motion picture art in Germany and Scandinavia.
NOTE: Language of instruction is English; no knowledge of German or Scandinavian languages is required. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

SCAND 332 : Cultural History of the Vikings. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.
DESCRIPTION: History of art, literature, mythology, culture, and society in medieval Scandinavia.

**Course Outcomes**

There are no course outcomes available

SCAND 337 : Works of Hans Christian Andersen. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.
DESCRIPTION: Study of the life, works, and times of Danish author Hans Christian Andersen.

**Course Outcomes**

No outcomes are available at this time.

SCAND 344R : Topics in Scandinavian Studies. (3:3:.5)

DESCRIPTION: Topic varies. Typical topics might be folklore, culture, music, film, emigration, art and design, political and economic problems, literature in translation, etc. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

SCAND 377 : Methods in Teaching Nordic Languages. (3:3:2)

WHEN TAUGHT: Fall
PREREQUISITE: Must have an assignment teaching a Nordic language class or instructor's consent.
DESCRIPTION: Prior or concurrent enrollment in this course required for student instructors of Nordic languages. Focuses on teaching skills specific to foreign language instruction in beginning and intermediate language courses.

**Course Outcomes**

No outcomes are available at this time.

### 400-Level Courses

SCAND 429 : Old Norse. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
RECOMMENDED: Knowledge of a modern Scandinavian language.
DESCRIPTION: Grammar and exercises. Readings in Old Norse literature.
NOTE: Returned missionaries from Iceland or those with equivalent experience should enroll in Iclnd 429.

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


**Course Outcomes**
There are no course outcomes available

SCAND 430 : Cultural History of Scandinavia. (3:3:0)
WHEN TAUGHT: Winter
DESCRIPTION: Scandinavian culture from the Vikings to the present.
NOTE: Works may be read in English translation.

**Course Outcomes**
There are no course outcomes available

SCAND 490R : Seminar in Scandinavian Studies. (.5-3:ARR:.5)
PREREQUISITE: Reading knowledge of at least one Scandinavian language.
DESCRIPTION: Topics vary. Includes International Cinema.

**Course Outcomes**
There are no course outcomes available

SCAND 491R : Directed Readings in Scandinavian. (.5-3:ARR:ARR)
RECOMMENDED: Written plan of study approved by both instructor and program coordinator.
DESCRIPTION: Directed individual study.

**Course Outcomes**
There are no course outcomes available


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Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major

- BA in Interdisciplinary Humanities

Minor

- Humanities

Course Information

- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors

- BA in Comparative Literature

Course Information

- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors

- Scandinavian Studies

Language Certificates

- Danish
- Finnish
- Norwegian
- Swedish

Course Information

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Danish (Dansh)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

DANSH 101 : First-Year Danish. (4:5:1.5)
WHEN TAUGHT: Fall Even Yrs.
DESCRIPTION: Basic language skills. Includes International Cinema.

**Course Outcomes**
There are no course outcomes available

DANSH 102 : First-Year Danish. (4:5:1.5)
WHEN TAUGHT: Winter Odd Yrs.
DESCRIPTION: Basic language skills. Includes International Cinema.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

DANSH 201 : Second-Year Danish. (4:5:1.5)
WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: Dansh 102 or equivalent experience.
DESCRIPTION: Conversation, vocabulary building, and reading and writing skills, emphasizing reading. Includes International Cinema.

**Course Outcomes**
There are no course outcomes available

DANSH 202 : Second Year Danish. (4:5:1)
WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: DANSH 201
DESCRIPTION: Emphasis on literature and culture with continued writing, grammar, listening, and speaking. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement (except for returned missionaries or those with equivalent experience). This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

DANSH 211R : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: Dansh 102 or equivalent experience.
DESCRIPTION: Intermediate listening comprehension and speaking skills.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

DANSH 311R : Third-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: Dansh 211R or equivalent experience.
DESCRIPTION: Advanced conversational skills.

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


**Course Outcomes**

No outcomes are available at this time.

DANSH 321 : Advanced Danish. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.
PREREQUISITE: Dansh 202 or equivalent experience.
DESCRIPTION: Third-year course in Danish. Developing advanced language skills in speaking, reading, listening, and writing as defined by ACTFL standards.
NOTE: Entry course for returned missionaries or others with equivalent Danish language experience. Required course for obtaining language credit by examination (Dansh 101, 102, 201, 211R).

**Course Outcomes**

There are no course outcomes available

DANSH 340 : Danish Literature. (3:3:.5)

WHEN TAUGHT: Winter Odd Yrs.
RECOMMENDED: Dansh 321 or equivalent experience.
DESCRIPTION: Readings in Danish literature; introduction to basic literary concepts. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

DANSH 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Department's consent.
DESCRIPTION: On-the-job experience in Danish.

**Course Outcomes**

No outcomes are available at this time.


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College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major

- BA in Interdisciplinary Humanities

Minor

- Humanities

Course Information

- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors

- BA in Comparative Literature

Course Information

- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors

- Scandinavian Studies

Language Certificates

- Danish
- Finnish
- Norwegian
- Swedish

Course Information

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Finnish (Finn)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

FINN 101 : First-Year Finnish. (4:5:1)
WHEN TAUGHT: Fall Even Yrs.
DESCRIPTION: Basic language skills.

**Course Outcomes**
There are no course outcomes available

FINN 102 : First-Year Finnish. (4:5:1)
WHEN TAUGHT: Winter Odd Yrs.
DESCRIPTION: Basic language skills.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

FINN 201 : Second-Year Finnish. (4:5:1)
WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: Finn 102 or equivalent experience.
DESCRIPTION: Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

**Course Outcomes**
There are no course outcomes available

FINN 202 : Second Year Finnish. (4:5:1)
WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: FINN 201
DESCRIPTION: Emphasis on literature and culture with continued writing, grammar, listening, and speaking.
NOTE: Culminating course for GE Foreign Language requirement (except for returned missionaries or those with equivalent experience). This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

FINN 211R : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: Finn 102 or equivalent experience.
DESCRIPTION: Intermediate listening comprehension and speaking skills.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

FINN 311R : Third-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: Finn 211R or equivalent experience.
DESCRIPTION: Advanced conversational skills.

**Course Outcomes**

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


There are no course outcomes available

FINN 321 : Third-Year Finnish. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.
PREREQUISITE: Finn 202 or equivalent experience.
DESCRIPTION: Third-year course in Finnish. Developing intermediate language skills in speaking, reading, listening, and writing as defined by ACTFL standards.
NOTE: Entry course for returned missionaries or others with equivalent Finnish language experience. Required course for obtaining language credit by examination (Finn 101, 102, 201, 211R).

**Course Outcomes**

There are no course outcomes available

FINN 340 : Finnish Literature. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
RECOMMENDED: Finn 321 or equivalent experience.
DESCRIPTION: Readings in Finnish literature; introduction to basic literary concepts. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

FINN 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Department's consent.
DESCRIPTION: On-the-job experience in Finnish.

**Course Outcomes**

No outcomes are available at this time.


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College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major

- BA in Interdisciplinary Humanities

Minor

- Humanities

Course Information

- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies

Emphases:

- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors

- BA in Comparative Literature

Course Information

- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors

- Scandinavian Studies

Language Certificates

- Danish
- Finnish
- Norwegian
- Swedish

Course Information

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Icelandic (Iclnd)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

ICLND 101 : First-Year Icelandic. (4:5:1)
WHEN TAUGHT: Fall Odd Yrs.
DESCRIPTION: Basic language skills.

**Course Outcomes**
There are no course outcomes available

ICLND 102 : First-Year Icelandic. (4:5:1)
WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Basic language skills.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

ICLND 201 : Second-Year Icelandic. (4:5:1)
WHEN TAUGHT: Fall Even Yrs.
PREREQUISITE: Iclnd 102 or equivalent experience.
DESCRIPTION: Conversation, vocabulary building, and reading and writing skills, emphasizing writing.

**Course Outcomes**
There are no course outcomes available

ICLND 202 : Second-Year Icelandic. (4:5:1)
WHEN TAUGHT: Winter Odd Yrs.
PREREQUISITE: ICLND 201
DESCRIPTION: Emphasis on literature and culture with continued writing, grammar, listening, and speaking.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

ICLND 211R : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: Iclnd 102 or equivalent experience.
DESCRIPTION: Intermediate listening comprehension and speaking skills.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

ICLND 311R : Third-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: Iclnd 211R or equivalent experience.
DESCRIPTION: Advanced conversational skills.

**Course Outcomes**
No outcomes are available at this time.

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


ICLND 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Department's consent.

DESCRIPTION: On-the-job experience in Icelandic.

**Course Outcomes**

No outcomes are available at this time.

**400-Level Courses**

ICLND 429 : Old Icelandic Language and Literature. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Iclnd 201 or equivalent experience.

DESCRIPTION: Readings and exercises in Old Icelandic; introduction to Old Icelandic literature and its influence on later Icelandic culture.

NOTE: Entry course for returned missionaries or others with equivalent Icelandic language experience. Required course for obtaining language credit by examination (Iclnd 101, 102, 201, 211R). Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available


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Interdisciplinary Humanities

Major

- BA in Interdisciplinary Humanities

Minor

- Humanities

Course Information

- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors

- BA in Comparative Literature

Course Information

- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors

- Scandinavian Studies

Language Certificates

- Danish
- Finnish
- Norwegian
- Swedish

Course Information

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Norwegian (Norwe)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

NORWE 101 : First-Year Norwegian. (4:5:1.5)
WHEN TAUGHT: Fall Odd Yrs.
DESCRIPTION: Basic language skills. Includes International Cinema.

**Course Outcomes**
There are no course outcomes available

NORWE 102 : First-Year Norwegian. (4:5:1.5)
WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Basic language skills. Includes International Cinema.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

NORWE 201 : Second-Year Norwegian. (4:5:1.5)
WHEN TAUGHT: Fall Even Yrs.
PREREQUISITE: Norwe 102 or equivalent experience.
DESCRIPTION: Conversation, vocabulary building, and reading and writing skills, emphasizing reading. Includes International Cinema.

**Course Outcomes**
There are no course outcomes available

NORWE 202 : Second Year Norwegian. (4:5:1.5)
WHEN TAUGHT: Winter Odd Yrs.
PREREQUISITE: NORWE 201
DESCRIPTION: Emphasis on literature and culture with continued writing, grammar, listening, and speaking. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement (except for returned missionaries or those with equivalent experience). This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

NORWE 211R : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: Norwe 102 or equivalent experience.
DESCRIPTION: Intermediate listening comprehension and speaking skills.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

NORWE 311R : Third-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: Norwe 211R or equivalent experience.
DESCRIPTION: Advanced conversational skills.

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


**Course Outcomes**

No outcomes are available at this time.

NORWE 321 : Advanced Norwegian. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Norwe 202 or equivalent experience.

DESCRIPTION: Third-year course in Norwegian. Developing advanced language skills in speaking, reading, listening, and writing as defined by ACTFL standards.

NOTE: Entry course for returned missionaries or others with equivalent Norwegian language experience. Required course for obtaining language credit by examination (Norwe 101, 102, 201, 211R).

**Course Outcomes**

There are no course outcomes available

NORWE 340 : Norwegian Literature. (3:3:.5)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Readings in Norwegian literature; introduction to basic literary concepts. Includes International Cinema.

NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

NORWE 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Department's consent.

DESCRIPTION: On-the-job experience in Norwegian.

**Course Outcomes**

No outcomes are available at this time.


**Back to Humanities, Classics, and Comparative Literature Department Home**

College of Humanities Home

Humanities, Classics, and Comparative Literature Department Home

Interdisciplinary Humanities

Major

- BA in Interdisciplinary Humanities

Minor

- Humanities

Course Information

- Interdisciplinary Humanities (IHum) Courses

Classics

Majors

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

Minors

- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

Course Information

- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

Comparative Literature

Majors

- BA in Comparative Literature

Course Information

- Comparative Literature (CmLit) Courses

Scandinavian Studies

Minors

- Scandinavian Studies

Language Certificates

- Danish
- Finnish
- Norwegian
- Swedish

Course Information

- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Swedish (Swed)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

SWED 101 : First-Year Swedish. (4:5:1.5)
WHEN TAUGHT: Fall
DESCRIPTION: Basic language skills. Includes International Cinema.

**Course Outcomes**
There are no course outcomes available

SWED 102 : First-Year Swedish. (4:5:1.5)
WHEN TAUGHT: Winter
DESCRIPTION: Basic language skills. Includes International Cinema.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

SWED 201 : Second-Year Swedish. (4:5:1.5)
WHEN TAUGHT: Fall
PREREQUISITE: Swed 102 or equivalent experience.
DESCRIPTION: Conversation, vocabulary building, and reading and writing skills, emphasizing reading. Includes International Cinema.

**Course Outcomes**
There are no course outcomes available

SWED 202 : Second Year Swedish. (4:5:1.5)
WHEN TAUGHT: Winter
PREREQUISITE: SWED 201
DESCRIPTION: Emphasis on literature and culture with continued writing, grammar, listening, and speaking. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement (except for returned missionaries or those with equivalent experience). This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

SWED 211R : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: Swed 102 or equivalent experience.
DESCRIPTION: Intermediate listening comprehension and speaking skills.

**Course Outcomes**
There are no course outcomes available

### 300-Level Courses

SWED 311R : Third-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: Swed 211R or equivalent experience.
DESCRIPTION: Advanced conversational skills.

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


**Course Outcomes**

There are no course outcomes available

SWED 321 : Advanced Swedish. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Swed 202 or equivalent experience.

DESCRIPTION: Third-year course in Swedish. Developing advanced language skills in speaking, reading, listening, and writing as defined by ACTFL standards.

NOTE: Entry course for returned missionaries or others with equivalent Swedish language experience. Required course for obtaining language credit by examination (Swed 101, 102, 201, 211R).

**Course Outcomes**

There are no course outcomes available

SWED 340 : Swedish Literature. (3:3:.5)

WHEN TAUGHT: Winter

RECOMMENDED: Swed 321 or equivalent experience.

DESCRIPTION: Readings in Swedish literature: introduction to basic literary concepts. Includes International Cinema.

NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

- Students should better know how to understand, interpret, and thoughtfully reflect upon the literature and art they will encounter in later life.
- Students should be able to insightfully analyze important literary and artistic works from Swedish cultural history and be able to communicate this analysis through articulate and well-organized written and oral presentations in Swedish. Students will also develop basic research skills.
- Students should understand key historical trends and works from Swedish culture, recognize connections between these works, and be able to relate them to the development of contemporary cultural developments.
- Students will be able to relate the ideas and issues raised by the works studied in class to their own cultural situation as well as to their experience with contemporary Swedish culture. They will reflect upon and develop an appreciation for the expression of ideas that make up Swedish cultural history and even value the expression of perspectives and opinions they do not necessarily share.

SWED 399R : Academic Internship. (.5-9:0:0)

PREREQUISITE: Department's consent.

DESCRIPTION: On-the-job experience in Swedish.

**Course Outcomes**

There are no course outcomes available


**Back to Humanities, Classics, and Comparative Literature Department Home**

**College of Humanities Home**

**Humanities, Classics, and Comparative Literature Department Home**

**Interdisciplinary Humanities**

**Major**
- BA in Interdisciplinary Humanities

**Minor**
- Humanities

**Course Information**
- Interdisciplinary Humanities (IHum) Courses

**Classics**

**Majors**

BA in Classical Studies
Emphases:
- Classical Civilization
- Classics
- Greek
- Latin

- BA in Latin Teaching

**Minors**
- Classical Studies (Greek option)
- Classical Studies (Latin option)
- Latin Teaching

**Course Information**
- Classical Civilization (Cl Cv) Courses
- Classical Greek (Greek) Courses
- Classical Latin (Latin) Courses
- Classics (Clscs) Courses

**Comparative Literature**

**Majors**
- BA in Comparative Literature

**Course Information**
- Comparative Literature (CmLit) Courses

**Scandinavian Studies**

**Minors**
- Scandinavian Studies

**Language Certificates**
- Danish
- Finnish
- Norwegian
- Swedish

**Course Information**
- Scandinavian Studies (Scand) Courses
- Danish (Dansh) Courses
- Finnish (Finn) Courses

# Humanities, Classics, and Comparative Literature Faculty

Show All
Hide All

## Professors

Benfell, V. Stanley
- **COLLEGE:** Humanities
- **DEPARTMENT:** Humanities, Classics, and Comparative Literature
- **RANK:** Professor
- **DEGREES:** BA, Brigham Young University, 1987
  MA, New York University, 1990
  PhD, New York University, 1994

Christenson, Allen J.
- **COLLEGE:** Humanities
- **DEPARTMENT:** Humanities, Classics, and Comparative Literature
- **RANK:** Professor
- **DEGREES:** BS, Brigham Young University, 1980
  DDS, University of California, Los Angeles, 1984
  MA, University of Texas, Austin, 1996
  PhD, University of Texas, Austin, 1998

Handley, George Browning
- **COLLEGE:** Humanities
- **DEPARTMENT:** Humanities, Classics, and Comparative Literature
- **RANK:** Professor
- **DEGREES:** BA, Stanford University, 1989
  MA, University of California, Berkeley, 1991
  PhD, University of California, Berkeley, 1995

Parry, Joseph Douglas
- **COLLEGE:** Humanities
- **DEPARTMENT:** Humanities, Classics, and Comparative Literature
- **RANK:** Professor
- **DEGREES:** BA, Brigham Young University, 1985
  MA, Brigham Young University, 1987
  PhD, University of Utah, 1995

Peer, Larry H.
- **COLLEGE:** Humanities
- **DEPARTMENT:** Humanities, Classics, and Comparative Literature
- **RANK:** Professor
- **DEGREES:** BA, Brigham Young University, 1963
  MA, Brigham Young University, 1965
  PhD, University of Maryland, College Park, 1969

Sondrup, Steven P.
- **COLLEGE:** Humanities
- **DEPARTMENT:** Humanities, Classics, and Comparative Literature
- **RANK:** Professor
- **DEGREES:** BA, University of Utah, 1968
  MA, Harvard University, 1969
  PhD, Harvard University, 1974

## Associate Professors

- Icelandic (Iclnd) Courses
- Norwegian (Norwe) Courses
- Swedish (Swed) Courses

**Faculty**


Kramer, Nathaniel Todd
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** PhD, University of California, Los Angeles, 2005

Lawson, Francesca Sborgi
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1977
MA, University of California, Los Angeles, 1980
PhD, University of Washington, 1988

Macfarlane, Roger T.
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, University of Michigan, Ann Arbor, 1987
PhD, University of Michigan, Ann Arbor, 1991

Oscarson, Christopher
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1997
MA, Brigham Young University, 2000
PhD, University of California, Berkeley, 2006

Peek, Cecilia M.
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
MA, University of California, Berkeley, 1991
PhD, University of California, Berkeley, 2000

Sederholm, Carl
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** AA, Long Beach City College, 1994
BA, University of California, Los Angeles, 1996
PhD, University of Utah, 2002

Soper, Kerry David
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** BFA, Utah State University, 1992
MA, Emory University, 1994
PhD, Emory University, 1998

Stanford, Charlotte A.
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1993
MA, University of Connecticut, 1996
PhD, Pennsylvania State University, 2003

## Assistant Professors

Ancell, Matthew
**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, University of California, Irvine, 2001
PhD, University of California, Irvine, 2007

Bay, Stephen M.

**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1993
BA, University of Utah, 1997
MA, University of Illinois, Urbana-Champaign, 2000
PhD, University of Illinois, Urbana-Champaign, 2004

Call, Michael Josiah

**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2000
MA, Yale University, 2002
MPhil, Yale University, 2004
PhD, Yale University, 2006

Colson, Robert

**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Assistant Professor
**DEGREES:** BA, University of Utah, 2003
MA, University of California, Irvine, 2004
PhD, University of California, Irvine, 2010

Esplin, Marlene Hansen

**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2001
MA, Brigham Young University, 2003
PhD, Michigan State University, 2012

Jeppesen, Seth

**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Assistant Professor
**DEGREES:** BA, Utah State University, 2006
MA, UC Santa Barbara, 2009
PhD, UC Santa Barbara, 2013

Yamada, Marc

**COLLEGE:** Humanities
**DEPARTMENT:** Humanities, Classics, and Comparative Literature
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1997
MA, Brigham Young University, 2000
PhD, University of California, Berkely, 2006

**Departments/Centers/Programs**

- American Studies Program
- Asian and Near Eastern Languages
- Digital Humanities and Technology Program
- English
- French and Italian
- German and Russian
- Humanities, Classics, and Comparative Literature
- Humanities College Courses
- Center for Language Studies
- Linguistics and English Language
- Philosophy
- Spanish and Portuguese
- Women's Studies Program

# Humanities College (HColl) Courses

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

HCOLL 110 : Introduction to the College of Humanities. (1:1.0:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introductory course to provide an understanding of the Humanities within the context of the Gospel, the academy, the global economy and students' lives. Students learn about strategies and resources to connect humanities to careers.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

HCOLL 290R : International Cinema. (1.5:1:4)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Students will view significant films and discuss them in a seminar setting in order to increase cultural awareness, enrich language acquisition, enhance critical analysis abilities, and develop understanding of cinematic art.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

HCOLL 396R : Humanities Leadership Development. (1-2:Arr:0)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Discussion and practice in leadership and service in the humanities, including planning, decision-making, communications, teamwork, and motivation.

**Course Outcomes**

- Learn skills that will enable service on the Humanities student council
- Practice leadership while serving on the Humanities student council.

### 400-Level Courses

HCOLL 480R : Humanities Research Seminar. (1-3:ARR:0)

DESCRIPTION: Research, writing, and discussion exploring enduring questions from perspectives offered by humanities disciplines.

**Course Outcomes**

No outcomes are available at this time.

: Readings in Humanities and Leadership.

**Course Outcomes**

HCOLL 490R : Humanities Lecture Series. (1:1:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Lecture and discussion by scholars in the humanities, with supplementary reading and writing.

**Course Outcomes**

No outcomes are available at this time.

HCOLL 494R : Humanities On-campus Experiential Projects. (3:0.5:Arr)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Practical, on-campus (not in the field) projects in which education is directly applied to real-world solutions for companies and other organizations. Students apply and are accepted to work on specific projects based on their skills, interests, and major emphasis.

**Course Outcomes**

There are no course outcomes available

**Back to Humanities College Home**

**College of Humanities Home**

**Center for Language Studies Home**

**Course Information**

- Afrikaans (Afrik) Courses
- American Sign Language (ASL) Courses
- Bulgarian (Bulgn) Courses
- Czech (Czech) Courses
- Dutch (Dutch) Courses
- Hungarian (Hung) Courses
- Latvian (Latvi) Courses
- Lithuanian (Lithu) Courses
- Polish (Polsh) Courses
- Romanian (Rom) Courses
- Serbo-Croatian (SrbCr) Courses
- Slovenian (Sln) Courses
- Ukrainian (Ukrai) Courses
- Welsh (Welsh) Courses

- Foreign Language (FLang) Courses

- See page here for list of languages offered.

**BYU Language Certificate Program**

**Faculty**

# Center for Language Studies

Ray T. Clifford, Director
3086A JFSB, (801) 422-3263

Michael D. Bush, Associate Director for ARCLITE Lab
3086C JFSB, (801) 422-4515

Troy L. Cox, Associate Director for Research and Assessment
4069 JFSB, (801) 422-5755

Robert G. Erickson, Associate Director for Curriculum and Instruction
3105 JFSB, (801) 422-5193

Agnes Welch, Program Manager
3086B JFSB, (801) 422-5199

College of Humanities Advisement Center
1175 JFSB, (801) 422-4789

## General Information

The Center supports the College of Humanities by augmenting the list of languages taught by other departments. Not all classes are taught at every level every semester. **(Please see the Class Schedule for a listing of classes currently offered.)**

Some of the languages have their own "teaching area" (where you will find them in the drop-down menu during registration), while others are listed under "FLANG" (for Foreign Language). The "teaching area" abbreviation for each language is listed below in parentheses.

Afrikaans (AFRIK)
Akan (FLANG)
Albanian (FLANG)
American Sign Language (ASL)
Arabic (ARAB)
Armenian (FLANG)
Aymara (FLANG)
Basque (FLANG)
Bicolano (FLANG)
Bulgarian (BULGN)
Burmese (FLANG)
Cakchiquel (FLANG)
Cambodian (FLANG)
Cantonese (CANT)
Catalan (FLANG)
Cebuano (FLANG)
Croatian (FLANG)
Czech (CZECH)
Danish (DANSH)
Dari (FLANG)
Dutch (DUTCH)
Estonian (FLANG)
Fijian (FLANG)
Finnish (FINN)
French (FREN)
Ga (FLANG)
Georgian (FLANG)
German (GERM)
Greek (Classical) (GREEK)
Guarani (FLANG)
Haitian Creole (FLANG)
Hawaiian (FLANG)
Hebrew (HEB)
Hindi (FLANG)
Hmong (FLANG)
Hungarian (HUNG)
Icelandic (ICLND)
Ilangot (FLANG)
Ilocano (FLANG)
Ilonggo/Hiligaynon (FLANG)
Indonesian (FLANG)
Italian (ITAL)
Japanese (JAPAN)
Javanese (FLANG)
Kazakh (FLANG)
K'iche (FLANG)
Korean (KOREA)
Laotian (FLANG)
Latin (LATIN)
Latvian (LATVI)
Lithuanian (LITHU)
Malagasy (FLANG)
Malay (FLANG)
Mandarin (CHIN)
Maori (FLANG)
Marshallese (FLANG)
Maya (FLANG)
Mongolian (FLANG)
Navajo (FLANG)
Niuean (FLANG)
Norwegian (NORWE)
Pashto (FLANG)
Persian (FLANG)
Polish (POLSH)
Portuguese (PORT)
Quechua (FLANG)
Rarotongan (FLANG)
Romanian (ROM)
Russian (RUSS)
Samoan (FLANG)
Serbian (FLANG)
Slovenian (SLN)
Spanish (SPAN)
Swahili (FLANG)
Swedish (SWED)
Tagalog (FLANG)
Tahitian (FLANG)
Taiwanese (FLANG)
Tamil (FLANG)
Thai (FLANG)
Tibetan (FLANG)
Tongan (FLANG)
Trukese (FLANG)
Turkish (FLANG)
Twi (FLANG)
Ukrainian (UKRAI)
Urdu (FLANG)
Vanuatau (FLANG)
Vietnamese (FLANG)
Waray-Waray (FLANG)
Welsh (WELSH & FLANG)
Xhosa (FLANG)

## Advanced Language and Culture Courses (for returned missionaries and others of comparable ability)

The advanced language and culture courses are a popular enrollment option for returned missionaries and others of comparable ability.

During this course, students are offered the opportunity to take a Challenge Examination whereby they may bypass beginning language classes and earn up to 16 graded credits.

**Note 1:** If the course is not offered at the time the student is interested in taking the Challenge Exam, the student has the option of taking the FLATS tests (through the Foreign Language Achievement Testing Service) on campus. However, that test only offers 12 pass/fail credits. **Once the FLATS test is taken for pass/fail credit it may not be reevaluated for graded credit, *nor* may the Challenge Exam be taken at a later date.** (See http://flats.byu.edu for details.)

**Note 2:** Students may not take a FLATS test during any semester in which a "challenge exam course" for the targeted language is being offered.

**Note 3:** Many of these advanced language and culture courses satisfy the Languages of Learning (and/or other) GE requirements. Be sure to check the GE website to confirm the possibilities.

### Advanced language and culture courses for returned missionaries (note "teaching area" acronym used for registration found here in parentheses):

Albanian (FLANG) 330
Armenian (FLANG) 330
Bulgarian (BULGN) 330
Cambodian (FLANG) 330
Cantonese (CANT) 202
Cebuano (FLANG) 330
Croatian (FLANG) 330
Czech (CZECH) 330
Danish (DANSH) 340
Dutch (DUTCH) 340
Estonian (FLANG) 330
Fijian (FLANG) 330
Finnish (FINN) 340
French (FREN) 321
Georgian (FLANG) 330
German (GERM) 330
Guarani (FLANG) 330
Hmong (FLANG) 330
Hungarian (HUNG) 330
Icelandic (ICLND) 429
Ilonggo/Hiligaynon (FLANG) 330
Indonesian (FLANG) 330
Italian (ITAL) 321
Japanese (JAPAN) 300, 302
Korean (KOREA) 301
Latvian (LATVI) 330
Lituanian (LITHU) 330
Malagasy (FLANG) 330
Malay (FLANG) 330
Mandarin Chinese (CHIN) 112, 201, 202
Mongolian (FLANG) 330
Norwegian (NORWE) 340
Polish (POLSH) 330
Portuguese (PORT) 321
Romanian (ROM) 340
Russian (RUSS) 330
Samoan (FLANG) 330
Serbian (FLANG) 330
Slovenian (SLN) 330
Spanish (SPAN) 321
Swedish (SWED) 340
Tagalog (FLANG) 330
Tahitian (FLANG) 300
Thai (FLANG) 330
Tongan (FLANG) 330
Ukrainian (UKRAI) 330
Vietnamese (FLANG) 330

## BYU Language Certificate Program

The Center for Language Studies administers the BYU Language Certificate program. This program is designed to certify a student's language proficiency (through oral and written assessments) as well as a limited academic experience (only three courses are required).

We currently offer the Language Certificate in the following languages:

Arabic, Chinese, Japanese, Korean
French, Italian
German, Russian
Spanish, Portuguese
Danish, Finnish, Norwegian, Swedish

Visit the website (http://languagecertificate.byu.edu) to read about the program.

College of Humanities Home

Center for Language Studies Home

Course Information

- Afrikaans (Afrik) Courses
- American Sign Language (ASL) Courses
- Bulgarian (Bulgn) Courses
- Czech (Czech) Courses
- Dutch (Dutch) Courses
- Hungarian (Hung) Courses
- Latvian (Latvi) Courses
- Lithuanian (Lithu) Courses
- Polish (Polsh) Courses
- Romanian (Rom) Courses
- Serbo-Croatian (SrbCr) Courses
- Slovenian (Sln) Courses
- Ukrainian (Ukrai) Courses
- Welsh (Welsh) Courses

- Foreign Language (FLang) Courses

- See page here for list of languages offered.

BYU Language Certificate Program

Faculty

# Afrikaans (Afrik)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

AFRIK 101 : First-Year Afrikaans. (4:5:1)
DESCRIPTION: Basic language skills.

**Course Outcomes**
There are no course outcomes available

AFRIK 102 : First-Year Afrikaans. (4:5:1)
PREREQUISITE: AFRIK 101
DESCRIPTION: Basic language skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

AFRIK 201 : Second-Year Afrikaans. (4:5:1)
PREREQUISITE: AFRIK 102
DESCRIPTION: Conversation, vocabulary building, and reading and writing skills, emphasizing reading.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

AFRIK 202 : Second-Year Afrikaans. (4:5:1)
PREREQUISITE: AFRIK 201; Teacher may waive prerequisite based on prior experience.
DESCRIPTION: Emphasis on literature and culture with continued writing, grammar, listening, and speaking.
NOTE: Culminating course for Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
No outcomes are available at this time.

AFRIK 211R : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: AFRIK 201
DESCRIPTION: Intermediate listening comprehension and speaking skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

AFRIK 311R : Third-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: AFRIK 202
DESCRIPTION: Advanced conversational skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

No outcomes are available at this time.

**Back to Center for Language Studies Home**

College of Humanities Home

Center for Language Studies Home

Course Information

- Afrikaans (Afrik) Courses
- American Sign Language (ASL) Courses
- Bulgarian (Bulgn) Courses
- Czech (Czech) Courses
- Dutch (Dutch) Courses
- Hungarian (Hung) Courses
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# American Sign Language (ASL)

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## Undergraduate Courses

### 100-Level Courses

ASL 101 : First-Year American Sign Language. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: First in a series of courses which focuses on acquiring basic ASL skills, both receptive and expressive. An introduction to the Deaf community and culture will be provided.

NOTE: Intended for students with little or no experience in ASL.

**Course Outcomes**

There are no course outcomes available

ASL 102 : First-Year American Sign Language. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ASL 101

DESCRIPTION: Second in a series of courses which focuses on acquiring basic ASL skills, both receptive and expressive. An introduction to the Deaf community and culture will be provided.

NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

- Be able to converse naturally using selected vocabulary.
- Be able to develop and use appropriate classifiers.
- Be able to develop and use appropriate ASL structure.
- Be able to identify and explain selected culture rules.
- able to answer questions about selected films.

ASL 111 : American Sign Language Fingerspelling. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ASL 102

DESCRIPTION: Improve ability to comprehend and communicate using various ASL fingerspelling styles.

NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

- Fingerspell smoothly.
- Identify and use various fingerspelling styles.
- Read fingerspelling of various styles.
- Identify the characteristics of lexicalization.

ASL 112 : American Sign Language Numbering. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ASL 102

DESCRIPTION: Improve ability to comprehend and communicate using various ASL numbering styles.

NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

- Sign numbers smoothly.
- Identify and use various numbering styles.
- Read fingerspelling of various styles.
- Sign numbers with correct sign parameters.

### 200-Level Courses

ASL 201 : Second-Year American Sign Language. (4:4:1)

WHEN Fall; Winter; Spring; Summer

TAUGHT:
PREREQUISITE: ASL 102
DESCRIPTION: Third in a series of courses which focuses on developing intermediate ASL skills, both receptive and expressive. Increased focus on the role that ASL plays in the lives of the Deaf community.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
There are no course outcomes available

ASL 202 : Second-Year American Sign Language. (4:4:1)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: ASL 201; Teacher may waive prerequisite based on prior experience.
DESCRIPTION: Fourth in a series of courses which focuses on developing intermediate ASL skills, both receptive and expressive. Increased focus on the role that ASL plays in the lives of the Deaf community.
NOTE: Culminating course for GE Languages of Learning requirement. Required course for obtaining language credit by examination.

**Course Outcomes**
There are no course outcomes available

### 300-Level Courses

ASL 301 : Advanced American Sign Language and Culture. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ASL 202
DESCRIPTION: Fifth in a series of five courses which aims to increase interpersonal, receptive, and presentational ASL skills in the context of society and culture of the Deaf community.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
There are no course outcomes available

ASL 302 : Deaf Literature. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ASL 301
DESCRIPTION: Various genres of Deaf literature. Introduction to analysis of ASL literary works.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
There are no course outcomes available

### 400-Level Courses

ASL 431 : Introduction to American Sign Language Linguistics. (3:3:0)
WHEN TAUGHT: Fall Contact Department; Winter Contact Department
PREREQUISITE: ASL 301 or equivalent.
RECOMMENDED: ASL 302 or concurrent enrollment.
DESCRIPTION: Designed for students who have acquired a good mastery of ASL. This course explores the dynamics of ASL linguistics, including basic simillarities between ASL and other languages.

**Course Outcomes**
There are no course outcomes available

ASL 432 : Introduction to American Sign Language Interpreting. (3:3:1)
WHEN TAUGHT: Winter Contact Department
PREREQUISITE: ASL 431
DESCRIPTION: An introduction to the profession of interpreting, the Code of Professional Conduct, interpreting protocol, and interpreting issues.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

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# Bulgarian (Bulgn)

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## Undergraduate Courses

### 100-Level Courses

BULGN 101 : First-Year Bulgarian. (4:5:1)
DESCRIPTION: Basic language skills.

**Course Outcomes**
No outcomes are available at this time.

BULGN 102 : First-Year Bulgarian. (4:5:1)
PREREQUISITE: BULGN 101
DESCRIPTION: Basic language skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 200-Level Courses

BULGN 201 : Second-Year Bulgarian. (4:5:1)
PREREQUISITE: BULGN 102
DESCRIPTION: Grammar review and conversation.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

BULGN 211R : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: BULGN 201
DESCRIPTION: Intermediate listening comprehension and speaking skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

BULGN 330 : Cultural History of Bulgaria. (3:3:1)
PREREQUISITE: Bulgn 201 or foreign residence experience.
DESCRIPTION: Entry course for returned missionaries or others with extensive Bulgarian language experience.
NOTE: Required course for obtaining language credit by examination (Bulgn 101, 102, 201, 211R). Culminating course for Languages of Learning requirement.

**Course Outcomes**
- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Fulfill GE "Languages of Learning" requirements.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).

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# Czech (Czech)

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## Undergraduate Courses

### 100-Level Courses

CZECH 101 : First-Year Czech. (4:5:1)
DESCRIPTION: Basic language skills.

**Course Outcomes**
No outcomes are available at this time.

CZECH 102 : First-Year Czech. (4:5:1)
PREREQUISITE: CZECH 101
DESCRIPTION: Basic language skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 200-Level Courses

CZECH 201 : Second-Year Czech. (4:5:1)
PREREQUISITE: CZECH 102
DESCRIPTION: Grammar review and conversation.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

CZECH 211R : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: CZECH 201
DESCRIPTION: Intermediate listening comprehension and speaking skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

CZECH 330 : Cultural History of Czech Republic. (3:3:1)
PREREQUISITE: Czech 201 or foreign residence experience.
DESCRIPTION: Entry course for returned missionaries or others with extensive Czech or Slovak language experience.
NOTE: Required course for obtaining language credit by examination (Czech 101, 102, 201, 211R). Culminating course for Languages of Learning requirement.

**Course Outcomes**
- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfill GE "Languages of Learning" requirements.

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# Dutch (Dutch)

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## Undergraduate Courses

### 100-Level Courses

DUTCH 101 : First-Year Dutch. (4:5:1)
DESCRIPTION: Basic language skills.

**Course Outcomes**
No outcomes are available at this time.

DUTCH 102 : First-Year Dutch. (4:5:1)
PREREQUISITE: DUTCH 101
DESCRIPTION: Basic language skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 200-Level Courses

DUTCH 201 : Second-Year Dutch. (4:5:1)
PREREQUISITE: DUTCH 102
DESCRIPTION: Conversation, vocabulary building, and reading and writing skills, emphasizing reading.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

DUTCH 211R : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: DUTCH 201
DESCRIPTION: Intermediate listening comprehension and speaking skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

DUTCH 311R : Third-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: DUTCH 211R
DESCRIPTION: Advanced conversational skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
There are no course outcomes available

DUTCH 340 : Introduction to Dutch Literature. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Dutch 201 or foreign residence.
DESCRIPTION: Readings from the best Dutch literature. Introduction to basic literary concepts.
NOTE: Entry course for returned missionaries or others of equivalent language experience. Required course for obtaining language credit by examination. May fulfill the GE Languages of Learning requirement.

**Course Outcomes**

There are no course outcomes available

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# Hungarian (Hung)

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## Undergraduate Courses

### 100-Level Courses

HUNG 101 : First-Year Hungarian. (4:5:1)
DESCRIPTION: Basic language skills.

**Course Outcomes**
No outcomes are available at this time.

HUNG 102 : First-Year Hungarian. (4:5:1)
PREREQUISITE: HUNG 101
DESCRIPTION: Basic language skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 200-Level Courses

HUNG 201 : Second-Year Hungarian. (4:5:1)
PREREQUISITE: HUNG 102
DESCRIPTION: Grammar review and conversation.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

HUNG 211R : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: HUNG 201
DESCRIPTION: Intermediate listening comprehension and speaking skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

HUNG 330 : Cultural History of Hungary. (3:3:1)
PREREQUISITE: Hung 201 or foreign residence experience.
NOTE: For returned missionaries and others with extensive Hungarian language experience. Required course for obtaining language credit by examination (Hung 101, 102, 201, 211R). Culminating course for Languages of Learning requirement.

**Course Outcomes**
- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfills the GE "Languages of Learning" requirements.

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# Latvian (Latvi)

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## Undergraduate Courses

### 100-Level Courses

LATVI 101 : First-Year Latvian. (4:5:1)
PREREQUISITE: Foreign residence experience.
NOTE: Credit by examination only.

**Course Outcomes**
No outcomes are available at this time.

LATVI 102 : First-Year Latvian. (4:5:1)
PREREQUISITE: LATVI 101
NOTE: Credit by examination only. Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 200-Level Courses

LATVI 201 : Second-Year Latvian. (4:5:1)
PREREQUISITE: LATVI 102
NOTE: Credit by examination only. Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

LATVI 211R : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: LATVI 201
NOTE: Credit by examination only. Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

LATVI 330 : Cultural History of Latvia. (3:3:1)
PREREQUISITE: Latvi 201 or foreign residence experience.
NOTE: Entry course for returned missionaries or others of equivalent language experience. Required course for obtaining language credit by examination. May fulfill the GE Languages of Learning requirement.

**Course Outcomes**
- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfills the GE "Languages of Learning" requirements.

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# Lithuanian (Lithu)

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## Undergraduate Courses

### 100-Level Courses

LITHU 101 : First-Year Lithuanian. (4:5:1)
PREREQUISITE: Foreign residency experience.
NOTE: Credit by examination only.

**Course Outcomes**
No outcomes are available at this time.

LITHU 102 : First-Year Lithuanian. (4:5:1)
PREREQUISITE: LITHU 101
NOTE: Credit by examination only. Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 200-Level Courses

LITHU 201 : Second-Year Lithuanian. (4:5:1)
PREREQUISITE: LITHU 102
NOTE: Credit by examination only. Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

LITHU 211R : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: LITHU 201; Foreign residence experience.
NOTE: Credit by examination only. Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

LITHU 330 : Cultural History of Lithuania. (3:3:1)
PREREQUISITE: Lithu 201 or foreign residence experience.
NOTE: Entry course for returned missionaries or others of equivalent language experience. Required course for obtaining language credit by examination. May fulfill the GE Languages of Learning requirement.

**Course Outcomes**
- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfills the GE "Languages of Learning" requirements.

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# Polish (Polsh)

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## Undergraduate Courses

### 100-Level Courses

POLSH 101 : First-Year Polish. (4:5:1)

DESCRIPTION: Basic language skills.

**Course Outcomes**

- Speak the target language well enough to satisfy immediate needs related to basic social situations, simple transactions, basic food and lodging, and routine travel.
- Understand written and spoken target language relating to familiar topics.
- In the target language, write short, simple messages consisting of structurally-accurate sentences on familiar topics.
- Function appropriately in routine, familiar situations in the target culture.

POLSH 102 : First-Year Polish. (4:5:1)

PREREQUISITE: POLSH 101

DESCRIPTION: Continuation of Polsh 101.

NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

- Speak the target language well enough to satisfy immediate needs related to basic social situations, simple transactions, basic food and lodging, and routine travel.
- Understand written and spoken target language relating to familiar topics.
- In the target language, write short, simple messages consisting of structurally-accurate sentences on familiar topics.
- Function appropriately in routine, familiar situations in the target culture.

### 200-Level Courses

POLSH 201 : Second-Year Polish. (4:5:1)

PREREQUISITE: POLSH 102

DESCRIPTION: Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

- Create structurally-accurate, elaborated utterances and begin to group utterances into paragraphs and narratives. Do this in present, past and future time.
- Broaden vocabulary for both reception (listening and reading comprehension) and production (speaking and writing).
- Review and increase understanding of basic language structures.
- Discuss in the target language common products and practices related to every-day life in the target culture.

POLSH 202 : Second-Year Polish. (4:5:1)

PREREQUISITE: POLSH 201; Teacher may waive prerequisite based on prior experience.

DESCRIPTION: Emphasis on literature and culture with continued writing, grammar, listening, and speaking.

NOTE: Culminating course for Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- In both written and spoken target language, communicate with reasonable accuracy about real-world activities with well-educated members of the target-culture accustomed to dealing with non-native speakers.
- Understand every-day written and verbal instructions. Comprehend concrete details and global meaning of intermediate-level written and spoken passages related to familiar topics that native speakers encounter routinely in their daily life.
- Discuss in the target language cultural practices related to every-day life in the target culture. Acquire basic background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.).
- Meet GE "Languages of Learning" requirements.

POLSH 211R : Second-Year Conversation. (.5-5:ARR:ARR)

PREREQUISITE: POLSH 201

DESCRIPTION: Intermediate listening comprehension and speaking skills.

NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

- Speak comfortably about predictable, familiar topics related to daily activities; this includes the ability to Initiate, maintain, and close simple conversations and to ask and respond to simple questions.
- Carry out “survival” transactions (shopping, getting directions, ordering meals, etc.)
- Be understood by native speakers unaccustomed to dealing with non-native speakers.

### 300-Level Courses

POLSH 311R : Third-Year Conversation. (.5-5:ARR:ARR)

PREREQUISITE: POLSH 211R

DESCRIPTION: Advanced conversational skills.

NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

- Speak comfortably about predictable, familiar topics related to daily activities and current events; this includes the ability to Initiate, maintain, and close simple conversations and to ask and respond to simple questions
- Begin to speak in "oral paragraphs."
- Apply appropriate strategies to deal with unpredictable language situations.
- Be understood by native speakers unaccustomed to dealing with non-native speakers.

POLSH 330 : Cultural History of Poland. (3:3:1)

PREREQUISITE: Polsh 202 or foreign residence experience.

NOTE: Entry course for returned missionaries or others of equivalent language experience. Required course for obtaining language credit by examination. May fulfill the GE Languages of Learning requirement.

**Course Outcomes**

- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfills the GE "Languages of Learning" requirements.Fulfills the GE "Languages of Learning" requirements.

POLSH 340 : Polish Literature Survey. (3:3:0)

PREREQUISITE: POLSH 330

DESCRIPTION: Survey of Polish literature from Kochanowski to Szymborska, including works by Rej, Krasicki, Mickiewicz, Slowacki, Norwid, Prus, Sienkiewicz, Zeromski, Reymont, and others.

NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

- Recognize and analyze the most important genres in target-language literature.
- Identify and discuss key characteristics of the most important literary movements in the target culture.
- Place literature in a meaningful cultural and historical context.
- Improve target-language reading, writing, and speaking skills.

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# Romanian (Rom)

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## Undergraduate Courses

### 100-Level Courses

ROM 101 : First-Year Romanian, Part 1. (4:5:2)
DESCRIPTION: Basic language skills.

**Course Outcomes**
There are no course outcomes available

ROM 102 : First-Year Romanian, Part 2. (4:5:2)
DESCRIPTION: Basic language skills.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

ROM 201 : Second-Year Romanian. (4:5:2)
PREREQUISITE: Rom 102 or equivalent experience.
DESCRIPTION: Conversation vocabulary building; reading and writing skills, emphasizing writing.

**Course Outcomes**
No outcomes are available at this time.

ROM 211R : Second-Year Romanian Conversation. (2:2:0)
PREREQUISITE: Rom 102 or equivalent experience.
DESCRIPTION: Intermediate listening comprehension and speaking skills.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

ROM 311R : Third-Year Romanian Conversation. (2:2:0)
PREREQUISITE: Rom 211R or equivalent experience.
DESCRIPTION: Advanced conversational skills.

**Course Outcomes**
No outcomes are available at this time.

ROM 340 : Introduction to Romanian Literature and Culture. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Foreign residence experience in Romania.
DESCRIPTION: For returned missionaries or others with extensive Romanian language experience.
NOTE: Required course for obtaining language credit by examination. Culminating course for GE Foreign Language requirement.

**Course Outcomes**
- Meet all program-level learning outcomes.
- Demonstrate knowledge and understanding of the history, politics and culture of Romania both past and present, in a European and world context.
- Place the issues studied in a European and world context and make connections between Romanian events and

issues, and important events and facts that have affected Europe or the world in general.
- Be able to analyze and interpret specific Romanian topics at a high academic level using appropriate theories, concepts and research materials.
- Be able to read complex a variety of texts in Romanian, and express (orally or in writing) complex ideas in Romanian.
- Develop the curiosity and habits of thought that will encourage life-long learning and continued interest and even love of Romania, its people and culture.

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BYU Language Certificate Program

Faculty

# Serbo-Croatian (SrbCr)

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## Undergraduate Courses

### 100-Level Courses

SRBCR 101 : First-Year Serbo-Croatian. (4:5:1)
DESCRIPTION: Basic language skills.

**Course Outcomes**
No outcomes are available at this time.

SRBCR 102 : First-Year Serbo-Croatian. (4:5:1)
PREREQUISITE: SRBCR 101
DESCRIPTION: Continuation of SrbCr 101.

**Course Outcomes**
No outcomes are available at this time.

### 200-Level Courses

SRBCR 201 : Second-Year Serbo-Croatian. (4:5:1)
PREREQUISITE: SrbCr 102 or foreign residence experience.
DESCRIPTION: Conversation, vocabulary building, and reading and writing skills, emphasizing reading.

**Course Outcomes**
No outcomes are available at this time.

SRBCR 211R : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: SrbCr 201 or foreign residence experience.
DESCRIPTION: Intermediate listening comprehension and speaking skills.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

SRBCR 311R : Third-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: SrbCr 211R or foreign residence experience.

**Course Outcomes**
No outcomes are available at this time.

SRBCR 330 : Cultural History of the Former Yugoslavia. (3:3:1)
PREREQUISITE: SrbCr 201 or foreign residence experience.
NOTE: For returned missionaries or others with extensive Serbo-Croatian language experience. Required course for obtaining language credit by examination (SrbCr 101, 102, 201, 211R). Culminating course for Languages of Learning requirement.

**Course Outcomes**
- Meet all program-level learning outcomes.

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# Slovenian (Sln)

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## Undergraduate Courses

### 100-Level Courses

SLN 101 : First-Year Slovenian. (4:5.0:1.0)
NOTE: Credit by examination only.

**Course Outcomes**
No outcomes are available at this time.

SLN 102 : First-Year Slovenian. (4:5:1)
PREREQUISITE: SLN 101
NOTE: Credit by examination only. Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 200-Level Courses

SLN 201 : Second-Year Slovenian. (4:5.0:1.0)
PREREQUISITE: SLN 102
NOTE: Credit by examination only. Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

SLN 211R : Second-Year Conversation. (1-5:ARR:ARR)
PREREQUISITE: SLN 201
NOTE: Credit by examination only. Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

SLN 330 : Cultural History of Slovenia. (3:3.0:1.0)
PREREQUISITE: SLN 201 or foreign residence experience.
NOTE: Entry course for returned missionaries or others of equivalent language experience. Required course for obtaining language credit by examination. May fulfill the GE Languages of Learning requirement.

**Course Outcomes**
- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfills the GE "Languages of Learning" requirements.

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# Ukrainian (Ukrai)

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## Undergraduate Courses

### 100-Level Courses

UKRAI 101 : First-Year Ukrainian. (4:5:1)
DESCRIPTION: Basic language skills.

**Course Outcomes**
No outcomes are available at this time.

UKRAI 102 : First-Year Ukrainian. (4:5:1)
PREREQUISITE: UKRAI 101
DESCRIPTION: Basic language skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 200-Level Courses

UKRAI 201 : Second-Year Ukrainian. (4:5:1)
PREREQUISITE: UKRAI 102
DESCRIPTION: Grammar review and conversation.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

UKRAI 211R : Second-Year Conversation. (.5-5:ARR:ARR)
PREREQUISITE: UKRAI 201
DESCRIPTION: Intermediate listening comprehension and speaking skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 300-Level Courses

UKRAI 330 : Cultural History of Ukraine. (3:3:1)
PREREQUISITE: Ukrai 201 or foreign residence experience.
NOTE: Entry course for returned missionaries or others of equivalent language experience. Required course for obtaining language credit by examination. May fulfill the GE Languages of Learning requirement.

**Course Outcomes**
- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfills the GE "Languages of Learning" requirements.

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- Foreign Language (FLang) Courses

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# Welsh (Welsh)

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## Undergraduate Courses

### 100-Level Courses

WELSH 101 : First-Year Welsh. (4:5:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Pronunciation, grammar fundamentals, and vocabulary building, emphasizing conversation.

**Course Outcomes**

- Speak the target language well enough to satisfy immediate needs related to basic social situations, simple transactions, basic food and lodging, and routine travel.
- Understand written and spoken target language relating to familiar topics.
- In the target language, write short, simple messages consisting of structurally-accurate sentences on familiar topics.
- Function appropriately in routine, familiar situations in the target culture.

WELSH 102 : First-Year Welsh. (4:5:1)

PREREQUISITE: WELSH 101

DESCRIPTION: Second-semester speaking, listening, reading, and writing skills.

NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

- Speak the target language well enough to satisfy immediate needs related to basic social situations, simple transactions, basic food and lodging, and routine travel.
- Understand written and spoken target language relating to familiar topics.
- In the target language, write short, simple messages consisting of structurally-accurate sentences on familiar topics.
- Function appropriately in routine, familiar situations in the target culture.

### 200-Level Courses

WELSH 201 : Second-Year Welsh. (4:5:1)

PREREQUISITE: WELSH 102; Welsh 101 and 102; or equivalents.

DESCRIPTION: Intermediate speaking, listening, reading, and writing skills.

NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

- Create structurally-accurate, elaborated utterances and begin to group utterances into paragraphs and narratives. Do this in present, past and future time.
- Broaden vocabulary for both reception (listening and reading comprehension) and production (speaking and writing).
- Review and increase understanding of basic language structures.
- Discuss in the target language common products and practices related to every-day life in the target culture.

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# Foreign Language (FLang)

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## Undergraduate Courses

### 100-Level Courses

FLANG 100R : Language Study. (2:2:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Survival-level conversation, reading, listening, and culture skills in the target language.

**Course Outcomes**
No outcomes are available at this time.

FLANG 101R : First-Year Language Study. (4:5:1)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Beginning speaking, listening, reading, and writing skills.

**Course Outcomes**
- Speak the target language well enough to satisfy immediate needs related to basic social situations, simple transactions, basic food and lodging, and routine travel.
- Understand written and spoken target language relating to familiar topics.
- In the target language, write short, simple messages consisting of structurally-accurate sentences on familiar topics.
- Function appropriately in routine, familiar situations in the target culture.

FLANG 102R : First-Year Language Study. (4:5:1)
WHEN TAUGHT: Contact Department.
PREREQUISITE: FLANG 101R
DESCRIPTION: Second-semester speaking, listening, reading, and writing skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
No outcomes are available at this time.

### 200-Level Courses

FLANG 201R : Second-Year Language Study. (4:5:1)
WHEN TAUGHT: Contact Department.
PREREQUISITE: FLANG 102R
DESCRIPTION: Intermediate speaking, listening, reading, and writing skills.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**
- Create structurally-accurate, elaborated utterances and begin to group utterances into paragraphs and narratives. Do this in present, past and future time.
- Broaden vocabulary for both reception (listening and reading comprehension) and production (speaking and writing).
- Review and increase understanding of basic language structures.
- Discuss in the target language common products and practices related to every-day life in the target culture.

FLANG 202R : Second-Year Language Study. (4:5:1)
WHEN TAUGHT: Contact Department.
PREREQUISITE: FLANG 201R; Teacher may waive prerequisite based on prior experience.
DESCRIPTION: Continued emphasis on communication skills, vocabulary building, and cultural awareness.
NOTE: Culminating course for GE Languages of Learning requirement. Not an entry course for returned missionaries. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- In both written and spoken target language, communicate with reasonable accuracy about real-world activities with well-educated members of the target-culture accustomed to dealing with non-native speakers.Meet all program-level outcomes.
- Understand every-day written and verbal instructions. Comprehend concrete details and global meaning of intermediate-level written and spoken passages related to familiar topics that native speakers encounter routinely in their daily life.
- Discuss in the target language cultural practices related to every-day life in the target culture. Acquire basic background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.).
- Meet GE "Languages of Learning" requirements.

FLANG 276 : Exploration of Teaching Foreign Languages. (4:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Field-based exposure to practices, demands, and issues associated with teaching foreign languages in public secondary schools.

**Course Outcomes**

- Determine if pursuing a personal career in foreign language teaching in public secondary schools is the correct decision.
- Have a developing awareness of what foreign-language students should know and be able to do and of good foreign-language teaching practice.
- Discuss the public purposes of education, related social and political issues, and the benefits of speaking a foreign language.
- Articulate personal motivations for becoming a teacher, as well as recognize potential strengths and weaknesses as a teacher.

**300-Level Courses**

FLANG 300 : Foundations of Dual Language and Immersion Education. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Historical overview, theoretical and research foundations for dual language and immersion education; practical application of theory and research in immersion programs.

**Course Outcomes**

- Discuss theoretical principles and research findings that underlie dual language and immersion education
- Explain differences and similarities between one-way, two-way, developmental bilingual and indigenous language immersion programs
- Summarize key principles of first and second language learning in dual language and immersion classrooms
- Discuss the social and political contexts for dual language education and their implications for classrooms and programs
- Synthesize lessons that can be learned from dual language and immersion programs around the world

FLANG 305R : Language Skills Development. (1-4:Arr:Arr)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Increasing proficiency in one or more of the following target-language or target-culture skills: speaking, listening, reading, writing, cultural awareness.

**Course Outcomes**

- Use the specific language skill at the level required to meet the "special" foreign-language need defined by the Center for Language Studies.

FLANG 321R : Advanced Grammar. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: FLANG 202R; Teacher may waive prerequisite based on prior experience.

DESCRIPTION: Systematic review of grammar and syntax of target language.

**Course Outcomes**

- Apply grammar rules with accuracy to a variety of advanced grammatical and communicative tasks.
- Analyze target language morphology and syntax.
- Function as independent learners of the target language by using proper terms and appropriate resources for language analysis.

FLANG 330R : Advanced Language Proficiency Through Cultural Studies. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: FLang 202R or equivalent in same language.

DESCRIPTION: Study of target language culture(s) using interpersonal, presentational, and interpretive skills in the target language.

NOTE: Entry course for returned missionaries or others of equivalent language experience. Required course for obtaining language credit by examination. May fulfill the GE Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- In both written and spoken target language, communicate accurately with well educated members of the

target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfills the GE "Languages of Learning" requirements.

FLANG 340R : Introduction to Literature. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: FLang 330R in same language.
DESCRIPTION: Advanced study of literature of target language. Continued emphasis on communication skills and culture.
NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

No outcomes are available at this time.

: Introduction to Literature: Albanian.

**Course Outcomes**

: Introduction to Literature: Armenian.

**Course Outcomes**

: Introduction to Literature: Aymara.

**Course Outcomes**

: Introduction to Literature: Basque.

**Course Outcomes**

: Introduction to Literature: Cambodian.

**Course Outcomes**

: Introduction to Literature: Cakchiquel.

**Course Outcomes**

: Introduction to Literature: Catalan.

**Course Outcomes**

: Introduction to Literature: Cebuano.

**Course Outcomes**

: Introduction to Literature: Croatian.

**Course Outcomes**

: Introduction to Literature: Fijian.

**Course Outcomes**

: Introduction to Literature: Guarani.

**Course Outcomes**

: Introduction to Literature: Haitian Creole.

**Course Outcomes**

: Introduction to Literature: Hmong.

**Course Outcomes**

: Introduction to Literature: Ilangot.

**Course Outcomes**

: Introduction to Literature: Ilocano.

**Course Outcomes**

: Introduction to Literature: Indonesian.

**Course Outcomes**

: Introduction to Literature: Laotian.

**Course Outcomes**

: Introduction to Literature: Maori.

**Course Outcomes**

: Introduction to Literature: Maya.

**Course Outcomes**

: Introduction to Literature: Mongolian.

**Course Outcomes**

: Introduction to Literature: Navajo.

**Course Outcomes**

: Introduction to Literature: Niuean.

**Course Outcomes**

: Introduction to Literature: Quechua.

**Course Outcomes**

: Introduction to Literature: Rarotongan.

**Course Outcomes**

: Introduction to Literature: Samoan.

**Course Outcomes**

: Introduction to Literature: Serbian.

**Course Outcomes**

: Introduction to Literature: Swahili.

**Course Outcomes**

: Introduction to Literature: Tagalog.

**Course Outcomes**

: Introduction to Literature: Tahitian.

**Course Outcomes**

: Introduction to Literature: Taiwanese.

**Course Outcomes**

: Introduction to Literature: Tongan.

**Course Outcomes**

: Introduction to Literature: Trukese.

**Course Outcomes**

: Introduction to Literature: Urdu.

**Course Outcomes**

: Introduction to Literature: Vanuatau.

**Course Outcomes**

: Introduction to Literature: Waray-Waray.

**Course Outcomes**

: Introduction to Literature: Vietnamese.

**Course Outcomes**

: Introduction to Literature: Turkish.

**Course Outcomes**

: Introduction to Literature: Hawaiian.

**Course Outcomes**

: Introduction to Literature: Thai.

**Course Outcomes**

: Introduction to Literature: Hindi.

**Course Outcomes**

: Introduction to Literature: Modern Greek.

**Course Outcomes**

: Introduction to Literature: Estonian.

**Course Outcomes**

: Introduction to Literature: Welsh.

**Course Outcomes**

: Introduction to Literature: Akan.

**Course Outcomes**

: Introduction to Literature: Bicolano.

**Course Outcomes**

: Introduction to Literature: Burmese.

**Course Outcomes**

: Introduction to Literature: Ga.

**Course Outcomes**

: Introduction to Literature: Javanese.

**Course Outcomes**

: Introduction to Literature: Kazakh.

**Course Outcomes**

: Introduction to Literature: Malay.

**Course Outcomes**

: Introduction to Literature: Malagasy.

**Course Outcomes**

: Introduction to Literature: Marshallese.

**Course Outcomes**

: Introduction to Literature: Arabic.

**Course Outcomes**

: Introduction to Literature: Afrikaans.

**Course Outcomes**

: Introduction to Literature: Bulgarian.

**Course Outcomes**

: Introduction to Literature: Czech.

**Course Outcomes**

: Introduction to Literature: Chinese:

**Course Outcomes**

: Introduction to Literature: German.

**Course Outcomes**

: Introduction to Literature: Hebrew.

**Course Outcomes**

: Introduction to Literature: Hungarian.

**Course Outcomes**

: Introduction to Literature: Icelandic.

**Course Outcomes**

: Introduction to Literature: Japanese.

**Course Outcomes**

: Introduction to Literature: Latin.

**Course Outcomes**

: Introduction to Literature: Latvian.

**Course Outcomes**

: Introduction to Literature: Lithuanian.

**Course Outcomes**

: Introduction to Literature: Portuguese.

**Course Outcomes**

: Introduction to Literature: Russian.

**Course Outcomes**

: Introduction to Literature: Serbo-Croatian.

**Course Outcomes**

: Introduction to Literature: Slovenian.

**Course Outcomes**

: Introduction to Literature: Spanish.

**Course Outcomes**

: Introduction to Literature: Ukrainian.

**Course Outcomes**

: Introduction to Literature: Ilonggo/Hiligaynon.

**Course Outcomes**

: Introduction to Literature: K'iche.

**Course Outcomes**

: Introduction to Literature: Persian.

**Course Outcomes**

: Introduction to Literature: Dari.

**Course Outcomes**

: Introduction to Literature: Pashto.

**Course Outcomes**

: Introduction to Literature: Twi.

**Course Outcomes**

: Introduction to Literature: Tamil.

**Course Outcomes**

: Introduction to Literature: Xhosa.

**Course Outcomes**

: Introduction to Literature: Georgian.

**Course Outcomes**

FLANG 350R : Advanced Language Study for Career Purposes. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: FLang 330R in same language.
DESCRIPTION: Concentration on target-language and target-culture issues for specific careers.

**Course Outcomes**

No outcomes are available at this time.

FLANG 377R : Foreign Language Teaching Methods. (1-3:Arr:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Native- or advanced-level proficiency in the target language.
DESCRIPTION: Teaching methods specific to teaching less commonly taught language courses. Lectures, demonstrations, and microteaching. Topics include curriculum/lesson planning, reflective teaching, and communicative language teaching.
NOTE: Prospective teachers and TAs shoiuld take this course before or while teaching the target language course.

**Course Outcomes**

- Design and deliver effective target-language instruction appropriate to learners' needs.
- Discuss and apply basic principles of second-language acquisition.

- Discuss and apply basic principles of formal and informal assessment.
- Reflect on and justify instructional choices and actions.

**400-Level Courses**

FLANG 490R : Special Studies in Second Language Applications. (1-3:Arr:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Faculty-supervised instruction for advanced students. Individual or group study. Course work established by contract and director's approval.

**Course Outcomes**

- Meet learning outcomes specified by the Center for Language Studies relative to a specific language application.

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**BYU Language Certificate Program**

**Faculty**

# Center for Language Studies Faculty

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## Professor

Clifford, Ray T.

**COLLEGE:** Humanities
**DEPARTMENT:** Center for Language Studies
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1968
MA, Brigham Young University, 1970
PhD, University of Minnesota, 1977

## Associate Professor

Bush, Michael Douglas

**COLLEGE:** Humanities
**DEPARTMENT:** Center for Language Studies
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1972
MBA, University of Missouri, 1976
PhD, Ohio State University, 1983

## Assistant Professors

Cox, Troy L.

**COLLEGE:** Humanities
**DEPARTMENT:** Center for Language Studies
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1994
MA, Brigham Young University, 1996
PhD, Brigham Young University, 2013

Erickson, Robert G.

**COLLEGE:** Humanities
**DEPARTMENT:** Center for Language Studies
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1971
MA, Middlebury College, 1975
PhD, Brigham Young University, 2000

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**Linguistics and English Language Department Home**

**Majors**

- BA in English Language
- BA in Linguistics

**Minors**

- Editing
- Linguistics
- TESOL

**Certificate**

- TESOL

**Course Information**

- English Language (ELang) Courses
- Linguistics (Ling) Courses
- Linguistic Computing (LingC) Courses

**English as a Second Language**

**Course Information**

- English as a Second Language (ESL) Courses

**Faculty**

# Linguistics and English Language

Diane Strong-Krause, Chair
Don Chapman, Associate Chair
4064 JFSB, (801) 422-2937
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Internet: http://linguistics.byu.edu

College of Humanities Advisement Center
1175 JFSB, (801) 422-4789

## Admission to Degree Program

All undergraduate degree programs in the Department of Linguistics and English Language are open enrollment.

## The Discipline

Linguistics is the study of language in all its aspects—from speech sounds to sentence formation to meaning; from how language is organized and used in a social setting to how it is organized and processed in the brain or by computers. Linguists study language form, language change, language acquisition, and even the texts in which language is recorded. Linguists recognize that the communicative power of language is what brings cohesion to all human enterprises. For the student interested in the nature of language, linguistics is the subject to study.

The science of linguistics has many real-world applications, including translation, information storage/retrieval, lexicography, editing, and language teaching. In addition to its majors in general linguistics and in English language, BYU's Department of Linguistics and English Language offers undergraduate minor programs (as well as graduate degrees) in several of these areas.

## Career Opportunities

A linguistics degree with an emphasis in computers may lead to jobs in high technology, e.g., machine translation, information retrieval, speech recognition and production software, and lexicography. Linguistics is also recognized as a strong specialization for those pursuing a career in military intelligence or technical writing.

The English language major is in many ways similar to the linguistics major, though its focus is more specifically on English linguistics. The major provides useful preparation for careers that require special attention to the English language, such as advertising and technical writing. The English language major along with a TESOL or editing minor is an especially strong combination.

The teaching of English to speakers of other languages is an applied linguistics area of high demand, both within the United States and around the world. Both a TESOL minor and TESOL undergraduate certificate are offered by the department.

In addition, the linguistics and English language majors are excellent preparations for those planning graduate studies in areas as diverse as law, international business, tourism, library science, TESOL, communicative disorders, and speech pathology, not to mention graduate studies in specific languages or in linguistics itself.

## General Information

The Department of Linguistics and English Language strongly recommends that StDev 317, a 1-credit-hour course, be taken at the end of the sophomore year or the beginning of the junior year. Because liberal arts degrees provide preparation in a variety of useful fields rather than a single career track, this course is recommended to help liberal arts students focus on specific educational and occupational goals and to identify the career options or educational opportunities available to them. The course will introduce them to the resources needed for accessing information about graduate schools, internships, careers, and career development. Students will learn basic employment strategies, including the steps necessary for obtaining employment related to their own specialty.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in English Language** (Program Outcomes)
**BA in Linguistics** (Program Outcomes)

**Minor in Editing**
**Minor in Linguistics**
**Minor in TESOL**

**Certificate in TESOL**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MA in Linguistics
MA in TESOL

For more information see the BYU 2014–2015 Graduate Catalog.

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Faculty

# BA in English Language (51 hours)

Show All Course Descriptions
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## Program Requirements | View MAP | View Program Outcomes

1. Complete the following prerequisite to all courses required for the English language major:

ELANG 223 : Introduction to the English Language. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Overview of English from linguistic point of view, emphasizing structure of English and social, biological, and psychological aspects of language.

**Course Outcomes**
- Students will have acquired basic analytical tools in core areas of linguistics: phonology, morphology, syntax, semantics, and pragmatics.
- Students will be able to apply these analytical tools to English language data of various types, such as those involving aspects of variation, acquisition, and historical change.

2. Complete the following core courses:

ELANG 273 : Empirical Methods in English Linguistics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ELang 223 or concurrent enrollment.

DESCRIPTION: The use of large collections of texts for teaching and particularly for research, including the study of many different types of linguistic variation.

**Course Outcomes**
- Students will be able to carry out library and online research to investigate findings by other linguists.
- Students will be able to organize linguistic data, construct and test hypotheses about it, and report the findings.
- Students will be able to distinguish empirical from introspective-based research and apply both (either separately or in conjunction with each other) for research topics.
- Students will be able to recognize and begin to apply statistical measures.
- Students will acquire authentic linguistic data from native speakers through appropriately selected computer corpora (collections of texts) as well as through other methods such as interviews, surveys, recordings, etc., and effectively extract the relevant data

ELANG 322 : Modern American Usage. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: ELang 223 or Ling 201 or concurrent enrollment.

DESCRIPTION: Current conventions and effective use of American English.

**Course Outcomes**
- Students will be able to identify and use multiple approaches to evaluating English usage.
- Students will be able to identify and use the most appropriate tools for each approach.
- Students will be able to evaluate the validity of prescriptive rules by using these approaches and tools.

ELANG 324 : History of the English Language. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELang 223 or Ling 201, or concurrent enrollment.

DESCRIPTION: Basic changes from Old English to modern English, including modern American dialects.

**Course Outcomes**
- Students will be able to trace the general phonemic, morphological, syntactic, and semantic changes of English in relation to the major periods of Old English, Middle English, Early Modern English, and Present-Day English.
- Students will be able to identify some of the appropriate linguistic tools and resources that are available to answer specific questions about the history and development of the English language.
- Students will be able to explain the important social and political factors as well as linguistic processes that have influenced the development of the English language and some of its varieties, including the current standard variety.
- Students will be able to apply course concepts and information to the assessment and interpretation of

authentic historical texts.

ELANG 325 : The Grammar of English. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ELang 223 or Ling 201 or concurrent enrollment.

DESCRIPTION: Study of English grammar in various applications.

**Course Outcomes**

- Students will be able to analyze and describe grammatical structures in English at the word, phrase, clause, and sentence levels.
- Students will be able to apply the knowledge from parts 1) and 2) towards the analysis of authentic texts.
- Students will be able to identify and label parts of speech in English sentences.

ELANG 326 : English Semantics and Pragmatics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ELANG 223; or LING 201

DESCRIPTION: Structure of meaning in words, phrases, and discourse. Lexical semantics and the mental lexicon; phrase-level meaning; interaction of situation and meaning.

**Course Outcomes**

- Students will be able to identify and discuss basic semantic and pragmatic concepts such as sense, reference, deixis, perlocution, illocution, entailment, implicature, metaphor, Gricean Maxims, etc.
- Students will be able to apply the above concepts towards the analysis of spoken and written texts, demonstrating their knowledge and understanding in a written paper.

ELANG 327 : English Phonetics and Phonology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ELANG 223; or LING 201

DESCRIPTION: Pronunciation, perception, and interaction of English speech sounds. Dialect variation.

**Course Outcomes**

- Students will be able to listen analytically to speech and identify a wide range of speech sounds and prosodic patterns found in English.
- Students will be able to use standard transcription systems to represent English speech sounds and discuss some of the limitations of those systems.
- Students will know how to use speech analysis software to investigate English speech sounds.
- Students will understand the theoretical principles underlying the classification and description of English speech sounds and prosodic patterns of English.
- Students will be able to describe and analyze at an intermediate level major features of the segmental and prosodic phonology of English.

ELANG 495R : The Senior Course. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Senior status; English language major status.

DESCRIPTION: In-depth study of a limited area of English language. Content varies; requires research and writing.

**Course Outcomes**

- Students will be able to identify some of the linguistic assumptions that underlie the approaches and methods they might use in completing the project.
- Students will be able to demonstrate how a variety of linguistic concepts, authoritative sources, and methodologies they have previously learned about in other courses may be effectively applied in a focused course project in which the students participate.
- By the end of the course, students will have written a substantial paper that describes, explains, and justifies the work they have done and the approach they have used in their project.

3. Complete one course from the following:

ELANG 362 : Discourse Analysis. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ELANG 223; or LING 201

DESCRIPTION: Linguistic analysis of connected speech or written discourse, especially larger linguistic units above the clause level, such as conversational exchanges or written texts.

**Course Outcomes**

- Students will be able to demonstrate knowledge of the ways that discourse is structured in a variety of genres and registers, including spoken conversational discourse and written academic discourse.
- Students will be able to identify and critically evaluate sources relevant to issues concerning discourse analysis.
- Students will be able to evaluate and appropriately apply various methods and approaches to the analysis of authentic English discourse and effectively communicate their findings.

ELANG 468 : Varieties of English. (3:3:0)

WHEN Fall

TAUGHT:
PREREQUISITE: ELANG 223; or LING 201
DESCRIPTION: Regional and social variation in English, especially standard and nonstandard national and world Englishes such as English-based pidgins and creoles.

**Course Outcomes**

- Students will learn the basic properties of several varieties of English.
- Students will be able to understand the basic terminology as well as the theoretical and social issues associated with studying varieties of English.
- Students will learn to collect and analyze data using several data collection methods.
- Students will collect and analyze data on a topic of their choice and present their findings in a research paper.

LING 550 : Sociolinguistics. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: For Fall 2013 & forward admits, Ling 210 or ELang 223; or equivalent.
DESCRIPTION: Research and theory in anthropological linguistics and sociolinguistics.

**Course Outcomes**

- Understand the relationship between language use and society with respect to regional, social, ethnic and contextual variation.
- Conduct research into a wide range of sociolingusitic variation
- Impart knowledge of sociolinguistics and related research in presentations and papers

4. Complete one of the following period courses:

ELANG 525 : Old English 1. (3:3:0)
WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: ELANG 324; or equivalent.
DESCRIPTION: Old English grammar and vocabulary; traditional syntactical patterns in various types of Old English prose and poetry.

**Course Outcomes**

- Students will be able to read Old English texts with the aid of a glossary and grammar and how to contextualize the content of the texts with Anglo-Saxon culture.
- Students will have learned the basic grammatical and syntactic structures of Old English.
- Students will be able to describe the differences between Old English and Present-day English and note the changes that occurred between the two stages of English.
- Students will be able to describe the major dialects and genres of Old English writings.

ELANG 526 : Middle English. (3:3:0)
WHEN TAUGHT: Fall Even Yrs.
PREREQUISITE: ELANG 324; or equivalent.
DESCRIPTION: Detailed study of the principal dialects of Middle English, as illustrated in the literature of the period.

**Course Outcomes**

- Students will be able to identify some of the most important ways that Middle English differs from Present-day English and Old English and tell how the language is in the process of changing in Middle English.
- Students will be able to read a Middle English text, with a little help from a glossary or dictionary.
- Students will be able to identify the major dialect differences in Middle English.
- Students will be able to explain concepts of language contact and sociolinguistics as exemplified by Middle English.

ELANG 527 : Early Modern English. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ELANG 324; or equivalent.
DESCRIPTION: English language from about 1500 to 1800, with special emphasis on language of Shakespeare and the King James Bible.

**Course Outcomes**

- Students will be able to identify the phonological, morphological, syntactic, lexical, pragmatic, and orthographic characteristics of Early Modern English and how those characteristics are distinguished from Present Day English.
- Students will be able to identify important historical, social, and linguistic factors that influenced the development of the language during the Early Modern Period, including the development of modern prescriptive norms.
- Students will be able to apply their understanding of Early Modern English to the interpretation of contemporary texts, including passages from the works of Shakespeare and the King James translation of the Bible.

5. Complete three courses from the following:

DIGHT 230 : Introduction to Print Publishing. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Introduction to layout and typesetting and their place in the publications process; includes graphic design theory, audience analysis, and basic skills with professional desktop publishing application.

**Course Outcomes**

- Students will recognize the differences in purpose, audience, and style between various print publications.
- Students will situate typesetting and printing within the scope of the publishing process as a whole.
- Students will master the basic functions of Adobe InDesign for the purpose of typesetting various publications.
- Students will use a set of basic design principles (proximity, alignment, repetition, contrast) to improve the quality of their publications in InDesign.
- Students will be familiar with Adobe Photoshop and some of its uses in print publishing.
- Students will work effectively in groups to produce high quality printed material.

DIGHT 250 : Web Publishing. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview and introduction to web programming as a form of expression. Includes HTML, CSS, and some JavaScript.

**Course Outcomes**

- Students will evaluate new web technologies in light of the general history of the web.
- Students will be able to draft, design, and code static web content, and then post that content to a publicly-accessible web server.
- Students will have a mastery of HTML/CSS syntax, common HTML elements/attributes/properties, and basic skill with JavaScript.

DIGHT 260 : Tools for Text Processing and Analysis. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: LingC 200 or C S 100 or equivalent experience.

DESCRIPTION: Introduction to tools and techniques suited for use with text analysis, including basic text encoding, text preparation, basic regular expression, and concordance programs.

**Course Outcomes**

There are no course outcomes available

DIGHT 315 : Research in the Digital Humanities. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DIGHT 215

RECOMMENDED: DigHT 260.

DESCRIPTION: Applications of computer technology to research in the Digital Humanities across language and literature, e.g. text processing, data mining, information storage and retrieval, etc.

**Course Outcomes**

There are no course outcomes available

ELANG 362 : Discourse Analysis. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ELANG 223; or LING 201

DESCRIPTION: Linguistic analysis of connected speech or written discourse, especially larger linguistic units above the clause level, such as conversational exchanges or written texts.

**Course Outcomes**

- Students will be able to demonstrate knowledge of the ways that discourse is structured in a variety of genres and registers, including spoken conversational discourse and written academic discourse.
- Students will be able to identify and critically evaluate sources relevant to issues concerning discourse analysis.
- Students will be able to evaluate and appropriately apply various methods and approaches to the analysis of authentic English discourse and effectively communicate their findings.

ELANG 421R : Studies in Language or Editing. (3:3:0)

DESCRIPTION: Topics vary.

**Course Outcomes**

- Students will be able to use information-design theory to improve their critiques of text features and to create new text design which is improved in both practical and ethical terms.
- Students will be able to use traditional editing rules to evaluate texts and revise text (format and information structure).
- Students will be able to explain how information-design theory can reconcile tensions between traditional editing rules that may come into conflict.

ELANG 468 : Varieties of English. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ELANG 223; or LING 201

DESCRIPTION: Regional and social variation in English, especially standard and nonstandard national and world Englishes such as English-based pidgins and creoles.

**Course Outcomes**

- Students will learn the basic properties of several varieties of English.
- Students will be able to understand the basic terminology as well as the theoretical and social issues associated with studying varieties of English.
- Students will learn to collect and analyze data using several data collection methods.
- Students will collect and analyze data on a topic of their choice and present their findings in a research paper.

ELANG 521R : Studies in Language. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ELANG 223; or LING 201; or equivalent.

DESCRIPTION: Topics vary.

**Course Outcomes**

- By the end of the course, students will have read extensively on a topic determined by the instructor.
- Students will be able to identify and outline some of the principal issues and contextual matters related to the designated topic area as well as to identify the principal sources and methods for resolving questions related to that topic area.
- By the end of the course, students will have prepared a substantial paper or project that demonstrates their mastery of material related to a specific issue or question within the topic area.

: English Spelling.

**Course Outcomes**

ELANG 522 : Language Policy and Planning in English Language Contexts. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ELANG 223; or LING 201; or equivalent.

DESCRIPTION: Theories and practices of governing entities as they formulate policies relating to the status and codification of the English language.

**Course Outcomes**

- Students will be able to apply fundamental language planning theories and practices toward solving real-world English language macro and micro planning problems.
- Students will be able to understand, interpret, explain, analyze, and assess representative texts and practices in English language planning and policy development.
- Students will be able to conduct research using appropriate language planning and policy theory and practice models in English language contexts.

ELANG 524 : History of the Book. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: History and development of the book, including modern methods and practices.

**Course Outcomes**

- Students will be able to describe the history of the book and the reasons it has developed the way it has.
- Students will be able to describe and show how the book (the codex, in particular) is physically constructed and produced.
- Students will be able to describe the development of scripts and fonts and the reasons they have changed over time.
- Students will be able to describe what goes into making a book look beautiful (design, typography, construction, usefulness, etc.).
- Students will be able to describe the fundamentals that underlie how texts change and develop over time, including the kinds of transmission errors that occur.

ELANG 525 : Old English 1. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: ELANG 324; or equivalent.

DESCRIPTION: Old English grammar and vocabulary; traditional syntactical patterns in various types of Old English prose and poetry.

**Course Outcomes**

- Students will be able to read Old English texts with the aid of a glossary and grammar and how to contextualize the content of the texts with Anglo-Saxon culture.
- Students will have learned the basic grammatical and syntactic structures of Old English.
- Students will be able to describe the differences between Old English and Present-day English and note the changes that occurred between the two stages of English.
- Students will be able to describe the major dialects and genres of Old English writings.

ELANG 526 : Middle English. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: ELANG 324; or equivalent.

DESCRIPTION: Detailed study of the principal dialects of Middle English, as illustrated in the literature of the

period.

**Course Outcomes**

- Students will be able to identify some of the most important ways that Middle English differs from Present-day English and Old English and tell how the language is in the process of changing in Middle English.
- Students will be able to read a Middle English text, with a little help from a glossary or dictionary.
- Students will be able to identify the major dialect differences in Middle English.
- Students will be able to explain concepts of language contact and sociolinguistics as exemplified by Middle English.

ELANG 527 : Early Modern English. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ELANG 324; or equivalent.

DESCRIPTION: English language from about 1500 to 1800, with special emphasis on language of Shakespeare and the King James Bible.

**Course Outcomes**

- Students will be able to identify the phonological, morphological, syntactic, lexical, pragmatic, and orthographic characteristics of Early Modern English and how those characteristics are distinguished from Present Day English.
- Students will be able to identify important historical, social, and linguistic factors that influenced the development of the language during the Early Modern Period, including the development of modern prescriptive norms.
- Students will be able to apply their understanding of Early Modern English to the interpretation of contemporary texts, including passages from the works of Shakespeare and the King James translation of the Bible.

ELANG 529 : Structure of Modern English. (3:3:0)

WHEN TAUGHT: Spring Odd Yrs.

PREREQUISITE: ELANG 325; or instructor's consent.

DESCRIPTION: English syntax through modern grammars; theories underlying those grammars.

**Course Outcomes**

- Students will be able to identify the various characteristics, features, and behaviors of the lexical and structural classes, as well as the larger phrase, clause, and sentence types within the English language.
- Students will be abel to identify some of the important reference works and resources that are available to answer questions about English grammatical structure and how they might appropriately be applied.
- Students will be able to demonstrate how grammatical knowledge can be consciously applied in a variety of analytical and applied language tasks.

ELANG 535 : Language and Literature. (3:3:0)

WHEN TAUGHT: Summer Contact Department

PREREQUISITE: ELANG 223; or LING 201; or equivalent.

DESCRIPTION: Literature from a language perspective; applying linguistic constructs to literary language; examining literary style; linguistic analysis of unfamiliar texts.

**Course Outcomes**

- Students will have become acquainted with important philological principles.
- Students will be able to analyze literary texts using poetic formulas, including simple and complex figures.
- Students will be able to analyze literary texts using philological criticism, including contextual relations.
- Students will understand how an online corpus might be used effectively to analyze literary texts.
- Students will be able to create literary texts using language features identified within the course.

ELANG 548 : Old English 2. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ELANG 525

DESCRIPTION: Additional reading in Old English, emphasizing sound changes, dialects, and textual production.

**Course Outcomes**

- By the end of the course students will have achieved a greater fluency within the Old English language.
- Students will have translated the entire epic poem, Beowulf.
- Students will be able to identify the features in Beowulf that exemplify the conventions of Old English heroic verse and the larger cultural context of the heroic society.
- Students will be able to provide examples of contrasting Old English lexical uses, including ones involving metaphor and synonymy among words within the poem as well as differences between the lexical forms in the poem and other Old English texts.

LING 325 : Theoretical Syntax. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 220.

DESCRIPTION: Theoretical comparison and contrast of different sentence types. Methods of argument to develop and critique generative theories of lexical categories, grammatical roles, and syntactic structure.

**Course Outcomes**

- Recognize and classify different types of constituents, including phrases and sentences.
- Understand and apply a theoretical framework and analytical techniques to determine and describe constituents.
- In writing and speaking, argue for (or against) particular theory dependent interpretations of structure, and support the argument with empirical evidence.
- Apply these outcomes to English and investigate their relevance to other languages.

LING 360 : (Ling-DigHT) Programming for Text Processing and Analysis. (3:3:0)

PREREQUISITE: C S 100 or equivalent experience.

DESCRIPTION: Development of computer applications for research in language and literature (text processing, retrieval, and analysis) in one or more programming languages (e.g., Perl, Python, etc.).

**Course Outcomes**

There are no course outcomes available

LING 361 : Speech Processing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: LING 360

DESCRIPTION: Analyzing and manipulating speech data. Developing software applications that include speech recognition and/or speech generation.

**Course Outcomes**

No outcomes are available at this time.

LING 450 : Introduction to Historical-Comparative Linguistics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 210 and Ling 220.

DESCRIPTION: Theory and method of language change via comparison of daughter languages and reconstruction of their ancestral language: phonological, morphological, semantic, and lexical.

**Course Outcomes**

- Students will be able to apply the comparative method and internal reconstruction in order to hypothesize earlier states of a language and to examine the relatedness of different languages.
- Students will be able to explain how and why linguistic changes occur in phonology, morphology, syntax, semantics, and the lexicon.
- Students will be able to explain how linguistic change is affected by language contact and psychological, physical, social, and cultural factors.
- Students will be able to use corpora, texts, and lexicons in order to obtain data on, and answer questions about, language change.

LING 485 : Corpus Linguistics. (3:3:0)

PREREQUISITE: For Fall 2013 & forward admits, Ling 240.

DESCRIPTION: Using large collections of texts for teaching and particularly for research, including many types of linguistic variation

**Course Outcomes**

- Students will be able to understand how corpora and corpus-based materials can best be used for teaching and learning. They will carry out an in-depth investigation of one particular linguistic phenomenon using the best available corpora and corpus-based tools.
- Students will be able to apply the basic principles of corpus design and construction to design a corpus for their area of interest.
- Students will be able to understand the differences between corpus-based/empirical and rationalist/non-empirical approaches to linguistics.
- Students will be able to use text analysis tools to investigate frequency, keywords, and do simple concordancing.
- Students will be able to use corpora to carry out research in the areas of 1) lexicography 2) genre-based differences in language 3) syntax 4) semantics, and 5) historical change.

LING 545 : Psycholinguistics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: For Fall 2013 & forward admits, Ling 201 or ELang 223; or equivalent.

DESCRIPTION: How the mind interprets, stores, retrieves, and produces language. Anatomical structures and physiological processes of the brain dealing with language.

**Course Outcomes**

- Discuss basic terminology, theories, and issues of psycholinguistics.
- Know the basic findings in each area of psycholinguistics (including comprehension, production, acquisition, and language disorders).
- Read and critically respond to psycholinguistic research and articles.
- Create and participate in psycholinguistic experimental research.

LING 550 : Sociolinguistics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 210 or ELang 223; or equivalent.

DESCRIPTION: Research and theory in anthropological linguistics and sociolinguistics.

**Course Outcomes**

- Understand the relationship between language use and society with respect to regional, social, ethnic and contextual variation.
- Conduct research into a wide range of sociolingusitic variation
- Impart knowledge of sociolinguistics and related research in presentations and papers

LING 551 : Anthropological Linguistics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: For Fall 2013 & forward admits, Ling 220 and Ling 230; or equivalent.

DESCRIPTION: Language in culture and society: development, typology, and description.

**Course Outcomes**

- Upon completion of this course students will be equipped with the conceptual tools to think about and analyze linguistic data in social contexts of use.
- Student will become conversant with foundational texts which inform our cultural understanding and use of language.
- Through readings, weekly exercises and discussions they will acquire the metalinguistic concepts necessary for contextualizing varieties of language.
- In class transcription sessions will address the representation of linguistic data, and how that representation may affect one's assessments of semantic intent.

LINGC 220 : Linguistic Computing Programming 1. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: LingC 200 or C S 100 or equivalent experience.

DESCRIPTION: Computer programming for language applications: data types, character representation, flow of control, file input/output, string manipulation.

**Course Outcomes**

- Understand what a computing algorithm is, as opposed to instructions intended for a human who as agency.
- Be able to manipulate digital information using algorithms written in a programming language. This includes an ability to understand and write assignment statements, loops, conditionals, and functions.
- Be able to manipulate digital information using algorithms written in a programming language. This includes an ability to understand and write assignment statements, loops, conditionals, and functions.
- Be able to create a simple graphical user interface for a software application.

LINGC 489R : Linguistic Computing Project. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Any 300-level linguistic computing course.

DESCRIPTION: Applying principles from other courses to a substantial research or development project. Students work individually with faculty and technical advisors.

**Course Outcomes**

- Design and implement a language-related software application that satisfies the requirements of a faculty or staff member, drawing on the expertise of a faculty or staff technical advisor.

**Note 1:** Only one digital humanities and technology (DigHT) or linguistics computing (LingC) course can be used to fill this requirement.

**Note 2:** The courses chosen to satisfy items three and four above can NOT double count in this requirement.

6. Complete 12 credit hours of university course work (or the equivalent) to a 200-level or higher in any single language. This may be the same language used to satisfy the GE Foreign Language option. (Note that the GE Foreign Language option may require more coursework than this requirement for the English language major.) A language relevant to the historical development of English is strongly recommended, namely Latin, French, German, or classical Greek.

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Faculty

# BA in Linguistics (51 hours*)

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Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following prerequisite course:

LING 201 : Introduction to Linguistics (Modern). (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic understanding of linguistic systems. Phonology, morphology, syntax, semantics, and pragmatics.

**Course Outcomes**
- Be familiar with some of the major subfields of linguistics and the main topics of interest within each subfield.
- Demonstrate understanding of phonological, morphological, and syntactic structure.
- Master techniques of basic phonological, morphological, syntactic, and historical analysis.

2. Complete the following core courses:

LING 210 : Sounds of Language. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 201.

DESCRIPTION: Introduction to the description and analysis of speech sounds.

**Course Outcomes**
- Transcribe and give articulatory descriptions for common speech sounds of the world's languages, including those of English
- Explain common phonetic processes.
- Complete basic phonological analyses using knowledge ofthe phonemic principlethe content and organization of phonological featuresthe elements of prosody (syllable, stress, etc)

LING 220 : Structure in Language. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 201.

DESCRIPTION: Introduction to the analysis of word and sentence structure.

**Course Outcomes**
- Complete basic syntactic analyses using knowledge ofparts of speechconstituent structuregrammatical relations
- Complete basic morphological analyses using knowledge ofbasic word formation processesthe distinction between inflection and derivation and common inflectional categoriesproperties of the interfaces of morphology with phonology and syntax
- Describe the results of analyses using appropriate terminology and formalisms.

LING 230 : Meaning in Language. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 201.

DESCRIPTION: Introduction to the analysis of meaning in words, grammar, and discourse.

**Course Outcomes**
- Conduct semantic and pragmatic analyses and explications of natural human language at the lexical, grammatical, discourse and metaphorical levels applying a variety of semantic and pragmatic analytical procedures
- Critique contemporary approaches to semantic and pragmatic analyses by becoming familiar with semantic and pragmatic theories.
- Argue for a particular semantic or pragmatic explication through producing papers and project reports.

LING 240 : Linguistic Tools 1. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 201.

DESCRIPTION: Introduction to quantitative and qualitative research methods in linguistics.

**Course Outcomes**

- Be able to formulate testable hypotheses concerning language.
- Be able to collect linguistic data using interviews, surveys, experiments, corpora, etc
- Be able to use appropriate tools to analyze linguistic data.
- Be able to describe the results of linguistic research using appropriate terminology and rhetorical strategies (i.e., talk and write like a linguist).

3. Complete two courses from the following:

ELANG 362 : Discourse Analysis. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ELANG 223; or LING 201

DESCRIPTION: Linguistic analysis of connected speech or written discourse, especially larger linguistic units above the clause level, such as conversational exchanges or written texts.

**Course Outcomes**

- Students will be able to demonstrate knowledge of the ways that discourse is structured in a variety of genres and registers, including spoken conversational discourse and written academic discourse.
- Students will be able to identify and critically evaluate sources relevant to issues concerning discourse analysis.
- Students will be able to evaluate and appropriately apply various methods and approaches to the analysis of authentic English discourse and effectively communicate their findings.

LING 310 : Phonetics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: For Fall 2013 & forward admits, Ling 210.

DESCRIPTION: General inventory of speech sounds possible in language, from both an acoustic and articulatory point of view.

**Course Outcomes**

- Produce and transcribe approximately 100 of the sounds of the world's languages and describe the articulatory and acoustic properties of these sounds.
- Transcribe and explain the phonetic processes common to languages of the world.
- Perform field work in phonetics—learning to record and acoustically analyze phonetics data.
- Recognize the phonetic systems of several languages and how and why the languages are organized the way they are.

LING 315 : Phonology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 210.

DESCRIPTION: Study of natural language sound systems from a variety of theoretical perspectives.

**Course Outcomes**

- Use a theoretical model to complete a phonological analysis at an intermediate level using appropriate methods and techniques,
- Present the results of phonological analyses, showing awareness of foundational issues in theories of phonology.

LING 320 : Morphology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: For Fall 2013 & forward admits, Ling 220.

DESCRIPTION: Theory and analysis of word structure in human language.

**Course Outcomes**

There are no course outcomes available

LING 325 : Theoretical Syntax. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 220.

DESCRIPTION: Theoretical comparison and contrast of different sentence types. Methods of argument to develop and critique generative theories of lexical categories, grammatical roles, and syntactic structure.

**Course Outcomes**

- Recognize and classify different types of constituents, including phrases and sentences.
- Understand and apply a theoretical framework and analytical techniques to determine and describe constituents.
- In writing and speaking, argue for (or against) particular theory dependent interpretations of structure, and support the argument with empirical evidence.
- Apply these outcomes to English and investigate their relevance to other languages.

LING 332 : Semantics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: LING 201 & LING 230; or LING 201 & ELANG 326
DESCRIPTION: Theory and analysis of natural language semantics from a variety of theoretical perspectives.

**Course Outcomes**

There are no course outcomes available

LING 335 : Pragmatics. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: LING 201 & LING 230; or LING 201 & ELANG 326
DESCRIPTION: Theory and analysis of pragmatics from a variety of theoretical perspectives.

**Course Outcomes**

There are no course outcomes available

4. Complete one course from the following:

LING 450 : Introduction to Historical-Comparative Linguistics. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: For Fall 2013 & forward admits, Ling 210 and Ling 220.
DESCRIPTION: Theory and method of language change via comparison of daughter languages and reconstruction of their ancestral language: phonological, morphological, semantic, and lexical.

**Course Outcomes**

- Students will be able to apply the comparative method and internal reconstruction in order to hypothesize earlier states of a language and to examine the relatedness of different languages.
- Students will be able to explain how and why linguistic changes occur in phonology, morphology, syntax, semantics, and the lexicon.
- Students will be able to explain how linguistic change is affected by language contact and psychological, physical, social, and cultural factors.
- Students will be able to use corpora, texts, and lexicons in order to obtain data on, and answer questions about, language change.

LING 485 : Corpus Linguistics. (3:3:0)
PREREQUISITE: For Fall 2013 & forward admits, Ling 240.
DESCRIPTION: Using large collections of texts for teaching and particularly for research, including many types of linguistic variation

**Course Outcomes**

- Students will be able to understand how corpora and corpus-based materials can best be used for teaching and learning. They will carry out an in-depth investigation of one particular linguistic phenomenon using the best available corpora and corpus-based tools.
- Students will be able to apply the basic principles of corpus design and construction to design a corpus for their area of interest.
- Students will be able to understand the differences between corpus-based/empirical and rationalist/non-empirical approaches to linguistics.
- Students will be able to use text analysis tools to investigate frequency, keywords, and do simple concordancing.
- Students will be able to use corpora to carry out research in the areas of 1) lexicography 2) genre-based differences in language 3) syntax 4) semantics, and 5) historical change.

LING 550 : Sociolinguistics. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: For Fall 2013 & forward admits, Ling 210 or ELang 223; or equivalent.
DESCRIPTION: Research and theory in anthropological linguistics and sociolinguistics.

**Course Outcomes**

- Understand the relationship between language use and society with respect to regional, social, ethnic and contextual variation.
- Conduct research into a wide range of sociolingusitic variation
- Impart knowledge of sociolinguistics and related research in presentations and papers

5. Complete 15 credit hours (to a 200-level or higher) of university-level course work (or the equivalent) in a single foreign language (American Sign Language also qualifies). Students intending to pursue graduate studies in linguistics are strongly encouraged to study a non-Indo-European language. Non-native speakers of English may elect to use English to fill this requirement. They may choose to earn the credit by special examination or by taking classes (ESL 301, 302, 303, 304, and 305).

6. Complete three courses from the following electives:

ELANG 362 : Discourse Analysis. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: ELANG 223; or LING 201
DESCRIPTION: Linguistic analysis of connected speech or written discourse, especially larger linguistic units above the clause level, such as conversational exchanges or written texts.

**Course Outcomes**

- Students will be able to demonstrate knowledge of the ways that discourse is structured in a variety of

genres and registers, including spoken conversational discourse and written academic discourse.
- Students will be able to identify and critically evaluate sources relevant to issues concerning discourse analysis.
- Students will be able to evaluate and appropriately apply various methods and approaches to the analysis of authentic English discourse and effectively communicate their findings.

LING 310 : Phonetics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: For Fall 2013 & forward admits, Ling 210.

DESCRIPTION: General inventory of speech sounds possible in language, from both an acoustic and articulatory point of view.

**Course Outcomes**

- Produce and transcribe approximately 100 of the sounds of the world's languages and describe the articulatory and acoustic properties of these sounds.
- Transcribe and explain the phonetic processes common to languages of the world.
- Perform field work in phonetics—learning to record and acoustically analyze phonetics data.
- Recognize the phonetic systems of several languages and how and why the languages are organized the way they are.

LING 315 : Phonology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 210.

DESCRIPTION: Study of natural language sound systems from a variety of theoretical perspectives.

**Course Outcomes**

- Use a theoretical model to complete a phonological analysis at an intermediate level using appropriate methods and techniques,
- Present the results of phonological analyses, showing awareness of foundational issues in theories of phonology.

LING 320 : Morphology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: For Fall 2013 & forward admits, Ling 220.

DESCRIPTION: Theory and analysis of word structure in human language.

**Course Outcomes**

There are no course outcomes available

LING 325 : Theoretical Syntax. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 220.

DESCRIPTION: Theoretical comparison and contrast of different sentence types. Methods of argument to develop and critique generative theories of lexical categories, grammatical roles, and syntactic structure.

**Course Outcomes**

- Recognize and classify different types of constituents, including phrases and sentences.
- Understand and apply a theoretical framework and analytical techniques to determine and describe constituents.
- In writing and speaking, argue for (or against) particular theory dependent interpretations of structure, and support the argument with empirical evidence.
- Apply these outcomes to English and investigate their relevance to other languages.

LING 360 : (Ling-DigHT) Programming for Text Processing and Analysis. (3:3:0)

PREREQUISITE: C S 100 or equivalent experience.

DESCRIPTION: Development of computer applications for research in language and literature (text processing, retrieval, and analysis) in one or more programming languages (e.g., Perl, Python, etc.).

**Course Outcomes**

There are no course outcomes available

LING 361 : Speech Processing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: LING 360

DESCRIPTION: Analyzing and manipulating speech data. Developing software applications that include speech recognition and/or speech generation.

**Course Outcomes**

No outcomes are available at this time.

LING 440 : Linguistic Tools 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: For Fall 2013 & forward admits, Ling 240.
DESCRIPTION: Linguistic research tools and methods; resources, literature, and synthesis of techniques.

**Course Outcomes**

There are no course outcomes available

LING 450 : Introduction to Historical-Comparative Linguistics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: For Fall 2013 & forward admits, Ling 210 and Ling 220.
DESCRIPTION: Theory and method of language change via comparison of daughter languages and reconstruction of their ancestral language: phonological, morphological, semantic, and lexical.

**Course Outcomes**

- Students will be able to apply the comparative method and internal reconstruction in order to hypothesize earlier states of a language and to examine the relatedness of different languages.
- Students will be able to explain how and why linguistic changes occur in phonology, morphology, syntax, semantics, and the lexicon.
- Students will be able to explain how linguistic change is affected by language contact and psychological, physical, social, and cultural factors.
- Students will be able to use corpora, texts, and lexicons in order to obtain data on, and answer questions about, language change.

LING 460 : Typology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: For Fall 2013 & forward admits, Ling 220.
DESCRIPTION: Introduction to the study of language universals and linguistic typology.

**Course Outcomes**

There are no course outcomes available

LING 480 : Problems in Translation. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: For Fall 2013 & forward admits, Ling 230 and proficiency in a second language.
DESCRIPTION: History, theory, and practice of human and machine translation.

**Course Outcomes**

- Discuss the possible future of translation technology, including future applications of existing technology and future development of new technologies, drawing on class assignments and a personal project.
- Create a bi-text corpus and derive translation memory and terminology from that bi-text corpus.
- Define a set of specifications for a translation project based on text type, audience, and purpose.
- Use machine translation, translation memory, and terminology in conjunction with a translation environment tool to complete a translation project according to the project's specifications.

LING 485 : Corpus Linguistics. (3:3:0)

PREREQUISITE: For Fall 2013 & forward admits, Ling 240.
DESCRIPTION: Using large collections of texts for teaching and particularly for research, including many types of linguistic variation

**Course Outcomes**

- Students will be able to understand how corpora and corpus-based materials can best be used for teaching and learning. They will carry out an in-depth investigation of one particular linguistic phenomenon using the best available corpora and corpus-based tools.
- Students will be able to apply the basic principles of corpus design and construction to design a corpus for their area of interest.
- Students will be able to understand the differences between corpus-based/empirical and rationalist/non-empirical approaches to linguistics.
- Students will be able to use text analysis tools to investigate frequency, keywords, and do simple concordancing.
- Students will be able to use corpora to carry out research in the areas of 1) lexicography 2) genre-based differences in language 3) syntax 4) semantics, and 5) historical change.

LING 545 : Psycholinguistics. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: For Fall 2013 & forward admits, Ling 201 or ELang 223; or equivalent.
DESCRIPTION: How the mind interprets, stores, retrieves, and produces language. Anatomical structures and physiological processes of the brain dealing with language.

**Course Outcomes**

- Discuss basic terminology, theories, and issues of psycholinguistics.
- Know the basic findings in each area of psycholinguistics (including comprehension, production, acquisition, and language disorders).
- Read and critically respond to psycholinguistic research and articles.
- Create and participate in psycholinguistic experimental research.

LING 550 : Sociolinguistics. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: For Fall 2013 & forward admits, Ling 210 or ELang 223; or equivalent.
DESCRIPTION: Research and theory in anthropological linguistics and sociolinguistics.

**Course Outcomes**

- Understand the relationship between language use and society with respect to regional, social, ethnic and contextual variation.
- Conduct research into a wide range of sociolingusitic variation
- Impart knowledge of sociolinguistics and related research in presentations and papers

LING 551 : Anthropological Linguistics. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: For Fall 2013 & forward admits, Ling 220 and Ling 230; or equivalent.
DESCRIPTION: Language in culture and society: development, typology, and description.

**Course Outcomes**

- Upon completion of this course students will be equipped with the conceptual tools to think about and analyze linguistic data in social contexts of use.
- Student will become conversant with foundational texts which inform our cultural understanding and use of language.
- Through readings, weekly exercises and discussions they will acquire the metalinguistic concepts necessary for contextualizing varieties of language.
- In class transcription sessions will address the representation of linguistic data, and how that representation may affect one's assessments of semantic intent.

Any other courses such as internships, directed readings, and field project as presently constituted.

Note 1: Courses taken in requirements 3 and 4 cannot double count for requirement 6.

Note 2: Subject to approval by the Linguistics Area Coordinator, students may take up to two courses taught outside of the department to satisfy elective requirements.

7. Complete the following capstone course:
   LING 495 : Senior Capstone. (3:3:0)
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   PREREQUISITE: For Fall 2013 & forward admits, Ling 210 & Ling 220 & Ling 230.
   DESCRIPTION: Integrative, culminating experience for linguistics majors; topics vary.

   **Course Outcomes**
   There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

## Show all Linguistics (Ling) Courses

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Linguistics and English Language Department Home

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- Linguistic Computing (LingC) Courses

English as a Second Language

Course Information
- English as a Second Language (ESL) Courses

Faculty

# Minor in Editing (21 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

DIGHT 230 : Introduction to Print Publishing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Introduction to layout and typesetting and their place in the publications process; includes graphic design theory, audience analysis, and basic skills with professional desktop publishing application.

**Course Outcomes**
- Students will recognize the differences in purpose, audience, and style between various print publications.
- Students will situate typesetting and printing within the scope of the publishing process as a whole.
- Students will master the basic functions of Adobe InDesign for the purpose of typesetting various publications.
- Students will use a set of basic design principles (proximity, alignment, repetition, contrast) to improve the quality of their publications in InDesign.
- Students will be familiar with Adobe Photoshop and some of its uses in print publishing.
- Students will work effectively in groups to produce high quality printed material.

ELANG 223 : Introduction to the English Language. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Overview of English from linguistic point of view, emphasizing structure of English and social, biological, and psychological aspects of language.

**Course Outcomes**
- Students will have acquired basic analytical tools in core areas of linguistics: phonology, morphology, syntax, semantics, and pragmatics.
- Students will be able to apply these analytical tools to English language data of various types, such as those involving aspects of variation, acquisition, and historical change.

ELANG 322 : Modern American Usage. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: ELang 223 or Ling 201 or concurrent enrollment.

DESCRIPTION: Current conventions and effective use of American English.

**Course Outcomes**
- Students will be able to identify and use multiple approaches to evaluating English usage.
- Students will be able to identify and use the most appropriate tools for each approach.
- Students will be able to evaluate the validity of prescriptive rules by using these approaches and tools.

ELANG 325 : The Grammar of English. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ELang 223 or Ling 201 or concurrent enrollment.

DESCRIPTION: Study of English grammar in various applications.

**Course Outcomes**
- Students will be able to analyze and describe grammatical structures in English at the word, phrase, clause, and sentence levels.
- Students will be able to apply the knowledge from parts 1) and 2) towards the analysis of authentic texts.
- Students will be able to identify and label parts of speech in English sentences.

ELANG 350 : Basic Editing Skills. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 223 & ELANG 322 & ELANG 325

DESCRIPTION: Editing theory and practice, emphasizing copy editing and basic line editing.

**Course Outcomes**

- Students demonstrate copy editing skills by using these skills to improve sample manuscripts in terms of punctuation, spelling, usage, and sentence clarity.
- Students apply style and usage requirements with flexibility, customized to specific contexts and circumstances.
- Students deploy empirical methods to investigate patterns of style and usage and make editorial decisions.

ELANG 410R : Genre and Substantive Editing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 223 & ELANG 322 & ELANG 325

DESCRIPTION: Exploring a different genre of publishing each semester; instruction in substantive editing.

**Course Outcomes**

- Students articulate a personal perspective on ethical issues in publishing, such as preserving the author's voice, plagiarism, copyright infringement, the tensions between the editorial and the marketing sides of publishing, the promotion of values and the transmission of our cultural heritage.
- Students demonstrate specialized skills and the perspective required by at least one specific editing genre (such as magazine publishing, technical communication, fiction, scholarly publishing, or visual information design).

2. Complete three hours of the following:

ELANG 430R : Editing for Publication. (1-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 350 & ELANG 410R & DIGHT 230

DESCRIPTION: Refining copy editing and substantive editing skills through hands-on work with actual publications; one-on-one feedback and mentoring.

**Course Outcomes**

- Students demonstrate improvement in basic editing skills acquired in previous courses: copy editing, substantive genre editing, and use of electronic tools for editing and layout.
- Students demonstrate ability to work in small groups by producing as a group a publication project effectively edited and visually designed.
- Students demonstrate a basic understanding of the publication industry and the requirements of an effective job search by creating a job application and an editing skills portfolio.

## Show all English Language (ELang) Courses

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- Linguistics (Ling) Courses
- Linguistic Computing (LingC) Courses

English as a Second Language

Course Information
- English as a Second Language (ESL) Courses

Faculty

# Minor in Linguistics (15 hours)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

LING 201 : Introduction to Linguistics (Modern). (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic understanding of linguistic systems. Phonology, morphology, syntax, semantics, and pragmatics.

**Course Outcomes**
- Be familiar with some of the major subfields of linguistics and the main topics of interest within each subfield.
- Demonstrate understanding of phonological, morphological, and syntactic structure.
- Master techniques of basic phonological, morphological, syntactic, and historical analysis.

2. Complete two courses from the following:

LING 210 : Sounds of Language. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 201.

DESCRIPTION: Introduction to the description and analysis of speech sounds.

**Course Outcomes**
- Transcribe and give articulatory descriptions for common speech sounds of the world's languages, including those of English
- Explain common phonetic processes.
- Complete basic phonological analyses using knowledge ofthe phonemic principlethe content and organization of phonological featuresthe elements of prosody (syllable, stress, etc)

LING 220 : Structure in Language. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 201.

DESCRIPTION: Introduction to the analysis of word and sentence structure.

**Course Outcomes**
- Complete basic syntactic analyses using knowledge ofparts of speechconstituent structuregrammatical relations
- Complete basic morphological analyses using knowledge ofbasic word formation processesthe distinction between inflection and derivation and common inflectional categoriesproperties of the interfaces of morphology with phonology and syntax
- Describe the results of analyses using appropriate terminology and formalisms.

LING 230 : Meaning in Language. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 201.

DESCRIPTION: Introduction to the analysis of meaning in words, grammar, and discourse.

**Course Outcomes**
- Conduct semantic and pragmatic analyses and explications of natural human language at the lexical, grammatical, discourse and metaphorical levels applying a variety of semantic and pragmatic analytical procedures
- Critique contemporary approaches to semantic and pragmatic analyses by becoming familiar with semantic and pragmatic theories.
- Argue for a particular semantic or pragmatic explication through producing papers and project reports.

LING 240 : Linguistic Tools 1. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 201.

DESCRIPTION: Introduction to quantitative and qualitative research methods in linguistics.

**Course Outcomes**

- Be able to formulate testable hypotheses concerning language.
- Be able to collect linguistic data using interviews, surveys, experiments, corpora, etc
- Be able to use appropriate tools to analyze linguistic data.
- Be able to describe the results of linguistic research using appropriate terminology and rhetorical strategies (i.e., talk and write like a linguist).

3. Complete six hours of electives from other Linguistics course work.

## Show all Linguistics (Ling) Courses

College of Humanities Home

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- Linguistic Computing (LingC) Courses

English as a Second Language

Course Information
- English as a Second Language (ESL) Courses

Faculty

# Minor in TESOL (18 hours)

Show All Course Descriptions
Hide All Course Descriptions

BYU's Department of Linguistics and English Language offers a minor and a certificate in teaching English to speakers of other languages (TESOL). Students may earn a minor, or a certificate and a minor as completion of the minor occurs in the process of completing the certificate.

**Note:** For education majors, the TESOL K-12 minor is available to those earning a teaching major and leads to an ESL Endorsement. It is offered through the School of Education. For more information, contact the David O. McKay School of Education Advisement Center.

## Career Opportunities

TESOL minor students are qualified for many overseas positions teaching English as a foreign language. They may also work in various ESL programs in the United States and other English-speaking countries. Possible teaching settings include adult education classes, intensive English programs, and English language learning programs around the world. Students in any major may apply for the TESOL minor.

### Difference between the TESOL certificate and the TESOL minor

The TESOL minor will be indicated on a student's official transcript, whereas the TESOL certificate will not. Students should apply to the minor program by going to their college advisement center. Requirements will be tracked by the MyMap system and the student's progress report. If all requirements are met, the minor will be awarded at the time of graduation. Students who also want to complete the TESOL certificate must provide evidence to the Linguistics and English Language Department that requirements have been met. Once the certificate requirements have been met, the department will prepare and mail the certificate to the student.

Choosing whether or not to complete the certificate depends largely on the student's career goals. A TESOL certificate is a term that is recognized around the world. It is viewed as more applied and usable in the professional world. A certificate may be particularly useful if a student plans to teach abroad.

Students may choose to complete either a minor only or a minor and a certificate.

## Program Requirements

1. Complete the prerequisite course:

ELANG 223 : Introduction to the English Language. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Overview of English from linguistic point of view, emphasizing structure of English and social, biological, and psychological aspects of language.

**Course Outcomes**
- Students will have acquired basic analytical tools in core areas of linguistics: phonology, morphology, syntax, semantics, and pragmatics.
- Students will be able to apply these analytical tools to English language data of various types, such as those involving aspects of variation, acquisition, and historical change.

2. Complete the following foundation courses:

ELANG 325 : The Grammar of English. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ELang 223 or Ling 201 or concurrent enrollment.

DESCRIPTION: Study of English grammar in various applications.

**Course Outcomes**
- Students will be able to analyze and describe grammatical structures in English at the word, phrase, clause, and sentence levels.
- Students will be able to apply the knowledge from parts 1) and 2) towards the analysis of authentic texts.
- Students will be able to identify and label parts of speech in English sentences.

ELANG 375 : TESOL Listening, Speaking, and Pronunciation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ELANG 223; or LING 201
DESCRIPTION: Understanding basic English as a second/foreign language theories and practices for teaching and assessing listening, speaking, and pronunciation.

**Course Outcomes**

- Analyze historical methods and techniques in English as a second/foreign language for teaching and assessing listening, speaking, and pronunciation.
- Analyze and adapt textbook materials designed to promote accuracy and fluency in listening, speaking, and pronunciation.
- Observe and analyze second language accuracy and fluency instruction in relation to concepts discussed in class.
- Identify the roles that langauge acquisition, learner variables, and language learning strategies play in teaching and assessing listening, speaking, and pronunciation.
- Evaluate technology aimed at promoting listening, speaking, and pronunciation.

ELANG 376 : TESOL Reading, Writing, and Vocabulary. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ELANG 223; or LING 201
DESCRIPTION: Understanding basic processes of literacy development in English as a second or foreign langauge. How knowledge of these processes informs classroom literacy instruction and practices.

**Course Outcomes**

- Analyze basic theories of second/foreign language literacy and vocabulary acquisition and assessment.
- Apply basic theories to actual classroom literacy and vocabulary instruction.
- Observe and analyze L2 literacy instruction in relation to concepts discussed in class.
- Identify and critique online resources aimed at literacy and vocabulary development.

3. Complete the following courses:

ELANG 477 : TESOL Basic Course and Lesson Planning. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: For Fall 2013 & forward admits, ELang 325 & ELang 375 & ELang 376.
DESCRIPTION: Design English as a second or foreign language course and lesson plans on principles and knowledge of learning outcomes, assessment plans, methods, materials, classroom management, and learning activities; access and use professional resources.

**Course Outcomes**

- Based on a needs assessment, students will be able to design an ESL course that includes learning outcomes, an assessment plan, a description of what will be taught, how it will be taught (including the roles for teacher and students), and major learning activities.
- Students will be able to develop an instructional unit using materials from a textbook that includes learning objectives, a unit plan, and sample lesson plans.
- Students will become more professional in TESOL by accessing and using resources including international, national, and local organizations; journals and online resources; job listings; and information about further educational opportunities.

ELANG 478 : TESOL Practicum. (3:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ELANG 325 & ELANG 375 & ELANG 376; ELang 223; and ELang 477 or concurrent enrollment.
DESCRIPTION: Synthesize and apply the foundational knowledge of the English language systems and competencies in teaching English as a second or foreign language.

**Course Outcomes**

- Students will put the knowledge and skills learned in the TESOL minor classes into use during the practicum at the English Language Center by:• Observing more experienced teachers in the classroom• Working with a mentor• Tutoring in the Self-Access Study Center• Assisting in the computer lab• Teaching in the Foundations Prep or Academic Prep classes• Completing a portfolio of work completed during the practicum

## Show all English Language (ELang) Courses

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# Certificate in TESOL (21 hours)

Show All Course Descriptions
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BYU's Department of Linguistics and English Language offers a minor and a certificate in teaching English to speakers of other languages (TESOL). Students may earn a minor, or a certificate and a minor as completion of the minor occurs in the process of completing the certificate.

**Note:** For education majors, the TESOL K-12 minor is available to those earning a teaching major and leads to an ESL Endorsement. It is offered through the School of Education. For more information, contact the David O. McKay School of Education Advisement Center.

## Career Opportunities

TESOL certificate students are qualified for many overseas positions teaching English as a foreign language. They may also work in various ESL programs in the United States and other English-speaking countries. Possible teaching settings include adult education classes, intensive English programs, and English language learning programs around the world. Students in any major may apply for the TESOL certificate.

### Difference between the TESOL certificate and the TESOL minor

The TESOL minor will be indicated on a student's official transcript, whereas the TESOL certificate will not. Students should apply to the minor program by going to their college advisement center. Requirements will be tracked by the MyMap system and the student's progress report. If all requirements are met, the minor will be awarded at the time of graduation. Students who also want to complete the TESOL certificate must provide evidence to the Linguistics and English Language Department that requirements have been met. Once the certificate requirements have been met, the department will prepare and mail the certificate to the student.

Choosing whether or not to complete the certificate depends largely on the student's career goals. A TESOL certificate is a term that is recognized around the world. It is viewed as more applied and usable in the professional world. A certificate may be particularly useful if a student plans to teach abroad.

Students may choose to complete either a minor only or a minor and a certificate.

## Program Requirements

1. Complete a TESOL minor (18 hours).
2. Complete 3 hours of the following:

   ELANG 496R : TESOL Internship. (.5-9:0:0)

   WHEN TAUGHT: Fall; Winter; Spring; Summer
   PREREQUISITE: ELANG 477 & ELANG 478
   DESCRIPTION: Individualized work or volunteer experience in a domestic or international setting.
   NOTE: International internships must be coordinated through International Study Programs. All internships require prior departmental approval.

   **Course Outcomes**

   - Apply linguistic and pedagogical concepts learned in other TESOL minor courses in real-world situations.
   - Develop feelings of confidence and preparedness in teaching English as a second language.
   - Demonstrate critical reflection of their own teaching beliefs and practices.
   - Become familiar with professional conduct, practice, and employment options in the TESOL industry.

3. Provide evidence of the following:
   a. Evidence of a second language learning experience equivalent to 4 semesters of a second language (through classes or challenge exams).
   b. For students whose first language is not English, evidence of English language proficiency (at least an *Advanced-low* on the ACTFL OPI).

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# English Language (ELang)

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## Undergraduate Courses

### 100-Level Courses

ELANG 150 : First-Year Writing for International Students. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Processes of academic writing, reading, and research for international students who have English as their second language.

NOTE: Fulfills GE First-Year Writing requirement.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

ELANG 223 : Introduction to the English Language. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Overview of English from linguistic point of view, emphasizing structure of English and social, biological, and psychological aspects of language.

**Course Outcomes**

- Students will have acquired basic analytical tools in core areas of linguistics: phonology, morphology, syntax, semantics, and pragmatics.
- Students will be able to apply these analytical tools to English language data of various types, such as those involving aspects of variation, acquisition, and historical change.

ELANG 273 : Empirical Methods in English Linguistics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ELang 223 or concurrent enrollment.

DESCRIPTION: The use of large collections of texts for teaching and particularly for research, including the study of many different types of linguistic variation.

**Course Outcomes**

- Students will be able to carry out library and online research to investigate findings by other linguists.
- Students will be able to organize linguistic data, construct and test hypotheses about it, and report the findings.
- Students will be able to distinguish empirical from introspective-based research and apply both (either separately or in conjunction with each other) for research topics.
- Students will be able to recognize and begin to apply statistical measures.
- Students will acquire authentic linguistic data from native speakers through appropriately selected computer corpora (collections of texts) as well as through other methods such as interviews, surveys, recordings, etc., and effectively extract the relevant data

### 300-Level Courses

ELANG 322 : Modern American Usage. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: ELang 223 or Ling 201 or concurrent enrollment.

DESCRIPTION: Current conventions and effective use of American English.

**Course Outcomes**

- Students will be able to identify and use multiple approaches to evaluating English usage.
- Students will be able to identify and use the most appropriate tools for each approach.
- Students will be able to evaluate the validity of prescriptive rules by using these approaches and tools.

ELANG 324 : History of the English Language. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELang 223 or Ling 201, or concurrent enrollment.

DESCRIPTION: Basic changes from Old English to modern English, including modern American dialects.

**Course Outcomes**

- Students will be able to trace the general phonemic, morphological, syntactic, and semantic changes of English in relation to the major periods of Old English, Middle English, Early Modern English, and Present-Day English.
- Students will be able to identify some of the appropriate linguistic tools and resources that are available to answer specific questions about the history and development of the English language.
- Students will be able to explain the important social and political factors as well as linguistic processes that have influenced the development of the English language and some of its varieties, including the current standard variety.
- Students will be able to apply course concepts and information to the assessment and interpretation of authentic historical texts.

ELANG 325 : The Grammar of English. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ELang 223 or Ling 201 or concurrent enrollment.

DESCRIPTION: Study of English grammar in various applications.

**Course Outcomes**

- Students will be able to analyze and describe grammatical structures in English at the word, phrase, clause, and sentence levels.
- Students will be able to apply the knowledge from parts 1) and 2) towards the analysis of authentic texts.
- Students will be able to identify and label parts of speech in English sentences.

ELANG 326 : English Semantics and Pragmatics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ELANG 223; or LING 201

DESCRIPTION: Structure of meaning in words, phrases, and discourse. Lexical semantics and the mental lexicon; phrase-level meaning; interaction of situation and meaning.

**Course Outcomes**

- Students will be able to identify and discuss basic semantic and pragmatic concepts such as sense, reference, deixis, perlocution, illocution, entailment, implicature, metaphor, Gricean Maxims, etc.
- Students will be able to apply the above concepts towards the analysis of spoken and written texts, demonstrating their knowledge and understanding in a written paper.

ELANG 327 : English Phonetics and Phonology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ELANG 223; or LING 201

DESCRIPTION: Pronunciation, perception, and interaction of English speech sounds. Dialect variation.

**Course Outcomes**

- Students will be able to listen analytically to speech and identify a wide range of speech sounds and prosodic patterns found in English.
- Students will be able to use standard transcription systems to represent English speech sounds and discuss some of the limitations of those systems.
- Students will know how to use speech analysis software to investigate English speech sounds.
- Students will understand the theoretical principles underlying the classification and description of English speech sounds and prosodic patterns of English.
- Students will be able to describe and analyze at an intermediate level major features of the segmental and prosodic phonology of English.

ELANG 350 : Basic Editing Skills. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 223 & ELANG 322 & ELANG 325

DESCRIPTION: Editing theory and practice, emphasizing copy editing and basic line editing.

**Course Outcomes**

- Students demonstrate copy editing skills by using these skills to improve sample manuscripts in terms of punctuation, spelling, usage, and sentence clarity.
- Students apply style and usage requirements with flexibility, customized to specific contexts and circumstances.
- Students deploy empirical methods to investigate patterns of style and usage and make editorial decisions.

ELANG 351R : Editing Student Journals. (1-2:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Hands-on training and experience in all aspects of editing and publishing student journals.

**Course Outcomes**

- Students acquire practical experience in one or more phases of the production of a BYU student journal: manuscript solicitation, evaluation, development, copy editing, layout, production, and promotion.
- Students seek out opportunities to apply principles learned in editing classes to improve communication in live settings.
- Students articulate what they have learned about communication or publication processes in live settings that have enhanced their course learning.

ELANG 362 : Discourse Analysis. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ELANG 223; or LING 201

DESCRIPTION: Linguistic analysis of connected speech or written discourse, especially larger linguistic units above the clause level, such as conversational exchanges or written texts.

**Course Outcomes**

- Students will be able to demonstrate knowledge of the ways that discourse is structured in a variety of genres and registers, including spoken conversational discourse and written academic discourse.
- Students will be able to identify and critically evaluate sources relevant to issues concerning discourse analysis.
- Students will be able to evaluate and appropriately apply various methods and approaches to the analysis of authentic English discourse and effectively communicate their findings.

ELANG 375 : TESOL Listening, Speaking, and Pronunciation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ELANG 223; or LING 201

DESCRIPTION: Understanding basic English as a second/foreign language theories and practices for teaching and assessing listening, speaking, and pronunciation.

**Course Outcomes**

- Analyze historical methods and techniques in English as a second/foreign language for teaching and assessing listening, speaking, and pronunciation.
- Analyze and adapt textbook materials designed to promote accuracy and fluency in listening, speaking, and pronunciation.
- Observe and analyze second language accuracy and fluency instruction in relation to concepts discussed in class.
- Identify the roles that langauge acquisition, learner variables, and language learning strategies play in teaching and assessing listening, speaking, and pronunciation.
- Evaluate technology aimed at promoting listening, speaking, and pronunciation.

ELANG 376 : TESOL Reading, Writing, and Vocabulary. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ELANG 223; or LING 201

DESCRIPTION: Understanding basic processes of literacy development in English as a second or foreign langauge. How knowledge of these processes informs classroom literacy instruction and practices.

**Course Outcomes**

- Analyze basic theories of second/foreign language literacy and vocabulary acquisition and assessment.
- Apply basic theories to actual classroom literacy and vocabulary instruction.
- Observe and analyze L2 literacy instruction in relation to concepts discussed in class.
- Identify and critique online resources aimed at literacy and vocabulary development.

ELANG 399R : Academic Internship: Editing and English Language. (.5-9:0:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: On-the-job experience and education related to editing and English language studies.

**Course Outcomes**

- Students acquire practical experience in one or more phases of the production of a professional publication or other document by serving as an intern at that publication or for the document production team: manuscript solicitation, evaluation, development of content, copy editing, layout, and print production.
- Students seek out opportunities to apply principles learned in editing classes to improve communication in live settings.
- Students articulate what they have learned about communication or publication processes in live settings that has enhanced their course learning and professional development.

### 400-Level Courses

ELANG 410R : Genre and Substantive Editing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 223 & ELANG 322 & ELANG 325

DESCRIPTION: Exploring a different genre of publishing each semester; instruction in substantive editing.

**Course Outcomes**

- Students articulate a personal perspective on ethical issues in publishing, such as preserving the author's voice, plagiarism, copyright infringement, the tensions between the editorial and the marketing sides of publishing, the promotion of values and the transmission of our cultural heritage.
- Students demonstrate specialized skills and the perspective required by at least one specific editing genre (such as magazine publishing, technical communication, fiction, scholarly publishing, or visual information design).

ELANG 421R : Studies in Language or Editing. (3:3:0)

DESCRIPTION: Topics vary.

**Course Outcomes**

- Students will be able to use information-design theory to improve their critiques of text features and to create new text design which is improved in both practical and ethical terms.
- Students will be able to use traditional editing rules to evaluate texts and revise text (format and information structure).
- Students will be able to explain how information-design theory can reconcile tensions between traditional editing rules that may come into conflict.

ELANG 430R : Editing for Publication. (1-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ELANG 350 & ELANG 410R & DIGHT 230

DESCRIPTION: Refining copy editing and substantive editing skills through hands-on work with actual publications; one-on-one feedback and mentoring.

**Course Outcomes**

- Students demonstrate improvement in basic editing skills acquired in previous courses: copy editing, substantive genre editing, and use of electronic tools for editing and layout.
- Students demonstrate ability to work in small groups by producing as a group a publication project effectively edited and visually designed.
- Students demonstrate a basic understanding of the publication industry and the requirements of an effective job search by creating a job application and an editing skills portfolio.

ELANG 468 : Varieties of English. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ELANG 223; or LING 201

DESCRIPTION: Regional and social variation in English, especially standard and nonstandard national and world Englishes such as English-based pidgins and creoles.

**Course Outcomes**

- Students will learn the basic properties of several varieties of English.
- Students will be able to understand the basic terminology as well as the theoretical and social issues associated with studying varieties of English.
- Students will learn to collect and analyze data using several data collection methods.
- Students will collect and analyze data on a topic of their choice and present their findings in a research paper.

ELANG 477 : TESOL Basic Course and Lesson Planning. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: For Fall 2013 & forward admits, ELang 325 & ELang 375 & ELang 376.

DESCRIPTION: Design English as a second or foreign language course and lesson plans on principles and knowledge of learning outcomes, assessment plans, methods, materials, classroom management, and learning activities; access and use professional resources.

**Course Outcomes**

- Based on a needs assessment, students will be able to design an ESL course that includes learning outcomes, an assessment plan, a description of what will be taught, how it will be taught (including the roles for teacher and students), and major learning activities.
- Students will be able to develop an instructional unit using materials from a textbook that includes learning objectives, a unit plan, and sample lesson plans.
- Students will become more professional in TESOL by accessing and using resources including international, national, and local organizations; journals and online resources; job listings; and information about further educational opportunities.

ELANG 478 : TESOL Practicum. (3:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ELANG 325 & ELANG 375 & ELANG 376; ELang 223; and ELang 477 or concurrent enrollment.

DESCRIPTION: Synthesize and apply the foundational knowledge of the English language systems and competencies in teaching English as a second or foreign language.

**Course Outcomes**

- Students will put the knowledge and skills learned in the TESOL minor classes into use during the practicum at the English Language Center by:• Observing more experienced teachers in the classroom• Working with a mentor• Tutoring in the Self-Access Study Center• Assisting in the computer lab• Teaching in the Foundations Prep or Academic Prep classes• Completing a portfolio of work completed during the practicum

ELANG 495R : The Senior Course. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Senior status; English language major status.

DESCRIPTION: In-depth study of a limited area of English language. Content varies; requires research and writing.

**Course Outcomes**

- Students will be able to identify some of the linguistic assumptions that underlie the approaches and methods they might use in completing the project.
- Students will be able to demonstrate how a variety of linguistic concepts, authoritative sources, and methodologies they have previously learned about in other courses may be effectively applied in a focused course project in which the students participate.
- By the end of the course, students will have written a substantial paper that describes, explains, and justifies

the work they have done and the approach they have used in their project.

ELANG 496R : TESOL Internship. (.5-9:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ELANG 477 & ELANG 478

DESCRIPTION: Individualized work or volunteer experience in a domestic or international setting.

NOTE: International internships must be coordinated through International Study Programs. All internships require prior departmental approval.

**Course Outcomes**

- Apply linguistic and pedagogical concepts learned in other TESOL minor courses in real-world situations.
- Develop feelings of confidence and preparedness in teaching English as a second language.
- Demonstrate critical reflection of their own teaching beliefs and practices.
- Become familiar with professional conduct, practice, and employment options in the TESOL industry.

## 500-Level Graduate Courses (available to advanced undergraduates)

ELANG 521R : Studies in Language. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ELANG 223; or LING 201; or equivalent.

DESCRIPTION: Topics vary.

**Course Outcomes**

- By the end of the course, students will have read extensively on a topic determined by the instructor.
- Students will be able to identify and outline some of the principal issues and contextual matters related to the designated topic area as well as to identify the principal sources and methods for resolving questions related to that topic area.
- By the end of the course, students will have prepared a substantial paper or project that demonstrates their mastery of material related to a specific issue or question within the topic area.

: English Spelling.

**Course Outcomes**

ELANG 522 : Language Policy and Planning in English Language Contexts. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ELANG 223; or LING 201; or equivalent.

DESCRIPTION: Theories and practices of governing entities as they formulate policies relating to the status and codification of the English language.

**Course Outcomes**

- Students will be able to apply fundamental language planning theories and practices toward solving real-world English language macro and micro planning problems.
- Students will be able to understand, interpret, explain, analyze, and assess representative texts and practices in English language planning and policy development.
- Students will be able to conduct research using appropriate language planning and policy theory and practice models in English language contexts.

ELANG 524 : History of the Book. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: History and development of the book, including modern methods and practices.

**Course Outcomes**

- Students will be able to describe the history of the book and the reasons it has developed the way it has.
- Students will be able to describe and show how the book (the codex, in particular) is physically constructed and produced.
- Students will be able to describe the development of scripts and fonts and the reasons they have changed over time.
- Students will be able to describe what goes into making a book look beautiful (design, typography, construction, usefulness, etc.).
- Students will be able to describe the fundamentals that underlie how texts change and develop over time, including the kinds of transmission errors that occur.

ELANG 525 : Old English 1. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: ELANG 324; or equivalent.

DESCRIPTION: Old English grammar and vocabulary; traditional syntactical patterns in various types of Old English prose and poetry.

**Course Outcomes**

- Students will be able to read Old English texts with the aid of a glossary and grammar and how to contextualize the content of the texts with Anglo-Saxon culture.
- Students will have learned the basic grammatical and syntactic structures of Old English.

Students will be able to describe the differences between Old English and Present-day English and note the changes that occurred between the two stages of English.
- Students will be able to describe the major dialects and genres of Old English writings.

ELANG 526 : Middle English. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: ELANG 324; or equivalent.

DESCRIPTION: Detailed study of the principal dialects of Middle English, as illustrated in the literature of the period.

**Course Outcomes**

- Students will be able to identify some of the most important ways that Middle English differs from Present-day English and Old English and tell how the language is in the process of changing in Middle English.
- Students will be able to read a Middle English text, with a little help from a glossary or dictionary.
- Students will be able to identify the major dialect differences in Middle English.
- Students will be able to explain concepts of language contact and sociolinguistics as exemplified by Middle English.

ELANG 527 : Early Modern English. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ELANG 324; or equivalent.

DESCRIPTION: English language from about 1500 to 1800, with special emphasis on language of Shakespeare and the King James Bible.

**Course Outcomes**

- Students will be able to identify the phonological, morphological, syntactic, lexical, pragmatic, and orthographic characteristics of Early Modern English and how those characteristics are distinguished from Present Day English.
- Students will be able to identify important historical, social, and linguistic factors that influenced the development of the language during the Early Modern Period, including the development of modern prescriptive norms.
- Students will be able to apply their understanding of Early Modern English to the interpretation of contemporary texts, including passages from the works of Shakespeare and the King James translation of the Bible.

ELANG 528 : Varieties of English. (3:3:0)

PREREQUISITE: ELang 223, 324; or equivalents.

DESCRIPTION: Regional and social variation in English, especially standard and nonstandard national and world Englishes, including English-based pidgins and creoles.

**Course Outcomes**

There are no course outcomes available

ELANG 529 : Structure of Modern English. (3:3:0)

WHEN TAUGHT: Spring Odd Yrs.

PREREQUISITE: ELANG 325; or instructor's consent.

DESCRIPTION: English syntax through modern grammars; theories underlying those grammars.

**Course Outcomes**

- Students will be able to identify the various characteristics, features, and behaviors of the lexical and structural classes, as well as the larger phrase, clause, and sentence types within the English language.
- Students will be abel to identify some of the important reference works and resources that are available to answer questions about English grammatical structure and how they might appropriately be applied.
- Students will be able to demonstrate how grammatical knowledge can be consciously applied in a variety of analytical and applied language tasks.

ELANG 535 : Language and Literature. (3:3:0)

WHEN TAUGHT: Summer Contact Department

PREREQUISITE: ELANG 223; or LING 201; or equivalent.

DESCRIPTION: Literature from a language perspective; applying linguistic constructs to literary language; examining literary style; linguistic analysis of unfamiliar texts.

**Course Outcomes**

- Students will have become acquainted with important philological principles.
- Students will be able to analyze literary texts using poetic formulas, including simple and complex figures.
- Students will be able to analyze literary texts using philological criticism, including contextual relations.
- Students will understand how an online corpus might be used effectively to analyze literary texts.
- Students will be able to create literary texts using language features identified within the course.

ELANG 548 : Old English 2. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: ELANG 525

DESCRIPTION: Additional reading in Old English, emphasizing sound changes, dialects, and textual production.

**Course Outcomes**

- By the end of the course students will have achieved a greater fluency within the Old English language.
- Students will have translated the entire epic poem, Beowulf.

- Students will be able to identify the features in Beowulf that exemplify the conventions of Old English heroic verse and the larger cultural context of the heroic society.
- Students will be able to provide examples of contrasting Old English lexical uses, including ones involving metaphor and synonymy among words within the poem as well as differences between the lexical forms in the poem and other Old English texts.

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# Linguistics (Ling)

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## Undergraduate Courses

### 100-Level Courses

LING 110 : Introduction to Human Language. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Introduces students to the basic principles of language. The course considers language as part of our human, biological heritage, as wel as critical for our social and intellectual development.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

LING 201 : Introduction to Linguistics (Modern). (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic understanding of linguistic systems. Phonology, morphology, syntax, semantics, and pragmatics.

**Course Outcomes**

- Be familiar with some of the major subfields of linguistics and the main topics of interest within each subfield.
- Demonstrate understanding of phonological, morphological, and syntactic structure.
- Master techniques of basic phonological, morphological, syntactic, and historical analysis.

LING 210 : Sounds of Language. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 201.

DESCRIPTION: Introduction to the description and analysis of speech sounds.

**Course Outcomes**

- Transcribe and give articulatory descriptions for common speech sounds of the world's languages, including those of English
- Explain common phonetic processes.
- Complete basic phonological analyses using knowledge ofthe phonemic principlethe content and organization of phonological featuresthe elements of prosody (syllable, stress, etc)

LING 220 : Structure in Language. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 201.

DESCRIPTION: Introduction to the analysis of word and sentence structure.

**Course Outcomes**

- Complete basic syntactic analyses using knowledge ofparts of speechconstituent structuregrammatical relations
- Complete basic morphological analyses using knowledge ofbasic word formation processesthe distinction between inflection and derivation and common inflectional categoriesproperties of the interfaces of morphology with phonology and syntax
- Describe the results of analyses using appropriate terminology and formalisms.

LING 230 : Meaning in Language. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 201.

DESCRIPTION: Introduction to the analysis of meaning in words, grammar, and discourse.

**Course Outcomes**

- Conduct semantic and pragmatic analyses and explications of natural human language at the lexical, grammatical, discourse and metaphorical levels applying a variety of semantic and pragmatic analytical procedures

- Critique contemporary approaches to semantic and pragmatic analyses by becoming familiar with semantic and pragmatic theories.
- Argue for a particular semantic or pragmatic explication through producing papers and project reports.

LING 240 : Linguistic Tools 1. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 201.

DESCRIPTION: Introduction to quantitative and qualitative research methods in linguistics.

**Course Outcomes**

- Be able to formulate testable hypotheses concerning language.
- Be able to collect linguistic data using interviews, surveys, experiments, corpora, etc
- Be able to use appropriate tools to analyze linguistic data.
- Be able to describe the results of linguistic research using appropriate terminology and rhetorical strategies (i.e., talk and write like a linguist).

LING 299R : Academic Internship: English Language Teaching. (1-9:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: LING 377R

DESCRIPTION: Students with focused training teach specific English skills to speakers of other languages in the U.S. or abroad.

**Course Outcomes**

- Provide service to English language learners in various, real-world settings
- Apply linguistic and pedagogical concepts learned in TESOL basic training coursework in real world situations.
- Develop feelings of confidence and satisfaction from experience teaching English as a second language.

### 300-Level Courses

LING 310 : Phonetics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: For Fall 2013 & forward admits, Ling 210.

DESCRIPTION: General inventory of speech sounds possible in language, from both an acoustic and articulatory point of view.

**Course Outcomes**

- Produce and transcribe approximately 100 of the sounds of the world's languages and describe the articulatory and acoustic properties of these sounds.
- Transcribe and explain the phonetic processes common to languages of the world.
- Perform field work in phonetics—learning to record and acoustically analyze phonetics data.
- Recognize the phonetic systems of several languages and how and why the languages are organized the way they are.

LING 315 : Phonology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 210.

DESCRIPTION: Study of natural language sound systems from a variety of theoretical perspectives.

**Course Outcomes**

- Use a theoretical model to complete a phonological analysis at an intermediate level using appropriate methods and techniques,
- Present the results of phonological analyses, showing awareness of foundational issues in theories of phonology.

LING 320 : Morphology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: For Fall 2013 & forward admits, Ling 220.

DESCRIPTION: Theory and analysis of word structure in human language.

**Course Outcomes**

There are no course outcomes available

LING 325 : Theoretical Syntax. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 220.

DESCRIPTION: Theoretical comparison and contrast of different sentence types. Methods of argument to develop and critique generative theories of lexical categories, grammatical roles, and syntactic structure.

**Course Outcomes**

- Recognize and classify different types of constituents, including phrases and sentences.
- Understand and apply a theoretical framework and analytical techniques to determine and describe constituents.
- In writing and speaking, argue for (or against) particular theory dependent interpretations of structure, and support the argument with empirical evidence.
- Apply these outcomes to English and investigate their relevance to other languages.

LING 332 : Semantics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: LING 201 & LING 230; or LING 201 & ELANG 326

DESCRIPTION: Theory and analysis of natural language semantics from a variety of theoretical perspectives.

**Course Outcomes**

There are no course outcomes available

LING 335 : Pragmatics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: LING 201 & LING 230; or LING 201 & ELANG 326

DESCRIPTION: Theory and analysis of pragmatics from a variety of theoretical perspectives.

**Course Outcomes**

There are no course outcomes available

LING 360 : (Ling-DigHT) Programming for Text Processing and Analysis. (3:3:0)

PREREQUISITE: C S 100 or equivalent experience.

DESCRIPTION: Development of computer applications for research in language and literature (text processing, retrieval, and analysis) in one or more programming languages (e.g., Perl, Python, etc.).

**Course Outcomes**

There are no course outcomes available

LING 361 : Speech Processing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: LING 360

DESCRIPTION: Analyzing and manipulating speech data. Developing software applications that include speech recognition and/or speech generation.

**Course Outcomes**

No outcomes are available at this time.

LING 377R : Basic Training in TESOL. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Planned participation in IAS- or U.S.-based English teaching experience.

DESCRIPTION: Basic preparation to teach English to speakers of other languages in particular settings.

NOTE: Especially for international service volunteers who plan to teach ESL or EFL.

**Course Outcomes**

There are no course outcomes available

LING 399R : Academic Internship: Linguistics. (.5-9:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Program coordinator's consent.

DESCRIPTION: On-the-job experience and education related to linguistics.

**Course Outcomes**

- Students will learn to apply concepts learned in their academic classes to everyday, practical, linguistic situations outside the university.
- Interns' real-world work experiences will enhance and enrich their understanding of academic concepts they learned in university classes.

**400-Level Courses**

LING 427 : Phonology and Morphology. (3:3.0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: LING 201; or ELANG 223

DESCRIPTION: Introduction to phonology and morphology in the world's languages emphasizing the analysis of English.

**Course Outcomes**

- Be able to complete a phonological analysis at an intermediate level by applying knowledge of:the phonemic principle,the content and organization of the system of phonological features,the elements of the prosodic organization of utterances.
- Be able to complete a morphological analysis at an intermediate level by applying knowledge of:basic word formation processes,the distinction between inflection and derivation and common inflectional categories,properties of the interfaces of morphology with phonology and syntax.
- Be able to describe facts about phonology and morphology and communicate the results of phonological and morphological analyses using appropriate terminology and formalisms.

LING 440 : Linguistic Tools 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: For Fall 2013 & forward admits, Ling 240.
DESCRIPTION: Linguistic research tools and methods; resources, literature, and synthesis of techniques.

**Course Outcomes**

There are no course outcomes available

LING 450 : Introduction to Historical-Comparative Linguistics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: For Fall 2013 & forward admits, Ling 210 and Ling 220.
DESCRIPTION: Theory and method of language change via comparison of daughter languages and reconstruction of their ancestral language: phonological, morphological, semantic, and lexical.

**Course Outcomes**

- Students will be able to apply the comparative method and internal reconstruction in order to hypothesize earlier states of a language and to examine the relatedness of different languages.
- Students will be able to explain how and why linguistic changes occur in phonology, morphology, syntax, semantics, and the lexicon.
- Students will be able to explain how linguistic change is affected by language contact and psychological, physical, social, and cultural factors.
- Students will be able to use corpora, texts, and lexicons in order to obtain data on, and answer questions about, language change.

LING 460 : Typology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: For Fall 2013 & forward admits, Ling 220.
DESCRIPTION: Introduction to the study of language universals and linguistic typology.

**Course Outcomes**

There are no course outcomes available

LING 478 : Language Teaching Methods: MTC. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Instructional methods and strategies for teaching second and foreign languages at the Missionary Training Center (MTC).

**Course Outcomes**

- Students who are teaching language classes at the Missionary Training Center will connect methodological theory learned in this class with real-world practice.

LING 480 : Problems in Translation. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: For Fall 2013 & forward admits, Ling 230 and proficiency in a second language.
DESCRIPTION: History, theory, and practice of human and machine translation.

**Course Outcomes**

- Discuss the possible future of translation technology, including future applications of existing technology and future development of new technologies, drawing on class assignments and a personal project.
- Create a bi-text corpus and derive translation memory and terminology from that bi-text corpus.
- Define a set of specifications for a translation project based on text type, audience, and purpose.
- Use machine translation, translation memory, and terminology in conjunction with a translation environment tool to complete a translation project according to the project's specifications.

LING 485 : Corpus Linguistics. (3:3:0)

PREREQUISITE: For Fall 2013 & forward admits, Ling 240.
DESCRIPTION: Using large collections of texts for teaching and particularly for research, including many types of linguistic variation

**Course Outcomes**

- Students will be able to understand how corpora and corpus-based materials can best be used for teaching and learning. They will carry out an in-depth investigation of one particular linguistic phenomenon using the best available corpora and corpus-based tools.
- Students will be able to apply the basic principles of corpus design and construction to design a corpus for their area of interest.
- Students will be able to understand the differences between corpus-based/empirical and rationalist/non-empirical approaches to linguistics.
- Students will be able to use text analysis tools to investigate frequency, keywords, and do simple concordancing.
- Students will be able to use corpora to carry out research in the areas of 1) lexicography 2) genre-based differences in language 3) syntax 4) semantics, and 5) historical change.

LING 490 : Senior Seminar. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: LING 201; or ELANG 223
RECOMMENDED: Ling 420, 427, 430, 450.
DESCRIPTION: Reading and discussing major issues in linguistics, writing a senior paper, and reviewing content of core courses.

**Course Outcomes**

- Discuss intelligently several current big issues in linguistics.
- Resolve the tension between two sides of a narrow [linguistic] issue.
- Relate the narrow issue in your senior thesis to at least one major issue in linguistics and to possible career paths.

LING 495 : Senior Capstone. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: For Fall 2013 & forward admits, Ling 210 & Ling 220 & Ling 230.

DESCRIPTION: Integrative, culminating experience for linguistics majors; topics vary.

**Course Outcomes**

There are no course outcomes available

## 500-Level Graduate Courses (available to advanced undergraduates)

LING 501 : Advanced Research and Writing Techniques for Second Language Writers. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: For graduate international ESL students.

DESCRIPTION: Non-native English speaking students will develop research and writing techniques necessary for graduate-level writing.

**Course Outcomes**

There are no course outcomes available

LING 545 : Psycholinguistics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: For Fall 2013 & forward admits, Ling 201 or ELang 223; or equivalent.

DESCRIPTION: How the mind interprets, stores, retrieves, and produces language. Anatomical structures and physiological processes of the brain dealing with language.

**Course Outcomes**

- Discuss basic terminology, theories, and issues of psycholinguistics.
- Know the basic findings in each area of psycholinguistics (including comprehension, production, acquisition, and language disorders).
- Read and critically respond to psycholinguistic research and articles.
- Create and participate in psycholinguistic experimental research.

LING 550 : Sociolinguistics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: For Fall 2013 & forward admits, Ling 210 or ELang 223; or equivalent.

DESCRIPTION: Research and theory in anthropological linguistics and sociolinguistics.

**Course Outcomes**

- Understand the relationship between language use and society with respect to regional, social, ethnic and contextual variation.
- Conduct research into a wide range of sociolingusitic variation
- Impart knowledge of sociolinguistics and related research in presentations and papers

LING 551 : Anthropological Linguistics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: For Fall 2013 & forward admits, Ling 220 and Ling 230; or equivalent.

DESCRIPTION: Language in culture and society: development, typology, and description.

**Course Outcomes**

- Upon completion of this course students will be equipped with the conceptual tools to think about and analyze linguistic data in social contexts of use.
- Student will become conversant with foundational texts which inform our cultural understanding and use of language.
- Through readings, weekly exercises and discussions they will acquire the metalinguistic concepts necessary for contextualizing varieties of language.
- In class transcription sessions will address the representation of linguistic data, and how that representation may affect one's assessments of semantic intent.

LING 558 : Historical-Comparative Linguistics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Ling 450 or equivalent.

DESCRIPTION: Learning theory and method of language change via comparing daughter languages and reconstructing ancestral languages. Language universals and typology.

**Course Outcomes**

- Students will learn how to apply typological concepts to specific languages during in-class and out of class exercises.
- Students will have achieved an understanding of the most influential concepts of Linguistics typology, including the different kinds of universals (formal, substantive, implicational, syntactic, lexical, morphological).
- Students will become conversant with the arguments against language universals.

LING 580R : Problems in Linguistics and Applied Linguistics. (1-3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Advanced research in language acquisition, sociolinguistics, psycholinguistics, linguistics field study, applied linguistics.

**Course Outcomes**

- Each section of Ling 580R could have different learning outcomes from other sections and other semesters. Therefore, each instance of Ling 580R must be evaluated separately.

LING 581 : Natural Language Processing. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Good programming skills in at least one language (preferably LISP, Prolog, C, C++, Perl, or Java) and a knowledge of basic discrete math. Upper-division linguistics/computers and the humanities students with less programming experience may enroll with instructor`s consent.

DESCRIPTION: Intensive overview of natural language processing, including computational techniques, hands-on experience with linguistic technologies and corpora, language modeling approaches, and readings from current research.

**Course Outcomes**

- Students will be able to demonstrate by hands-on experience how to use NLP tools in the performance of linguistically interesting tasks.
- Students will be able to recognize and describe how computational techniques are used successfully in various areas of natural language processing.
- Students will be able to demonstrate application of a novel, nonontrivial programming approach to solving some aspect of NLP-related computation.
- Students will read, understand, discuss, and assess current research literature and trends in the relevant areas.

LING 590R : Readings in Linguistics. (1-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Individual study of current linguistic literature. Occasional discussion sessions with instructor and other class members.

NOTE: Pass/fail grade only.

**Course Outcomes**

- Individual advanced students will study and report on assigned readings under the direction of a professor
- Advanced students will study and complete individual projects under the direction of a professor

LING 599R : Academic Internship: Linguistics. (1-9:9:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: On-the-job experience under faculty supervision, with department approval.

**Course Outcomes**

- Students will learn to apply concepts learned in their academic classes to everyday, practical, linguistic situations outside the university.
- Interns' real-world work experiences will enhance and enrich their understanding of academic concepts they learned in university classes.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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# Linguistic Computing (LingC)

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## Undergraduate Courses

### 200-Level Courses

LINGC 220 : Linguistic Computing Programming 1. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: LingC 200 or C S 100 or equivalent experience.

DESCRIPTION: Computer programming for language applications: data types, character representation, flow of control, file input/output, string manipulation.

**Course Outcomes**

- Understand what a computing algorithm is, as opposed to instructions intended for a human who as agency.
- Be able to manipulate digital information using algorithms written in a programming language. This includes an ability to understand and write assignment statements, loops, conditionals, and functions.
- Be able to manipulate digital information using algorithms written in a programming language. This includes an ability to understand and write assignment statements, loops, conditionals, and functions.
- Be able to create a simple graphical user interface for a software application.

### 400-Level Courses

LINGC 489R : Linguistic Computing Project. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Any 300-level linguistic computing course.

DESCRIPTION: Applying principles from other courses to a substantial research or development project. Students work individually with faculty and technical advisors.

**Course Outcomes**

- Design and implement a language-related software application that satisfies the requirements of a faculty or staff member, drawing on the expertise of a faculty or staff technical advisor.

LINGC 490R : Current Topics and Issues. (3:Arr.:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Individual or group study of current issues and developments in linguistic computing. Extended readings; research or project required.

**Course Outcomes**

No outcomes are available at this time.

LINGC 496R : Academic Internship: Linguistic Computing. (1-3:Arr.:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: LingC 300-level course or equivalent experience.

DESCRIPTION: On-the-job experience in publishing production (print or electronic), courseware/software development, museum/collection/textbase management, language/linguistics research, or other application of linguistic computing.

**Course Outcomes**

- Participate in the language-related software activities of an off-campus organization, satisfying the requirements of the internship supervisor and the BYU faculty member in charge of the internship course.

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# English as a Second Language (ESL)

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## Undergraduate Courses

### 300-Level Courses

ESL 301 : Advanced Academic English for International Students. (3:3:1)

WHEN TAUGHT: Fall

PREREQUISITE: For bilingual foreign students.

DESCRIPTION: Integrated skills course for nonnative English speakers, primarily focused on academic listening, speaking, and the basic skills needed for success at an American university.

**Course Outcomes**

- Gain English listening and speaking skills critical to success in American academic, university settings
- Participate and communicate in English in academic settings clearly, confidently, and effectively.
- Give oral presentations of various kinds in English effectively in academic settings.
- Listen to academic lectures and take effective notes
- Explain cultural differences in academic settings

ESL 302 : Advanced English Pronunciation for International Students. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: For bilingual foreign students.

DESCRIPTION: Improving the speaking ability of nonnative English students, emphasizing rhetorical and communication strategies, pronunciation, stress, rhythm, intonation, and fluency.

**Course Outcomes**

- Non-native English-speaking students will develop an increased awareness of English pronunciation patterns
- ESL students will improve their knowledge of strategies to learn to pronounce English and ability to pronounce English correctly in the following areas: a. Vowels and consonants, b. Syllables and word endings, c. Intonation, d. Stress, e. Rhythm, and f. Linking.

ESL 303 : College Reading and Study Skills for International Students. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: For bilingual foreign students.

DESCRIPTION: Learning strategies to improve reading speed and to understand materials used in university classes.

NOTE: Should be taken during the first year (for nonnative English speakers).

**Course Outcomes**

- Non-native English-speaking students will acquire or improve the skills they need to read and understand university-level materials.
- Students will build increased English vocabulary, comprehension, inference, and critical thinking and evaluation, among other skillls

ESL 304 : Academic Writing for International Students. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: For bilingual foreign students.

DESCRIPTION: Learning how to write essays, reports, and research papers acceptable in an American university

NOTE: Should be taken before ELang 105 or Engl 150.

**Course Outcomes**

- Non-native English-speaking students will become more independent in their English writing and study skills and more aware of their writing ability
- Students in this course will learn to think critically and creatively.
- Students in this course will learn to think critically and creatively.
- Students will demonstrate the ability to use various processes as they write
- Students will be able to locate information in a major university library and write a documented research paper based on that information.
- Students will gain the ability ro read and write in genres common in university coursework.

ESL 305 : Applied Grammar for International Students. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: For international students.

RECOMMENDED: Concurrent enrollment in ESL 304 or ELang 105.

DESCRIPTION: Increasing correct grammar use in academic writing.

**Course Outcomes**

- Non-native English-speaking students will gain the ability to respond appropriately to a variety of academic writing tasks in English.
- Demostrate the ability to select appropriate and varied English vocabulary related to assigned topics with accuracy in word choice and form.
- Demonstrate the ability to recognize and independently correct grammar errors.

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**English as a Second Language**

**Course Information**

- English as a Second Language (ESL) Courses

**Faculty**

# Linguistics and English Language Faculty

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## Professors

Anderson, Neil J.
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1979
MA, Brigham Young University, 1981
PhD, University of Texas, Austin, 1989

Davies, Mark Edward
**COLLEGE:** Humanities
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**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1986
MA, Brigham Young University, 1989
PhD, University of Texas, Austin, 1992

Eddington, David S.
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**DEGREES:** BA, Brigham Young University, 1986
MA, Brigham Young University, 1989
PhD, University of Texas, Austin, 1993

Eggington, William Gregory
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**DEGREES:** BA, Brigham Young University—Hawaii, 1975
MA, University of Southern California, 1981
PhD, University of Southern California, 1985

Henrichsen, Lynn E.
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**DEGREES:** BA, Brigham Young University, 1973
TESL Graduate Certificate, Brigham Young University, 1974
MA, Brigham Young University, 1975
EdD, University of Hawaii, Manoa, 1987

Manning, Alan D.
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**DEGREES:** BA, Brigham Young University, 1984
PhD, Louisiana State University, Baton Rouge, 1988

Melby, Alan K.
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**DEGREES:** BS, Brigham Young University, 1973
MA, Brigham Young University, 1974

PhD, Brigham Young University, 1976

Skousen, Royal

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**DEGREES:** BA, Brigham Young University, 1969
MA, University of Illinois, Urbana, 1971
PhD, University of Illinois, Urbana, 1972

## Associate Professors

Chapman, Don William

**COLLEGE:** Humanities
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**DEGREES:** BS, Brigham Young University, 1987
MA, Brigham Young University, 1990
PhD, University of Toronto, 1995

Dewey, Dan

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MA, Brigham Young University, 1997
PhD, Carnegie Mellon University, 2002

Elzinga, Dirk Allen

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**DEGREES:** BA, University of Utah, 1992
MA, University of Utah, 1993
PhD, University of Arizona, 1999

Evans, Norman W.

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**DEGREES:** BA, Brigham Young University, 1979
MA, Brigham Young University, 1981
EdD, University of Southern California, 2001

Gardner, Dee

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**DEGREES:** BA, Brigham Young University, 1983
TESOL Graduate Certificate, Brigham Young University, 1993
MA, Brigham Young University, 1994
PhD, Northern Arizona University, 1999

Hallen, Cynthia Leah

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**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1980
TESOL Graduate Certificate, Brigham Young University, 1981
MA, Brigham Young University, 1982
PhD, University of Arizona, 1991

Lonsdale, Deryle

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**DEGREES:** BSc, University of Alberta, Canada, 1981
MS, Carnegie Mellon University, 1992
PhD, Carnegie Mellon University, 1997

Nuckolls, Janis

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**DEGREES:** BA, University of Wisconsin-Madison, 1981
AM, University of Chicago, 1983
PhD, University of Chicago, 1990

Oaks, Dallin Dixon
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**DEGREES:** BA, Brigham Young University, 1984
MA, University of Utah, 1986
PhD, Purdue University, 1990

Smemoe, Wendy Baker
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**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1991
MA, Brigham Young University, 1995
PhD, University of Illinois, Urbana, 2002

## Assistant Professors

Tanner, Mark W.
**COLLEGE:** Humanities
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**RANK:** Assistant Professor
**DEGREES:** BA, University of Utah, 1982
MA, University of Southern California, 1985
PhD, University of Pennsylvania, 1991

Willson, Heather
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1996
MA, Arizona State University, 2002
PhD, University of California, Los Angeles, 2008

## Teaching Professors

Gardner, Marvin K.
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Teaching Professor
**DEGREES:** BA, Brigham Young University, 1976
MA, Brigham Young University, 1977

Thorne, Melvin Jay
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Teaching Professor
**DEGREES:** BA, Brigham Young University, 1976
MA, University of Kansas, 1980
PhD, University of Kansas, 1986

## Associate Teaching Professor

Strong-Krause, Diane
**COLLEGE:** Humanities
**DEPARTMENT:** Linguistics and English Language
**RANK:** Associate Teaching Professor

**DEGREES:** BA, Brigham Young University, 1975
MA, Brigham Young University, 1977
PhD, Brigham Young University, 2001

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Faculty

# Philosophy

Travis Anderson, Chair
4086-A JFSB, (801) 422-5824

College of Humanities Advisement Center
1175 JFSB, (801) 422-4789

## Admission to Degree Program

All degree programs in the Department of Philosophy are open enrollment until the end of the sophomore year (60 credit hours), after which permission to add or change a major/minor must be obtained from the concerned dean's office(s)—as stipulated by recent University policy changes. To declare a philosophy major or minor, visit the College of Humanities Advisement Center.

## The Discipline

From its inception in ancient Greece down to the present, philosophy has sought to understand the world and the place of human beings within it. As it frames ideas and theories with which to clarify and explain experience, philosophy discloses its faith in the ability of reason to discover and communicate truth. While data generated by the physical and social sciences often informs philosophical analysis, philosophy remains committed to answering those metaphysical, ontological, ethical, epistemic, and aesthetic questions which are either fundamental to an understanding of life or inaccessible to empirical methods of investigation. Philosophy's respect for the authority of logic and rational argument fosters an intellectual environment wherein open dialogue is essential and conflicting opinions are respected, but in which beliefs must be scrutinized, claims must be validated, and a love of truth, goodness, and wisdom must guide one's every action.

Students who study philosophy will find that it not only provides insight into life's deepest concerns, it also helps them develop their capacity for critical thinking, perceptive judgment, and cogent argumentation. Such competence will serve them well as they pursue further education or begin their careers.

## Career Opportunities

Philosophy offers excellent preparation for a variety of career paths, especially law, medicine, and business. The value of a major in philosophy resides in the intellectual development it promotes and the transferrable skills it nourishes. Philosophy majors perennially top the charts in standardized exams like the GRE, LSAT, and MCAT, especially on the verbal aptitude and analytic thinking sections. They also enjoy extremely high rates of acceptance to graduate programs and professional schools, whatever the discipline. In part, this is because philosophy students master the logic, reading, writing, and critical thinking skills that such tests and programs require. But philosophy can prepare a student for any type of work that requires highly developed abilities in analytical reasoning and effective communication.

## General Information

The Department of Philosophy strongly recommends that philosophy majors include StDev 317 and HColl 110 among the in-residence elective credits required for BYU graduation. Because liberal arts degrees provide preparation in a variety of useful fields rather than a single career track, StDev 317 is recommended to help liberal arts students focus on specific educational and occupational goals and to introduce them to graduate/professional school and employment preparation strategies, internships, available educational opportunities, and a variety of career options. HColl 110 introduces students to the culture and acadedmic landscape of the humanities, and teaches them how to market and employ their liberal arts education in today's challenging job market.

Philosophy students are also encouraged both to complete one of the many internships supported and funded by the College of Humanities (regardless of individual career goals), and to learn a foreign language.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in Philosophy** (Program Outcomes)

**Minor in Philosophy**
**Minor in Logic**
**Minor Theoretical and Applied Ethics**

Students should see their college advisement center for help or information concerning the undergraduate programs.

College of Humanities Home

Philosophy Department Home

Majors

- BA in Philosophy

Minors

- Philosophy
- Logic
- Theoretical and Applied Ethics

Course Information

- Philosophy (Phil) Courses

Faculty

# BA in Philosophy (44 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following sources and methods courses:

PHIL 200 : Philosophy Major Orientation and ePortfolio Training. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Overview of philosophy as a discipline; review of philosophy major requirements and course sequence; complete introduction to philosophy research methods and ePortfolio training.

**Course Outcomes**

There are no course outcomes available

PHIL 201 : History of Philosophy 1. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Western civilization from Greek antiquity to Renaissance, primarily from perspective of philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

**Course Outcomes**

- Know milestones of Western history and culture from antiquity through the Renaissance and Reformation.
- Acquire a basic understanding of the most important philosophical figures, texts, and issues in ancient, medieval, and early modern philosophy.
- Write a clear and cogent philosophical essay.

PHIL 202 : History of Philosophy 2. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Western civilization from Renaissance to present, primarily from perspective of philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

**Course Outcomes**

- Know milestones of Western history and culture from the Renaissance and Reformation through the present.
- Acquire a basic understanding of the most important philosophical figures, texts, and issues in late modern and contemporary philosophy.
- Write a clear and cogent philosophical essay.

PHIL 205 : Introduction to Formal Logic. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: History and use of syllogistic and propositional logic; evaluating arguments with Venn diagrams, truth tables, and Copi-style proofs and proof strategies; informal reasoning and fallacies.

**Course Outcomes**

- Know the basic vocabulary and concepts of formal and informal logic.
- Learn how to appraise validity by refuting invalid arguments and by constructing formal proofs for valid ones.
- Learn how to translate ordinary language into logical symbolism.

PHIL 300 : Philosophical Writing. (3:3:0)

OFFERED: Honors also

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 201 and Phil 202 and Phil 205.
DESCRIPTION: Writing philosophical papers about philosophical texts or problems. Research methods in philosophy. Library research paper.
NOTE: Fulfills GE Advanced Written and Oral Communications requirement. No course challenges accepted.

**Course Outcomes**

- Learn advanced strategies of writing clearly on a well-defined topic using correct grammar, accepted usage, and stylistic conventions appropriate to philosophy; refine the ability to write using a voice, tone, and level of formality suited to one's intended audience.
- Cultivate advanced critical reading and writing skills used in summarizing, paraphrasing, formulating, analyzing and evaluating philosophical arguments, and in prewriting, drafting, revising, critiquing, editing, and proofreading philosophical essays.
- Refine the ability to use scholarly research tools (including library and internet resources) in writing expository, persuasive, and philosophical essays, and to use and cite researched material.

PHIL 305 : Intermediate Formal Logic. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: PHIL 205
DESCRIPTION: History and use of first-order logic and second-order logic; natural-deduction and axiomatic proofs; modal logic; set theory and foundations of mathematics.
NOTE: Fulfills GE Languages of Learning requirement.

**Course Outcomes**

- Master first order logic including the correct use of symbols and the construction of proofs.
- Learn to construct proofs within axiom systems in such areas as identity, set theory, arithmetic, and modal logic.
- Understand key historical developments such as Cantor's theory of transfinite numbers, Frege's attempt to reduce arithmetic to logic, the logical paradoxes, and Gödel's theorems.

2. Complete one course from the following core topics in Western philosophy courses:

PHIL 213 : Introduction to Ethics. (3:3:0)
WHEN TAUGHT: Fall; Winter; Summer Contact Department
DESCRIPTION: Nature and justification of moral standards, beliefs, and decisions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Know basic concepts, figures, texts, and issues of moral philosophy; know basic normative theories in ethics, including deontology, utilitarianism, virtue theory, subjectivism, relativism, divine command theory, natural law, social contract theory, and care ethics.
- Learn how to apply normative theories to ethical problems, questions, and situations.
- Learn how to integrate philosophical skills and practices with religious convictions, while cultivating a respect for contrary points of view.

PHIL 214 : Introduction to the Philosophy of Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: The experience of beauty in nature, in literature, and in the arts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Know basic concepts, theories, figures, texts, and issues in Western philosophy of art and beauty.
- Learn how to use the philosophy of art and theories of taste to appreciate and critique individual works of art.
- Practice philosophical analysis and argument orally and in writing; write a clear and cogent essay on the philosophy of art and beauty.

PHIL 215 : Introduction to the Philosophy of Religion. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Existence and nature of God, God's foreknowledge and man's free will, faith, immortality, and religious experience and language.

**Course Outcomes**

- Know central problems in philosophy of religion, and traditional responses to those problems; know central figures and texts in philosophy of religion.
- Know and evaluate major arguments for God's existence, and learn how to examine the role of reason and evidence in religious belief.
- Practice philosophical analysis and argument orally and in writing; write a clear and cogent essay on the philosophy of religion.

PHIL 217R : Social and Political Philosophy. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Phil 150 or equivalent.
RECOMMENDED: Phil 201, 202.
DESCRIPTION: Examine selected topics, periods, and figures in social and political philosophy with an aim to understand and apply theories to particular problems and questions.

**Course Outcomes**

- Know basic concepts, theories, figures, texts, and issues in social and political philosophy.
- Practice philosophical analysis and argument orally and in writing; write a clear and cogent essay on social and political philosophy.

3. Complete one registration of the following:

PHIL 320R : Studies in Ancient Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 201.

DESCRIPTION: Selected figures or topics.

**Course Outcomes**

There are no course outcomes available

: Topics in Greek Philosophy.

**Course Outcomes**

: Pre-Socratics.

**Course Outcomes**

: Socrates.

**Course Outcomes**

: Plato.

**Course Outcomes**

: Aristotle.

**Course Outcomes**

: Neo-Platonism.

**Course Outcomes**

: Plotinus.

**Course Outcomes**

: Stoicism.

**Course Outcomes**

: Greek Ethics.

**Course Outcomes**

: Greek Science.

**Course Outcomes**

: Greek Metaphysics.

**Course Outcomes**

: Greek Logic.

**Course Outcomes**

: Greek Political Theory.

**Course Outcomes**

: Greek Epistemology.

**Course Outcomes**

: Greek Philosophy of Religion.

**Course Outcomes**

: Helenistic Philosophy.

**Course Outcomes**

: Church Fathers.

**Course Outcomes**

: Chinese Philosophy.

**Course Outcomes**

: Hindu Philosophy.

**Course Outcomes**

: Buddhism.

**Course Outcomes**

4. Complete one registration of the following:

PHIL 340R : Studies in Modern Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 202.

DESCRIPTION: Selected figures or topics.

**Course Outcomes**

There are no course outcomes available

: Topics in Modern Philosophy.

**Course Outcomes**

: Continental Rationalism.

**Course Outcomes**

: Descartes.

**Course Outcomes**

: Spinoza.

**Course Outcomes**

: Leibniz.

**Course Outcomes**

: British Empiricism.

**Course Outcomes**

: Hobbes.

**Course Outcomes**

: Locke.

**Course Outcomes**

: Descartes and Locke.

**Course Outcomes**

: Berkeley.

**Course Outcomes**

: Hume.

**Course Outcomes**

: Kant.

**Course Outcomes**

: Hegel.

**Course Outcomes**

: Schopenhauer.

**Course Outcomes**

: German Idealism.

**Course Outcomes**

: Nietzsche.

**Course Outcomes**

: Nietzsche and Freud.

**Course Outcomes**

: Kierkegaard.

**Course Outcomes**

: Utilitarianism.

**Course Outcomes**

: Modern Political Theory.

**Course Outcomes**

: Bentham.

**Course Outcomes**

: J. S. Mill.

**Course Outcomes**

: Pragmatism.

**Course Outcomes**

: Peirce.

**Course Outcomes**

: William James.

**Course Outcomes**

: Dewey.

**Course Outcomes**

: Bergson.

**Course Outcomes**

: Alexander.

**Course Outcomes**

: Bradley.

**Course Outcomes**

: Bosanquet.

**Course Outcomes**

: British Idealism.

**Course Outcomes**

5. Complete one course from the following:

PHIL 313R : History of Ethics. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Phil 150 or equivalent.
RECOMMENDED: Phil 201, 202, 213.
DESCRIPTION: Designed to survey the history of ethics or to examine multiple periods and figures in the history of philosophy.

**Course Outcomes**

There are no course outcomes available

PHIL 320R : Studies in Ancient Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Phil 201.
DESCRIPTION: Selected figures or topics.

**Course Outcomes**

There are no course outcomes available

: Topics in Greek Philosophy.

**Course Outcomes**

: Pre-Socratics.

**Course Outcomes**

: Socrates.

**Course Outcomes**

: Plato.

**Course Outcomes**

: Aristotle.

**Course Outcomes**

: Neo-Platonism.

**Course Outcomes**

: Plotinus.

**Course Outcomes**

: Stoicism.

**Course Outcomes**

: Greek Ethics.

**Course Outcomes**

: Greek Science.

**Course Outcomes**

: Greek Metaphysics.

**Course Outcomes**

: Greek Logic.

**Course Outcomes**

: Greek Political Theory.

**Course Outcomes**

: Greek Epistemology.

**Course Outcomes**

: Greek Philosophy of Religion.

**Course Outcomes**

: Helenistic Philosophy.

**Course Outcomes**

: Church Fathers.

**Course Outcomes**

: Chinese Philosophy.

**Course Outcomes**

: Hindu Philosophy.

**Course Outcomes**

: Buddhism.

**Course Outcomes**

PHIL 330R : Studies in Medieval Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 201.

DESCRIPTION: Selected figures or topics.

**Course Outcomes**

No outcomes are available at this time.

: Topics in Medieval Philosophy.

**Course Outcomes**

: Augustine.

**Course Outcomes**

: Anselm.

**Course Outcomes**

: Averroes.

**Course Outcomes**

: Bonaventure.

**Course Outcomes**

: Maimonides.

**Course Outcomes**

: Aquinas.

**Course Outcomes**

: Duns Scotus.

**Course Outcomes**

: William of Ockham.

**Course Outcomes**

: Boethius.

**Course Outcomes**

: Medieval Jewish Philosophers.

**Course Outcomes**

: Medieval Arabic Philosophers.

**Course Outcomes**

: Medieval Ethics.

**Course Outcomes**

: Medieval Science.

**Course Outcomes**

: Medieval Epistemology.

**Course Outcomes**

: Medieval Metaphysics.

**Course Outcomes**

: Medieval Logic.

**Course Outcomes**

: Medieval Political Theory.

**Course Outcomes**

: Medieval Philosophy and Religion.

**Course Outcomes**

: Meister Eckhart.

**Course Outcomes**

PHIL 340R : Studies in Modern Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 202.

DESCRIPTION: Selected figures or topics.

**Course Outcomes**

There are no course outcomes available

: Topics in Modern Philosophy.

**Course Outcomes**

: Continental Rationalism.

**Course Outcomes**

: Descartes.

**Course Outcomes**

: Spinoza.

**Course Outcomes**

: Leibniz.

**Course Outcomes**

: British Empiricism.

**Course Outcomes**

: Hobbes.

**Course Outcomes**

: Locke.

**Course Outcomes**

: Descartes and Locke.

**Course Outcomes**

: Berkeley.

**Course Outcomes**

: Hume.

**Course Outcomes**

: Kant.

**Course Outcomes**

: Hegel.

**Course Outcomes**

: Schopenhauer.

**Course Outcomes**

: German Idealism.

**Course Outcomes**

: Nietzsche.

**Course Outcomes**

: Nietzsche and Freud.

**Course Outcomes**

: Kierkegaard.

**Course Outcomes**

: Utilitarianism.

**Course Outcomes**

: Modern Political Theory.

**Course Outcomes**

: Bentham.

**Course Outcomes**

: J. S. Mill.

**Course Outcomes**

: Pragmatism.

**Course Outcomes**

: Peirce.

**Course Outcomes**

: William James.

**Course Outcomes**

: Dewey.

**Course Outcomes**

: Bergson.

**Course Outcomes**

: Alexander.

**Course Outcomes**

: Bradley.

**Course Outcomes**

: Bosanquet.

**Course Outcomes**

: British Idealism.

**Course Outcomes**

PHIL 350R : Studies in Contemporary Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 202.

DESCRIPTION: Selected figures or topics.

**Course Outcomes**

There are no course outcomes available

: Topics in Contemporary Philosophy.

**Course Outcomes**

: Philosophy of Social Science.

**Course Outcomes**

: Philosophy of History.

**Course Outcomes**

: Philosophy of Psychology.

**Course Outcomes**

: Philosophy of Theology.

**Course Outcomes**

: Philosophy and Film.

**Course Outcomes**

: Philosophy and Literature.

**Course Outcomes**

: Philosophy of Architecture.

**Course Outcomes**

: Contemporary Analytical Philosophy.

**Course Outcomes**

: Contemporary Political Theory.

**Course Outcomes**

: Russell.

**Course Outcomes**

: Moore.

**Course Outcomes**

: Frege.

**Course Outcomes**

: Truth.

**Course Outcomes**

: Wittgenstein.

**Course Outcomes**

: Whitehead.

**Course Outcomes**

: Logical Positivism.

**Course Outcomes**

: Continental Philosophy.

**Course Outcomes**

: Existentialism.

**Course Outcomes**

: Hermeneutics.

**Course Outcomes**

: Phenomenology.

**Course Outcomes**

: Philosophy of Cognitive Science.

**Course Outcomes**

: Ricoeur.

**Course Outcomes**

: Husserl.

**Course Outcomes**

: Heidegger.

**Course Outcomes**

: Sartre.

**Course Outcomes**

: Levinas.

**Course Outcomes**

: Merleau-Ponty.

**Course Outcomes**

: Gadamer.

**Course Outcomes**

: Dufrenne.

**Course Outcomes**

: Derrida.

**Course Outcomes**

: Foucault.

**Course Outcomes**

: Marion.

**Course Outcomes**

: Contemporary French Philosophy.

**Course Outcomes**

: Oakeshott.

**Course Outcomes**

: Philosophy of Logic.

**Course Outcomes**

: Lyotard. (0::)

**Course Outcomes**

: Ordinary Language Philosophy.

**Course Outcomes**

PHIL 360R : Non-Western Philosophy. (3:3:0)
DESCRIPTION: Study selected figures, texts, and problems in the history of non-Western philosophy.

**Course Outcomes**
There are no course outcomes available

6. Complete one of the following values and conduct courses:

PHIL 413R : Topics in Ethics. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Phil 300.
RECOMMENDED: Phil 213.
DESCRIPTION: Select topics, figures, problems, and theories in ethics. Topics include meta-ethics, deontology, consequentialism, virtue theory, applied ethics, ethical argumentation.

**Course Outcomes**
There are no course outcomes available

: Objectivity, Subjectivity, and Relativism.
**Course Outcomes**

: Meta-ethics.
**Course Outcomes**

: Skepticism.
**Course Outcomes**

: Deontology.
**Course Outcomes**

: Consequentialism.
**Course Outcomes**

: Virtue Theory.
**Course Outcomes**

: Medical Ethics.
**Course Outcomes**

: Environmental Ethics.
**Course Outcomes**

: Media and Cyber Ethics.
**Course Outcomes**

: Ethics of War and Peace.
**Course Outcomes**

: Moral Psychology.
**Course Outcomes**

: Applied Ethics.
**Course Outcomes**

: The Good Life.
**Course Outcomes**

: Theoretical Foundations of Business Ethics.
**Course Outcomes**

: Ethical Argumentation.
**Course Outcomes**

PHIL 414R : Topics in the Advanced Philosophy of Art, Architecture, Music, and Film. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Phil 300.
DESCRIPTION: Topics and figures in the philosophy of art, architecture, music, and film.

**Course Outcomes**

There are no course outcomes available

PHIL 415 : Philosophy of Religion. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 300.

DESCRIPTION: Selected figures or problems.

**Course Outcomes**

- Understand at an advanced level key concepts, theories, and issues in the philosophy of religion.
- Read and critically discuss figures and texts in the philosophy of religion.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of religion.
- Be able to explain the practice and value of philosophy of religion.

PHIL 416 : Philosophy of Law. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 300.

DESCRIPTION: The relation between natural and enacted law; theories of punishment; utilitarian and nonutilitarian theories of law; liberty.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in the philosophy of law.
- Read and critically discuss figures and texts in the philosophy of law.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of law.
- Be able to explain the practice and value of philosophy of law.

7. Complete two of the following knowledge and reality courses:

PHIL 405 : Advanced Logic and Metalogic. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 305.

DESCRIPTION: Completeness, soundness, and undecidability of first-order logic; incompleteness of arithmetic; treatment of related philosophical topics and of nonclassical topics as time permits.

**Course Outcomes**

- Prove and understand the completeness and consistency of first-order logic as well as the Solem-Löwenheim theorem, Gödel incompleteness, Church's undecidability theorem, etc.
- Formulate and evaluate the philosophical ramifications of these theorems.

PHIL 420 : Philosophy of Language. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: Phil 300.

DESCRIPTION: Meaning and reference, synonymy, metaphor, exemplification, translation; linguistic, artistic, and perceptual symbol systems.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in the philosophy of language.
- Read and critically discuss figures and texts in the philosophy of language.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of language.
- Be able to explain the practice and value of philosophy of language.

PHIL 421 : Metaphysics. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department

PREREQUISITE: Phil 300.

DESCRIPTION: Basic categories of being: appearance and reality, law, causality, space, time, eternity, deity.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in metaphysics.
- Read and critically discuss figures and texts in metaphysics.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on metaphysics.
- Be able to explain the practice and value of metaphysics.

PHIL 422 : Epistemology. (3:3:0)

WHEN TAUGHT: Winter; Summer Contact Department

PREREQUISITE: Phil 300.

DESCRIPTION: Meaning, limits, and justification of knowledge.

**Course Outcomes**

- Know and understand central issues and concepts in epistemology, including possible answers to questions like: What is knowledge? What is the extent of our knowledge? What is justified belief?
- Know major theories, figures, and texts in epistemology.
- Read and critically discuss figures and texts in epistemology.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on epistemology.
- Be able to explain the practice and value of epistemology.

PHIL 423 : History and Philosophy of Science. (3:3:0)

PREREQUISITE: Phy S 100 or instructor's consent; Phil 300.

DESCRIPTION: Scientific explanation, concepts, and models. Philosophical assumptions and criteria for theory selection, as exemplified by historical development of basic ideas in science.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in the history and philosophy of Western science from antiquity to the contemporary era.
- Read and critically discuss figures and texts in the philosophy of science.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of science.
- Be able to explain the practice and value of philosophy of science.

PHIL 424 : Philosophy of Mind. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 300.

DESCRIPTION: Relationship between the mental and the physical: consciousness, intentionality, mental causation.

**Course Outcomes**

There are no course outcomes available

8. Complete 6 additional hours (excluding 110, 150, and 499R) (with no more or less than three hours of 449R). Students must have a total of 27 credit hours of upper-division course work (300-level or above) in the major.
9. Complete the following seminar:

PHIL 490 : Senior Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 300.

DESCRIPTION: Review of philosophical principles and advanced writing experiences culminating in a publishable paper.

**Course Outcomes**

- Prepare students for graduate/professional school and the job market.
- Help students better understand the relevance of philosophy to life and to career options.
- Provide students added experience in professional-level writing and communication.

*Hours include courses that may fulfill university core requirements.

## Show all Philosophy (Phil) Courses

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Philosophy Department Home

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- BA in Philosophy

Minors

- Philosophy
- Logic
- Theoretical and Applied Ethics

Course Information

- Philosophy (Phil) Courses

Faculty

# Minor in Philosophy (18 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

PHIL 201 : History of Philosophy 1. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Western civilization from Greek antiquity to Renaissance, primarily from perspective of philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

**Course Outcomes**

- Know milestones of Western history and culture from antiquity through the Renaissance and Reformation.
- Acquire a basic understanding of the most important philosophical figures, texts, and issues in ancient, medieval, and early modern philosophy.
- Write a clear and cogent philosophical essay.

PHIL 202 : History of Philosophy 2. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Western civilization from Renaissance to present, primarily from perspective of philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

**Course Outcomes**

- Know milestones of Western history and culture from the Renaissance and Reformation through the present.
- Acquire a basic understanding of the most important philosophical figures, texts, and issues in late modern and contemporary philosophy.
- Write a clear and cogent philosophical essay.

PHIL 205 : Introduction to Formal Logic. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: History and use of syllogistic and propositional logic; evaluating arguments with Venn diagrams, truth tables, and Copi-style proofs and proof strategies; informal reasoning and fallacies.

**Course Outcomes**

- Know the basic vocabulary and concepts of formal and informal logic.
- Learn how to appraise validity by refuting invalid arguments and by constructing formal proofs for valid ones.
- Learn how to translate ordinary language into logical symbolism.

2. Complete three other philosophy courses.

*Hours include courses that may fulfill university core requirements.

## Show all Philosophy (Phil) Courses

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Philosophy Department Home

Majors

- BA in Philosophy

Minors

- Philosophy
- Logic
- Theoretical and Applied Ethics

Course Information

- Philosophy (Phil) Courses

Faculty

# Minor in Logic (15 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

PHIL 205 : Introduction to Formal Logic. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: History and use of syllogistic and propositional logic; evaluating arguments with Venn diagrams, truth tables, and Copi-style proofs and proof strategies; informal reasoning and fallacies.

**Course Outcomes**

- Know the basic vocabulary and concepts of formal and informal logic.
- Learn how to appraise validity by refuting invalid arguments and by constructing formal proofs for valid ones.
- Learn how to translate ordinary language into logical symbolism.

PHIL 305 : Intermediate Formal Logic. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHIL 205

DESCRIPTION: History and use of first-order logic and second-order logic; natural-deduction and axiomatic proofs; modal logic; set theory and foundations of mathematics.

NOTE: Fulfills GE Languages of Learning requirement.

**Course Outcomes**

- Master first order logic including the correct use of symbols and the construction of proofs.
- Learn to construct proofs within axiom systems in such areas as identity, set theory, arithmetic, and modal logic.
- Understand key historical developments such as Cantor's theory of transfinite numbers, Frege's attempt to reduce arithmetic to logic, the logical paradoxes, and Gödel's theorems.

PHIL 405 : Advanced Logic and Metalogic. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 305.

DESCRIPTION: Completeness, soundness, and undecidability of first-order logic; incompleteness of arithmetic; treatment of related philosophical topics and of nonclassical topics as time permits.

**Course Outcomes**

- Prove and understand the completeness and consistency of first-order logic as well as the Solem-Löwenheim theorem, Gödel incompleteness, Church's undecidability theorem, etc.
- Formulate and evaluate the philosophical ramifications of these theorems.

2. Complete two other approved courses.
3. No more than nine hours may double-count for the philosophy major and the logic minor.

*Hours include courses that may fulfill university core requirements.

## Show all Philosophy (Phil) Courses

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- BA in Philosophy

Minors

- Philosophy
- Logic
- Theoretical and Applied Ethics

Course Information

- Philosophy (Phil) Courses

Faculty

# Minor in Theoretical and Applied Ethics (14 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

PHIL 213 : Introduction to Ethics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department
DESCRIPTION: Nature and justification of moral standards, beliefs, and decisions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Know basic concepts, figures, texts, and issues of moral philosophy; know basic normative theories in ethics, including deontology, utilitarianism, virtue theory, subjectivism, relativism, divine command theory, natural law, social contract theory, and care ethics.
- Learn how to apply normative theories to ethical problems, questions, and situations.
- Learn how to integrate philosophical skills and practices with religious convictions, while cultivating a respect for contrary points of view.

2. From the following, complete four courses in ethics, social and political philosophy, or history of philosophy with an emphasis on ethics:

PHIL 217R : Social and Political Philosophy. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Phil 150 or equivalent.
RECOMMENDED: Phil 201, 202.
DESCRIPTION: Examine selected topics, periods, and figures in social and political philosophy with an aim to understand and apply theories to particular problems and questions.

**Course Outcomes**

- Know basic concepts, theories, figures, texts, and issues in social and political philosophy.
- Practice philosophical analysis and argument orally and in writing; write a clear and cogent essay on social and political philosophy.

PHIL 313R : History of Ethics. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Phil 150 or equivalent.
RECOMMENDED: Phil 201, 202, 213.
DESCRIPTION: Designed to survey the history of ethics or to examine multiple periods and figures in the history of philosophy.

**Course Outcomes**

There are no course outcomes available

PHIL 320R : Studies in Ancient Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Phil 201.
DESCRIPTION: Selected figures or topics.

**Course Outcomes**

There are no course outcomes available

: Topics in Greek Philosophy.

**Course Outcomes**

: Pre-Socratics.

**Course Outcomes**

: Socrates.

**Course Outcomes**

: Plato.

**Course Outcomes**

: Aristotle.

**Course Outcomes**

: Neo-Platonism.

**Course Outcomes**

: Plotinus.

**Course Outcomes**

: Stoicism.

**Course Outcomes**

: Greek Ethics.

**Course Outcomes**

: Greek Science.

**Course Outcomes**

: Greek Metaphysics.

**Course Outcomes**

: Greek Logic.

**Course Outcomes**

: Greek Political Theory.

**Course Outcomes**

: Greek Epistemology.

**Course Outcomes**

: Greek Philosophy of Religion.

**Course Outcomes**

: Helenistic Philosophy.

**Course Outcomes**

: Church Fathers.

**Course Outcomes**

: Chinese Philosophy.

**Course Outcomes**

: Hindu Philosophy.

**Course Outcomes**

: Buddhism.

**Course Outcomes**

(Must have an emphasis on ethics.)

PHIL 330R : Studies in Medieval Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 201.

DESCRIPTION: Selected figures or topics.

**Course Outcomes**

No outcomes are available at this time.

: Topics in Medieval Philosophy.

**Course Outcomes**

: Augustine.

**Course Outcomes**

: Anselm.

**Course Outcomes**

: Averroes.

**Course Outcomes**

: Bonaventure.

**Course Outcomes**

: Maimonides.

**Course Outcomes**

: Aquinas.

**Course Outcomes**

: Duns Scotus.

**Course Outcomes**

: William of Ockham.

**Course Outcomes**

: Boethius.

**Course Outcomes**

: Medieval Jewish Philosophers.

**Course Outcomes**

: Medieval Arabic Philosophers.

**Course Outcomes**

: Medieval Ethics.

**Course Outcomes**

: Medieval Science.

**Course Outcomes**

: Medieval Epistemology.

**Course Outcomes**

: Medieval Metaphysics.

**Course Outcomes**

: Medieval Logic.

**Course Outcomes**

: Medieval Political Theory.

**Course Outcomes**

: Medieval Philosophy and Religion.

**Course Outcomes**

: Meister Eckhart.

**Course Outcomes**

(Must have an emphasis on ethics.)

PHIL 340R : Studies in Modern Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 202.

DESCRIPTION: Selected figures or topics.

**Course Outcomes**

There are no course outcomes available

: Topics in Modern Philosophy.

**Course Outcomes**

: Continental Rationalism.

**Course Outcomes**

: Descartes.

**Course Outcomes**

: Spinoza.

**Course Outcomes**

: Leibniz.

**Course Outcomes**

: British Empiricism.

**Course Outcomes**

: Hobbes.

**Course Outcomes**

: Locke.

**Course Outcomes**

: Descartes and Locke.

**Course Outcomes**

: Berkeley.

**Course Outcomes**

: Hume.

**Course Outcomes**

: Kant.

**Course Outcomes**

: Hegel.

**Course Outcomes**

: Schopenhauer.

**Course Outcomes**

: German Idealism.

**Course Outcomes**

: Nietzsche.

**Course Outcomes**

: Nietzsche and Freud.

**Course Outcomes**

: Kierkegaard.

**Course Outcomes**

: Utilitarianism.

**Course Outcomes**

: Modern Political Theory.

**Course Outcomes**

: Bentham.

**Course Outcomes**

: J. S. Mill.

**Course Outcomes**

: Pragmatism.

**Course Outcomes**

: Peirce.

**Course Outcomes**

: William James.

**Course Outcomes**

: Dewey.

**Course Outcomes**

: Bergson.

**Course Outcomes**

: Alexander.

**Course Outcomes**

: Bradley.

**Course Outcomes**

: Bosanquet.

**Course Outcomes**

: British Idealism.

**Course Outcomes**

(Must have an emphasis on ethics.)

PHIL 350R : Studies in Contemporary Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 202.

DESCRIPTION: Selected figures or topics.

**Course Outcomes**

There are no course outcomes available

: Topics in Contemporary Philosophy.

**Course Outcomes**

: Philosophy of Social Science.

**Course Outcomes**

: Philosophy of History.

**Course Outcomes**

: Philosophy of Psychology.

**Course Outcomes**

: Philosophy of Theology.

**Course Outcomes**

: Philosophy and Film.

**Course Outcomes**

: Philosophy and Literature.

**Course Outcomes**

: Philosophy of Architecture.

**Course Outcomes**

: Contemporary Analytical Philosophy.

**Course Outcomes**

: Contemporary Political Theory.

**Course Outcomes**

: Russell.

**Course Outcomes**

: Moore.

**Course Outcomes**

: Frege.

**Course Outcomes**

: Truth.

**Course Outcomes**

: Wittgenstein.

**Course Outcomes**

: Whitehead.

**Course Outcomes**

: Logical Positivism.

**Course Outcomes**

: Continental Philosophy.

**Course Outcomes**

: Existentialism.

**Course Outcomes**

: Hermeneutics.

**Course Outcomes**

: Phenomenology.

**Course Outcomes**

: Philosophy of Cognitive Science.

**Course Outcomes**

: Ricoeur.

**Course Outcomes**

: Husserl.

**Course Outcomes**

: Heidegger.

**Course Outcomes**

: Sartre.

**Course Outcomes**

: Levinas.

**Course Outcomes**

: Merleau-Ponty.

**Course Outcomes**

: Gadamer.

**Course Outcomes**

: Dufrenne.

**Course Outcomes**

: Derrida.

**Course Outcomes**

: Foucault.

**Course Outcomes**

: Marion.

**Course Outcomes**

: Contemporary French Philosophy.

**Course Outcomes**

: Oakeshott.

**Course Outcomes**

: Philosophy of Logic.

**Course Outcomes**

: Lyotard. (0::)

**Course Outcomes**

: Ordinary Language Philosophy.

**Course Outcomes**

(Must have an emphasis on ethics.)

PHIL 413R : Topics in Ethics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Phil 300.
RECOMMENDED: Phil 213.
DESCRIPTION: Select topics, figures, problems, and theories in ethics. Topics include meta-ethics, deontology, consequentialism, virtue theory, applied ethics, ethical argumentation.

**Course Outcomes**

There are no course outcomes available

: Objectivity, Subjectivity, and Relativism.

**Course Outcomes**

: Meta-ethics.

**Course Outcomes**

: Skepticism.

**Course Outcomes**

: Deontology.

**Course Outcomes**

: Consequentialism.

**Course Outcomes**

: Virtue Theory.

**Course Outcomes**

: Medical Ethics.

**Course Outcomes**

: Environmental Ethics.

**Course Outcomes**

: Media and Cyber Ethics.

**Course Outcomes**

: Ethics of War and Peace.

**Course Outcomes**

: Moral Psychology.

**Course Outcomes**

: Applied Ethics.

**Course Outcomes**

: The Good Life.

**Course Outcomes**

: Theoretical Foundations of Business Ethics.

**Course Outcomes**

: Ethical Argumentation.

**Course Outcomes**

POLI 362 : Reason, Revelation, and Politics. (3:3:0)

RECOMMENDED: Poli 201 or 202 or class in philosophy.
DESCRIPTION: The fruitful tension between the authority of reason and that of revelation in the Western tradition and in contemporary politics.

**Course Outcomes**

No outcomes are available at this time.

POLI 367 : Contemporary Political Theory. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: Poli 201 or Poli 202 or Phil 201 or Phil 202.
DESCRIPTION: History of political science, including the moral and ethical dimensions of politics.

**Course Outcomes**

There are no course outcomes available

POLI 368R : Topics in Political Philosophy. (3:3:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

There are no course outcomes available

Note: One approved 2 or 3 credit course in ethics from another department may substitute for any single course listed above. (The Philosophy Department maintains a list of ethics courses offered by other BYU departments.)

*Hours include courses that may fulfill university core requirements.

## Show all Philosophy (Phil) Courses

College of Humanities Home

Philosophy Department Home

Majors

- BA in Philosophy

Minors

- Philosophy
- Logic
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Course Information

- Philosophy (Phil) Courses

Faculty

# Philosophy (Phil)

Show All Course Descriptions
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## Undergraduate Courses

### 100-Level Courses

PHIL 110 : Introduction to Philosophy. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Articulating, assessing, and defending fundamental positions on topics such as reason, knowledge, science, education, ethics, politics, and religion.

**Course Outcomes**

- Become acquainted with important figures, topics, and issues in the history of philosophy.
- Learn to read and discuss critically philosophical texts.
- Write a clear and cogent philosophical essay.
- Learn to integrate philosophical skills and practices with religious convictions, while cultivating a respect for contrary points of view.

PHIL 150 : Reasoning and Writing. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Recommended for philosophy majors and minors.
DESCRIPTION: Informal grammar, logic, and rhetoric as tools for reading and writing. Library research.
NOTE: Fulfills GE First-Year Writing requirement. No course challenges accepted.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

PHIL 200 : Philosophy Major Orientation and ePortfolio Training. (1:1:0)

WHEN TAUGHT: Fall
DESCRIPTION: Overview of philosophy as a discipline; review of philosophy major requirements and course sequence; complete introduction to philosophy research methods and ePortfolio training.

**Course Outcomes**

There are no course outcomes available

PHIL 201 : History of Philosophy 1. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Western civilization from Greek antiquity to Renaissance, primarily from perspective of philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

**Course Outcomes**

- Know milestones of Western history and culture from antiquity through the Renaissance and Reformation.
- Acquire a basic understanding of the most important philosophical figures, texts, and issues in ancient, medieval, and early modern philosophy.
- Write a clear and cogent philosophical essay.

PHIL 202 : History of Philosophy 2. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Western civilization from Renaissance to present, primarily from perspective of philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

**Course Outcomes**

- Know milestones of Western history and culture from the Renaissance and Reformation through the present.
- Acquire a basic understanding of the most important philosophical figures, texts, and issues in late modern and contemporary philosophy.
- Write a clear and cogent philosophical essay.

PHIL 205 : Introduction to Formal Logic. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: History and use of syllogistic and propositional logic; evaluating arguments with Venn diagrams, truth tables, and Copi-style proofs and proof strategies; informal reasoning and fallacies.

**Course Outcomes**

- Know the basic vocabulary and concepts of formal and informal logic.
- Learn how to appraise validity by refuting invalid arguments and by constructing formal proofs for valid ones.
- Learn how to translate ordinary language into logical symbolism.

PHIL 210 : Science and Civilization 1. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall

DESCRIPTION: History of Civilization from Greek antiquity to scientific revolution; methods in early science and their philosophical significance; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Know about the development of scientific ideas and practices in their cultural context, including the major figures and methods of science from antiquity to 1500.
- Read, analyze, and critically summarize a book-length study of science.
- Learn to integrate philosophical skills and practices with religious convictions, while cultivating a respect for contrary points of view.

PHIL 211 : Science and Civilization 2. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Winter

DESCRIPTION: History of Civilization from scientific revolution to present; concepts and methods in modern science and their philosophical significance; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

PHIL 213 : Introduction to Ethics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

DESCRIPTION: Nature and justification of moral standards, beliefs, and decisions.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Know basic concepts, figures, texts, and issues of moral philosophy; know basic normative theories in ethics, including deontology, utilitarianism, virtue theory, subjectivism, relativism, divine command theory, natural law, social contract theory, and care ethics.
- Learn how to apply normative theories to ethical problems, questions, and situations.
- Learn how to integrate philosophical skills and practices with religious convictions, while cultivating a respect for contrary points of view.

PHIL 214 : Introduction to the Philosophy of Art. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: The experience of beauty in nature, in literature, and in the arts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Know basic concepts, theories, figures, texts, and issues in Western philosophy of art and beauty.
- Learn how to use the philosophy of art and theories of taste to appreciate and critique individual works of art.
- Practice philosophical analysis and argument orally and in writing; write a clear and cogent essay on the philosophy of art and beauty.

PHIL 215 : Introduction to the Philosophy of Religion. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Existence and nature of God, God's foreknowledge and man's free will, faith, immortality, and religious experience and language.

**Course Outcomes**

- Know central problems in philosophy of religion, and traditional responses to those problems; know central figures and texts in philosophy of religion.
- Know and evaluate major arguments for God's existence, and learn how to examine the role of reason and evidence in religious belief.
- Practice philosophical analysis and argument orally and in writing; write a clear and cogent essay on the philosophy of religion.

PHIL 217R : Social and Political Philosophy. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Phil 150 or equivalent.
RECOMMENDED: Phil 201, 202.
DESCRIPTION: Examine selected topics, periods, and figures in social and political philosophy with an aim to understand and apply theories to particular problems and questions.

**Course Outcomes**

- Know basic concepts, theories, figures, texts, and issues in social and political philosophy.
- Practice philosophical analysis and argument orally and in writing; write a clear and cogent essay on social and political philosophy.

**300-Level Courses**

PHIL 300 : Philosophical Writing. (3:3:0)

OFFERED: Honors also
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Phil 201 and Phil 202 and Phil 205.
DESCRIPTION: Writing philosophical papers about philosophical texts or problems. Research methods in philosophy. Library research paper.
NOTE: Fulfills GE Advanced Written and Oral Communications requirement. No course challenges accepted.

**Course Outcomes**

- Learn advanced strategies of writing clearly on a well-defined topic using correct grammar, accepted usage, and stylistic conventions appropriate to philosophy; refine the ability to write using a voice, tone, and level of formality suited to one's intended audience.
- Cultivate advanced critical reading and writing skills used in summarizing, paraphrasing, formulating, analyzing and evaluating philosophical arguments, and in prewriting, drafting, revising, critiquing, editing, and proofreading philosophical essays.
- Refine the ability to use scholarly research tools (including library and internet resources) in writing expository, persuasive, and philosophical essays, and to use and cite researched material.

PHIL 305 : Intermediate Formal Logic. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PHIL 205
DESCRIPTION: History and use of first-order logic and second-order logic; natural-deduction and axiomatic proofs; modal logic; set theory and foundations of mathematics.
NOTE: Fulfills GE Languages of Learning requirement.

**Course Outcomes**

- Master first order logic including the correct use of symbols and the construction of proofs.
- Learn to construct proofs within axiom systems in such areas as identity, set theory, arithmetic, and modal logic.
- Understand key historical developments such as Cantor's theory of transfinite numbers, Frege's attempt to reduce arithmetic to logic, the logical paradoxes, and Gödel's theorems.

PHIL 313R : History of Ethics. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Phil 150 or equivalent.
RECOMMENDED: Phil 201, 202, 213.
DESCRIPTION: Designed to survey the history of ethics or to examine multiple periods and figures in the history of philosophy.

**Course Outcomes**

There are no course outcomes available

PHIL 320R : Studies in Ancient Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Phil 201.
DESCRIPTION: Selected figures or topics.

**Course Outcomes**

There are no course outcomes available

: Topics in Greek Philosophy.

**Course Outcomes**

: Pre-Socratics.

**Course Outcomes**

: Socrates.

**Course Outcomes**

: Plato.

**Course Outcomes**

: Aristotle.

**Course Outcomes**

: Neo-Platonism.

**Course Outcomes**

: Plotinus.

**Course Outcomes**

: Stoicism.

**Course Outcomes**

: Greek Ethics.

**Course Outcomes**

: Greek Science.

**Course Outcomes**

: Greek Metaphysics.

**Course Outcomes**

: Greek Logic.

**Course Outcomes**

: Greek Political Theory.

**Course Outcomes**

: Greek Epistemology.

**Course Outcomes**

: Greek Philosophy of Religion.

**Course Outcomes**

: Helenistic Philosophy.

**Course Outcomes**

: Church Fathers.

**Course Outcomes**

: Chinese Philosophy.

**Course Outcomes**

: Hindu Philosophy.

**Course Outcomes**

: Buddhism.

**Course Outcomes**

PHIL 330R : Studies in Medieval Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 201.

DESCRIPTION: Selected figures or topics.

**Course Outcomes**

No outcomes are available at this time.

: Topics in Medieval Philosophy.

**Course Outcomes**

: Augustine.

**Course Outcomes**

: Anselm.

**Course Outcomes**

: Averroes.

**Course Outcomes**

: Bonaventure.

**Course Outcomes**

: Maimonides.

**Course Outcomes**

: Aquinas.

**Course Outcomes**

: Duns Scotus.

**Course Outcomes**

: William of Ockham.

**Course Outcomes**

: Boethius.

**Course Outcomes**

: Medieval Jewish Philosophers.

**Course Outcomes**

: Medieval Arabic Philosophers.

**Course Outcomes**

: Medieval Ethics.

**Course Outcomes**

: Medieval Science.

**Course Outcomes**

: Medieval Epistemology.

**Course Outcomes**

: Medieval Metaphysics.

**Course Outcomes**

: Medieval Logic.

**Course Outcomes**

: Medieval Political Theory.

**Course Outcomes**

: Medieval Philosophy and Religion.

**Course Outcomes**

: Meister Eckhart.

**Course Outcomes**

PHIL 340R : Studies in Modern Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 202.

DESCRIPTION: Selected figures or topics.

**Course Outcomes**

There are no course outcomes available

: Topics in Modern Philosophy.

**Course Outcomes**

: Continental Rationalism.

**Course Outcomes**

: Descartes.

**Course Outcomes**

: Spinoza.

**Course Outcomes**

: Leibniz.

**Course Outcomes**

: British Empiricism.

**Course Outcomes**

: Hobbes.

**Course Outcomes**

: Locke.

**Course Outcomes**

: Descartes and Locke.

**Course Outcomes**

: Berkeley.

**Course Outcomes**

: Hume.

**Course Outcomes**

: Kant.

**Course Outcomes**

: Hegel.

**Course Outcomes**

: Schopenhauer.

**Course Outcomes**

: German Idealism.

**Course Outcomes**

: Nietzsche.

**Course Outcomes**

: Nietzsche and Freud.

**Course Outcomes**

: Kierkegaard.

**Course Outcomes**

: Utilitarianism.

**Course Outcomes**

: Modern Political Theory.

**Course Outcomes**

: Bentham.

**Course Outcomes**

: J. S. Mill.

**Course Outcomes**

: Pragmatism.

**Course Outcomes**

: Peirce.

**Course Outcomes**

: William James.

**Course Outcomes**

: Dewey.

**Course Outcomes**

: Bergson.

**Course Outcomes**

: Alexander.

**Course Outcomes**

: Bradley.

**Course Outcomes**

: Bosanquet.

**Course Outcomes**

: British Idealism.

**Course Outcomes**

PHIL 350R : Studies in Contemporary Philosophy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 202.

DESCRIPTION: Selected figures or topics.

**Course Outcomes**

There are no course outcomes available

: Topics in Contemporary Philosophy.

**Course Outcomes**

: Philosophy of Social Science.

**Course Outcomes**

: Philosophy of History.

**Course Outcomes**

: Philosophy of Psychology.

**Course Outcomes**

: Philosophy of Theology.

**Course Outcomes**

: Philosophy and Film.

**Course Outcomes**

: Philosophy and Literature.

**Course Outcomes**

: Philosophy of Architecture.

**Course Outcomes**

: Contemporary Analytical Philosophy.

**Course Outcomes**

: Contemporary Political Theory.

**Course Outcomes**

: Russell.

**Course Outcomes**

: Moore.

**Course Outcomes**

: Frege.

**Course Outcomes**

: Truth.

**Course Outcomes**

: Wittgenstein.

**Course Outcomes**

: Whitehead.

**Course Outcomes**

: Logical Positivism.

**Course Outcomes**

: Continental Philosophy.

**Course Outcomes**

: Existentialism.

**Course Outcomes**

: Hermeneutics.

**Course Outcomes**

: Phenomenology.

**Course Outcomes**

: Philosophy of Cognitive Science.

**Course Outcomes**

: Ricoeur.

**Course Outcomes**

: Husserl.

**Course Outcomes**

: Heidegger.

**Course Outcomes**

: Sartre.

**Course Outcomes**

: Levinas.

**Course Outcomes**

: Merleau-Ponty.

**Course Outcomes**

: Gadamer.

**Course Outcomes**

: Dufrenne.

**Course Outcomes**

: Derrida.

**Course Outcomes**

: Foucault.

**Course Outcomes**

: Marion.

**Course Outcomes**

: Contemporary French Philosophy.

**Course Outcomes**

: Oakeshott.

**Course Outcomes**

: Philosophy of Logic.

**Course Outcomes**

: Lyotard. (0::)

**Course Outcomes**

: Ordinary Language Philosophy.

**Course Outcomes**

PHIL 360R : Non-Western Philosophy. (3:3:0)

DESCRIPTION: Study selected figures, texts, and problems in the history of non-Western philosophy.

**Course Outcomes**

There are no course outcomes available

### 400-Level Courses

PHIL 405 : Advanced Logic and Metalogic. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 305.

DESCRIPTION: Completeness, soundness, and undecidability of first-order logic; incompleteness of arithmetic; treatment of related philosophical topics and of nonclassical topics as time permits.

**Course Outcomes**

- Prove and understand the completeness and consistency of first-order logic as well as the Solem-Löwenheim theorem, Gödel incompleteness, Church's undecidability theorem, etc.
- Formulate and evaluate the philosophical ramifications of these theorems.

PHIL 413R : Topics in Ethics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 300.

RECOMMENDED: Phil 213.

DESCRIPTION: Select topics, figures, problems, and theories in ethics. Topics include meta-ethics, deontology, consequentialism, virtue theory, applied ethics, ethical argumentation.

**Course Outcomes**

There are no course outcomes available

: Objectivity, Subjectivity, and Relativism.

**Course Outcomes**

: Meta-ethics.

**Course Outcomes**

: Skepticism.

**Course Outcomes**

: Deontology.

**Course Outcomes**

: Consequentialism.

**Course Outcomes**

: Virtue Theory.

**Course Outcomes**

: Medical Ethics.

**Course Outcomes**

: Environmental Ethics.

**Course Outcomes**

: Media and Cyber Ethics.

**Course Outcomes**

: Ethics of War and Peace.

**Course Outcomes**

: Moral Psychology.

**Course Outcomes**

: Applied Ethics.

**Course Outcomes**

: The Good Life.

**Course Outcomes**

: Theoretical Foundations of Business Ethics.

**Course Outcomes**

: Ethical Argumentation.

**Course Outcomes**

PHIL 414R : Topics in the Advanced Philosophy of Art, Architecture, Music, and Film. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Phil 300.

DESCRIPTION: Topics and figures in the philosophy of art, architecture, music, and film.

**Course Outcomes**

There are no course outcomes available

PHIL 415 : Philosophy of Religion. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 300.

DESCRIPTION: Selected figures or problems.

**Course Outcomes**

- Understand at an advanced level key concepts, theories, and issues in the philosophy of religion.
- Read and critically discuss figures and texts in the philosophy of religion.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of religion.
- Be able to explain the practice and value of philosophy of religion.

PHIL 416 : Philosophy of Law. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 300.

DESCRIPTION: The relation between natural and enacted law; theories of punishment; utilitarian and nonutilitarian theories of law; liberty.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in the philosophy of law.
- Read and critically discuss figures and texts in the philosophy of law.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of law.
- Be able to explain the practice and value of philosophy of law.

PHIL 420 : Philosophy of Language. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: Phil 300.

DESCRIPTION: Meaning and reference, synonymy, metaphor, exemplification, translation; linguistic, artistic, and perceptual symbol systems.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in the philosophy of language.
- Read and critically discuss figures and texts in the philosophy of language.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of language.
- Be able to explain the practice and value of philosophy of language.

PHIL 421 : Metaphysics. (3:3:0)

WHEN TAUGHT: Fall; Spring Contact Department

PREREQUISITE: Phil 300.

DESCRIPTION: Basic categories of being: appearance and reality, law, causality, space, time, eternity, deity.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in metaphysics.
- Read and critically discuss figures and texts in metaphysics.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on metaphysics.
- Be able to explain the practice and value of metaphysics.

PHIL 422 : Epistemology. (3:3:0)

WHEN TAUGHT: Winter; Summer Contact Department

PREREQUISITE: Phil 300.

DESCRIPTION: Meaning, limits, and justification of knowledge.

**Course Outcomes**

- Know and understand central issues and concepts in epistemology, including possible answers to questions like: What is knowledge? What is the extent of our knowledge? What is justified belief?
- Know major theories, figures, and texts in epistemology.
- Read and critically discuss figures and texts in epistemology.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on epistemology.
- Be able to explain the practice and value of epistemology.

PHIL 423 : History and Philosophy of Science. (3:3:0)

PREREQUISITE: Phy S 100 or instructor's consent; Phil 300.

DESCRIPTION: Scientific explanation, concepts, and models. Philosophical assumptions and criteria for theory selection, as exemplified by historical development of basic ideas in science.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in the history and philosophy of Western science from antiquity to the contemporary era.
- Read and critically discuss figures and texts in the philosophy of science.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of science.
- Be able to explain the practice and value of philosophy of science.

PHIL 424 : Philosophy of Mind. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 300.

DESCRIPTION: Relationship between the mental and the physical: consciousness, intentionality, mental causation.

**Course Outcomes**

There are no course outcomes available

PHIL 449R : Philosophical Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures on philosophical topics by faculty and advanced students.

**Course Outcomes**

- Become acquainted with a range of figures, topics and problems in the history of philosophy as presented by different faculty members, visiting lecturers, and advanced students.
- Learn how to articulate and critique philosophical assertions, arguments, questions and presentations.
- Recognize and participate in accepted forms of philosophical thought and discourse.

PHIL 490 : Senior Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Phil 300.

DESCRIPTION: Review of philosophical principles and advanced writing experiences culminating in a publishable paper.

**Course Outcomes**

- Prepare students for graduate/professional school and the job market.
- Help students better understand the relevance of philosophy to life and to career options.
- Provide students added experience in professional-level writing and communication.

PHIL 495R : Directed Readings in Philosophy. (1-3:Arr:Arr)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PHIL 300

DESCRIPTION: For instructors and students who wish to pursue special problems or projects, or who wish to read texts that are not covered by available courses.

**Course Outcomes**

There are no course outcomes available

PHIL 499R : Honors Thesis. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Selected topic or figure in philosophy

**Course Outcomes**

- Write the honors thesis.
- Conduct research on the honors thesis topic.

## 500-Level Graduate Courses (available to advanced undergraduates)

PHIL 501R : Graduate Seminar. (.5-5:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Selected topic, figure, or movement in philosophy, as announced in current class schedule.

**Course Outcomes**

- Earn graduate credit for attending and completing an upper-division philosophy course with enhanced assignments, research, and writing.
- Investigate and understand an advanced philosophical issue or research topic.

**Back to Philosophy Department Home**

**College of Humanities Home**

**Philosophy Department Home**

**Majors**

- BA in Philosophy

**Minors**

- Philosophy
- Logic
- Theoretical and Applied Ethics

**Course Information**

- Philosophy (Phil) Courses

**Faculty**

# Philosophy Faculty

Show All
Hide All

## Professors

Carter, K. Codell
**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1963
MA, University of Utah, 1964
PhD, Cornell University, 1968

Faulconer, James E.
**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1972
MA, Pennsylvania State University, 1975
PhD, Pennsylvania State University, 1977

Graham, Daniel W.
**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Professor
**DEGREES:** BA, Davidson College, 1970
MA, Brigham Young University, 1975
PhD, University of Texas, Austin, 1980

Grandy, David A.
**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1973
MA, Indiana University, Bloomington, 1990
PhD, Indiana University, Bloomington, 1994

Packard, Dennis J.
**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Professor
**DEGREES:** AA, Miracosta College, 1966
BA, Stanford University, 1968
PhD, Stanford University, 1974

## Associate Professors

Anderson, Travis T.
**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1985
BFA, Brigham Young University, 1985
MA, Loyola University, Chicago, 1989
PhD, Loyola University, Chicago, 1992

Jensen, David A.

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1996
MA, University of California, Los Angeles, 1998
PhD, University of California, Los Angeles, 2005

## Assistant Professors

Boch, Rachael

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Assistant Professor
**DEGREES:** BS, Utah State University, 1997
MA, University of Arizona, 2002
PhD, University of Arizona, 2004

Christensen, Ryan G.

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, Stanford University, 2006
PhD, Stanford University, 2008

Mower, Gordon

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Assistant Professor
**DEGREES:** BA, University of Utah, 1988
MA, University of Utah, 1994
PhD, University of Utah, 2007

## Emeritus

Hedengren, Paul

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Emeritus
**DEGREES:** BA, Brown University, 1971
MA, Brown University, 1974
PhD, University of Toronto, 1983

Nielsen, Kent

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Emeritus
**DEGREES:** BA, Harvard University, 1954
MA, Harvard University, 1955

Paulsen, David L.

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Emeritus
**DEGREES:** AS, Snow College, 1957
BS, Brigham Young University, 1961
JD, University of Chicago, 1964
PhD, University of Michigan, Ann Arbor, 1975

Rasmussen, Dennis

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Emeritus
**DEGREES:** BS, University of Utah, 1966
MA, Yale University, 1968
PhD, Yale University, 1970

Riddle, Chauncey

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Emeritus
**DEGREES:** BS, Brigham Young University, 1947
PhD, Columbia University, 1958

Siebach, James L.

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Emeritus
**DEGREES:** BA, Brigham Young University, 1982
PhD, University of Texas, Austin, 1994

Warner, C. Terry

**COLLEGE:** Humanities
**DEPARTMENT:** Philosophy
**RANK:** Emeritus
**DEGREES:** BS, Brigham Young University, 1963
MA, Yale University, 1965
PhD, Yale University, 1967

**College of Humanities Home**

**Spanish and Portuguese Department Home**

**Portuguese**

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

**Spanish**

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

**Faculty**

# Spanish and Portuguese

David P. Laraway, Chair
3190 JFSB, (801) 422-3807

College of Humanities Advisement Center
1175 JFSB, (801) 422-4789

## Admission to Degree Program

All degree programs in the Department of Spanish and Portuguese are open enrollment. However, students planning on declaring a major in the Spanish and Portuguese Department must first obtain permission by visiting the Department. Additionally, special limitations apply for teaching and translation majors.

## The Discipline

The Spanish and Portuguese languages and literatures dominate the Iberian Peninsula, major parts of Africa, and the southern portion of the New World from Mexico to the Magellan Straits. These languages, spoken by over 450 million people in twenty-one countries, provide a wide spectrum of cultural, linguistic, and literary variety. Spanish and Portuguese boast vibrant literatures that stand at the forefront of twentieth-century excellence and innovation, a linguist's paradise of dialects, rapid change, and development.

Such breadth—plus some 35 million speakers within the borders of the United States itself—gives multiple opportunities for developing skill in the spoken language, as well as in listening, reading, writing, and translation. Studying the Iberian roots of this large and important part of the population and learning about the people's perception of life also brings greater understanding of their values and their struggle for identity. A Spanish or Portuguese major makes for a demanding, intriguing, and pleasurable experience.

## Career Opportunities

The field of teaching has always provided good employment opportunities for Spanish majors. In addition, opportunities for both Spanish and Portuguese have been found in government service (translation, U.S. State Department, CIA, FBI, Border Patrol, Peace Corps, NSA, USIA), business, social work, airlines, banking, etc. Many majors go on to professional schools (law, medicine, dentistry, business, etc.), where a liberal arts background is advised. For employment in fields other than teaching, a strong minor or a second major in the employment area is strongly encouraged.

## General Information

The Department of Spanish and Portuguese strongly recommends that StDev 317, a 2-credit-hour course, be taken at the end of the sophomore year or the beginning of the junior year. Because liberal arts degrees provide preparation in a variety of useful fields rather than a single career track, this course is recommended to help liberal arts students focus on specific educational and occupational goals and to identify the career options or educational opportunities available to them. The course will introduce them to the resources needed for accessing information about graduate schools, internships, careers, and career development. Students will learn basic employment strategies, including the steps necessary for obtaining employment related to their own specialty.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A BYU cumulative GPA of at least 2.0
- A major GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in Portuguese** (Program Outcomes)
**BA in Portuguese Studies (Secondary Major Program)** (Program Outcomes)
**BA in Spanish** (Program Outcomes)
**BA in Spanish Studies (Secondary Major Program)** (Program Outcomes)
**BA in Spanish Teaching** (Program Outcomes)
**BA in Spanish Translation** (Program Outcomes)

**Minor in Portuguese**
**Minor in Portuguese Teaching**
**Minor in Spanish**
**Minor in Spanish Teaching**

**Certificate in Portuguese**
**Certificate in Spanish**

Students should see their department or college advisement center for help or information concerning the undergraduate programs.

# Graduate Programs and Degrees

MA in Portuguese
MA in Spanish
MA in Language Acquisition (Spanish and Portuguese)

For more information see the BYU 2014–2015 Graduate Catalog.

# General Information

## Spanish Resource Center

164 University Parkway Center, (801) 378-8107
E-mail: sp-rescenter@email.byu.edu

The Ministry of Education and Culture of Spain, in connection with the Department of Spanish and Portuguese and the Center for the Improvement of Teacher Education and Schooling (CITES), operates the Spanish Resource Center (Centro de Recursos). The purpose of the center is to provide an ample supply of books, computer programs, and didactic materials, both printed and audiovisual, related to the teaching of Spanish language and literature. Researchers, professors, students, educational institutions, coordinators, administrators, and in general all those who may be interested in the knowledge and promotion of Spanish are welcome. To increase the prestige of the Spanish language academically as well as socially, the Spanish Resource Center

- sponsors workshops, seminars, and work groups on topics related to teaching Spanish and researching linguistics and literature;
- organizes conferences, film series, recitals, and cultural activities in general that relate to the Spanish language and culture; and
- promotes and participates in all initiatives that are deemed appropriate and that favor acquisition and use of the Spanish language by students at different educational levels.

## Foreign Language Student Residence

The Foreign Language Student Residence provides live-in opportunities for students in Spanish and Portuguese. A twenty-four-hour-a-day Spanish or Portuguese rule assures participants intensive use of the language, under the direction of native speakers. See Foreign Language Housing at 3086 JFSB for information.

## Language Skills Development

A program to improve and monitor all language skills at each level of course work has been developed by the department, and a final oral proficiency examination is required of all graduating seniors. Writing skills in Spanish or Portuguese courses will advance from writing exercises and short messages in 100-level courses to original short themes in 200-level classes. Papers in the language at the 300-level and more extensive research and vocabulary and full control of structures at the 400-level will complete the program.

## Minor, Double Major, or Approved Supporting Course Work Required for Spanish or Portuguese Majors

All Spanish and Portuguese majors are required to complete either a minor (from any department in the university), 15 hours of approved supporting course work, or a secondary major.

Nonteaching majors who do not wish to complete a formal minor may substitute at least 15 hours of courses from among the following related fields: a second modern foreign language (upper-division courses only), Latin, Greek, English (beyond the GE requirement), linguistics, classical civilization, Latin American history or geography, Spanish/Portuguese history or geography, humanities, archaeology of Spain/Portugal or Latin America, comparative literature, or other areas approved by the department chair. Pre-med, pre-dent, and other pre-professional prerequisites may also count as long as they meet the 15 hour requirement.

Nonteaching and nontranslation majors also may meet their minor requirement by completing 15 additional hours consisting of elective Spanish/Portuguese courses or (strongly recommended) a combination of Spanish/Portuguese electives and interdisciplinary work. In all cases these courses must form a coherent program and *must be preapproved* by the department chair.

A secondary major is an acceptable alternative to a minor.

## Foreign Residency

The department strongly recommends that all majors participate in an extended (at least two continuous months) and intensive language and culture experience in a Spanish- or Portuguese-speaking country or area.

A student should complete this requirement by:

1. Residency abroad (may include a Spanish or Portuguese LDS mission, attendance at a foreign university, an advanced exchange program, or similar intensive foreign residence).
2. Participating in BYU Study Abroad Programs in Spain, Portugal, or Latin America.
3. Participating in individual or group-arranged internship programs abroad as approved by the department.

Students unable to participate in one of these programs must spend at least one year (two semesters) in the Foreign Language Student Residence, pledging to use only Spanish or Portuguese within the residence. Prerequisite to this experience is Span 205 or Port 201 or its equivalent; any exceptions must be approved by the department. For further information contact the department secretary or the Foreign Language Student Residence Office, 3086 JFSB, (801) 422-3765.

College of Humanities Home

Spanish and Portuguese Department Home

**Portuguese**

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

**Spanish**

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

**Faculty**

# BA in Portuguese (55–76 hours minimum*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. The Spanish and Portuguese Department requires a minimum of 18 hours of upper-division major credit to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
2. Meet the foreign residency requirement.
3. Complete a minor (approximately 16–21 hours), second major (approximately 30–60 hours), or supporting course work (15 hours).

   **Note:** Latin American Studies majors or minors: Port 321, 339, 345 or 355, and 441 or 451 meet requirements for both the Portuguese major and the area studies minor. Only one of these courses may be double-counted (applied to both the major and the minor). Students wishing to complete a Portuguese major and one of these area studies minors must take an additional 6–9 hours chosen from the approved electives for either major or minor. Consult the department and the advisement center for clarification of the choices available to you.
4. Complete the following prerequisite courses:

PORT 101 : First-Year Portuguese. (4:5:1)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Pronunciation, conversation, reading, and fundamentals of grammar. Specific attention to Portuguese as the language of Brazil.
NOTE: Native speakers of Portuguese must enroll in Port 321.

**Course Outcomes**

- Participate in classroom activities in Portuguese.
- Communicate verbally in routine situations such as greeting people and becoming acquainted.
- Understand simple conversations about some familiar, concrete topics such as daily activities, likes and dislikes, family, and home.
- Create simple sentences using basic grammar rules and vocabulary with limited accuracy.
- Read short "cultural blurbs" from the textbook, as well as other short texts such as personal ads, menus, and advertisements.
- Write word- and sentence-length messages such as lists, biographical information on forms, and descriptions of people and things.
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 102 : First-Year Portuguese. (4:5:1)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Port 101.
DESCRIPTION: Pronunciation, conversation, reading, and fundamentals of grammar. Specific attention to Portuguese as the language of Brazil.
NOTE: Native speakers of Portuguese must enroll in Port 321.

**Course Outcomes**

- Participate in classroom activities in Portuguese.
- Participate in conversations about some familiar, concrete topics such as daily activities, family, home, work, and school.
- Understand simple conversations about some familiar, concrete topics such as daily activities, likes and dislikes, family, and home.
- Create simple sentences using basic grammar rules and vocabulary with limited accuracy.
- Read short "cultural blurbs" from the textbook, as well as other short texts such as advertisements, letters, recipes, and stories.
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 201 : Third-Semester Portuguese. (4:5:0)

PREREQUISITE: Port 102 or three units of high school Portuguese.
DESCRIPTION: Second-year grammar, reading, writing, and conversation.
NOTE: Native speakers of Portuguese must take Port 321.

**Course Outcomes**

- Maintain a simple face-to-face conversation about concrete topics such as self, family, friends, and daily activities.
- Handle a simple transactional situation (making purchases, interviewing for a job, etc.)
- Discuss some topics of general interest (school, geography, finances, business, etc.)
- Use grammar principles, including the present, past, and future indicative and subjunctive, with increasing accuracy.
- Understand conversations, announcements, and media reports on familiar topics.
- Read short journalistic and literary texts.
- Write short, simple compositions in a variety of genres (stories, résumés, skits, etc.)
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 211R : First-Semester Conversation. (2:2:1)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Concurrent enrollment in Port 201.

**Course Outcomes**

- Begin to develop ability to handle a variety of uncomplicated communicative tasks in straightforward social situations, including verbal and nonverbal messages.

**And** complete one course from the following:

PORT 202 : Fourth-Semester Portuguese: Reading and Comprehension. (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 201.

DESCRIPTION: Fourth-semester class introducing grammar and culture through study of literature.

NOTE: Not for returned missionaries. Culmination of GE Mathematics/Foreign Language requirement. Native speakers of Portuguese must take Port 321. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Maintain a simple face-to-face conversation about an increasing range of topics of general interest (politics, transportation, the media, the arts, sports, etc.)
- Handle some situations with a complication (resolving disagreements, traffic violations, etc.)
- Use previously-learned grammar principles with increasing accuracy.
- Understand oral conversations, announcements, and media reports about familiar topics.
- Read medium-length journalistic and literary texts on familiar topics, including a short story and a play.
- Write simple compositions in a variety of genres (letters, pamphlets, articles, short stories, etc.).
- Discuss some differences between the cultural norms and perspectives of Americans and Portuguese speakers.
- Discuss some common themes from Portuguese-speaking cultures.

PORT 315 : Intermediate Portuguese Grammar, Reading, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction of culture, literature, and grammatical concerns through reading short stories, novels, and drama in Portuguese.

NOTE: Will count for minor but not for major. Native speakers should take Port 321.

**Course Outcomes**

There are no course outcomes available

**Note 1:** Students with foreign residence experience should take Port 321.

**Note 2:** Prerequisite courses may be waived for those having sufficient proficiency with the language.

5. Complete the following:

PORT 321 : Third-Year Portuguese Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Placement by test.

NOTE: First class for returned Portuguese-speaking missionaries. Fulfills GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

PORT 322 : Third-Year Portuguese Grammar and Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: PORT 321

**Course Outcomes**

- Expand Advanced-level language skills as they are applied to the writing modality.
- Acquire the techniques necessary for producing a variety of texts such as summaries, correspondence, detailed descriptions of people and places, elaborate narrations, analyses and argumentative essays.
- Enhance critical thinking abilities through an analysis of advanced grammatical, lexical and stylistic

features of the Portuguese language.
- Increase vocabulary, grammatical accuracy, cultural awareness and comprehension of the Portuguese language through receptive and productive practice.

PORT 339 : Introduction to Portuguese and Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Port 321.

DESCRIPTION: Readings in modern literature; formal literary analysis.

**Course Outcomes**

- Contextualize and analyze literature written in Portuguese from various genres and periods.
- Acquire and apply the fundamental tools for literary analysis, appreciation, and interpretation through a study of a balanced selection of foundational works from Portugal and Brazil and some areas of Lusophone Africa.
- Demonstrate through written exercises mastery of the basic terms of literary analysis and the formal patterns of fiction (narration, plot, characterization, structure, etc.) drama (tragedy, comedy, dialogue, structure, staging, etc.), and poetry (meter, rhyme, syllabification, figurative language, including tropes and figures).
- Produce several interpretive essays that demonstrate mastery of the formal components of fiction, drama, and poetry, and that reveal competence in library research skills, appropriate use of secondary sources, and proper adherence to MLA bibliographic style.

PORT 441 : Survey of Portuguese Literature. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PORT 339

DESCRIPTION: Literary periods, genres, and great writers of Portugal.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Portuguese literature.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Portuguese literature.
- Demonstrate and apply strong understanding of the basic structures of the Portuguese language as they apply to literature.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 451 : Survey of Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Literary periods, genres, and great writers of Brazil.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Brazilian literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literature.
- Write essays in Portuguese, including a final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 493 : Capstone Course in Portuguese. (1:1:0)

WHEN TAUGHT: Contact Department. Fall; Winter; Spring; Summer

PREREQUISITE: Senior standing or departmental advisor's consent.

DESCRIPTION: A culminating experience for Portuguese as a first or second major. Students will be able to articulate the value of the Portuguese BA and will develop strategies and a rationale for applying the skills acquired during their undergraduate studies.

NOTE: Course must be taken concurrently with an approved upper-division, senior-level (e.g. 400-level) course in the semester prior to graduation.

**Course Outcomes**

There are no course outcomes available

6. Complete one course from the following:

PORT 345 : Portuguese Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: Port 321.

DESCRIPTION: Culture, history, art, music, and traditions of Portugal.

**Course Outcomes**

- Describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe the linear progression of historical periods that might include important political, social, and

artistic events.
- Recognize and describe important cultural products such as art, literature, architecture, and music, including important works and individuals.
- Describe important cultural institutions that might include family, religion, education and government.
- Discuss important cultural practices, including customs related to birth, marriage and death, as well as traditions and holidays.
- Analyze recent developments, including political, social, religious, and artistic activities.
- Interpret cultural products and practices within the framework of historical, geographic, religious, and social factors that influence them.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced awareness of cultural and historical knowledge
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

PORT 355 : Brazilian Civilization. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Port 321.
DESCRIPTION: Culture, history, art, music, and traditions of Brazil.

**Course Outcomes**

There are no course outcomes available

7. Complete 18 hours from the following:

PORT 326 : Portuguese Phonetics and Pronunciation. (3:3:3)
WHEN TAUGHT: Fall
PREREQUISITE: PORT 321
DESCRIPTION: Underlying concepts of Portuguese speech production and applications to pronunciation.

**Course Outcomes**

- Understand the basic concepts of articulatory phonetics and phonology.
- Understand how the sounds of standard Portuguese are pronounced.
- Be able to transcribe phonetically both oral and written texts in Portuguese.
- Improve their pronunciation of Portuguese through self analysis.
- Appreciate how the pronunciation of Portuguese has changed, and continues to change, across time and space.

PORT 329 : Survey of Luso-Brazilian Linguistics. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: PORT 321
DESCRIPTION: Introduction to linguistics of Portuguese: phonetics, phonology, morphology, syntax, semantics, history of the Portuguese language, philology, dialectology, sociolinguistics, and psycholinguistics.

**Course Outcomes**

- The objective of this course is to introduce students to the basic fields of linguistic study within the Hispanic context. Students should be able to identify and explain issues of phonetics, phonology, morphology, syntax, semantics, and types of variation as found in oral and written language

PORT 345 : Portuguese Civilization. (3:3:0)
WHEN TAUGHT: Fall; Winter Contact Department
PREREQUISITE: Port 321.
DESCRIPTION: Culture, history, art, music, and traditions of Portugal.

**Course Outcomes**

- Describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe the linear progression of historical periods that might include important political, social, and artistic events.
- Recognize and describe important cultural products such as art, literature, architecture, and music, including important works and individuals.
- Describe important cultural institutions that might include family, religion, education and government.
- Discuss important cultural practices, including customs related to birth, marriage and death, as well as traditions and holidays.
- Analyze recent developments, including political, social, religious, and artistic activities.
- Interpret cultural products and practices within the framework of historical, geographic, religious, and social factors that influence them.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced awareness of cultural and historical knowledge
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

PORT 355 : Brazilian Civilization. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Port 321.
DESCRIPTION: Culture, history, art, music, and traditions of Brazil.

**Course Outcomes**

There are no course outcomes available

PORT 395R : Contemporary Culture. (.5-3:0:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Contemporary Portuguese or Brazilian culture: the people and their customs and institutions.

NOTE: For Study Abroad programs only.

**Course Outcomes**

- Through readings, develop a familiarity with macro forces (historical, political, economical) that have shaped the host culture.
- Through a series of cultural proofs (visits, interviews, observations), develop a familiarity with the host culture at the level of the individual.

PORT 439R : Luso-Brazilian Theatre Production. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Theory and practice of dramatic performance. Includes participation in play to be performed during semester.

NOTE: No more than 3 hours of 439R credit may count toward any degree.

**Course Outcomes**

- Demonstrate understanding of the theory and practice of dramatic performances.
- Participate in the production of a play during the course of the semester.
- Develop advanced skills in research techniques and academic writing.

PORT 442 : Camoes. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PORT 441

**Course Outcomes**

- Demonstrate thorough understanding of Portuguese literary history, the context for the work of Camões and its reception.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.)
- Develop advanced skills in research techniques and academic writing.

PORT 449R : Special Topics in Portuguese Literature. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PORT 441

DESCRIPTION: Specific topics in Portuguese (Peninsular) literature. Course content will vary each semester to offer optimum exposure to all areas of Portuguese literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Portuguese Literature special topics.

PORT 452 : Machado de Assis. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: PORT 451

**Course Outcomes**

- Demonstrate thorough understanding of Brazilian literary history, the cultural context for the work of Machado de Assis, and the reception of Machado's work.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.

PORT 453 : Twentieth-Century Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: PORT 451

**Course Outcomes**

- Demonstrate thorough understanding of twentieth-century literary history in Brazil.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.

PORT 459R : Special Topics in Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PORT 451

DESCRIPTION: Specific topics in Portuguese (Brazilian) literature. Course content will vary each semester to offer optimum exposure to all areas of Brazilian literature.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literary texts.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Develop the habits and skills for Brazilian literary study that inspire continued learning.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 461R : African Literature in Portuguese. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Modern authors from the five African nations whose official language is Portuguese: Angola, Cabo Verde, Guine Bissau, Mozambique, and the two-island republic Sao Tome and Principe. Authors include Jose Craveirinha, Mia Couto, Noemia de Sousa, Jose Tenreiro, Castro Soromenho, Luandino Vieira, Pepetala, and Baltasar Lopes, among others.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Develop the habits and skills for Luso-African literary study that inspire continued learning.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Luso-African literary texts.

PORT 462R : Literature of the Lusophone World. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Authors from the eight nations whose official language is Portuguese, plus former colonies and present regions of important Portuguese influence. These include Luso-American and Azorean writers, as well as authors from East Timor (formerly Indonesia), Goa (India), and Macau (China).

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Lusophone literary texts.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.

PORT 480R : Directed Research in Portuguese. (.5-3:ARR:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Written proposal subject to department approval.

DESCRIPTION: Under faculty member's direction, designing and conducting research project covering material not normally presented in regular course work. Research paper required.

NOTE: Total Port 480R credit toward bachelor's degree not to exceed 3 hours.

**Course Outcomes**

- Conduct advanced, independent research on a topic in Portuguese studies.

PORT 490 : Senior Seminar in Portuguese. (.5-3:0:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Senior standing.

DESCRIPTION: Bibliography, research, and writing of senior thesis.

NOTE: Recommended for students planning graduate studies in Portuguese.

**Course Outcomes**

No outcomes are available at this time.

PORT 520 : Advanced Portuguese Grammar. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: Port 326 or 329.

DESCRIPTION: Applying contemporary grammatical concepts to problems in Portuguese grammar.

**Course Outcomes**

- The student enrolled in Advanced Portuguese Grammar will carefully examine some grammar “problems” by reading and studying selections from grammarians and researchers who provide insights into the problem in question. The student’s ability to synthesize coherent and meaningful generalizations will be objectively tested by exams and further evaluated while he or she participates in classroom discussion.

- The student enrolled in Advanced Portuguese Grammar will acquire a greater understanding of both descriptive and prescriptive grammars and their function and limitations. The student will also acquire specialized terms employed by grammarians and morphosyntacticians. The student's ability to understand and use these terms appropriately will also be objectively measured by examination.
- Complete a research paper/presentation on a particular grammar point or construction. This assignment will test a student's ability to locate appropriate refereed sources, read and synthesize them and prepare a written document and oral presentation according to a recognized style manual.

PORT 521 : Romance Philology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Port 326 or 329.

DESCRIPTION: Comparative study of evolution of Latin into modern romance languages.

**Course Outcomes**

- Situate Latin and the Romance Languages in their "external" (i.e. political and literary) historical context.
- Recognize the "laws" of regular phonological evolution (e.g. syncope, lenition, diphthongization, etc.).
- Compare the "major" (i.e. literary) Romance languages as far as their phonological development is concerned.
- Lexical Differences and Etymology
- Become familiar with articles published in professional journals relating to the subject matter and produce accurate and meaningful written summaries and reactions to them.
- Learn the rudiments of transcribing medieval or Renaissance manuscripts.

PORT 522 : History of the Portuguese Language. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: Port 326 or 329.

DESCRIPTION: Linguistic sources that contributed to formation of Portuguese.

**Course Outcomes**

- Acquire a basic knowledge of the changes undergone by the nominal and verbal systems of Latin and Portuguese (e.g., the demise of the case system, the development of new verbal tenses, etc.).
- Demonstrate the ability to summarize and discuss in a clear and concise manner several scholarly articles on the topic of the history of the Portuguese language.
- Situate Latin and Portuguese in their political and literary historical contexts.
- Recognize the laws of regular phonological development (e.g. syncope, lenition, diphthongization, etc.).
- Identify the sources of the Portuguese lexicon.
- Understand the different theories that claim to understand the relation between Latin and the Romance languages, especially the relation between Latin and Portuguese.
- Understand the process of linguistic standardization in Romance and its implications for the linguistic map of the Iberian Peninsula.

PORT 529R : Special Topics in Portuguese Linguistics. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: Port 326 or 329, or instructor's approval.

DESCRIPTION: Topics from semantics to dialectology to sociolinguistics.

**Course Outcomes**

- Read and analyze research articles related to special topic in Portuguese linguistics.
- Produce an original research paper/project centered on the theme of the seminar.

PORT 599R : Academic Internship: Portuguese Internship. (1-3:0:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Port 321; instructor's consent.

NOTE: For supervised internship credit on BYU Study Abroad programs only.

**Course Outcomes**

- Successfully complete internship in a Portuguese-speaking country.

*Hours include courses that may fulfill university core requirements.

## Show all Portuguese (Port) Courses

College of Humanities Home

Spanish and Portuguese Department Home

Portuguese

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

Spanish

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

Faculty

# BA in Portuguese Studies (secondary major program) (25–43 hours minimum*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Students must complete the requirements for a primary major in another field.
2. Complete the following prerequisite courses (or equivalents):

PORT 101 : First-Year Portuguese. (4:5:1)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Pronunciation, conversation, reading, and fundamentals of grammar. Specific attention to Portuguese as the language of Brazil.
NOTE: Native speakers of Portuguese must enroll in Port 321.

**Course Outcomes**

- Participate in classroom activities in Portuguese.
- Communicate verbally in routine situations such as greeting people and becoming acquainted.
- Understand simple conversations about some familiar, concrete topics such as daily activities, likes and dislikes, family, and home.
- Create simple sentences using basic grammar rules and vocabulary with limited accuracy.
- Read short “cultural blurbs” from the textbook, as well as other short texts such as personal ads, menus, and advertisements.
- Write word- and sentence-length messages such as lists, biographical information on forms, and descriptions of people and things.
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 102 : First-Year Portuguese. (4:5:1)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Port 101.
DESCRIPTION: Pronunciation, conversation, reading, and fundamentals of grammar. Specific attention to Portuguese as the language of Brazil.
NOTE: Native speakers of Portuguese must enroll in Port 321.

**Course Outcomes**

- Participate in classroom activities in Portuguese.
- Participate in conversations about some familiar, concrete topics such as daily activities, family, home, work, and school.
- Understand simple conversations about some familiar, concrete topics such as daily activities, likes and dislikes, family, and home.
- Create simple sentences using basic grammar rules and vocabulary with limited accuracy.
- Read short “cultural blurbs” from the textbook, as well as other short texts such as advertisements, letters, recipes, and stories.
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 201 : Third-Semester Portuguese. (4:5:0)

PREREQUISITE: Port 102 or three units of high school Portuguese.
DESCRIPTION: Second-year grammar, reading, writing, and conversation.
NOTE: Native speakers of Portuguese must take Port 321.

**Course Outcomes**

- Maintain a simple face-to-face conversation about concrete topics such as self, family, friends, and daily activities.
- Handle a simple transactional situation (making purchases, interviewing for a job, etc.)
- Discuss some topics of general interest (school, geography, finances, business, etc.)
- Use grammar principles, including the present, past, and future indicative and subjunctive, with increasing accuracy.
- Understand conversations, announcements, and media reports on familiar topics.
- Read short journalistic and literary texts.
- Write short, simple compositions in a variety of genres (stories, résumés, skits, etc.)
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 211R : First-Semester Conversation. (2:2:1)
WHEN TAUGHT: Contact Department.
RECOMMENDED: Concurrent enrollment in Port 201.

**Course Outcomes**

- Begin to develop ability to handle a variety of uncomplicated communicative tasks in straightforward social situations, including verbal and nonverbal messages.

**And** complete one course from the following:

PORT 202 : Fourth-Semester Portuguese: Reading and Comprehension. (4:5:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Port 201.
DESCRIPTION: Fourth-semester class introducing grammar and culture through study of literature.
NOTE: Not for returned missionaries. Culmination of GE Mathematics/Foreign Language requirement. Native speakers of Portuguese must take Port 321. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Maintain a simple face-to-face conversation about an increasing range of topics of general interest (politics, transportation, the media, the arts, sports, etc.)
- Handle some situations with a complication (resolving disagreements, traffic violations, etc.)
- Use previously-learned grammar principles with increasing accuracy.
- Understand oral conversations, announcements, and media reports about familiar topics.
- Read medium-length journalistic and literary texts on familiar topics, including a short story and a play.
- Write simple compositions in a variety of genres (letters, pamphlets, articles, short stories, etc.).
- Discuss some differences between the cultural norms and perspectives of Americans and Portuguese speakers.
- Discuss some common themes from Portuguese-speaking cultures.

PORT 315 : Intermediate Portuguese Grammar, Reading, and Culture. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction of culture, literature, and grammatical concerns through reading short stories, novels, and drama in Portuguese.
NOTE: Will count for minor but not for major. Native speakers should take Port 321.

**Course Outcomes**

There are no course outcomes available

**Note 1:** Students with foreign residence experience should take Port 315.

**Note 2:** Prerequisite courses may be waived for those having sufficient proficiency with the language. See the department for language testing details.

3. Complete the following core courses:

PORT 321 : Third-Year Portuguese Reading, Grammar, and Culture. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Placement by test.
NOTE: First class for returned Portuguese-speaking missionaries. Fulfills GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

PORT 329 : Survey of Luso-Brazilian Linguistics. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: PORT 321
DESCRIPTION: Introduction to linguistics of Portuguese: phonetics, phonology, morphology, syntax, semantics, history of the Portuguese language, philology, dialectology, sociolinguistics, and psycholinguistics.

**Course Outcomes**

- The objective of this course is to introduce students to the basic fields of linguistic study within the Hispanic context. Students should be able to identify and explain issues of phonetics, phonology, morphology, syntax, semantics, and types of variation as found in oral and written language

PORT 339 : Introduction to Portuguese and Brazilian Literature. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Port 321.
DESCRIPTION: Readings in modern literature; formal literary analysis.

**Course Outcomes**

- Contextualize and analyze literature written in Portuguese from various genres and periods.
- Acquire and apply the fundamental tools for literary analysis, appreciation, and interpretation through a study of a balanced selection of foundational works from Portugal and Brazil and some areas of Lusophone Africa.
- Demonstrate through written exercises mastery of the basic terms of literary analysis and the formal patterns of fiction (narration, plot, characterization, structure, etc.) drama (tragedy, comedy, dialogue, structure, staging, etc.), and poetry (meter, rhyme, syllabification, figurative language, including tropes and figures).
- Produce several interpretive essays that demonstrate mastery of the formal components of fiction, drama, and poetry, and that reveal competence in library research skills, appropriate use of secondary sources, and proper adherence to MLA bibliographic style.

4. Complete one course from the following:

PORT 345 : Portuguese Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: Port 321.

DESCRIPTION: Culture, history, art, music, and traditions of Portugal.

**Course Outcomes**

- Describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe the linear progression of historical periods that might include important political, social, and artistic events.
- Recognize and describe important cultural products such as art, literature, architecture, and music, including important works and individuals.
- Describe important cultural institutions that might include family, religion, education and government.
- Discuss important cultural practices, including customs related to birth, marriage and death, as well as traditions and holidays.
- Analyze recent developments, including political, social, religious, and artistic activities.
- Interpret cultural products and practices within the framework of historical, geographic, religious, and social factors that influence them.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced awareness of cultural and historical knowledge
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

PORT 355 : Brazilian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 321.

DESCRIPTION: Culture, history, art, music, and traditions of Brazil.

**Course Outcomes**

There are no course outcomes available

5. Complete one course from the following:

PORT 441 : Survey of Portuguese Literature. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PORT 339

DESCRIPTION: Literary periods, genres, and great writers of Portugal.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Portuguese literature.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Portuguese literature.
- Demonstrate and apply strong understanding of the basic structures of the Portuguese language as they apply to literature.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 451 : Survey of Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Literary periods, genres, and great writers of Brazil.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Brazilian literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literature.
- Write essays in Portuguese, including a final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

6. Complete the following:

PORT 414 : Introduction to Translation for Second Majors. (3:3:0)

WHEN TAUGHT: Contact Department. Fall; Winter

PREREQUISITE: PORT 321

DESCRIPTION: Readings, individual research projects, and group translation activities. How the translation profession works. Developing the ability to translate general financial and legal texts. Learning to read texts critically.

**Course Outcomes**

- Students will produce a log of their own malapropisms and false cognates (minimum 100 words or conjugational parts).
- Students will produce, after several edited iterations, a legible translation of a professional treatise or work of fiction, appropriate to the social register of their audience.

PORT 493 : Capstone Course in Portuguese. (1:1:0)

WHEN TAUGHT: Contact Department. Fall; Winter; Spring; Summer

PREREQUISITE: Senior standing or departmental advisor's consent.

DESCRIPTION: A culminating experience for Portuguese as a first or second major. Students will be able to articulate the value of the Portuguese BA and will develop strategies and a rationale for applying the skills acquired during their undergraduate studies.

NOTE: Course must be taken concurrently with an approved upper-division, senior-level (e.g. 400-level) course in the semester prior to graduation.

**Course Outcomes**

There are no course outcomes available

7. Complete one of the following:

PORT 322 : Third-Year Portuguese Grammar and Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: PORT 321

**Course Outcomes**

- Expand Advanced-level language skills as they are applied to the writing modality.
- Acquire the techniques necessary for producing a variety of texts such as summaries, correspondence, detailed descriptions of people and places, elaborate narrations, analyses and argumentative essays.
- Enhance critical thinking abilities through an analysis of advanced grammatical, lexical and stylistic features of the Portuguese language.
- Increase vocabulary, grammatical accuracy, cultural awareness and comprehension of the Portuguese language through receptive and productive practice.

PORT 323R : Portuguese for the Professions. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PORT 321

DESCRIPTION: Introduction to professional terminology, documentation, and correspondence.

**Course Outcomes**

- Students will identify Portuguese-speaking populations (regions) of the U.S.
- Students will identify current employment opportunities in those regions, in a variety of professions, and acquire a working specialized vocabulary (300 words plus) in at least three professions.

8. Complete 3 additional credit hours from the following:

PORT 322 : Third-Year Portuguese Grammar and Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: PORT 321

**Course Outcomes**

- Expand Advanced-level language skills as they are applied to the writing modality.
- Acquire the techniques necessary for producing a variety of texts such as summaries, correspondence, detailed descriptions of people and places, elaborate narrations, analyses and argumentative essays.
- Enhance critical thinking abilities through an analysis of advanced grammatical, lexical and stylistic features of the Portuguese language.
- Increase vocabulary, grammatical accuracy, cultural awareness and comprehension of the Portuguese language through receptive and productive practice.

PORT 323R : Portuguese for the Professions. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PORT 321

DESCRIPTION: Introduction to professional terminology, documentation, and correspondence.

**Course Outcomes**

- Students will identify Portuguese-speaking populations (regions) of the U.S.
- Students will identify current employment opportunities in those regions, in a variety of professions, and acquire a working specialized vocabulary (300 words plus) in at least three professions.

PORT 326 : Portuguese Phonetics and Pronunciation. (3:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: PORT 321

DESCRIPTION: Underlying concepts of Portuguese speech production and applications to pronunciation.

**Course Outcomes**

- Understand the basic concepts of articulatory phonetics and phonology.
- Understand how the sounds of standard Portuguese are pronounced.
- Be able to transcribe phonetically both oral and written texts in Portuguese.
- Improve their pronunciation of Portuguese through self analysis.
- Appreciate how the pronunciation of Portuguese has changed, and continues to change, across time and space.

PORT 329 : Survey of Luso-Brazilian Linguistics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PORT 321

DESCRIPTION: Introduction to linguistics of Portuguese: phonetics, phonology, morphology, syntax, semantics, history of the Portuguese language, philology, dialectology, sociolinguistics, and psycholinguistics.

**Course Outcomes**

- The objective of this course is to introduce students to the basic fields of linguistic study within the Hispanic context. Students should be able to identify and explain issues of phonetics, phonology, morphology, syntax, semantics, and types of variation as found in oral and written language

PORT 345 : Portuguese Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: Port 321.

DESCRIPTION: Culture, history, art, music, and traditions of Portugal.

**Course Outcomes**

- Describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe the linear progression of historical periods that might include important political, social, and artistic events.
- Recognize and describe important cultural products such as art, literature, architecture, and music, including important works and individuals.
- Describe important cultural institutions that might include family, religion, education and government.
- Discuss important cultural practices, including customs related to birth, marriage and death, as well as traditions and holidays.
- Analyze recent developments, including political, social, religious, and artistic activities.
- Interpret cultural products and practices within the framework of historical, geographic, religious, and social factors that influence them.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced awareness of cultural and historical knowledge
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

PORT 355 : Brazilian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 321.

DESCRIPTION: Culture, history, art, music, and traditions of Brazil.

**Course Outcomes**

There are no course outcomes available

PORT 356R : Special Topics in Brazilian Culture. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PORT 321

DESCRIPTION: An in-depth examination of some aspect of Brazilian culture and civilization. Subject matter will vary. This course is recommended for those individuals who may already have a broad exposure to the culture and civilization of Brazil and/or those who desire a more focused cultural experience.

**Course Outcomes**

There are no course outcomes available

PORT 377 : Methods of Portuguese Teaching. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Methods for planning Portuguese language and culture instruction, teaching communicative skills, and assessing students' learning. Course is geared toward instructors at K-12 as well as university level.

**Course Outcomes**

- Discuss historical trends in the teaching of foreign languages.
- Select and evaluate textbooks for teaching Portuguese.
- Plan thematic units and lessons incorporating theStandards for Foreign Language Learning.
- Plan and implement communicative activities for teaching speaking, listening, reading, and writing, as well as grammar and vocabulary, in a thematic context.
- Plan instruction about the cultural products, practices, and perspectives of Lusophone countries.
- Create and adapt various forms of assessment, including tests, project, rubrics and portfolios, to assess language and culture learning and provide feedback to students.
- Use technological tools for teaching languages and cultures, as well as for discussing and reflecting on professional themes with colleagues.
- Plan instruction that attends to the diverse needs of students, including Spanish speakers.

PORT 395R : Contemporary Culture. (.5-3:0:0)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Contemporary Portuguese or Brazilian culture: the people and their customs and institutions.
NOTE: For Study Abroad programs only.

**Course Outcomes**

- Through readings, develop a familiarity with macro forces (historical, political, economical) that have shaped the host culture.
- Through a series of cultural proofs (visits, interviews, observations), develop a familiarity with the host culture at the level of the individual.

PORT 439R : Luso-Brazilian Theatre Production. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Theory and practice of dramatic performance. Includes participation in play to be performed during semester.
NOTE: No more than 3 hours of 439R credit may count toward any degree.

**Course Outcomes**

- Demonstrate understanding of the theory and practice of dramatic performances.
- Participate in the production of a play during the course of the semester.
- Develop advanced skills in research techniques and academic writing.

PORT 441 : Survey of Portuguese Literature. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: PORT 339
DESCRIPTION: Literary periods, genres, and great writers of Portugal.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Portuguese literature.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Portuguese literature.
- Demonstrate and apply strong understanding of the basic structures of the Portuguese language as they apply to literature.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 442 : Camoes. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: PORT 441

**Course Outcomes**

- Demonstrate thorough understanding of Portuguese literary history, the context for the work of Camões and its reception.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.)
- Develop advanced skills in research techniques and academic writing.

PORT 449R : Special Topics in Portuguese Literature. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: PORT 441
DESCRIPTION: Specific topics in Portuguese (Peninsular) literature. Course content will vary each semester to offer optimum exposure to all areas of Portuguese literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Portuguese Literature special topics.

PORT 451 : Survey of Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Literary periods, genres, and great writers of Brazil.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Brazilian literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literature.
- Write essays in Portuguese, including a final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 452 : Machado de Assis. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: PORT 451

**Course Outcomes**

- Demonstrate thorough understanding of Brazilian literary history, the cultural context for the work of Machado de Assis, and the reception of Machado's work.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.

PORT 453 : Twentieth-Century Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: PORT 451

**Course Outcomes**

- Demonstrate thorough understanding of twentieth-century literary history in Brazil.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.

PORT 459R : Special Topics in Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PORT 451

DESCRIPTION: Specific topics in Portuguese (Brazilian) literature. Course content will vary each semester to offer optimum exposure to all areas of Brazilian literature.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literary texts.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Develop the habits and skills for Brazilian literary study that inspire continued learning.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 461R : African Literature in Portuguese. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Modern authors from the five African nations whose official language is Portuguese: Angola, Cabo Verde, Guine Bissau, Mozambique, and the two-island republic Sao Tome and Principe. Authors include Jose Craveirinha, Mia Couto, Noemia de Sousa, Jose Tenreiro, Castro Soromenho, Luandino Vieira, Pepetala, and Baltasar Lopes, among others.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Develop the habits and skills for Luso-African literary study that inspire continued learning.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Luso-African literary texts.

PORT 462R : Literature of the Lusophone World. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Authors from the eight nations whose official language is Portuguese, plus former colonies and present regions of important Portuguese influence. These include Luso-American and Azorean writers, as well as authors from East Timor (formerly Indonesia), Goa (India), and Macau (China).

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Lusophone literary texts.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.

PORT 480R : Directed Research in Portuguese. (.5-3:ARR:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Written proposal subject to department approval.
DESCRIPTION: Under faculty member's direction, designing and conducting research project covering material not normally presented in regular course work. Research paper required.
NOTE: Total Port 480R credit toward bachelor's degree not to exceed 3 hours.

**Course Outcomes**

- Conduct advanced, independent research on a topic in Portuguese studies.

PORT 490 : Senior Seminar in Portuguese. (.5-3:0:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Senior standing.
DESCRIPTION: Bibliography, research, and writing of senior thesis.
NOTE: Recommended for students planning graduate studies in Portuguese.

**Course Outcomes**

No outcomes are available at this time.

PORT 520 : Advanced Portuguese Grammar. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department
PREREQUISITE: Port 326 or 329.
DESCRIPTION: Applying contemporary grammatical concepts to problems in Portuguese grammar.

**Course Outcomes**

- The student enrolled in Advanced Portuguese Grammar will carefully examine some grammar “problems” by reading and studying selections from grammarians and researchers who provide insights into the problem in question. The student’s ability to synthesize coherent and meaningful generalizations will be objectively tested by exams and further evaluated while he or she participates in classroom discussion.
- The student enrolled in Advanced Portuguese Grammar will acquire a greater understanding of both descriptive and prescriptive grammars and their function and limitations. The student will also acquire specialized terms employed by grammarians and morphosyntacticians. The student’s ability to understand and use these terms appropriately will also be objectively measured by examination.
- Complete a research paper/presentation on a particular grammar point or construction. This assignment will test a student’s ability to locate appropriate refereed sources, read and synthesize them and prepare a written document and oral presentation according to a recognized style manual.

PORT 521 : Romance Philology. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Port 326 or 329.
DESCRIPTION: Comparative study of evolution of Latin into modern romance languages.

**Course Outcomes**

- Situate Latin and the Romance Languages in their “external” (i.e. political and literary) historical context.
- Recognize the “laws” of regular phonological evolution (e.g. syncope, lenition, diphthongization, etc.).
- Compare the “major” (i.e. literary) Romance languages as far as their phonological development is concerned.
- Lexical Differences and Etymology
- Become familiar with articles published in professional journals relating to the subject matter and produce accurate and meaningful written summaries and reactions to them.
- Learn the rudiments of transcribing medieval or Renaissance manuscripts.

PORT 522 : History of the Portuguese Language. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
PREREQUISITE: Port 326 or 329.
DESCRIPTION: Linguistic sources that contributed to formation of Portuguese.

**Course Outcomes**

- Acquire a basic knowledge of the changes undergone by the nominal and verbal systems of Latin and Portuguese (e.g., the demise of the case system, the development of new verbal tenses, etc.).
- Demonstrate the ability to summarize and discuss in a clear and concise manner several scholarly articles on the topic of the history of the Portuguese language.
- Situate Latin and Portuguese in their political and literary historical contexts.
- Recognize the laws of regular phonological development (e.g. syncope, lenition, diphthongization, etc.).
- Identify the sources of the Portuguese lexicon.
- Understand the different theories that claim to understand the relation between Latin and the Romance languages, especially the relation between Latin and Portuguese.
- Understand the process of linguistic standardization in Romance and its implications for the linguistic

map of the Iberian Peninsula.

PORT 529R : Special Topics in Portuguese Linguistics. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
PREREQUISITE: Port 326 or 329, or instructor's approval.
DESCRIPTION: Topics from semantics to dialectology to sociolinguistics.

**Course Outcomes**

- Read and analyze research articles related to special topic in Portuguese linguistics.
- Produce an original research paper/project centered on the theme of the seminar.

PORT 599R : Academic Internship: Portuguese Internship. (1-3:0:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Port 321; instructor's consent.
NOTE: For supervised internship credit on BYU Study Abroad programs only.

**Course Outcomes**

- Successfully complete internship in a Portuguese-speaking country.

9. Complete the following:

PORT 491 : Senior Proficiency Evaluation. (0:1:0)

DESCRIPTION: Tool course to meet oral proficiency requirement for all majors.
NOTE: No major or minor credit.

**Course Outcomes**

- Receive an Advanced Low or better on the Oral Proficiency Interview.

**Note:** The Senior Proficiency Evaluation is taken in connection with Port 491. It is expected that Portuguese majors will pass with an ACTFL rating of *advanced-low* or higher.

*Hours include courses that may fulfill university core requirements.

## Show all Portuguese (Port) Courses

College of Humanities Home

Spanish and Portuguese Department Home

**Portuguese**

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

**Spanish**

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

**Faculty**

# Minor in Portuguese (18–25 hours)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following prerequisite courses:

PORT 101 : First-Year Portuguese. (4:5:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Pronunciation, conversation, reading, and fundamentals of grammar. Specific attention to Portuguese as the language of Brazil.

NOTE: Native speakers of Portuguese must enroll in Port 321.

**Course Outcomes**

- Participate in classroom activities in Portuguese.
- Communicate verbally in routine situations such as greeting people and becoming acquainted.
- Understand simple conversations about some familiar, concrete topics such as daily activities, likes and dislikes, family, and home.
- Create simple sentences using basic grammar rules and vocabulary with limited accuracy.
- Read short “cultural blurbs” from the textbook, as well as other short texts such as personal ads, menus, and advertisements.
- Write word- and sentence-length messages such as lists, biographical information on forms, and descriptions of people and things.
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 102 : First-Year Portuguese. (4:5:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 101.

DESCRIPTION: Pronunciation, conversation, reading, and fundamentals of grammar. Specific attention to Portuguese as the language of Brazil.

NOTE: Native speakers of Portuguese must enroll in Port 321.

**Course Outcomes**

- Participate in classroom activities in Portuguese.
- Participate in conversations about some familiar, concrete topics such as daily activities, family, home, work, and school.
- Understand simple conversations about some familiar, concrete topics such as daily activities, likes and dislikes, family, and home.
- Create simple sentences using basic grammar rules and vocabulary with limited accuracy.
- Read short “cultural blurbs” from the textbook, as well as other short texts such as advertisements, letters, recipes, and stories.
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 201 : Third-Semester Portuguese. (4:5:0)

PREREQUISITE: Port 102 or three units of high school Portuguese.

DESCRIPTION: Second-year grammar, reading, writing, and conversation.

NOTE: Native speakers of Portuguese must take Port 321.

**Course Outcomes**

- Maintain a simple face-to-face conversation about concrete topics such as self, family, friends, and daily activities.
- Handle a simple transactional situation (making purchases, interviewing for a job, etc.)
- Discuss some topics of general interest (school, geography, finances, business, etc.)
- Use grammar principles, including the present, past, and future indicative and subjunctive, with increasing accuracy.
- Understand conversations, announcements, and media reports on familiar topics.
- Read short journalistic and literary texts.
- Write short, simple compositions in a variety of genres (stories, résumés, skits, etc.)
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 211R : First-Semester Conversation. (2:2:1)
WHEN TAUGHT: Contact Department.
RECOMMENDED: Concurrent enrollment in Port 201.

**Course Outcomes**

- Begin to develop ability to handle a variety of uncomplicated communicative tasks in straightforward social situations, including verbal and nonverbal messages.

**And** complete one course from the following:

PORT 202 : Fourth-Semester Portuguese: Reading and Comprehension. (4:5:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Port 201.
DESCRIPTION: Fourth-semester class introducing grammar and culture through study of literature.
NOTE: Not for returned missionaries. Culmination of GE Mathematics/Foreign Language requirement. Native speakers of Portuguese must take Port 321. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Maintain a simple face-to-face conversation about an increasing range of topics of general interest (politics, transportation, the media, the arts, sports, etc.)
- Handle some situations with a complication (resolving disagreements, traffic violations, etc.)
- Use previously-learned grammar principles with increasing accuracy.
- Understand oral conversations, announcements, and media reports about familiar topics.
- Read medium-length journalistic and literary texts on familiar topics, including a short story and a play.
- Write simple compositions in a variety of genres (letters, pamphlets, articles, short stories, etc.).
- Discuss some differences between the cultural norms and perspectives of Americans and Portuguese speakers.
- Discuss some common themes from Portuguese-speaking cultures.

PORT 315 : Intermediate Portuguese Grammar, Reading, and Culture. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction of culture, literature, and grammatical concerns through reading short stories, novels, and drama in Portuguese.
NOTE: Will count for minor but not for major. Native speakers should take Port 321.

**Course Outcomes**

There are no course outcomes available

**Note 1:** Students with foreign residence experience should take Port 321.

**Note 2:** Prerequisite courses may be waived for those having sufficient proficiency with the language.

2. Complete the following:

PORT 321 : Third-Year Portuguese Reading, Grammar, and Culture. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Placement by test.
NOTE: First class for returned Portuguese-speaking missionaries. Fulfills GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

PORT 339 : Introduction to Portuguese and Brazilian Literature. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Port 321.
DESCRIPTION: Readings in modern literature; formal literary analysis.

**Course Outcomes**

- Contextualize and analyze literature written in Portuguese from various genres and periods.
- Acquire and apply the fundamental tools for literary analysis, appreciation, and interpretation through a study of a balanced selection of foundational works from Portugal and Brazil and some areas of Lusophone Africa.
- Demonstrate through written exercises mastery of the basic terms of literary analysis and the formal patterns of fiction (narration, plot, characterization, structure, etc.) drama (tragedy, comedy, dialogue, structure, staging, etc.), and poetry (meter, rhyme, syllabification, figurative language, including tropes and figures).
- Produce several interpretive essays that demonstrate mastery of the formal components of fiction, drama, and poetry, and that reveal competence in library research skills, appropriate use of secondary sources, and proper adherence to MLA bibliographic style.

3. Complete one course from the following:

PORT 345 : Portuguese Civilization. (3:3:0)
WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: Port 321.
DESCRIPTION: Culture, history, art, music, and traditions of Portugal.

**Course Outcomes**

- Describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe the linear progression of historical periods that might include important political, social, and artistic events.
- Recognize and describe important cultural products such as art, literature, architecture, and music, including important works and individuals.
- Describe important cultural institutions that might include family, religion, education and government.
- Discuss important cultural practices, including customs related to birth, marriage and death, as well as traditions and holidays.
- Analyze recent developments, including political, social, religious, and artistic activities.
- Interpret cultural products and practices within the framework of historical, geographic, religious, and social factors that influence them.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced awareness of cultural and historical knowledge
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

PORT 355 : Brazilian Civilization. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Port 321.
DESCRIPTION: Culture, history, art, music, and traditions of Brazil.

**Course Outcomes**

There are no course outcomes available

4. Complete one course from the following:

PORT 441 : Survey of Portuguese Literature. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: PORT 339
DESCRIPTION: Literary periods, genres, and great writers of Portugal.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Portuguese literature.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Portuguese literature.
- Demonstrate and apply strong understanding of the basic structures of the Portuguese language as they apply to literature.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 451 : Survey of Brazilian Literature. (3:3:0)
WHEN TAUGHT: Fall; Winter Contact Department
PREREQUISITE: PORT 339
DESCRIPTION: Literary periods, genres, and great writers of Brazil.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Brazilian literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literature.
- Write essays in Portuguese, including a final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

5. Complete 6 additional upper-division hours from the courses outlined for the major. Port 315 credit may be applied to the Portuguese minor but is not required.

*Hours include courses that may fulfill university core requirements.

## Show all Portuguese (Port) Courses

College of Humanities Home

Spanish and Portuguese Department Home

**Portuguese**

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

**Spanish**

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

**Faculty**

# Minor in Portuguese Teaching (21–37 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

## Program Requirements

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following prerequisite courses (or equivalent experience):

PORT 101 : First-Year Portuguese. (4:5:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Pronunciation, conversation, reading, and fundamentals of grammar. Specific attention to Portuguese as the language of Brazil.

NOTE: Native speakers of Portuguese must enroll in Port 321.

**Course Outcomes**

- Participate in classroom activities in Portuguese.
- Communicate verbally in routine situations such as greeting people and becoming acquainted.
- Understand simple conversations about some familiar, concrete topics such as daily activities, likes and dislikes, family, and home.
- Create simple sentences using basic grammar rules and vocabulary with limited accuracy.
- Read short “cultural blurbs” from the textbook, as well as other short texts such as personal ads, menus, and advertisements.
- Write word- and sentence-length messages such as lists, biographical information on forms, and descriptions of people and things.
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 102 : First-Year Portuguese. (4:5:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 101.

DESCRIPTION: Pronunciation, conversation, reading, and fundamentals of grammar. Specific attention to Portuguese as the language of Brazil.

NOTE: Native speakers of Portuguese must enroll in Port 321.

**Course Outcomes**

- Participate in classroom activities in Portuguese.
- Participate in conversations about some familiar, concrete topics such as daily activities, family, home, work, and school.
- Understand simple conversations about some familiar, concrete topics such as daily activities, likes and dislikes, family, and home.
- Create simple sentences using basic grammar rules and vocabulary with limited accuracy.
- Read short “cultural blurbs” from the textbook, as well as other short texts such as advertisements, letters, recipes, and stories.
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 201 : Third-Semester Portuguese. (4:5:0)

PREREQUISITE: Port 102 or three units of high school Portuguese.

DESCRIPTION: Second-year grammar, reading, writing, and conversation.

NOTE: Native speakers of Portuguese must take Port 321.

**Course Outcomes**

- Maintain a simple face-to-face conversation about concrete topics such as self, family, friends, and daily activities.
- Handle a simple transactional situation (making purchases, interviewing for a job, etc.)
- Discuss some topics of general interest (school, geography, finances, business, etc.)

- Use grammar principles, including the present, past, and future indicative and subjunctive, with increasing accuracy.
- Understand conversations, announcements, and media reports on familiar topics.
- Read short journalistic and literary texts.
- Write short, simple compositions in a variety of genres (stories, résumés, skits, etc.)
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 202 : Fourth-Semester Portuguese: Reading and Comprehension. (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 201.

DESCRIPTION: Fourth-semester class introducing grammar and culture through study of literature.

NOTE: Not for returned missionaries. Culmination of GE Mathematics/Foreign Language requirement. Native speakers of Portuguese must take Port 321. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Maintain a simple face-to-face conversation about an increasing range of topics of general interest (politics, transportation, the media, the arts, sports, etc.)
- Handle some situations with a complication (resolving disagreements, traffic violations, etc.)
- Use previously-learned grammar principles with increasing accuracy.
- Understand oral conversations, announcements, and media reports about familiar topics.
- Read medium-length journalistic and literary texts on familiar topics, including a short story and a play.
- Write simple compositions in a variety of genres (letters, pamphlets, articles, short stories, etc.).
- Discuss some differences between the cultural norms and perspectives of Americans and Portuguese speakers.
- Discuss some common themes from Portuguese-speaking cultures.

3. Complete the following:

PORT 377 : Methods of Portuguese Teaching. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Methods for planning Portuguese language and culture instruction, teaching communicative skills, and assessing students' learning. Course is geared toward instructors at K-12 as well as university level.

**Course Outcomes**

- Discuss historical trends in the teaching of foreign languages.
- Select and evaluate textbooks for teaching Portuguese.
- Plan thematic units and lessons incorporating theStandards for Foreign Language Learning.
- Plan and implement communicative activities for teaching speaking, listening, reading, and writing, as well as grammar and vocabulary, in a thematic context.
- Plan instruction about the cultural products, practices, and perspectives of Lusophone countries.
- Create and adapt various forms of assessment, including tests, project, rubrics and portfolios, to assess language and culture learning and provide feedback to students.
- Use technological tools for teaching languages and cultures, as well as for discussing and reflecting on professional themes with colleagues.
- Plan instruction that attends to the diverse needs of students, including Spanish speakers.

4. Complete the following:

PORT 321 : Third-Year Portuguese Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Placement by test.

NOTE: First class for returned Portuguese-speaking missionaries. Fulfills GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

PORT 322 : Third-Year Portuguese Grammar and Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: PORT 321

**Course Outcomes**

- Expand Advanced-level language skills as they are applied to the writing modality.
- Acquire the techniques necessary for producing a variety of texts such as summaries, correspondence, detailed descriptions of people and places, elaborate narrations, analyses and argumentative essays.
- Enhance critical thinking abilities through an analysis of advanced grammatical, lexical and stylistic features of the Portuguese language.
- Increase vocabulary, grammatical accuracy, cultural awareness and comprehension of the Portuguese language through receptive and productive practice.

PORT 339 : Introduction to Portuguese and Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Port 321.

DESCRIPTION: Readings in modern literature; formal literary analysis.

**Course Outcomes**

- Contextualize and analyze literature written in Portuguese from various genres and periods.
- Acquire and apply the fundamental tools for literary analysis, appreciation, and interpretation through a study of a balanced selection of foundational works from Portugal and Brazil and some areas of Lusophone Africa.
- Demonstrate through written exercises mastery of the basic terms of literary analysis and the formal patterns of fiction (narration, plot, characterization, structure, etc.) drama (tragedy, comedy, dialogue, structure, staging, etc.), and poetry (meter, rhyme, syllabification, figurative language, including tropes and figures).
- Produce several interpretive essays that demonstrate mastery of the formal components of fiction, drama, and poetry, and that reveal competence in library research skills, appropriate use of secondary sources, and proper adherence to MLA bibliographic style.

5. Complete one course from the following:

PORT 326 : Portuguese Phonetics and Pronunciation. (3:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: PORT 321

DESCRIPTION: Underlying concepts of Portuguese speech production and applications to pronunciation.

**Course Outcomes**

- Understand the basic concepts of articulatory phonetics and phonology.
- Understand how the sounds of standard Portuguese are pronounced.
- Be able to transcribe phonetically both oral and written texts in Portuguese.
- Improve their pronunciation of Portuguese through self analysis.
- Appreciate how the pronunciation of Portuguese has changed, and continues to change, across time and space.

PORT 329 : Survey of Luso-Brazilian Linguistics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PORT 321

DESCRIPTION: Introduction to linguistics of Portuguese: phonetics, phonology, morphology, syntax, semantics, history of the Portuguese language, philology, dialectology, sociolinguistics, and psycholinguistics.

**Course Outcomes**

- The objective of this course is to introduce students to the basic fields of linguistic study within the Hispanic context. Students should be able to identify and explain issues of phonetics, phonology, morphology, syntax, semantics, and types of variation as found in oral and written language

6. Complete one course from the following:

PORT 345 : Portuguese Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: Port 321.

DESCRIPTION: Culture, history, art, music, and traditions of Portugal.

**Course Outcomes**

- Describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe the linear progression of historical periods that might include important political, social, and artistic events.
- Recognize and describe important cultural products such as art, literature, architecture, and music, including important works and individuals.
- Describe important cultural institutions that might include family, religion, education and government.
- Discuss important cultural practices, including customs related to birth, marriage and death, as well as traditions and holidays.
- Analyze recent developments, including political, social, religious, and artistic activities.
- Interpret cultural products and practices within the framework of historical, geographic, religious, and social factors that influence them.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced awareness of cultural and historical knowledge
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

PORT 355 : Brazilian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 321.

DESCRIPTION: Culture, history, art, music, and traditions of Brazil.

**Course Outcomes**

There are no course outcomes available

7. Complete one course from the following:

PORT 441 : Survey of Portuguese Literature. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PORT 339

DESCRIPTION: Literary periods, genres, and great writers of Portugal.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Portuguese literature.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Portuguese literature.
- Demonstrate and apply strong understanding of the basic structures of the Portuguese language as they apply to literature.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 451 : Survey of Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Literary periods, genres, and great writers of Brazil.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Brazilian literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literature.
- Write essays in Portuguese, including a final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

8. Complete the following:

PORT 491 : Senior Proficiency Evaluation. (0:1:0)

DESCRIPTION: Tool course to meet oral proficiency requirement for all majors.

NOTE: No major or minor credit.

**Course Outcomes**

- Receive an Advanced Low or better on the Oral Proficiency Interview.

**Note:** The Senior Proficiency Evaluation is taken in connection with Port 491. Before applying to student teach in the major, achieve a minimum OPI rating of *Advanced-Low* to obtain Utah state licensure and to graduate.

*Hours include courses that may fulfill university core requirements.

## Show all Portuguese (Port) Courses

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Portuguese

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

Spanish

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

Faculty

# Portuguese Language Certificate (9 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This Language Certificate program is administered by the Center for Language Studies (3086 JFSB), http://languagecertificate.byu.edu.*

Any matriculated (degree-seeking) BYU student who meets the proficiency and course requirements may earn the Portuguese Language Certificate. The proficiency requirement is met through the nationally recognized ACTFL Oral and Writing Proficiency Exams. Qualifying students will be awarded a certificate on one of three levels based on the following:

1. Advanced Certificate: An ACTFL "Advanced" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
2. Mastery Certificate: An ACTFL "Advanced High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
3. Professional Certificate: An ACTFL "Superior" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.

## Required Courses:

**Note:** Students who have completed all of the coursework required for a language major or a language minor will also have satisfied the coursework requirement for the language certificate.

1. Language - complete one course from the following:

PORT 315 : Intermediate Portuguese Grammar, Reading, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction of culture, literature, and grammatical concerns through reading short stories, novels, and drama in Portuguese.
NOTE: Will count for minor but not for major. Native speakers should take Port 321.

**Course Outcomes**

There are no course outcomes available

PORT 321 : Third-Year Portuguese Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Placement by test.
NOTE: First class for returned Portuguese-speaking missionaries. Fulfills GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

2. Civilization - complete one course from the following:

PORT 345 : Portuguese Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department
PREREQUISITE: Port 321.
DESCRIPTION: Culture, history, art, music, and traditions of Portugal.

**Course Outcomes**

- Describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe the linear progression of historical periods that might include important political, social, and artistic events.
- Recognize and describe important cultural products such as art, literature, architecture, and music, including important works and individuals.
- Describe important cultural institutions that might include family, religion, education and government.
- Discuss important cultural practices, including customs related to birth, marriage and death, as well as traditions and holidays.
- Analyze recent developments, including political, social, religious, and artistic activities.
- Interpret cultural products and practices within the framework of historical, geographic, religious, and social factors that influence them.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced awareness of cultural and historical knowledge
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes,

beliefs, and worldview.

PORT 355 : Brazilian Civilization. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Port 321.
DESCRIPTION: Culture, history, art, music, and traditions of Brazil.

**Course Outcomes**

There are no course outcomes available

3. Literature:

PORT 339 : Introduction to Portuguese and Brazilian Literature. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Port 321.
DESCRIPTION: Readings in modern literature; formal literary analysis.

**Course Outcomes**

- Contextualize and analyze literature written in Portuguese from various genres and periods.
- Acquire and apply the fundamental tools for literary analysis, appreciation, and interpretation through a study of a balanced selection of foundational works from Portugal and Brazil and some areas of Lusophone Africa.
- Demonstrate through written exercises mastery of the basic terms of literary analysis and the formal patterns of fiction (narration, plot, characterization, structure, etc.) drama (tragedy, comedy, dialogue, structure, staging, etc.), and poetry (meter, rhyme, syllabification, figurative language, including tropes and figures).
- Produce several interpretive essays that demonstrate mastery of the formal components of fiction, drama, and poetry, and that reveal competence in library research skills, appropriate use of secondary sources, and proper adherence to MLA bibliographic style.

Students who successfully complete a certificate will receive an official document verifying their level of achievement. The certificate will be listed on the university transcript.

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Spanish and Portuguese Department Home

Portuguese

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

Spanish

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

Faculty

# Portuguese (Port)

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## Undergraduate Courses

### 100-Level Courses

PORT 101 : First-Year Portuguese. (4:5:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Pronunciation, conversation, reading, and fundamentals of grammar. Specific attention to Portuguese as the language of Brazil.

NOTE: Native speakers of Portuguese must enroll in Port 321.

**Course Outcomes**

- Participate in classroom activities in Portuguese.
- Communicate verbally in routine situations such as greeting people and becoming acquainted.
- Understand simple conversations about some familiar, concrete topics such as daily activities, likes and dislikes, family, and home.
- Create simple sentences using basic grammar rules and vocabulary with limited accuracy.
- Read short “cultural blurbs” from the textbook, as well as other short texts such as personal ads, menus, and advertisements.
- Write word- and sentence-length messages such as lists, biographical information on forms, and descriptions of people and things.
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 102 : First-Year Portuguese. (4:5:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 101.

DESCRIPTION: Pronunciation, conversation, reading, and fundamentals of grammar. Specific attention to Portuguese as the language of Brazil.

NOTE: Native speakers of Portuguese must enroll in Port 321.

**Course Outcomes**

- Participate in classroom activities in Portuguese.
- Participate in conversations about some familiar, concrete topics such as daily activities, family, home, work, and school.
- Understand simple conversations about some familiar, concrete topics such as daily activities, likes and dislikes, family, and home.
- Create simple sentences using basic grammar rules and vocabulary with limited accuracy.
- Read short “cultural blurbs” from the textbook, as well as other short texts such as advertisements, letters, recipes, and stories.
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 105 : Portuguese for Spanish Speakers 1. (4:4:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Intensive course designed for students fluent in Spanish or another Romance language. No previous knowledge of Portuguese required. Emphasis on development of oral skills, vocaulary, grammar, and understanding of Lusophone cultures.

**Course Outcomes**

- Participate in conversations in conversations about some familiar, concrete topics such as daily activities, family, home, work, and school.
- Understand conversations and monologues in spoken Brazilian Portuguese on familiar topics.
- Read "cultural blurbs" from the textbook, as well as other slightly longer texts such as advertisements, letters, recipes, and stories.
- Write short texts such as email messages, post cards, and descriptions of people and things.
- Create sentences using basic grammar rules and vocabulary with limited accuracy.
- Know basic facts about some Portuguese-speaking countries and identify cultural products, practices, and perspectives from these countries.
- Differentiate between basic Spanish and Portuguese grammar, vocabulary, and spelling conventions.

PORT 199R : Academic Internship. (.5-3:0:0)

PREREQUISITE: Department chair's and internship coordinator's consent.

DESCRIPTION: On-the-job experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Demonstrate capacity to contextualize internship responsibilities and experiences within an academic framework.

### 200-Level Courses

PORT 201 : Third-Semester Portuguese. (4:5:0)

PREREQUISITE: Port 102 or three units of high school Portuguese.

DESCRIPTION: Second-year grammar, reading, writing, and conversation.

NOTE: Native speakers of Portuguese must take Port 321.

**Course Outcomes**

- Maintain a simple face-to-face conversation about concrete topics such as self, family, friends, and daily activities.
- Handle a simple transactional situation (making purchases, interviewing for a job, etc.)
- Discuss some topics of general interest (school, geography, finances, business, etc.)
- Use grammar principles, including the present, past, and future indicative and subjunctive, with increasing accuracy.
- Understand conversations, announcements, and media reports on familiar topics.
- Read short journalistic and literary texts.
- Write short, simple compositions in a variety of genres (stories, résumés, skits, etc.)
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 202 : Fourth-Semester Portuguese: Reading and Comprehension. (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 201.

DESCRIPTION: Fourth-semester class introducing grammar and culture through study of literature.

NOTE: Not for returned missionaries. Culmination of GE Mathematics/Foreign Language requirement. Native speakers of Portuguese must take Port 321. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Maintain a simple face-to-face conversation about an increasing range of topics of general interest (politics, transportation, the media, the arts, sports, etc.)
- Handle some situations with a complication (resolving disagreements, traffic violations, etc.)
- Use previously-learned grammar principles with increasing accuracy.
- Understand oral conversations, announcements, and media reports about familiar topics.
- Read medium-length journalistic and literary texts on familiar topics, including a short story and a play.
- Write simple compositions in a variety of genres (letters, pamphlets, articles, short stories, etc.).
- Discuss some differences between the cultural norms and perspectives of Americans and Portuguese speakers.
- Discuss some common themes from Portuguese-speaking cultures.

PORT 205 : Portuguese for Spanish Speakers 2. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 105.

DESCRIPTION: Intensive course designed for students fluent in Spanish or another Romance language. Emphasizes development of reading and writing skills and understanding of Lusophone literary works and cultures.

**Course Outcomes**

- Carry on conversations about an increasing range of topics of general interest and handle some oral situations in which a complication arises (resolving disagreements, traffic violations, etc.).
- Understand oral conversations, announcements, and media reports about topics of general interest.
- Read journalistic and literary texts on familiar topics, including a short story and a play.
- Write short compositions in a variety of genres (letters, skits, short stories, etc.).
- Use previously-learned grammar principles with increasing accuracy and ability to differentiate from Spanish.
- Discuss some common themes from Portuguese-speaking cultures and the differences between the perspectives of these cultures and those of North American and Hispanic cultures.

PORT 211R : First-Semester Conversation. (2:2:1)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Concurrent enrollment in Port 201.

**Course Outcomes**

- Begin to develop ability to handle a variety of uncomplicated communicative tasks in straightforward social situations, including verbal and nonverbal messages.

PORT 212 : Second-Semester Conversation. (2:2:1)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

PORT 311R : Third-Year Conversation. (2:2:1)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Tools course to help students improve oral proficiency
NOTE: Will not count for major or minor.

**Course Outcomes**

- Communicate effectively in most real-life situations at the interpersonal level, including academic, professional, or social situations.
- Understand main ideas and most facts from interactive exchanges and aural texts.
- Ability to handle successfully a variety of uncomplicated communicative tasks in straightforward social situations, including verbal and nonverbal messages.

PORT 315 : Intermediate Portuguese Grammar, Reading, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction of culture, literature, and grammatical concerns through reading short stories, novels, and drama in Portuguese.
NOTE: Will count for minor but not for major. Native speakers should take Port 321.

**Course Outcomes**

There are no course outcomes available

PORT 321 : Third-Year Portuguese Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Placement by test.
NOTE: First class for returned Portuguese-speaking missionaries. Fulfills GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

PORT 322 : Third-Year Portuguese Grammar and Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: PORT 321

**Course Outcomes**

- Expand Advanced-level language skills as they are applied to the writing modality.
- Acquire the techniques necessary for producing a variety of texts such as summaries, correspondence, detailed descriptions of people and places, elaborate narrations, analyses and argumentative essays.
- Enhance critical thinking abilities through an analysis of advanced grammatical, lexical and stylistic features of the Portuguese language.
- Increase vocabulary, grammatical accuracy, cultural awareness and comprehension of the Portuguese language through receptive and productive practice.

PORT 323R : Portuguese for the Professions. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PORT 321
DESCRIPTION: Introduction to professional terminology, documentation, and correspondence.

**Course Outcomes**

- Students will identify Portuguese-speaking populations (regions) of the U.S.
- Students will identify current employment opportunities in those regions, in a variety of professions, and acquire a working specialized vocabulary (300 words plus) in at least three professions.

PORT 326 : Portuguese Phonetics and Pronunciation. (3:3:3)

WHEN TAUGHT: Fall
PREREQUISITE: PORT 321
DESCRIPTION: Underlying concepts of Portuguese speech production and applications to pronunciation.

**Course Outcomes**

- Understand the basic concepts of articulatory phonetics and phonology.
- Understand how the sounds of standard Portuguese are pronounced.
- Be able to transcribe phonetically both oral and written texts in Portuguese.
- Improve their pronunciation of Portuguese through self analysis.
- Appreciate how the pronunciation of Portuguese has changed, and continues to change, across time and space.

PORT 329 : Survey of Luso-Brazilian Linguistics. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: PORT 321
DESCRIPTION: Introduction to linguistics of Portuguese: phonetics, phonology, morphology, syntax, semantics, history of the

Portuguese language, philology, dialectology, sociolinguistics, and psycholinguistics.

**Course Outcomes**

- The objective of this course is to introduce students to the basic fields of linguistic study within the Hispanic context. Students should be able to identify and explain issues of phonetics, phonology, morphology, syntax, semantics, and types of variation as found in oral and written language

PORT 339 : Introduction to Portuguese and Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Port 321.

DESCRIPTION: Readings in modern literature; formal literary analysis.

**Course Outcomes**

- Contextualize and analyze literature written in Portuguese from various genres and periods.
- Acquire and apply the fundamental tools for literary analysis, appreciation, and interpretation through a study of a balanced selection of foundational works from Portugal and Brazil and some areas of Lusophone Africa.
- Demonstrate through written exercises mastery of the basic terms of literary analysis and the formal patterns of fiction (narration, plot, characterization, structure, etc.) drama (tragedy, comedy, dialogue, structure, staging, etc.), and poetry (meter, rhyme, syllabification, figurative language, including tropes and figures).
- Produce several interpretive essays that demonstrate mastery of the formal components of fiction, drama, and poetry, and that reveal competence in library research skills, appropriate use of secondary sources, and proper adherence to MLA bibliographic style.

PORT 345 : Portuguese Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: Port 321.

DESCRIPTION: Culture, history, art, music, and traditions of Portugal.

**Course Outcomes**

- Describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe the linear progression of historical periods that might include important political, social, and artistic events.
- Recognize and describe important cultural products such as art, literature, architecture, and music, including important works and individuals.
- Describe important cultural institutions that might include family, religion, education and government.
- Discuss important cultural practices, including customs related to birth, marriage and death, as well as traditions and holidays.
- Analyze recent developments, including political, social, religious, and artistic activities.
- Interpret cultural products and practices within the framework of historical, geographic, religious, and social factors that influence them.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced awareness of cultural and historical knowledge
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

PORT 346R : Special Topics in Portuguese Culture. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PORT 321

DESCRIPTION: An in-depth examination of some aspect of Iberian culture and civilization. Subject matter will vary. This course is recommended for those individuals who may already have a broad exposure to the culture and civilization of Portugal and/or those who desire a more focused experience.

**Course Outcomes**

No outcomes are available at this time.

PORT 355 : Brazilian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 321.

DESCRIPTION: Culture, history, art, music, and traditions of Brazil.

**Course Outcomes**

There are no course outcomes available

PORT 356R : Special Topics in Brazilian Culture. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PORT 321

DESCRIPTION: An in-depth examination of some aspect of Brazilian culture and civilization. Subject matter will vary. This course is recommended for those individuals who may already have a broad exposure to the culture and civilization of Brazil and/or those who desire a more focused cultural experience.

**Course Outcomes**

There are no course outcomes available

PORT 377 : Methods of Portuguese Teaching. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Methods for planning Portuguese language and culture instruction, teaching communicative skills, and assessing students' learning. Course is geared toward instructors at K-12 as well as university level.

**Course Outcomes**

- Discuss historical trends in the teaching of foreign languages.
- Select and evaluate textbooks for teaching Portuguese.
- Plan thematic units and lessons incorporating theStandards for Foreign Language Learning.
- Plan and implement communicative activities for teaching speaking, listening, reading, and writing, as well as grammar and vocabulary, in a thematic context.
- Plan instruction about the cultural products, practices, and perspectives of Lusophone countries.
- Create and adapt various forms of assessment, including tests, project, rubrics and portfolios, to assess language and culture learning and provide feedback to students.
- Use technological tools for teaching languages and cultures, as well as for discussing and reflecting on professional themes with colleagues.
- Plan instruction that attends to the diverse needs of students, including Spanish speakers.

PORT 395R : Contemporary Culture. (.5-3:0:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Contemporary Portuguese or Brazilian culture: the people and their customs and institutions.

NOTE: For Study Abroad programs only.

**Course Outcomes**

- Through readings, develop a familiarity with macro forces (historical, political, economical) that have shaped the host culture.
- Through a series of cultural proofs (visits, interviews, observations), develop a familiarity with the host culture at the level of the individual.

PORT 399R : Academic Internship: Portuguese Language Field Experience. (.5-6:0:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Program coordinator's consent.

DESCRIPTION: On-the-job experience.

**Course Outcomes**

- These course outcomes are in development.
- These course outcomes are in development.

**400-Level Courses**

PORT 414 : Introduction to Translation for Second Majors. (3:3:0)

WHEN TAUGHT: Contact Department. Fall; Winter

PREREQUISITE: PORT 321

DESCRIPTION: Readings, individual research projects, and group translation activities. How the translation profession works. Developing the ability to translate general financial and legal texts. Learning to read texts critically.

**Course Outcomes**

- Students will produce a log of their own malapropisms and false cognates (minimum 100 words or conjugational parts).
- Students will produce, after several edited iterations, a legible translation of a professional treatise or work of fiction, appropriate to the social register of their audience.

PORT 438 : Luso-Brazilian Cinema. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs., Contact Department

PREREQUISITE: PORT 321

DESCRIPTION: Introduction to study of film; background in appreciating the best of motion picture art in Brazil, Portugal and other Lusophone countries.

**Course Outcomes**

No outcomes are available at this time.

PORT 439R : Luso-Brazilian Theatre Production. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Theory and practice of dramatic performance. Includes participation in play to be performed during semester.

NOTE: No more than 3 hours of 439R credit may count toward any degree.

**Course Outcomes**

- Demonstrate understanding of the theory and practice of dramatic performances.
- Participate in the production of a play during the course of the semester.
- Develop advanced skills in research techniques and academic writing.

PORT 441 : Survey of Portuguese Literature. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PORT 339

DESCRIPTION: Literary periods, genres, and great writers of Portugal.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Portuguese literature.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Portuguese literature.
- Demonstrate and apply strong understanding of the basic structures of the Portuguese language as they apply to literature.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 442 : Camoes. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PORT 441

**Course Outcomes**

- Demonstrate thorough understanding of Portuguese literary history, the context for the work of Camões and its reception.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.)
- Develop advanced skills in research techniques and academic writing.

PORT 449R : Special Topics in Portuguese Literature. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PORT 441

DESCRIPTION: Specific topics in Portuguese (Peninsular) literature. Course content will vary each semester to offer optimum exposure to all areas of Portuguese literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Portuguese Literature special topics.

PORT 451 : Survey of Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Literary periods, genres, and great writers of Brazil.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Brazilian literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literature.
- Write essays in Portuguese, including a final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 452 : Machado de Assis. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: PORT 451

**Course Outcomes**

- Demonstrate thorough understanding of Brazilian literary history, the cultural context for the work of Machado de Assis, and the reception of Machado's work.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.

PORT 453 : Twentieth-Century Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: PORT 451

**Course Outcomes**

- Demonstrate thorough understanding of twentieth-century literary history in Brazil.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.

PORT 459R : Special Topics in Brazilian Literature. (3:3:0)

WHEN Fall; Winter

TAUGHT:

PREREQUISITE: PORT 451

DESCRIPTION: Specific topics in Portuguese (Brazilian) literature. Course content will vary each semester to offer optimum exposure to all areas of Brazilian literature.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literary texts.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Develop the habits and skills for Brazilian literary study that inspire continued learning.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 461R : African Literature in Portuguese. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Modern authors from the five African nations whose official language is Portuguese: Angola, Cabo Verde, Guine Bissau, Mozambique, and the two-island republic Sao Tome and Principe. Authors include Jose Craveirinha, Mia Couto, Noemia de Sousa, Jose Tenreiro, Castro Soromenho, Luandino Vieira, Pepetala, and Baltasar Lopes, among others.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Develop the habits and skills for Luso-African literary study that inspire continued learning.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Luso-African literary texts.

PORT 462R : Literature of the Lusophone World. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Authors from the eight nations whose official language is Portuguese, plus former colonies and present regions of important Portuguese influence. These include Luso-American and Azorean writers, as well as authors from East Timor (formerly Indonesia), Goa (India), and Macau (China).

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Lusophone literary texts.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Portuguese literary study that inspire continued learning.

PORT 480R : Directed Research in Portuguese. (.5-3:ARR:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Written proposal subject to department approval.

DESCRIPTION: Under faculty member's direction, designing and conducting research project covering material not normally presented in regular course work. Research paper required.

NOTE: Total Port 480R credit toward bachelor's degree not to exceed 3 hours.

**Course Outcomes**

- Conduct advanced, independent research on a topic in Portuguese studies.

PORT 490 : Senior Seminar in Portuguese. (.5-3:0:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Senior standing.

DESCRIPTION: Bibliography, research, and writing of senior thesis.

NOTE: Recommended for students planning graduate studies in Portuguese.

**Course Outcomes**

No outcomes are available at this time.

PORT 491 : Senior Proficiency Evaluation. (0:1:0)

DESCRIPTION: Tool course to meet oral proficiency requirement for all majors.

NOTE: No major or minor credit.

**Course Outcomes**

- Receive an Advanced Low or better on the Oral Proficiency Interview.

PORT 493 : Capstone Course in Portuguese. (1:1:0)

WHEN TAUGHT: Contact Department. Fall; Winter; Spring; Summer

PREREQUISITE: Senior standing or departmental advisor's consent.
DESCRIPTION: A culminating experience for Portuguese as a first or second major. Students will be able to articulate the value of the Portuguese BA and will develop strategies and a rationale for applying the skills acquired during their undergraduate studies.
NOTE: Course must be taken concurrently with an approved upper-division, senior-level (e.g. 400-level) course in the semester prior to graduation.

**Course Outcomes**

There are no course outcomes available

## 500-Level Graduate Courses (available to advanced undergraduates)

PORT 520 : Advanced Portuguese Grammar. (3:3:0)
WHEN TAUGHT: Fall; Winter Contact Department
PREREQUISITE: Port 326 or 329.
DESCRIPTION: Applying contemporary grammatical concepts to problems in Portuguese grammar.

**Course Outcomes**

- The student enrolled in Advanced Portuguese Grammar will carefully examine some grammar "problems" by reading and studying selections from grammarians and researchers who provide insights into the problem in question. The student's ability to synthesize coherent and meaningful generalizations will be objectively tested by exams and further evaluated while he or she participates in classroom discussion.
- The student enrolled in Advanced Portuguese Grammar will acquire a greater understanding of both descriptive and prescriptive grammars and their function and limitations. The student will also acquire specialized terms employed by grammarians and morphosyntacticians. The student's ability to understand and use these terms appropriately will also be objectively measured by examination.
- Complete a research paper/presentation on a particular grammar point or construction. This assignment will test a student's ability to locate appropriate refereed sources, read and synthesize them and prepare a written document and oral presentation according to a recognized style manual.

PORT 521 : Romance Philology. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: Port 326 or 329.
DESCRIPTION: Comparative study of evolution of Latin into modern romance languages.

**Course Outcomes**

- Situate Latin and the Romance Languages in their "external" (i.e. political and literary) historical context.
- Recognize the "laws" of regular phonological evolution (e.g. syncope, lenition, diphthongization, etc.).
- Compare the "major" (i.e. literary) Romance languages as far as their phonological development is concerned.
- Lexical Differences and Etymology
- Become familiar with articles published in professional journals relating to the subject matter and produce accurate and meaningful written summaries and reactions to them.
- Learn the rudiments of transcribing medieval or Renaissance manuscripts.

PORT 522 : History of the Portuguese Language. (3:3:0)
WHEN TAUGHT: Fall Contact Department; Winter Contact Department
PREREQUISITE: Port 326 or 329.
DESCRIPTION: Linguistic sources that contributed to formation of Portuguese.

**Course Outcomes**

- Acquire a basic knowledge of the changes undergone by the nominal and verbal systems of Latin and Portuguese (e.g., the demise of the case system, the development of new verbal tenses, etc.).
- Demonstrate the ability to summarize and discuss in a clear and concise manner several scholarly articles on the topic of the history of the Portuguese language.
- Situate Latin and Portuguese in their political and literary historical contexts.
- Recognize the laws of regular phonological development (e.g. syncope, lenition, diphthongization, etc.).
- Identify the sources of the Portuguese lexicon.
- Understand the different theories that claim to understand the relation between Latin and the Romance languages, especially the relation between Latin and Portuguese.
- Understand the process of linguistic standardization in Romance and its implications for the linguistic map of the Iberian Peninsula.

PORT 529R : Special Topics in Portuguese Linguistics. (3:3:0)
WHEN TAUGHT: Fall Contact Department; Winter Contact Department
PREREQUISITE: Port 326 or 329, or instructor's approval.
DESCRIPTION: Topics from semantics to dialectology to sociolinguistics.

**Course Outcomes**

- Read and analyze research articles related to special topic in Portuguese linguistics.
- Produce an original research paper/project centered on the theme of the seminar.

PORT 599R : Academic Internship: Portuguese Internship. (1-3:0:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Port 321; instructor's consent.
NOTE: For supervised internship credit on BYU Study Abroad programs only.

**Course Outcomes**

- Successfully complete internship in a Portuguese-speaking country.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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- BA in Portuguese Studies (secondary major program)

Minors

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- Portuguese Teaching

Language Certificate

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**Spanish**

Majors

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- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
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Language Certificate

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Course Information

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**Faculty**

# BA in Spanish (52–86 hours minimum*)

Show All Course Descriptions
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## Program Requirements | View MAP | View Program Outcomes

1. The Spanish and Portuguese Department requires a minimum of 18 hours of upper-division major credit to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
2. Meet the foreign language residency requirement.
3. Complete a minor (approximately 16–21 hours), second major (approximately 30–60 hours), or supporting course work (15 hours).

   **Note:** Latin American Studies majors or minors: Span 321, 339, 345 or 355, and 441 or 451 meet requirements for both the Spanish major and the area studies minor. Only one of these courses may be double-counted (applied to both the major and the minor). Students wishing to complete a Spanish major and one of these area studies minors must take an additional 6–9 hours chosen from the approved electives for either major or minor. Consult the department and the advisement center for clarification of the choices available to you.
4. Complete the following prerequisite courses:

SPAN 101 : Foundational Spanish 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

NOTE: For students with no previous Spanish.

**Course Outcomes**

- Respond in Spanish to simple ques-tions on the most commonfeatures of daily life
- Convey minimal meaning tointerlocutors experiencedwith dealing with foreign-ers by using isolated words,lists of words, memorizedphrases and some personal-ized recombinations ofwords and phrases
- Satisfy a very limited num-ber of immediate needs through the use of spoken Spanish.
- Respond in written Spanish at the same level as indicated in outcomes related to speaking.
- Understand common basic cultural practices and products related to greetings and family life in some Spanish-speaking countries.

SPAN 102 : Foundational Spanish 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 101.

DESCRIPTION: Continuation of Span 101. Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

**Course Outcomes**

- Using Spanish, participate in simple, directconversations on generallypredictable topics related todaily activities and personalenvironment.
- Create with the languageand communicate personalmeaning to sympatheticinterlocutors by combininglanguage elements in dis-crete sentences and stringsof sentences.
- Obtain and give informationby asking and answeringquestions.
- Sustain and bring to a closea number of basic, uncom-plicated communicativeexchanges, mostly in a reac-tive mode.
- Satisfy simple personalneeds and social demandsto survive in the target lan-guage culture.
- Respond in written Spanish at the same level as indicated in preceding objectives related to spoken Spanish.
- Understand common basic cultural practices and products related to travel in some Spanish-speaking countries.

SPAN 105 : University Spanish 1. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Two years of high school Spanish or Span 101/102 or placement by diagnostic test.

DESCRIPTION: Continued development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational courses. Students are expected to attain an *Intermediate-Mid* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 106 : University Spanish 2. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 105.

DESCRIPTION: Expanded development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational and intermediate courses. Students are expected to attain an *Intermediate-Mid* to *Intermediate-High* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 111R : Spanish Conversation 1. (2:2.5:1)

RECOMMENDED: Concurrent enrollment in Span 105.

DESCRIPTION: Development of conversation skills in Spanish.

**Course Outcomes**

- Communicate orally in Spanish in specific speaking situations at the interpersonal level, which may include various personal or social situations.
- Understand main ideas and some facts from interactive exchanges and aural texts.
- Demonstrate awareness of cultures and backgrounds other than the student's own.
- Present orally to an audience a topic related to Hispanic cultural products, practices and events.
- Ability to read consistently with increased understanding simple, connected texts dealing with a variety of basic and social needs.

SPAN 112R : Spanish Conversation 2. (2:2.5:1)

RECOMMENDED: Concurrent enrollment in Span 106.

DESCRIPTION: Continued development of conversation skills in Spanish.

**Course Outcomes**

- Communicate orally in Spanish in specific speaking situations at the interpersonal level, which may include various personal or social situations.
- Understand main ideas and some facts from interactive exchanges and aural texts.
- Demonstrate awareness of cultures and backgrounds other than the student's own
- Present orally to an audience a topic related to Hispanic cultural products, practices and events.
- Ability to read consistently with increased understanding simple, connected texts dealing with a variety of basic and social needs.

SPAN 205 : University Spanish 3. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Four years of high school Spanish, Span 106, or placement by test.

DESCRIPTION: Continued development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain an *Intermediate-High* proficiency level.

NOTE: Fulfills the University Core Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Consolidate the student's understanding of the basic structures of the Spanish language and demonstrate intermediate proficiency in Spanish as defined by the American Council on the Teaching of Foreign Languages (ACTFL) proficiency guidelines for reading, writing, speaking, and listening.
- Provide students with a moderate knowledge of the Spanish language and cultures, thus broadening their perception of humanity and its varied manifestations.
- Interpret and analyze a selection of literary works in Spanish within their historical and cultural context.

SPAN 206 : University Spanish 4. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Spanish 205 or placement by test.

DESCRIPTION: Expanded development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain a strong *Intermediate-High* or *Advanced-Low* proficiency level.

**Course Outcomes**

- Consolidate the student's command of the basic structures of the Spanish language.
- Develop literacy and oral language skills at the intermediate-advanced range.

- Obtain an adequate knowledge of the Spanish language and cultures through the study of selected perceptions and manifestations.
- Understanding the natural speech of native speakers from any Spanish-speaking country and interpret the general idea in their proper cultural background.

**Note 1:** Students with foreign residence experience usually begin with Span 321.

**Note 2:** Prerequisite courses may be waived for those having sufficient proficiency with the language.

5. Complete the following:

SPAN 321 : Third-Year Spanish Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Placement by test.
DESCRIPTION: Intensive study and practice with Spanish grammar, vocabulary, and writings incorporating cultural and literary readings.
NOTE: First class for returned Spanish-speaking missionaries. Fullfills the University Core Languages of Learning requirement. Required for Spanish major and minor.

**Course Outcomes**

There are no course outcomes available

SPAN 329 : Survey of Hispanic Linguistics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer, Contact Department
PREREQUISITE: SPAN 321
DESCRIPTION: Introduction to linguistics of Spanish: phonetics, phonology, morphology, syntax, semantics, history of the Spanish language, philology, dialectology, sociolinguistics, and psycholinguistics.

**Course Outcomes**

- The objective of this course is to introduce students to the basic fields of linguistic study within the Hispanic context. Students should be able to identify and explain issues of phonetics, phonology, morphology, syntax, semantics, and types of variation as found in oral and written language.

SPAN 339 : Introduction to Spanish Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Readings in modern Hispanic literatures, focusing on formal literary analysis.
NOTE: Course is prerequisite to 400-level literature courses.

**Course Outcomes**

- Demonstrate a working knowledge of the most salient elements of the most important literary genres, including, for example, short story, novel, poetry, theater, essay, and film.
- Students will demonstrate a mastery of basic tools of literary analysis, including versification and basic elements of narratology, and interpretation through the study of a variety of works from authors from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstrate the ability to speak and write in Spanish about literature with a reasonable degree of grammatical correctness and fluency.

SPAN 441 : Survey of Spanish Literature. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: SPAN 339
DESCRIPTION: Literary masterpieces of Spain.

**Course Outcomes**

There are no course outcomes available

SPAN 451 : Survey of Hispanic-American Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
PREREQUISITE: SPAN 339
DESCRIPTION: Literary masterpieces of Spanish America.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, literary theory as well as other critical and philosophical concepts which may apply to Spanish American literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Define and recognize the periods, significant authors, schools or movements of Spanish American literature.
- Recognize and value the contributions, past and present, of Spanish American literature to the cultures of its respective countries.
- Develop the habits and skills of lifelong readers of Spanish American literature.
- Demonstrate and apply a strong understanding of the basic structures of the Spanish language as they apply to literature.
- Write analytical and descriptive essays in Spanish that demonstrate an advanced knowledge of the works studied, a proper command of the Spanish language, mastery of the tools of literary criticism,

and familiarity with research methodologies.

SPAN 493 : Capstone Course in Spanish. (1:1:0)

WHEN TAUGHT: Contact Department. Fall; Winter; Summer

PREREQUISITE: Senior status or departmental advisor's consent.

DESCRIPTION: A culminating experience for Spanish as a first or second major. Students will be able to articulate the value of the Spanish BA and will develop strategies and a rationale for applying the skills acquired during their undergraduate studies.

NOTE: Course must be taken concurrently with an approved upper-division, senior-level (e.g. 400-level) course in the semester prior to graduation.

**Course Outcomes**

- Students will be able to articulate the value of the Spanish and Portuguese BA.
- Students will develop strategies and a rationale for applying the skills acquired during their undergraduate studies in all aspects of their future lives.

6. Complete one course from the following:

SPAN 345 : Iberian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Culture, history, art, music, and traditions of Spain.

**Course Outcomes**

- Students will be able to describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe and analyze historical periods and current events (e.g., political, social, artistic, and religious developments).
- Recognize and describe important cultural products (e.g., art, literature, architecture, and music, including important works and individuals), cultural institutions (e.g., family, religion, education, and government), and cultural practices (e.g., customs related to birth, marriage, death, holidays, and traditions).
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

SPAN 355 : Spanish American Culture and Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Culture, history, art, music, and traditions of Spanish America.

**Course Outcomes**

There are no course outcomes available

7. Complete 18 hours from the following:

Complete at least one linguistics course from the following:

SPAN 326 : Spanish Phonetics and Pronunciation. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: SPAN 321

DESCRIPTION: Spanish sound system; underlying concepts of Spanish speech production and applications to pronunciation.

**Course Outcomes**

- Students who successfully complete this class will:Understand the basic concepts of articulatory phonetics and phonology;
- Understand how the sounds of standard Spanish are pronounced;
- Be able to transcribe phonetically both oral and written texts in Spanish;

SPAN 421 : Fourth-Year Grammar. (3:3:0)

WHEN TAUGHT: Contact Department. Fall

PREREQUISITE: SPAN 321

DESCRIPTION: Fourth-year study of Spanish grammar and usage.

**Course Outcomes**

- Recognize stylistic errors in Spanish composition and acquire the necessary strategies for their correction.
- Improve the knowledge of syntactic structures of Spanish.
- Enrich passive and active vocabularies of Spanish.
- Demonstrate competence in writing short essays in Spanish that conform to the "advanced" level as described in the ACTFL proficiency guidelines.
- Improve listening comprehension of authentic Spanish sources.

SPAN 423 : Border Spanish. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Span 326 or Span 329.

DESCRIPTION: Mexican-American speech patterns, including language contact and bilingualism.

NOTE: Previous course in linguistics strongly recommended.

**Course Outcomes**

- Students will demonstrate a knowledge of principal features of (Mexican-American) Popular Spanish in terms of semantics, morphosyntax, and phonetics/phonology.
- Students will understand and be able to describe succinctly S-E bilingual contact phenomena, such as borrowing, code-switching, and language maintenance/shift.
- Students will gain a greater understanding of and appreciation for Mexicans and Mexican-Americans living in the U.S.

SPAN 425 : Contrastive Analysis of the Structures of Spanish and English. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Span 326 or Span 329.

DESCRIPTION: Contrastive analysis of phonology, morphology, syntax, and semantics of Spanish and English.

**Course Outcomes**

- Students will be able to explain the chief differences and similarities between the structures of the English and Spanish languages.
- Learn the basic principles of Spanish phonology, morphology (both derivational and inflectional), syntax and sociolinguistics.
- Learn what the assumptions of modern linguistics are (e.g., natural language is based on the use of signs; language is a social phenomenon; oral language takes precedence over written language; linguistics is descriptive, not prescriptive; variation is intrinsic to language; language is highly structured; there are linguistic universals; etc.)
- Be able to solve linguistic problems in the teaching and learning of a second language.

SPAN 429R : Special Topics in Spanish Linguistics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 326; or SPAN 329

DESCRIPTION: Course content varies yearly; focuses on specific area of linguistics such as dialectology or sociolinguistics.

**Course Outcomes**

There are no course outcomes available

: Dialectology.

**Course Outcomes**

: Sociolinguistics.

**Course Outcomes**

: Language Planning.

**Course Outcomes**

: Bilingualism.

**Course Outcomes**

: Syntax.

**Course Outcomes**

: Semantics.

**Course Outcomes**

SPAN 520 : Problems in Spanish Grammar. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs., Contact Department; Spring Contact Department; Summer Even Yrs.

PREREQUISITE: SPAN 326; or SPAN 329

DESCRIPTION: Application of contemporary grammatical concepts to problems in Spanish grammar.

**Course Outcomes**

- The student enrolled in Problems in Spanish Grammar will carefully examine and formulate more accurate and complete rules for several recalcitrant grammar “problems” by reading and studying selections from grammarians and researchers who provide insights into the problem in question. The student’s ability to synthesize coherent and meaningful generalizations will be objectively tested by exams and further evaluated while he or she participates in classroom discussion.
- The student enrolled in Problems in Spanish Grammar will acquire a greater understanding of both descriptive and prescriptive grammars and their function and limitations. The student will also acquire specialized terms employed by grammarians and morphosyntacticians. The student’s ability to understand and use these terms appropriately will also be objectively measured by examination.
- Complete a research paper/presentation on a particular grammar point or construction. This assignment will test a student’s ability to locate appropriate refereed sources, read and synthesize them and prepare a written document and oral presentation according to a

recognized style manual.

SPAN 521 : Romance Philology. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 326; or SPAN 329

DESCRIPTION: Comparative study of the evolution of Latin into modern Romance languages.

**Course Outcomes**

- Situate Latin and the Romance Languages in their "external" (i.e. political and literary) historical context.
- Recognize the "laws" of regular phonological evolution (e.g. syncope, lenition, diphthongization, etc.).
- Compare the "major" (i.e. literary) Romance languages as far as their phonological development is concerned.
- Summarize the major lexical differences across Romance languages and some of the basic principles of etymology.
- Become familiar with articles published in professional journals relating to the subject matter and produce accurate and meaningful written summaries and reactions to them.
- Learn the rudiments of transcribing medieval or Renaissance manuscripts.

SPAN 522 : History of the Spanish Language. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.; Summer Odd Yrs.

PREREQUISITE: SPAN 326; or SPAN 329

DESCRIPTION: Linguistic sources that contributed to formation of the Spanish language.

**Course Outcomes**

- Acquire a basic knowledge of the changes undergone by the nominal and verbal systems of Latin and Castilian (e.g. the demise of the case system, the development of new verbal tenses, etc.).
- Demonstrate the ability to summarize and discuss in a clear and concise manner several scholarly articles on the topic of the history of the Spanish language.
- Situate Latin and Castilian in their political and literary historical contexts.
- Recognize the laws of regular phonological development (e.g. syncope, lenition, diphthongization, etc.).
- Identify the sources of the Castilian lexicon.
- Understand the different theories that claim to understand the relation between Latin and the Romance languages, especially the relation between Latin and Castilian.
- Understand the process of linguistic standardization in Romance and its implications for the linguistic map of the Iberian Peninsula.

SPAN 529R : Special Topics in Spanish Linguistics. (3:3:0)

WHEN TAUGHT: Contact Department. Fall

PREREQUISITE: SPAN 326; or SPAN 329

DESCRIPTION: Topics include semantics, dialectology, and sociolinguistics.

**Course Outcomes**

- Read and analyze research articles related to special topic.
- Produce an original research paper/project centered on the theme of the seminar.

Complete at least one literature course from the following:

SPAN 440 : Medieval Spanish Literature. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: SPAN 441

DESCRIPTION: Spanish literature from *El Cantar de Mio Cid* (1140) through *La Celestina* (1499).

**Course Outcomes**

There are no course outcomes available

SPAN 443R : Golden Age Literature. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.; Spring

PREREQUISITE: SPAN 441

DESCRIPTION: Sixteenth- and seventeenth-century Spanish literature.

**Course Outcomes**

- Students will be able to demonstrate knowledge about one or more authors from the 16th and/or 17th centuries.
- Students will be able to analyze the texts studied in terms of the historical, cultural, and literary context of the Early Modern world.
- Students will be able to describe, analyze and discuss one or more of the genres of Early Modern Spanish literature and the conventions connected with the genre(s).
- Students will strengthen their research and writing skills by producing essays about, editions of, and/or translations of 16th and 17th-century Spanish texts.
- Students will develop the skills necessary to appreciate and enjoy reading Early Modern Spanish texts.

SPAN 444 : *Don Quijote.* (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: SPAN 441
DESCRIPTION: In-depth study of Cervantes' *El ingenioso hidalgo don Quijote de la Mancha*.

**Course Outcomes**

- Students will read Don Quijote de la Mancha in its original version, taking into account plot and character development, symbolism, cultural and literary context, literary antecedents, and subsequent influence.
- Students will comment on different strategies for reading, writing and translating (using critical vocabulary) as discussed in the Quijote, and will explain the different critical stances, including the "hard" perspective and the "soft" perspective.
- Students will trace the stylistic innovations introduced by Cervantes in the Quijote, and its intersections with other genres (e.g. theater, poetry).
- Students willanswer the question of whether el Quijote really is the first modern novel as many claim it to be. Students will identify and analyze episodes in the novel that display realism and metafiction, and will recognize the impact the Quijote has had on the development of these modes in the subsequent development of the western novel.

SPAN 446R : Nineteenth-Century Literature. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 441
DESCRIPTION: Romanticism (1770s through 1870s) and/or the novels of Benito Perez Galdos and his contemporaries.

**Course Outcomes**

There are no course outcomes available

SPAN 448R : Twentieth-Century Spanish Literature. (3:3:0)
WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: SPAN 441
DESCRIPTION: Genre (twentieth-century novel, drama, or poetry) or particular school (Generation of 1898, Generation of 1927, etc.) emphasized.

**Course Outcomes**

- Demonstrate thorough understanding of twentieth-century Spanish literary history.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to 20th-century Spanish Literature.

SPAN 449R : Special Topics in Spanish Literature. (3:3:0)
WHEN TAUGHT: Contact Department. ; Summer Even Yrs.
PREREQUISITE: SPAN 441
DESCRIPTION: Specific topics in Spanish (peninsular) literature. Course content will vary each semester to offer optimum exposure to all areas of Spanish literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Spanish, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Spanish literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to special topics in Spanish Literature.

SPAN 450R : Early Spanish-American Literature. (3:3:0)
WHEN TAUGHT: Contact Department. ; Winter Even Yrs.
PREREQUISITE: SPAN 451
DESCRIPTION: Indigenous literature (Maya, Nahuatl, etc.) and other texts written in Spanish Colonial America through eighteenth century.

**Course Outcomes**

- Apply a variety of analytical and theoretical approaches to the study of early Spanish American writings as literature and as a reflection of the early cultures of the Spanish-speaking countries of the Americas.
- Demonstrate an ability to critically analyze early Spanish American literature through insightful in-class participation, oral presentations, and written assignments.
- Demonstrate a strong knowledge of a broad range of the important literary and historical texts of the early Spanish American period and of the historical and cultural contexts in which they were produced.

SPAN 454R : The Spanish American Novel. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 451

DESCRIPTION: Selected Spanish-American novelists such as Juan Rulfo, Gabriel Garcia Marquez, Alejo Carpentier, Mario Vargas-Llosa, etc.

**Course Outcomes**

There are no course outcomes available

SPAN 455R : Spanish-American Poetry. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Selected Spanish-American poets, movements, and national traditions.

**Course Outcomes**

- Demonstrate critical acuity in interpreting individual poems, making appropriate reference to formal poetic devices.
- Demonstrate a grasp of the historical, social, and literary contexts of the poems and poets studied.
- Express one's insights in a research paper which makes appropriate use of secondary sources.

SPAN 456R : Spanish American Drama. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Twentieth-century theatre from Spanish America and Brazil.

**Course Outcomes**

There are no course outcomes available

SPAN 458R : Hispanic-American Short Story. (3:3:0)

WHEN TAUGHT: Contact Department. Fall Odd Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Introduction and development of an important literary genre in Spanish America, including works of Jorge Luis Borges, Julio Cortazar, Juan Rulfo, Gabriel Garcia Marquez, etc.

**Course Outcomes**

- Master basic bibliographical techniques related to the short story genre.
- Demonstrate a firm grasp of the formal aspects of the short story genre.
- Gain a working knowledge of the history and principal figures of the Spanish American short story.

SPAN 459R : Special Topics in Spanish American Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Spring Even Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Specific topics in Latin American literature. Course content will vary each semester to offer optimum exposure to all areas of Latin American literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Spanish, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Spanish literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to special topics in Spanish-American Literature.

SPAN 461 : Spanish-Speaking American (Mexican-American) Literature. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Even Yrs.; Spring Contact Department; Summer Contact Department

PREREQUISITE: SPAN 451

DESCRIPTION: Spanish-English literature of the Mexican-American within the United States.

**Course Outcomes**

- Demonstrate thorough understanding of the history of Mexican-American literary history.
- Develop advanced skills in research techniques and academic writing.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Mexican-American Literature.

Complete four additional courses (12 hours) from the linguistics or literature electives above or from the following (Span 345 and 355 will not double-count):

SPAN 322 : Third-Year Spanish Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: SPAN 321

DESCRIPTION: Study and practice of different writing styles, developing research skills.

NOTE: Strongly recommended for students continuing on to a graduate program.

**Course Outcomes**

- Demonstrate competence in writing a variety of genre types in Spanish that conform to the "advanced" level as described in the ACTFL proficiency guidelines.

SPAN 345 : Iberian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spain.

**Course Outcomes**

- Students will be able to describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe and analyze historical periods and current events (e.g., political, social, artistic, and religious developments).
- Recognize and describe important cultural products (e.g., art, literature, architecture, and music, including important works and individuals), cultural institutions (e.g., family, religion, education, and government), and cultural practices (e.g., customs related to birth, marriage, death, holidays, and traditions).
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

SPAN 346R : Special Topics in Iberian Culture. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 321
DESCRIPTION: An in-depth examination of some aspect of Iberian culture and civilization. Subject matter will vary. This course is recommended for those individuals who may already have a broad exposure to the culture and civilization of Spain and/or those who desire a more focused cultural experience.

**Course Outcomes**

No outcomes are available at this time.

SPAN 355 : Spanish American Culture and Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spanish America.

**Course Outcomes**

There are no course outcomes available

SPAN 356R : Special Topics in Spanish American Culture. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 321
DESCRIPTION: An in-depth examination of some aspect of Spanish American culture and civilization. Subject matter will vary. This course is recommended for those individuals who may already have a broad exposure to the culture and civilization of the Spanish-speaking countries of the Americas and/or those who desire a more focused cultural experience.

**Course Outcomes**

There are no course outcomes available

SPAN 365 : Mexican-American Culture. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Contemporary culture (education, popular and fine arts, worldview, attitudes, etc.) of the Mexican-American in the U.S.

**Course Outcomes**

- Recognize and describe important cultural products, such as art, literature, architecture, and music, including important works and individuals, as pertaining to Mexican American culture.
- Describe important cultural institutions, including family and religion.
- Discuss important cultural practices, including customs, traditions, celebrations, festivals, etc
- Analyze recent cultural and social developments, including political, social, religious, and artistic events, placing them in historical context.
- Students should be able to recognize, compare, and evaluate the influence of their own cultural background on their attitudes, beliefs, and worldview, in relation to the Mexican- American world.

SPAN 395R : Contemporary Culture. (.5-3:ARR:ARR)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Contemporary Spanish (or Spanish- American) culture: the people and their customs and institutions.
NOTE: For Study Abroad programs only.

**Course Outcomes**

- Through a series of cultural proofs (visits, interviews, observations), develop a familiarity with the host culture at the level of the individual.
- Through readings, develop a familiarity with macro forces (historical, political, economical) that have shaped the host culture.

SPAN 430R : Special Topics in Hispanic Culture. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Span 322 or concurrent enrollment.
DESCRIPTION: Regional and thematic approaches to Hispanic culture. Subject matter will vary.

**Course Outcomes**

There are no course outcomes available

SPAN 438 : Hispanic Cinema. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 339
DESCRIPTION: Introduction to study of film; background in appreciating best of motion picture art in Spain and Spanish America.
NOTE: Previous experience with film useful but not required.

**Course Outcomes**

- Students will demonstrate a mastery of basic tools of film analysis through the study of a variety of films from the various film industries from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstate the ability to speak and write in Spanish about film with a reasonable degree of grammatical correctness and fluency.

SPAN 439R : Hispanic Theatre Production. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Director's consent
DESCRIPTION: Theory and practice of dramatic performance. Includes participation in play to be performed during semester.
NOTE: No more than 3 hours of 439R credit may count toward any degree.

**Course Outcomes**

There are no course outcomes available

SPAN 477 : Techniques of Spanish Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: SPAN 321 & SPAN 326 & SPAN 345; or SPAN 321 & SPAN 326 & SPAN 355
DESCRIPTION: Techniques for teaching the four language skills and grammar, vocabulary, and culture; use of technology; assessing language achievement.
NOTE: For students not enrolled in Spanish teaching major or minor.

**Course Outcomes**

- Discuss basic theories of language teaching and learning.
- Plan Standards-based units and lessons, aligning assessments with learning objectives.
- Teach beginning-level vocabulary, grammar, culture, and the four skills (speaking, listening, reading, writing).
- Assess students' language and culture learning.

SPAN 480R : Directed Research in Spanish. (.5-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: Written proposal subject to department approval.
DESCRIPTION: Under faculty member's direction, designing and conducting research project covering material not normally presented in regular course work. Research paper required.
NOTE: Total Span 480R credit toward bachelor's degree not to exceed 3 hours.

**Course Outcomes**

- Conduct advanced, independent research on a topic in Hispanic studies.

SPAN 490 : Senior Seminar in Spanish. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Senior standing.
DESCRIPTION: Bibliography, research, and writing of senior thesis.
NOTE: Recommended for students planning graduate studies in Spanish.

**Course Outcomes**

There are no course outcomes available

SPAN 599R : Academic Internship: Spanish Internship. (.5-3:0:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 321
NOTE: For supervised internship credit on BYU Study Abroad programs only.

**Course Outcomes**

- Successfully complete internship in a Spanish speaking country.

8. Complete the following:

SPAN 491 : Senior Proficiency Evaluation. (0:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Tool course to meet oral proficiency requirement for all majors and teaching minors.
NOTE: No major or minor credit.

**Course Outcomes**

- Receive an Advanced Low or better on the Oral Proficiency Interview.

**Note:** The Senior Proficiency Evaluation is taken in connection with Span 491. It is expected that Spanish majors will pass with a rating of *advanced-low* or higher.

*Hours include courses that may fulfill university core requirements.

## Show all Spanish (Span) Courses

**College of Humanities Home**

**Spanish and Portuguese Department Home**

**Portuguese**

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

**Spanish**

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

**Faculty**

# BA in Spanish Studies (secondary major program) (25–43 hours minimum*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Students must complete the requirements for a primary major in another field.
2. Complete the following prerequisite courses (or equivalents):

SPAN 101 : Foundational Spanish 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

NOTE: For students with no previous Spanish.

**Course Outcomes**

- Respond in Spanish to simple ques-tions on the most commonfeatures of daily life
- Convey minimal meaning tointerlocutors experiencedwith dealing with foreign-ers by using isolated words,lists of words, memorizedphrases and some personal-ized recombinations ofwords and phrases
- Satisfy a very limited num-ber of immediate needs through the use of spoken Spanish.
- Respond in written Spanish at the same level as indicated in outcomes related to speaking.
- Understand common basic cultural practices and products related to greetings and family life in some Spanish-speaking countries.

SPAN 102 : Foundational Spanish 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 101.

DESCRIPTION: Continuation of Span 101. Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

**Course Outcomes**

- Using Spanish, participate in simple, directconversations on generallypredictable topics related todaily activities and personalenvironment.
- Create with the languageand communicate personalmeaning to sympatheticinterlocutors by combininglanguage elements in dis-crete sentences and stringsof sentences.
- Obtain and give informationby asking and answeringquestions.
- Sustain and bring to a closea number of basic, uncom-plicated communicativeexchanges, mostly in a reac-tive mode.
- Satisfy simple personalneeds and social demandsto survive in the target lan-guage culture.
- Respond in written Spanish at the same level as indicated in preceding objectives related to spoken Spanish.
- Understand common basic cultural practices and products related to travel in some Spanish-speaking countries.

SPAN 105 : University Spanish 1. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Two years of high school Spanish or Span 101/102 or placement by diagnostic test.

DESCRIPTION: Continued development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational courses. Students are expected to attain an *Intermediate-Mid* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 106 : University Spanish 2. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 105.
DESCRIPTION: Expanded development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational and intermediate courses. Students are expected to attain an *Intermediate-Mid* to *Intermediate-High* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 111R : Spanish Conversation 1. (2:2.5:1)
RECOMMENDED: Concurrent enrollment in Span 105.
DESCRIPTION: Development of conversation skills in Spanish.

**Course Outcomes**

- Communicate orally in Spanish in specific speaking situations at the interpersonal level, which may include various personal or social situations.
- Understand main ideas and some facts from interactive exchanges and aural texts.
- Demonstrate awareness of cultures and backgrounds other than the student's own.
- Present orally to an audience a topic related to Hispanic cultural products, practices and events.
- Ability to read consistently with increased understanding simple, connected texts dealing with a variety of basic and social needs.

SPAN 112R : Spanish Conversation 2. (2:2.5:1)
RECOMMENDED: Concurrent enrollment in Span 106.
DESCRIPTION: Continued development of conversation skills in Spanish.

**Course Outcomes**

- Communicate orally in Spanish in specific speaking situations at the interpersonal level, which may include various personal or social situations.
- Understand main ideas and some facts from interactive exchanges and aural texts.
- Demonstrate awareness of cultures and backgrounds other than the student's own
- Present orally to an audience a topic related to Hispanic cultural products, practices and events.
- Ability to read consistently with increased understanding simple, connected texts dealing with a variety of basic and social needs.

SPAN 205 : University Spanish 3. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Four years of high school Spanish, Span 106, or placement by test.
DESCRIPTION: Continued development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain an *Intermediate-High* proficiency level.
NOTE: Fulfills the University Core Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Consolidate the student's understanding of the basic structures of the Spanish language and demonstrate intermediate proficiency in Spanish as defined by the American Council on the Teaching of Foreign Languages (ACTFL) proficiency guidelines for reading, writing, speaking, and listening.
- Provide students with a moderate knowledge of the Spanish language and cultures, thus broadening their perception of humanity and its varied manifestations.
- Interpret and analyze a selection of literary works in Spanish within their historical and cultural context.

SPAN 206 : University Spanish 4. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Spanish 205 or placement by test.
DESCRIPTION: Expanded development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain a strong *Intermediate-High* or *Advanced-Low* proficiency level.

**Course Outcomes**

- Consolidate the student's command of the basic structures of the Spanish language.
- Develop literacy and oral language skills at the intermediate-advanced range.
- Obtain an adequate knowledge of the Spanish language and cultures through the study of selected perceptions and manifestations.
- Understanding the natural speech of native speakers from any Spanish-speaking country and interpret the general idea in their proper cultural background.

**Note 1:** Students with foreign residence experience usually begin with Span 321.

**Note 2:** Prerequisite courses may be waived for those having sufficient proficiency with the language.

3. Complete the following core courses:
   SPAN 321 : Third-Year Spanish Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Placement by test.
DESCRIPTION: Intensive study and practice with Spanish grammar, vocabulary, and writings incorporating cultural and literary readings.
NOTE: First class for returned Spanish-speaking missionaries. Fullfills the University Core Languages of Learning requirement. Required for Spanish major and minor.

**Course Outcomes**

There are no course outcomes available

SPAN 329 : Survey of Hispanic Linguistics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer, Contact Department
PREREQUISITE: SPAN 321
DESCRIPTION: Introduction to linguistics of Spanish: phonetics, phonology, morphology, syntax, semantics, history of the Spanish language, philology, dialectology, sociolinguistics, and psycholinguistics.

**Course Outcomes**

- The objective of this course is to introduce students to the basic fields of linguistic study within the Hispanic context. Students should be able to identify and explain issues of phonetics, phonology, morphology, syntax, semantics, and types of variation as found in oral and written language.

SPAN 339 : Introduction to Spanish Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Readings in modern Hispanic literatures, focusing on formal literary analysis.
NOTE: Course is prerequisite to 400-level literature courses.

**Course Outcomes**

- Demonstrate a working knowledge of the most salient elements of the most important literary genres, including, for example, short story, novel, poetry, theater, essay, and film.
- Students will demonstrate a mastery of basic tools of literary analysis, including versification and basic elements of narratology, and interpretation through the study of a variety of works from authors from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstrate the ability to speak and write in Spanish about literature with a reasonable degree of grammatical correctness and fluency.

4. Complete one course from the following:

SPAN 345 : Iberian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spain.

**Course Outcomes**

- Students will be able to describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe and analyze historical periods and current events (e.g., political, social, artistic, and religious developments).
- Recognize and describe important cultural products (e.g., art, literature, architecture, and music, including important works and individuals), cultural institutions (e.g., family, religion, education, and government), and cultural practices (e.g., customs related to birth, marriage, death, holidays, and traditions).
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

SPAN 355 : Spanish American Culture and Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spanish America.

**Course Outcomes**

There are no course outcomes available

5. Complete one course from the following:

SPAN 441 : Survey of Spanish Literature. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: SPAN 339
DESCRIPTION: Literary masterpieces of Spain.

**Course Outcomes**

There are no course outcomes available

SPAN 451 : Survey of Hispanic-American Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department

PREREQUISITE: SPAN 339

DESCRIPTION: Literary masterpieces of Spanish America.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, literary theory as well as other critical and philosophical concepts which may apply to Spanish American literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Define and recognize the periods, significant authors, schools or movements of Spanish American literature.
- Recognize and value the contributions, past and present, of Spanish American literature to the cultures of its respective countries.
- Develop the habits and skills of lifelong readers of Spanish American literature.
- Demonstrate and apply a strong understanding of the basic structures of the Spanish language as they apply to literature.
- Write analytical and descriptive essays in Spanish that demonstrate an advanced knowledge of the works studied, a proper command of the Spanish language, mastery of the tools of literary criticism, and familiarity with research methodologies.

6. Complete the following:

SPAN 414 : Introduction to Translation for Second Majors. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SPAN 321

DESCRIPTION: Readings, individual research projects, and group translation activities. How the translation profession works. Developing the ability to translate general financial and legal texts. Learning to read texts critically.

**Course Outcomes**

- Explain and apply methods for resolving common translation problems.
- Demonstrate the ability to evalute translation quality.
- Demonstrate understanding of the translation industry.

SPAN 493 : Capstone Course in Spanish. (1:1:0)

WHEN TAUGHT: Contact Department. Fall; Winter; Summer

PREREQUISITE: Senior status or departmental advisor's consent.

DESCRIPTION: A culminating experience for Spanish as a first or second major. Students will be able to articulate the value of the Spanish BA and will develop strategies and a rationale for applying the skills acquired during their undergraduate studies.

NOTE: Course must be taken concurrently with an approved upper-division, senior-level (e.g. 400-level) course in the semester prior to graduation.

**Course Outcomes**

- Students will be able to articulate the value of the Spanish and Portuguese BA.
- Students will develop strategies and a rationale for applying the skills acquired during their undergraduate studies in all aspects of their future lives.

7. Complete one of the following:

SPAN 322 : Third-Year Spanish Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: SPAN 321

DESCRIPTION: Study and practice of different writing styles, developing research skills.

NOTE: Strongly recommended for students continuing on to a graduate program.

**Course Outcomes**

- Demonstrate competence in writing a variety of genre types in Spanish that conform to the "advanced" level as described in the ACTFL proficiency guidelines.

SPAN 323R : Spanish for the Professions. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: SPAN 321

DESCRIPTION: Introduction to professional terminology, documentation, and correspondence.

**Course Outcomes**

- Discuss in general terms the economic and political realities of Spanish-speaking countries and regions (including the U.S.) and their impact on national and international business.
- Identify social and business-related cultural patterns in Spanish-speaking cultures and compare them with those of English-speaking cultures.
- Locate information on Spanish-speaking job opportunities in various professions and the necessary qualifications for each.
- Acquire a specialized Spanish working vocabulary in at least one profession.
- Write business letters, CVs, and other types of professional documents using appropriate writing conventions, register, and vocabulary.

8. Complete 3 additional hours from the following:

SPAN 322 : Third-Year Spanish Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: SPAN 321
DESCRIPTION: Study and practice of different writing styles, developing research skills.
NOTE: Strongly recommended for students continuing on to a graduate program.

**Course Outcomes**

- Demonstrate competence in writing a variety of genre types in Spanish that conform to the "advanced" level as described in the ACTFL proficiency guidelines.

SPAN 323R : Spanish for the Professions. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: SPAN 321
DESCRIPTION: Introduction to professional terminology, documentation, and correspondence.

**Course Outcomes**

- Discuss in general terms the economic and political realities of Spanish-speaking countries and regions (including the U.S.) and their impact on national and international business.
- Identify social and business-related cultural patterns in Spanish-speaking cultures and compare them with those of English-speaking cultures.
- Locate information on Spanish-speaking job opportunities in various professions and the necessary qualifications for each.
- Acquire a specialized Spanish working vocabulary in at least one profession.
- Write business letters, CVs, and other types of professional documents using appropriate writing conventions, register, and vocabulary.

SPAN 326 : Spanish Phonetics and Pronunciation. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: SPAN 321
DESCRIPTION: Spanish sound system; underlying concepts of Spanish speech production and applications to pronunciation.

**Course Outcomes**

- Students who successfully complete this class will:Understand the basic concepts of articulatory phonetics and phonology;
- Understand how the sounds of standard Spanish are pronounced;
- Be able to transcribe phonetically both oral and written texts in Spanish;

SPAN 345 : Iberian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spain.

**Course Outcomes**

- Students will be able to describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe and analyze historical periods and current events (e.g., political, social, artistic, and religious developments).
- Recognize and describe important cultural products (e.g., art, literature, architecture, and music, including important works and individuals), cultural institutions (e.g., family, religion, education, and government), and cultural practices (e.g., customs related to birth, marriage, death, holidays, and traditions).
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

SPAN 346R : Special Topics in Iberian Culture. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 321
DESCRIPTION: An in-depth examination of some aspect of Iberian culture and civilization. Subject matter will vary. This course is recommended for those individuals who may already have a broad exposure to the culture and civilization of Spain and/or those who desire a more focused cultural experience.

**Course Outcomes**

No outcomes are available at this time.

SPAN 355 : Spanish American Culture and Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spanish America.

**Course Outcomes**

There are no course outcomes available

SPAN 356R : Special Topics in Spanish American Culture. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 321

DESCRIPTION: An in-depth examination of some aspect of Spanish American culture and civilization. Subject matter will vary. This course is recommended for those individuals who may already have a broad exposure to the culture and civilization of the Spanish-speaking countries of the Americas and/or those who desire a more focused cultural experience.

**Course Outcomes**

There are no course outcomes available

SPAN 365 : Mexican-American Culture. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Contemporary culture (education, popular and fine arts, worldview, attitudes, etc.) of the Mexican-American in the U.S.

**Course Outcomes**

- Recognize and describe important cultural products, such as art, literature, architecture, and music, including important works and individuals, as pertaining to Mexican American culture.
- Describe important cultural institutions, including family and religion.
- Discuss important cultural practices, including customs, traditions, celebrations, festivals, etc
- Analyze recent cultural and social developments, including political, social, religious, and artistic events, placing them in historical context.
- Students should be able to recognize, compare, and evaluate the influence of their own cultural background on their attitudes, beliefs, and worldview, in relation to the Mexican- American world.

SPAN 395R : Contemporary Culture. (.5-3:ARR:ARR)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Contemporary Spanish (or Spanish- American) culture: the people and their customs and institutions.

NOTE: For Study Abroad programs only.

**Course Outcomes**

- Through a series of cultural proofs (visits, interviews, observations), develop a familiarity with the host culture at the level of the individual.
- Through readings, develop a familiarity with macro forces (historical, political, economical) that have shaped the host culture.

SPAN 421 : Fourth-Year Grammar. (3:3:0)

WHEN TAUGHT: Contact Department. Fall

PREREQUISITE: SPAN 321

DESCRIPTION: Fourth-year study of Spanish grammar and usage.

**Course Outcomes**

- Recognize stylistic errors in Spanish composition and acquire the necessary strategies for their correction.
- Improve the knowledge of syntactic structures of Spanish.
- Enrich passive and active vocabularies of Spanish.
- Demonstrate competence in writing short essays in Spanish that conform to the "advanced" level as described in the ACTFL proficiency guidelines.
- Improve listening comprehension of authentic Spanish sources.

SPAN 423 : Border Spanish. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Span 326 or Span 329.

DESCRIPTION: Mexican-American speech patterns, including language contact and bilingualism.

NOTE: Previous course in linguistics strongly recommended.

**Course Outcomes**

- Students will demonstrate a knowledge of principal features of (Mexican-American) Popular Spanish in terms of semantics, morphosyntax, and phonetics/phonology.
- Students will understand and be able to describe succinctly S-E bilingual contact phenomena, such as borrowing, code-switching, and language maintenance/shift.
- Students will gain a greater understanding of and appreciation for Mexicans and Mexican-Americans living in the U.S.

SPAN 425 : Contrastive Analysis of the Structures of Spanish and English. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Span 326 or Span 329.

DESCRIPTION: Contrastive analysis of phonology, morphology, syntax, and semantics of Spanish and English.

**Course Outcomes**

- Students will be able to explain the chief differences and similarities between the structures of the English and Spanish languages.

- Learn the basic principles of Spanish phonology, morphology (both derivational and inflectional), syntax and sociolinguistics.
- Learn what the assumptions of modern linguistics are (e.g., natural language is based on the use of signs; language is a social phenomenon; oral language takes precedence over written language; linguistics is descriptive, not prescriptive; variation is intrinsic to language; language is highly structured; there are linguistic universals; etc.)
- Be able to solve linguistic problems in the teaching and learning of a second language.

SPAN 429R : Special Topics in Spanish Linguistics. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 326; or SPAN 329
DESCRIPTION: Course content varies yearly; focuses on specific area of linguistics such as dialectology or sociolinguistics.

**Course Outcomes**

There are no course outcomes available

: Dialectology.

**Course Outcomes**

: Sociolinguistics.

**Course Outcomes**

: Language Planning.

**Course Outcomes**

: Bilingualism.

**Course Outcomes**

: Syntax.

**Course Outcomes**

: Semantics.

**Course Outcomes**

SPAN 430R : Special Topics in Hispanic Culture. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Span 322 or concurrent enrollment.
DESCRIPTION: Regional and thematic approaches to Hispanic culture. Subject matter will vary.

**Course Outcomes**

There are no course outcomes available

SPAN 438 : Hispanic Cinema. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 339
DESCRIPTION: Introduction to study of film; background in appreciating best of motion picture art in Spain and Spanish America.
NOTE: Previous experience with film useful but not required.

**Course Outcomes**

- Students will demonstrate a mastery of basic tools of film analysis through the study of a variety of films from the various film industries from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstate the ability to speak and write in Spanish about film with a reasonable degree of grammatical correctness and fluency.

SPAN 439R : Hispanic Theatre Production. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Director's consent
DESCRIPTION: Theory and practice of dramatic performance. Includes participation in play to be performed during semester.
NOTE: No more than 3 hours of 439R credit may count toward any degree.

**Course Outcomes**

There are no course outcomes available

SPAN 440 : Medieval Spanish Literature. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: SPAN 441

DESCRIPTION: Spanish literature from *El Cantar de Mio Cid* (1140) through *La Celestina* (1499).

**Course Outcomes**

There are no course outcomes available

SPAN 441 : Survey of Spanish Literature. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: SPAN 339
DESCRIPTION: Literary masterpieces of Spain.

**Course Outcomes**

There are no course outcomes available

SPAN 443R : Golden Age Literature. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.; Spring
PREREQUISITE: SPAN 441
DESCRIPTION: Sixteenth- and seventeenth-century Spanish literature.

**Course Outcomes**

- Students will be able to demonstrate knowledge about one or more authors from the 16th and/or 17th centuries.
- Students will be able to analyze the texts studied in terms of the historical, cultural, and literary context of the Early Modern world.
- Students will be able to describe, analyze and discuss one or more of the genres of Early Modern Spanish literature and the conventions connected with the genre(s).
- Students will strengthen their research and writing skills by producing essays about, editions of, and/or translations of 16th and 17th-century Spanish texts.
- Students will develop the skills necessary to appreciate and enjoy reading Early Modern Spanish texts.

SPAN 444 : *Don Quijote.* (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
PREREQUISITE: SPAN 441
DESCRIPTION: In-depth study of Cervantes' *El ingenioso hidalgo don Quijote de la Mancha*.

**Course Outcomes**

- Students will read Don Quijote de la Mancha in its original version, taking into account plot and character development, symbolism, cultural and literary context, literary antecedents, and subsequent influence.
- Students will comment on different strategies for reading, writing and translating (using critical vocabulary) as discussed in the Quijote, and will explain the different critical stances, including the "hard" perspective and the "soft" perspective.
- Students will trace the stylistic innovations introduced by Cervantes in the Quijote, and its intersections with other genres (e.g. theater, poetry).
- Students willanswer the question of whether el Quijote really is the first modern novel as many claim it to be. Students will identify and analyze episodes in the novel that display realism and metafiction, and will recognize the impact the Quijote has had on the development of these modes in the subsequent development of the western novel.

SPAN 446R : Nineteenth-Century Literature. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 441
DESCRIPTION: Romanticism (1770s through 1870s) and/or the novels of Benito Perez Galdos and his contemporaries.

**Course Outcomes**

There are no course outcomes available

SPAN 448R : Twentieth-Century Spanish Literature. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: SPAN 441
DESCRIPTION: Genre (twentieth-century novel, drama, or poetry) or particular school (Generation of 1898, Generation of 1927, etc.) emphasized.

**Course Outcomes**

- Demonstrate thorough understanding of twentieth-century Spanish literary history.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to 20th-century Spanish Literature.

SPAN 449R : Special Topics in Spanish Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Summer Even Yrs.
PREREQUISITE: SPAN 441

DESCRIPTION: Specific topics in Spanish (peninsular) literature. Course content will vary each semester to offer optimum exposure to all areas of Spanish literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Spanish, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Spanish literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to special topics in Spanish Literature.

SPAN 450R : Early Spanish-American Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Winter Even Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Indigenous literature (Maya, Nahuatl, etc.) and other texts written in Spanish Colonial America through eighteenth century.

**Course Outcomes**

- Apply a variety of analytical and theoretical approaches to the study of early Spanish American writings as literature and as a reflection of the early cultures of the Spanish-speaking countries of the Americas.
- Demonstrate an ability to critically analyze early Spanish American literature through insightful in-class participation, oral presentations, and written assignments.
- Demonstrate a strong knowledge of a broad range of the important literary and historical texts of the early Spanish American period and of the historical and cultural contexts in which they were produced.

SPAN 451 : Survey of Hispanic-American Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department

PREREQUISITE: SPAN 339

DESCRIPTION: Literary masterpieces of Spanish America.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, literary theory as well as other critical and philosophical concepts which may apply to Spanish American literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Define and recognize the periods, significant authors, schools or movements of Spanish American literature.
- Recognize and value the contributions, past and present, of Spanish American literature to the cultures of its respective countries.
- Develop the habits and skills of lifelong readers of Spanish American literature.
- Demonstrate and apply a strong understanding of the basic structures of the Spanish language as they apply to literature.
- Write analytical and descriptive essays in Spanish that demonstrate an advanced knowledge of the works studied, a proper command of the Spanish language, mastery of the tools of literary criticism, and familiarity with research methodologies.

SPAN 454R : The Spanish American Novel. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Selected Spanish-American novelists such as Juan Rulfo, Gabriel Garcia Marquez, Alejo Carpentier, Mario Vargas-Llosa, etc.

**Course Outcomes**

There are no course outcomes available

SPAN 455R : Spanish-American Poetry. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Selected Spanish-American poets, movements, and national traditions.

**Course Outcomes**

- Demonstrate critical acuity in interpreting individual poems, making appropriate reference to formal poetic devices.
- Demonstrate a grasp of the historical, social, and literary contexts of the poems and poets studied.
- Express one's insights in a research paper which makes appropriate use of secondary sources.

SPAN 456R : Spanish American Drama. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Twentieth-century theatre from Spanish America and Brazil.

**Course Outcomes**

There are no course outcomes available

SPAN 458R : Hispanic-American Short Story. (3:3:0)

WHEN TAUGHT: Contact Department. Fall Odd Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Introduction and development of an important literary genre in Spanish America, including works of Jorge Luis Borges, Julio Cortazar, Juan Rulfo, Gabriel Garcia Marquez, etc.

**Course Outcomes**

- Master basic bibliographical techniques related to the short story genre.
- Demonstrate a firm grasp of the formal aspects of the short story genre.
- Gain a working knowledge of the history and principal figures of the Spanish American short story.

SPAN 459R : Special Topics in Spanish American Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Spring Even Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Specific topics in Latin American literature. Course content will vary each semester to offer optimum exposure to all areas of Latin American literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Spanish, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Spanish literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to special topics in Spanish-American Literature.

SPAN 461 : Spanish-Speaking American (Mexican-American) Literature. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Even Yrs.; Spring Contact Department; Summer Contact Department

PREREQUISITE: SPAN 451

DESCRIPTION: Spanish-English literature of the Mexican-American within the United States.

**Course Outcomes**

- Demonstrate thorough understanding of the history of Mexican-American literary history.
- Develop advanced skills in research techniques and academic writing.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Mexican-American Literature.

SPAN 477 : Techniques of Spanish Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: SPAN 321 & SPAN 326 & SPAN 345; or SPAN 321 & SPAN 326 & SPAN 355

DESCRIPTION: Techniques for teaching the four language skills and grammar, vocabulary, and culture; use of technology; assessing language achievement.

NOTE: For students not enrolled in Spanish teaching major or minor.

**Course Outcomes**

- Discuss basic theories of language teaching and learning.
- Plan Standards-based units and lessons, aligning assessments with learning objectives.
- Teach beginning-level vocabulary, grammar, culture, and the four skills (speaking, listening, reading, writing).
- Assess students' language and culture learning.

SPAN 480R : Directed Research in Spanish. (.5-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Written proposal subject to department approval.

DESCRIPTION: Under faculty member's direction, designing and conducting research project covering material not normally presented in regular course work. Research paper required.

NOTE: Total Span 480R credit toward bachelor's degree not to exceed 3 hours.

**Course Outcomes**

- Conduct advanced, independent research on a topic in Hispanic studies.

SPAN 490 : Senior Seminar in Spanish. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Senior standing.

DESCRIPTION: Bibliography, research, and writing of senior thesis.

NOTE: Recommended for students planning graduate studies in Spanish.

**Course Outcomes**

There are no course outcomes available

SPAN 520 : Problems in Spanish Grammar. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs., Contact Department; Spring Contact Department; Summer Even Yrs.
PREREQUISITE: SPAN 326; or SPAN 329
DESCRIPTION: Application of contemporary grammatical concepts to problems in Spanish grammar.

**Course Outcomes**

- The student enrolled in Problems in Spanish Grammar will carefully examine and formulate more accurate and complete rules for several recalcitrant grammar "problems" by reading and studying selections from grammarians and researchers who provide insights into the problem in question. The student's ability to synthesize coherent and meaningful generalizations will be objectively tested by exams and further evaluated while he or she participates in classroom discussion.
- The student enrolled in Problems in Spanish Grammar will acquire a greater understanding of both descriptive and prescriptive grammars and their function and limitations. The student will also acquire specialized terms employed by grammarians and morphosyntacticians. The student's ability to understand and use these terms appropriately will also be objectively measured by examination.
- Complete a research paper/presentation on a particular grammar point or construction. This assignment will test a student's ability to locate appropriate refereed sources, read and synthesize them and prepare a written document and oral presentation according to a recognized style manual.

SPAN 521 : Romance Philology. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 326; or SPAN 329
DESCRIPTION: Comparative study of the evolution of Latin into modern Romance languages.

**Course Outcomes**

- Situate Latin and the Romance Languages in their "external" (i.e. political and literary) historical context.
- Recognize the "laws" of regular phonological evolution (e.g. syncope, lenition, diphthongization, etc.).
- Compare the "major" (i.e. literary) Romance languages as far as their phonological development is concerned.
- Summarize the major lexical differences across Romance languages and some of the basic principles of etymology.
- Become familiar with articles published in professional journals relating to the subject matter and produce accurate and meaningful written summaries and reactions to them.
- Learn the rudiments of transcribing medieval or Renaissance manuscripts.

SPAN 522 : History of the Spanish Language. (3:3:0)
WHEN TAUGHT: Winter Even Yrs.; Summer Odd Yrs.
PREREQUISITE: SPAN 326; or SPAN 329
DESCRIPTION: Linguistic sources that contributed to formation of the Spanish language.

**Course Outcomes**

- Acquire a basic knowledge of the changes undergone by the nominal and verbal systems of Latin and Castilian (e.g. the demise of the case system, the development of new verbal tenses, etc.).
- Demonstrate the ability to summarize and discuss in a clear and concise manner several scholarly articles on the topic of the history of the Spanish language.
- Situate Latin and Castilian in their political and literary historical contexts.
- Recognize the laws of regular phonological development (e.g. syncope, lenition, diphthongization, etc.).
- Identify the sources of the Castilian lexicon.
- Understand the different theories that claim to understand the relation between Latin and the Romance languages, especially the relation between Latin and Castilian.
- Understand the process of linguistic standardization in Romance and its implications for the linguistic map of the Iberian Peninsula.

SPAN 529R : Special Topics in Spanish Linguistics. (3:3:0)
WHEN TAUGHT: Contact Department. Fall
PREREQUISITE: SPAN 326; or SPAN 329
DESCRIPTION: Topics include semantics, dialectology, and sociolinguistics.

**Course Outcomes**

- Read and analyze research articles related to special topic.
- Produce an original research paper/project centered on the theme of the seminar.

SPAN 599R : Academic Internship: Spanish Internship. (.5-3:0:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 321
NOTE: For supervised internship credit on BYU Study Abroad programs only.

**Course Outcomes**

- Successfully complete internship in a Spanish speaking country.

9. Complete the following:

SPAN 491 : Senior Proficiency Evaluation. (0:1:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Tool course to meet oral proficiency requirement for all majors and teaching minors.
NOTE: No major or minor credit.

**Course Outcomes**

- Receive an Advanced Low or better on the Oral Proficiency Interview.

**Note:** The Senior Proficiency Evaluation is taken in connection with Span 491. It is expected that Spanish majors will pass with an ACTFL rating of *advanced-low* or higher.

*Hours include courses that may fulfill university core requirements.

## Show all Spanish (Span) Courses

College of Humanities Home

Spanish and Portuguese Department Home

**Portuguese**

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

**Spanish**

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

**Faculty**

# BA in Spanish Teaching (60–88 hours minimum*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this major.*

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

1. The Spanish and Portuguese Department requires a minimum of 18 hours of upper-division major credit to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
2. Meet the foreign residency requirement.
3. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
4. A teaching minor in another subject is strongly recommended. Teaching opportunities in public schools may be significantly reduced without a second teaching subject that a teaching minor provides.
5. Complete the following prerequisite courses:

SPAN 101 : Foundational Spanish 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

NOTE: For students with no previous Spanish.

**Course Outcomes**

- Respond in Spanish to simple ques-tions on the most commonfeatures of daily life
- Convey minimal meaning tointerlocutors experiencedwith dealing with foreign-ers by using isolated words,lists of words, memorizedphrases and some personal-ized recombinations ofwords and phrases
- Satisfy a very limited num-ber of immediate needs through the use of spoken Spanish.
- Respond in written Spanish at the same level as indicated in outcomes related to speaking.
- Understand common basic cultural practices and products related to greetings and family life in some Spanish-speaking countries.

SPAN 102 : Foundational Spanish 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 101.

DESCRIPTION: Continuation of Span 101. Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

**Course Outcomes**

- Using Spanish, participate in simple, directconversations on generallypredictable topics related todaily activities and personalenvironment.
- Create with the languageand communicate personalmeaning to sympatheticinterlocutors by combininglanguage elements in dis-crete sentences and stringsof sentences.
- Obtain and give informationby asking and answeringquestions.
- Sustain and bring to a closea number of basic, uncom-plicated communicativeexchanges, mostly in a reac-tive mode.
- Satisfy simple personalneeds and social demandsto survive in the target lan-guage culture.
- Respond in written Spanish at the same level as indicated in preceding objectives related to spoken Spanish.
- Understand common basic cultural practices and products related to travel in some Spanish-speaking countries.

SPAN 105 : University Spanish 1. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Two years of high school Spanish or Span 101/102 or placement by diagnostic test.

DESCRIPTION: Continued development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational courses. Students are expected to attain an *Intermediate-Mid* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 106 : University Spanish 2. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 105.

DESCRIPTION: Expanded development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational and intermediate courses. Students are expected to attain an *Intermediate-Mid* to *Intermediate-High* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 111R : Spanish Conversation 1. (2:2.5:1)

RECOMMENDED: Concurrent enrollment in Span 105.

DESCRIPTION: Development of conversation skills in Spanish.

**Course Outcomes**

- Communicate orally in Spanish in specific speaking situations at the interpersonal level, which may include various personal or social situations.
- Understand main ideas and some facts from interactive exchanges and aural texts.
- Demonstrate awareness of cultures and backgrounds other than the student's own.
- Present orally to an audience a topic related to Hispanic cultural products, practices and events.
- Ability to read consistently with increased understanding simple, connected texts dealing with a variety of basic and social needs.

SPAN 112R : Spanish Conversation 2. (2:2.5:1)

RECOMMENDED: Concurrent enrollment in Span 106.

DESCRIPTION: Continued development of conversation skills in Spanish.

**Course Outcomes**

- Communicate orally in Spanish in specific speaking situations at the interpersonal level, which may include various personal or social situations.
- Understand main ideas and some facts from interactive exchanges and aural texts.
- Demonstrate awareness of cultures and backgrounds other than the student's own
- Present orally to an audience a topic related to Hispanic cultural products, practices and events.
- Ability to read consistently with increased understanding simple, connected texts dealing with a variety of basic and social needs.

SPAN 205 : University Spanish 3. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Four years of high school Spanish, Span 106, or placement by test.

DESCRIPTION: Continued development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain an *Intermediate-High* proficiency level.

NOTE: Fulfills the University Core Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Consolidate the student's understanding of the basic structures of the Spanish language and demonstrate intermediate proficiency in Spanish as defined by the American Council on the Teaching of Foreign Languages (ACTFL) proficiency guidelines for reading, writing, speaking, and listening.
- Provide students with a moderate knowledge of the Spanish language and cultures, thus broadening their perception of humanity and its varied manifestations.
- Interpret and analyze a selection of literary works in Spanish within their historical and cultural context.

SPAN 206 : University Spanish 4. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Spanish 205 or placement by test.

DESCRIPTION: Expanded development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain a strong *Intermediate-*

*High* or *Advanced-Low* proficiency level.

**Course Outcomes**

- Consolidate the student's command of the basic structures of the Spanish language.
- Develop literacy and oral language skills at the intermediate-advanced range.
- Obtain an adequate knowledge of the Spanish language and cultures through the study of selected perceptions and manifestations.
- Understanding the natural speech of native speakers from any Spanish-speaking country and interpret the general idea in their proper cultural background.

**Note 1:** Students with foreign residence experience usually begin with Span 321.

**Note 2:** Prerequisite courses may be waived for those having sufficient proficiency with the language.

6. Complete the following:

SPAN 321 : Third-Year Spanish Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Placement by test.
DESCRIPTION: Intensive study and practice with Spanish grammar, vocabulary, and writings incorporating cultural and literary readings.
NOTE: First class for returned Spanish-speaking missionaries. Fullfills the University Core Languages of Learning requirement. Required for Spanish major and minor.

**Course Outcomes**

There are no course outcomes available

SPAN 322 : Third-Year Spanish Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: SPAN 321
DESCRIPTION: Study and practice of different writing styles, developing research skills.
NOTE: Strongly recommended for students continuing on to a graduate program.

**Course Outcomes**

- Demonstrate competence in writing a variety of genre types in Spanish that conform to the "advanced" level as described in the ACTFL proficiency guidelines.

SPAN 326 : Spanish Phonetics and Pronunciation. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: SPAN 321
DESCRIPTION: Spanish sound system; underlying concepts of Spanish speech production and applications to pronunciation.

**Course Outcomes**

- Students who successfully complete this class will:Understand the basic concepts of articulatory phonetics and phonology;
- Understand how the sounds of standard Spanish are pronounced;
- Be able to transcribe phonetically both oral and written texts in Spanish;

SPAN 339 : Introduction to Spanish Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Readings in modern Hispanic literatures, focusing on formal literary analysis.
NOTE: Course is prerequisite to 400-level literature courses.

**Course Outcomes**

- Demonstrate a working knowledge of the most salient elements of the most important literary genres, including, for example, short story, novel, poetry, theater, essay, and film.
- Students will demonstrate a mastery of basic tools of literary analysis, including versification and basic elements of narratology, and interpretation through the study of a variety of works from authors from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstrate the ability to speak and write in Spanish about literature with a reasonable degree of grammatical correctness and fluency.

SPAN 345 : Iberian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spain.

**Course Outcomes**

- Students will be able to describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe and analyze historical periods and current events (e.g., political, social, artistic, and religious developments).
- Recognize and describe important cultural products (e.g., art, literature, architecture, and music,

including important works and individuals), cultural institutions (e.g., family, religion, education, and government), and cultural practices (e.g., customs related to birth, marriage, death, holidays, and traditions).
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

SPAN 355 : Spanish American Culture and Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Culture, history, art, music, and traditions of Spanish America.

**Course Outcomes**

There are no course outcomes available

SPAN 377 : Spanish Teaching Methods 1. (3:3:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SPAN 321 & SPAN 326 & SPAN 345; or SPAN 321 & SPAN 326 & SPAN 355; Spanish Teaching major or minor status.

DESCRIPTION: History of language teaching methods; standards-based unit and lesson planning; strategies for teaching speaking, listening, reading, writing, grammar, and vocabulary.

**Course Outcomes**

- explain the benefits of studying a foreign language
- discuss major historical trends in foreign language teaching
- discuss ways of setting up your classroom to motivate students to learn Spanish
- select and evaluate textbooks for your program
- use the Standards for Foreign Language Learning to plan units and lessons
- plan and implement various methods for teaching oral skills (including pronunciation, conversation, games, and songs)
- plan and implement methods for teaching listening, reading, and writing
- plan and implement methods for teaching grammar and vocabulary

SPAN 378 : Spanish Teaching Methods 2. (3:3:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SPAN 377

DESCRIPTION: Strategies for teaching culture; use of instructional media and technology; assessment of learner performance; foreign language program models; planning for continuing professional development.

**Course Outcomes**

- Use professional reading to develop a research-based repertoire of instructional strategies that help secondary students meet each of the National Standards for Foreign Language Learning
- Design units, lessons, and activities that develop students' proficiency in Spanish across the three modes of communication
- Contextualize language learning experiences in cultural products, practices, and perspectives using various techniques for teaching and assessing culture learning
- Develop and adapt assessments to evaluate students' proficiency and provide them with feedback that will improve their performance
- Utilize a variety of emerging technologies to enhance instruction, develop language proficiency and cultural competence, improve your professional productivity, and support your professional
- Adapt learning experiences appropriately to better meet the needs of culturally diverse learners, including students with a variety of learning styles and special needs
- Compare and contrast various program models for world language learning
- Participate professionally in the school community, in professional organizations and professional development activities, and engage in professional dialogue and reflection with colleagues to improve teaching skills and your program

SPAN 380 : Practicum in Teaching Spanish. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SPAN 377; concurrent enrollment in Span 378; Spanish Teaching major status.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students in Spanish; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Craft meaningful, standards-based, developmentally and contextually appropriate language learning experiences in Spanish for students
- Contextualize language learning experiences in cultural products, practices, and perspectives using various techniques for engaging students in critical thinking and problem-solving regarding culture
- Use informal assessments to evaluate students' understanding
- Engage in professional dialogue and reflection with your mentor teacher to improve your own professional practice

SPAN 441 : Survey of Spanish Literature. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: SPAN 339

DESCRIPTION: Literary masterpieces of Spain.

**Course Outcomes**

There are no course outcomes available

SPAN 451 : Survey of Hispanic-American Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department

PREREQUISITE: SPAN 339

DESCRIPTION: Literary masterpieces of Spanish America.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, literary theory as well as other critical and philosophical concepts which may apply to Spanish American literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Define and recognize the periods, significant authors, schools or movements of Spanish American literature.
- Recognize and value the contributions, past and present, of Spanish American literature to the cultures of its respective countries.
- Develop the habits and skills of lifelong readers of Spanish American literature.
- Demonstrate and apply a strong understanding of the basic structures of the Spanish language as they apply to literature.
- Write analytical and descriptive essays in Spanish that demonstrate an advanced knowledge of the works studied, a proper command of the Spanish language, mastery of the tools of literary criticism, and familiarity with research methodologies.

**Note:** Span 377 and 378 must be taken before student teaching.

7. Complete 6 hours from the following courses:

SPAN 329 : Survey of Hispanic Linguistics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer, Contact Department

PREREQUISITE: SPAN 321

DESCRIPTION: Introduction to linguistics of Spanish: phonetics, phonology, morphology, syntax, semantics, history of the Spanish language, philology, dialectology, sociolinguistics, and psycholinguistics.

**Course Outcomes**

- The objective of this course is to introduce students to the basic fields of linguistic study within the Hispanic context. Students should be able to identify and explain issues of phonetics, phonology, morphology, syntax, semantics, and types of variation as found in oral and written language.

SPAN 365 : Mexican-American Culture. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Contemporary culture (education, popular and fine arts, worldview, attitudes, etc.) of the Mexican-American in the U.S.

**Course Outcomes**

- Recognize and describe important cultural products, such as art, literature, architecture, and music, including important works and individuals, as pertaining to Mexican American culture.
- Describe important cultural institutions, including family and religion.
- Discuss important cultural practices, including customs, traditions, celebrations, festivals, etc
- Analyze recent cultural and social developments, including political, social, religious, and artistic events, placing them in historical context.
- Students should be able to recognize, compare, and evaluate the influence of their own cultural background on their attitudes, beliefs, and worldview, in relation to the Mexican- American world.

SPAN 395R : Contemporary Culture. (.5-3:ARR:ARR)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Contemporary Spanish (or Spanish- American) culture: the people and their customs and institutions.

NOTE: For Study Abroad programs only.

**Course Outcomes**

- Through a series of cultural proofs (visits, interviews, observations), develop a familiarity with the host culture at the level of the individual.
- Through readings, develop a familiarity with macro forces (historical, political, economical) that have shaped the host culture.

SPAN 421 : Fourth-Year Grammar. (3:3:0)

WHEN TAUGHT: Contact Department. Fall

PREREQUISITE: SPAN 321

DESCRIPTION: Fourth-year study of Spanish grammar and usage.

**Course Outcomes**

- Recognize stylistic errors in Spanish composition and acquire the necessary strategies for their

correction.
- Improve the knowledge of syntactic structures of Spanish.
- Enrich passive and active vocabularies of Spanish.
- Demonstrate competence in writing short essays in Spanish that conform to the "advanced" level as described in the ACTFL proficiency guidelines.
- Improve listening comprehension of authentic Spanish sources.

SPAN 423 : Border Spanish. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Span 326 or Span 329.
DESCRIPTION: Mexican-American speech patterns, including language contact and bilingualism.
NOTE: Previous course in linguistics strongly recommended.

**Course Outcomes**

- Students will demonstrate a knowledge of principal features of (Mexican-American) Popular Spanish in terms of semantics, morphosyntax, and phonetics/phonology.
- Students will understand and be able to describe succinctly S-E bilingual contact phenomena, such as borrowing, code-switching, and language maintenance/shift.
- Students will gain a greater understanding of and appreciation for Mexicans and Mexican-Americans living in the U.S.

SPAN 425 : Contrastive Analysis of the Structures of Spanish and English. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Span 326 or Span 329.
DESCRIPTION: Contrastive analysis of phonology, morphology, syntax, and semantics of Spanish and English.

**Course Outcomes**

- Students will be able to explain the chief differences and similarities between the structures of the English and Spanish languages.
- Learn the basic principles of Spanish phonology, morphology (both derivational and inflectional), syntax and sociolinguistics.
- Learn what the assumptions of modern linguistics are (e.g., natural language is based on the use of signs; language is a social phenomenon; oral language takes precedence over written language; linguistics is descriptive, not prescriptive; variation is intrinsic to language; language is highly structured; there are linguistic universals; etc.)
- Be able to solve linguistic problems in the teaching and learning of a second language.

SPAN 429R : Special Topics in Spanish Linguistics. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 326; or SPAN 329
DESCRIPTION: Course content varies yearly; focuses on specific area of linguistics such as dialectology or sociolinguistics.

**Course Outcomes**

There are no course outcomes available

: Dialectology.

**Course Outcomes**

: Sociolinguistics.

**Course Outcomes**

: Language Planning.

**Course Outcomes**

: Bilingualism.

**Course Outcomes**

: Syntax.

**Course Outcomes**

: Semantics.

**Course Outcomes**

SPAN 430R : Special Topics in Hispanic Culture. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Span 322 or concurrent enrollment.
DESCRIPTION: Regional and thematic approaches to Hispanic culture. Subject matter will vary.

**Course Outcomes**

There are no course outcomes available

SPAN 438 : Hispanic Cinema. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 339
DESCRIPTION: Introduction to study of film; background in appreciating best of motion picture art in Spain and Spanish America.
NOTE: Previous experience with film useful but not required.

**Course Outcomes**

- Students will demonstrate a mastery of basic tools of film analysis through the study of a variety of films from the various film industries from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstate the ability to speak and write in Spanish about film with a reasonable degree of grammatical correctness and fluency.

SPAN 439R : Hispanic Theatre Production. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Director's consent
DESCRIPTION: Theory and practice of dramatic performance. Includes participation in play to be performed during semester.
NOTE: No more than 3 hours of 439R credit may count toward any degree.

**Course Outcomes**

There are no course outcomes available

SPAN 440 : Medieval Spanish Literature. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: SPAN 441
DESCRIPTION: Spanish literature from *El Cantar de Mio Cid* (1140) through *La Celestina* (1499).

**Course Outcomes**

There are no course outcomes available

SPAN 443R : Golden Age Literature. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.; Spring
PREREQUISITE: SPAN 441
DESCRIPTION: Sixteenth- and seventeenth-century Spanish literature.

**Course Outcomes**

- Students will be able to demonstrate knowledge about one or more authors from the 16th and/or 17th centuries.
- Students will be able to analyze the texts studied in terms of the historical, cultural, and literary context of the Early Modern world.
- Students will be able to describe, analyze and discuss one or more of the genres of Early Modern Spanish literature and the conventions connected with the genre(s).
- Students will strengthen their research and writing skills by producing essays about, editions of, and/or translations of 16th and 17th-century Spanish texts.
- Students will develop the skills necessary to appreciate and enjoy reading Early Modern Spanish texts.

SPAN 444 : *Don Quijote.* (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
PREREQUISITE: SPAN 441
DESCRIPTION: In-depth study of Cervantes' *El ingenioso hidalgo don Quijote de la Mancha*.

**Course Outcomes**

- Students will read Don Quijote de la Mancha in its original version, taking into account plot and character development, symbolism, cultural and literary context, literary antecedents, and subsequent influence.
- Students will comment on different strategies for reading, writing and translating (using critical vocabulary) as discussed in the Quijote, and will explain the different critical stances, including the "hard" perspective and the "soft" perspective.
- Students will trace the stylistic innovations introduced by Cervantes in the Quijote, and its intersections with other genres (e.g. theater, poetry).
- Students willanswer the question of whether el Quijote really is the first modern novel as many claim it to be. Students will identify and analyze episodes in the novel that display realism and metafiction, and will recognize the impact the Quijote has had on the development of these modes in the subsequent development of the western novel.

SPAN 446R : Nineteenth-Century Literature. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 441
DESCRIPTION: Romanticism (1770s through 1870s) and/or the novels of Benito Perez Galdos and his contemporaries.

**Course Outcomes**

There are no course outcomes available

SPAN 448R : Twentieth-Century Spanish Literature. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: SPAN 441

DESCRIPTION: Genre (twentieth-century novel, drama, or poetry) or particular school (Generation of 1898, Generation of 1927, etc.) emphasized.

**Course Outcomes**

- Demonstrate thorough understanding of twentieth-century Spanish literary history.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to 20th-century Spanish Literature.

SPAN 449R : Special Topics in Spanish Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Summer Even Yrs.

PREREQUISITE: SPAN 441

DESCRIPTION: Specific topics in Spanish (peninsular) literature. Course content will vary each semester to offer optimum exposure to all areas of Spanish literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Spanish, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Spanish literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to special topics in Spanish Literature.

SPAN 450R : Early Spanish-American Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Winter Even Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Indigenous literature (Maya, Nahuatl, etc.) and other texts written in Spanish Colonial America through eighteenth century.

**Course Outcomes**

- Apply a variety of analytical and theoretical approaches to the study of early Spanish American writings as literature and as a reflection of the early cultures of the Spanish-speaking countries of the Americas.
- Demonstrate an ability to critically analyze early Spanish American literature through insightful in-class participation, oral presentations, and written assignments.
- Demonstrate a strong knowledge of a broad range of the important literary and historical texts of the early Spanish American period and of the historical and cultural contexts in which they were produced.

SPAN 454R : The Spanish American Novel. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Selected Spanish-American novelists such as Juan Rulfo, Gabriel Garcia Marquez, Alejo Carpentier, Mario Vargas-Llosa, etc.

**Course Outcomes**

There are no course outcomes available

SPAN 455R : Spanish-American Poetry. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Selected Spanish-American poets, movements, and national traditions.

**Course Outcomes**

- Demonstrate critical acuity in interpreting individual poems, making appropriate reference to formal poetic devices.
- Demonstrate a grasp of the historical, social, and literary contexts of the poems and poets studied.
- Express one's insights in a research paper which makes appropriate use of secondary sources.

SPAN 456R : Spanish American Drama. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Twentieth-century theatre from Spanish America and Brazil.

**Course Outcomes**

There are no course outcomes available

SPAN 458R : Hispanic-American Short Story. (3:3:0)

WHEN TAUGHT: Contact Department. Fall Odd Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Introduction and development of an important literary genre in Spanish America, including works of Jorge Luis Borges, Julio Cortazar, Juan Rulfo, Gabriel Garcia Marquez, etc.

**Course Outcomes**

- Master basic bibliographical techniques related to the short story genre.
- Demonstrate a firm grasp of the formal aspects of the short story genre.
- Gain a working knowledge of the history and principal figures of the Spanish American short story.

SPAN 459R : Special Topics in Spanish American Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Spring Even Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Specific topics in Latin American literature. Course content will vary each semester to offer optimum exposure to all areas of Latin American literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Spanish, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Spanish literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to special topics in Spanish-American Literature.

SPAN 461 : Spanish-Speaking American (Mexican-American) Literature. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Even Yrs.; Spring Contact Department; Summer Contact Department

PREREQUISITE: SPAN 451

DESCRIPTION: Spanish-English literature of the Mexican-American within the United States.

**Course Outcomes**

- Demonstrate thorough understanding of the history of Mexican-American literary history.
- Develop advanced skills in research techniques and academic writing.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Mexican-American Literature.

SPAN 480R : Directed Research in Spanish. (.5-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Written proposal subject to department approval.

DESCRIPTION: Under faculty member's direction, designing and conducting research project covering material not normally presented in regular course work. Research paper required.

NOTE: Total Span 480R credit toward bachelor's degree not to exceed 3 hours.

**Course Outcomes**

- Conduct advanced, independent research on a topic in Hispanic studies.

SPAN 490 : Senior Seminar in Spanish. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Senior standing.

DESCRIPTION: Bibliography, research, and writing of senior thesis.

NOTE: Recommended for students planning graduate studies in Spanish.

**Course Outcomes**

There are no course outcomes available

SPAN 520 : Problems in Spanish Grammar. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs., Contact Department; Spring Contact Department; Summer Even Yrs.

PREREQUISITE: SPAN 326; or SPAN 329

DESCRIPTION: Application of contemporary grammatical concepts to problems in Spanish grammar.

**Course Outcomes**

- The student enrolled in Problems in Spanish Grammar will carefully examine and formulate more accurate and complete rules for several recalcitrant grammar “problems” by reading and studying selections from grammarians and researchers who provide insights into the problem in question. The student’s ability to synthesize coherent and meaningful generalizations will be objectively tested by exams and further evaluated while he or she participates in classroom discussion.
- The student enrolled in Problems in Spanish Grammar will acquire a greater understanding of both descriptive and prescriptive grammars and their function and limitations. The student will also acquire specialized terms employed by grammarians and morphosyntacticians. The student’s ability to understand and use these terms appropriately will also be objectively measured by examination.
- Complete a research paper/presentation on a particular grammar point or construction. This assignment will test a student’s ability to locate appropriate refereed sources, read and synthesize them and prepare a written document and oral presentation according to a recognized style manual.

SPAN 521 : Romance Philology. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 326; or SPAN 329

DESCRIPTION: Comparative study of the evolution of Latin into modern Romance languages.

**Course Outcomes**

- Situate Latin and the Romance Languages in their "external" (i.e. political and literary) historical context.
- Recognize the "laws" of regular phonological evolution (e.g. syncope, lenition, diphthongization, etc.).
- Compare the "major" (i.e. literary) Romance languages as far as their phonological development is concerned.
- Summarize the major lexical differences across Romance languages and some of the basic principles of etymology.
- Become familiar with articles published in professional journals relating to the subject matter and produce accurate and meaningful written summaries and reactions to them.
- Learn the rudiments of transcribing medieval or Renaissance manuscripts.

SPAN 522 : History of the Spanish Language. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.; Summer Odd Yrs.

PREREQUISITE: SPAN 326; or SPAN 329

DESCRIPTION: Linguistic sources that contributed to formation of the Spanish language.

**Course Outcomes**

- Acquire a basic knowledge of the changes undergone by the nominal and verbal systems of Latin and Castilian (e.g. the demise of the case system, the development of new verbal tenses, etc.).
- Demonstrate the ability to summarize and discuss in a clear and concise manner several scholarly articles on the topic of the history of the Spanish language.
- Situate Latin and Castilian in their political and literary historical contexts.
- Recognize the laws of regular phonological development (e.g. syncope, lenition, diphthongization, etc.).
- Identify the sources of the Castilian lexicon.
- Understand the different theories that claim to understand the relation between Latin and the Romance languages, especially the relation between Latin and Castilian.
- Understand the process of linguistic standardization in Romance and its implications for the linguistic map of the Iberian Peninsula.

SPAN 529R : Special Topics in Spanish Linguistics. (3:3:0)

WHEN TAUGHT: Contact Department. Fall

PREREQUISITE: SPAN 326; or SPAN 329

DESCRIPTION: Topics include semantics, dialectology, and sociolinguistics.

**Course Outcomes**

- Read and analyze research articles related to special topic.
- Produce an original research paper/project centered on the theme of the seminar.

8. Complete the following:

SPAN 491 : Senior Proficiency Evaluation. (0:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Tool course to meet oral proficiency requirement for all majors and teaching minors.

NOTE: No major or minor credit.

**Course Outcomes**

- Receive an Advanced Low or better on the Oral Proficiency Interview.

**Note:** The Senior Proficiency Evaluation is taken in connection with Span 491. Before applying to student teach, achieve a minimum OPI rating of *advanced-low* to obtain Utah state licensure and to graduate.

9. Complete the Professional Education Component:
   - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the

implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

FLANG 276 : Exploration of Teaching Foreign Languages. (4:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Field-based exposure to practices, demands, and issues associated with teaching foreign languages in public secondary schools.

**Course Outcomes**

- Determine if pursuing a personal career in foreign language teaching in public secondary schools is the correct decision.
- Have a developing awareness of what foreign-language students should know and be able to do and of good foreign-language teaching practice.
- Discuss the public purposes of education, related social and political issues, and the benefits of speaking a foreign language.
- Articulate personal motivations for becoming a teacher, as well as recognize potential strengths and weaknesses as a teacher.

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.

DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

**Note:** FBI fingerprint and background clearance must be completed before enrollment in FLang 276.

- Complete 12 hours of one of the following:

SPAN 476 : Secondary Spanish Student Teaching. (12:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Span 377, 378, and 380.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Critically integrate professional readings, coursework, and teaching experiences into a repertoire of options for professional thought and action
- Improve your Spanish language proficiency, your cultural understanding, and your ability to help students see patterns in the language.
- Craft standards-based, developmentally and contextually appropriate, meaningful learning experiences in Spanish that support the growth of students' language proficiency
- Contextualize language learning experiences in cultural products, practices, and perspectives and use various techniques for engaging students in critical thinking and problem-solving regarding culture

- Utilize a variety of communication techniques and emerging technologies to foster active inquiry and collaboration in the classroom, to develop language proficiency and cultural competence, to foster students' intrinsic motivation, and to support your own professional productivity and growth
- Develop and adapt a variety of traditional and alternative assessments (including performance-based assessments, portfolios, projects, and self-assessments) to inform instruction, to evaluate students' proficiency across all three modes of communication, to provide feedback that will improve student performance, and to report student progress
- Participate professionally in the school community, in professional organizations and professional development activities, and engage in professional dialogue and reflection with colleagues and community agencies to support students, improve your teaching, and strengthen your program
- Adapt learning experiences appropriately to better meet the needs of culturally diverse learners, including students with a variety of learning styles and special needs

SPAN 496 : Secondary Spanish Teaching Internship. (12:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Span 377, 378, and 380.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Critically integrate professional readings, coursework, and teaching experiences into a repertoire of options for professional thought and action
- Improve your Spanish language proficiency, your cultural understanding, and your ability to help students see patterns in the language.
- Craft standards-based, developmentally and contextually appropriate, meaningful learning experiences in Spanish that support the growth of students' language proficiency
- Adapt learning experiences appropriately to better meet the needs of culturally diverse learners, including students with a variety of learning styles and special needs
- Contextualize language learning experiences in cultural products, practices, and perspectives and use various techniques for engaging students in critical thinking and problem-solving regarding culture
- Utilize a variety of communication techniques and emerging technologies to foster active inquiry and collaboration in the classroom, to develop language proficiency and cultural competence, to foster students' intrinsic motivation, and to support your own professional productivity and growth
- Develop and adapt a variety of traditional and alternative assessments (including performance-based assessments, portfolios, projects, and self-assessments) to inform instruction, to evaluate students' proficiency across all three modes of communication, to provide feedback that will improve student performance, and to report student progress
- Participate professionally in the school community, in professional organizations and professional development activities, and engage in professional dialogue and reflection with colleagues and community agencies to support students, improve your teaching, and strengthen your program

*Hours include courses that may fulfill university core requirements.

## Show all Spanish (Span) Courses

College of Humanities Home

Spanish and Portuguese Department Home

**Portuguese**

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

**Spanish**

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

**Faculty**

# BA in Spanish Translation (51–85 hours minimum*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. The Spanish and Portuguese Department requires a minimum of 18 hours of upper-division major credit to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
2. Meet the foreign residency requirement.
3. Complete a minor (approximately 16–21 hours), second major (approximately 30–60 hours), or supporting course work (15 hours).
4. Complete the following prerequisite courses:

SPAN 101 : Foundational Spanish 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

NOTE: For students with no previous Spanish.

**Course Outcomes**

- Respond in Spanish to simple ques-tions on the most commonfeatures of daily life
- Convey minimal meaning tointerlocutors experiencedwith dealing with foreign-ers by using isolated words,lists of words, memorizedphrases and some personal-ized recombinations ofwords and phrases
- Satisfy a very limited num-ber of immediate needs through the use of spoken Spanish.
- Respond in written Spanish at the same level as indicated in outcomes related to speaking.
- Understand common basic cultural practices and products related to greetings and family life in some Spanish-speaking countries.

SPAN 102 : Foundational Spanish 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 101.

DESCRIPTION: Continuation of Span 101. Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

**Course Outcomes**

- Using Spanish, participate in simple, directconversations on generallypredictable topics related todaily activities and personalenvironment.
- Create with the languageand communicate personalmeaning to sympatheticinterlocutors by combininglanguage elements in dis-crete sentences and stringsof sentences.
- Obtain and give informationby asking and answeringquestions.
- Sustain and bring to a closea number of basic, uncom-plicated communicativeexchanges, mostly in a reac-tive mode.
- Satisfy simple personalneeds and social demandsto survive in the target lan-guage culture.
- Respond in written Spanish at the same level as indicated in preceding objectives related to spoken Spanish.
- Understand common basic cultural practices and products related to travel in some Spanish-speaking countries.

SPAN 105 : University Spanish 1. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Two years of high school Spanish or Span 101/102 or placement by diagnostic test.

DESCRIPTION: Continued development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational courses. Students are expected to attain an *Intermediate-Mid* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.

- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 106 : University Spanish 2. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 105.

DESCRIPTION: Expanded development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational and intermediate courses. Students are expected to attain an *Intermediate-Mid* to *Intermediate-High* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 111R : Spanish Conversation 1. (2:2.5:1)

RECOMMENDED: Concurrent enrollment in Span 105.

DESCRIPTION: Development of conversation skills in Spanish.

**Course Outcomes**

- Communicate orally in Spanish in specific speaking situations at the interpersonal level, which may include various personal or social situations.
- Understand main ideas and some facts from interactive exchanges and aural texts.
- Demonstrate awareness of cultures and backgrounds other than the student's own.
- Present orally to an audience a topic related to Hispanic cultural products, practices and events.
- Ability to read consistently with increased understanding simple, connected texts dealing with a variety of basic and social needs.

SPAN 112R : Spanish Conversation 2. (2:2.5:1)

RECOMMENDED: Concurrent enrollment in Span 106.

DESCRIPTION: Continued development of conversation skills in Spanish.

**Course Outcomes**

- Communicate orally in Spanish in specific speaking situations at the interpersonal level, which may include various personal or social situations.
- Understand main ideas and some facts from interactive exchanges and aural texts.
- Demonstrate awareness of cultures and backgrounds other than the student's own
- Present orally to an audience a topic related to Hispanic cultural products, practices and events.
- Ability to read consistently with increased understanding simple, connected texts dealing with a variety of basic and social needs.

SPAN 205 : University Spanish 3. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Four years of high school Spanish, Span 106, or placement by test.

DESCRIPTION: Continued development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain an *Intermediate-High* proficiency level.

NOTE: Fulfills the University Core Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Consolidate the student's understanding of the basic structures of the Spanish language and demonstrate intermediate proficiency in Spanish as defined by the American Council on the Teaching of Foreign Languages (ACTFL) proficiency guidelines for reading, writing, speaking, and listening.
- Provide students with a moderate knowledge of the Spanish language and cultures, thus broadening their perception of humanity and its varied manifestations.
- Interpret and analyze a selection of literary works in Spanish within their historical and cultural context.

SPAN 206 : University Spanish 4. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Spanish 205 or placement by test.

DESCRIPTION: Expanded development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain a strong *Intermediate-High* or *Advanced-Low* proficiency level.

**Course Outcomes**

- Consolidate the student's command of the basic structures of the Spanish language.
- Develop literacy and oral language skills at the intermediate-advanced range.
- Obtain an adequate knowledge of the Spanish language and cultures through the study of selected perceptions and manifestations.
- Understanding the natural speech of native speakers from any Spanish-speaking country and interpret

the general idea in their proper cultural background.

**Note 1:** Students with foreign residence experience usually begin with Span 321.

**Note 2:** These prerequisite courses may be waived for those having sufficient proficiency with the language.

**Note 3:** Students wishing to major in Spanish translation and interpretation must apply for admission to the program and pass an entrance exam in Spanish and English. Contact the department secretary the first week of February each year to obtain the official date and place of exam.

**Note 4:** Latin American Studies majors or minors: Span 321, 339, 345 or 355, and 441 or 451 meet requirements for both the Spanish translation major and the area studies minor. Only one of these courses may be double-counted (applied to both the major and the minor). Students wishing to complete a Spanish major and one of these area studies minors must take an additional 6–9 hours chosen from the approved electives for either major or minor. Consult the department and the advisement center for clarification of the choices available.

5. Complete the following:

LING 480 : Problems in Translation. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: For Fall 2013 & forward admits, Ling 230 and proficiency in a second language.
DESCRIPTION: History, theory, and practice of human and machine translation.

**Course Outcomes**

- Discuss the possible future of translation technology, including future applications of existing technology and future development of new technologies, drawing on class assignments and a personal project.
- Create a bi-text corpus and derive translation memory and terminology from that bi-text corpus.
- Define a set of specifications for a translation project based on text type, audience, and purpose.
- Use machine translation, translation memory, and terminology in conjunction with a translation environment tool to complete a translation project according to the project's specifications.

SPAN 321 : Third-Year Spanish Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Placement by test.
DESCRIPTION: Intensive study and practice with Spanish grammar, vocabulary, and writings incorporating cultural and literary readings.
NOTE: First class for returned Spanish-speaking missionaries. Fullfills the University Core Languages of Learning requirement. Required for Spanish major and minor.

**Course Outcomes**

There are no course outcomes available

SPAN 322 : Third-Year Spanish Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: SPAN 321
DESCRIPTION: Study and practice of different writing styles, developing research skills.
NOTE: Strongly recommended for students continuing on to a graduate program.

**Course Outcomes**

- Demonstrate competence in writing a variety of genre types in Spanish that conform to the "advanced" level as described in the ACTFL proficiency guidelines.

SPAN 329 : Survey of Hispanic Linguistics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer, Contact Department
PREREQUISITE: SPAN 321
DESCRIPTION: Introduction to linguistics of Spanish: phonetics, phonology, morphology, syntax, semantics, history of the Spanish language, philology, dialectology, sociolinguistics, and psycholinguistics.

**Course Outcomes**

- The objective of this course is to introduce students to the basic fields of linguistic study within the Hispanic context. Students should be able to identify and explain issues of phonetics, phonology, morphology, syntax, semantics, and types of variation as found in oral and written language.

SPAN 339 : Introduction to Spanish Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Readings in modern Hispanic literatures, focusing on formal literary analysis.
NOTE: Course is prerequisite to 400-level literature courses.

**Course Outcomes**

- Demonstrate a working knowledge of the most salient elements of the most important literary genres, including, for example, short story, novel, poetry, theater, essay, and film.
- Students will demonstrate a mastery of basic tools of literary analysis, including versification and basic elements of narratology, and interpretation through the study of a variety of works from authors from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstrate the ability to speak and write in Spanish about literature with a reasonable

degree of grammatical correctness and fluency.

SPAN 421 : Fourth-Year Grammar. (3:3:0)
WHEN TAUGHT: Contact Department. Fall
PREREQUISITE: SPAN 321
DESCRIPTION: Fourth-year study of Spanish grammar and usage.

**Course Outcomes**

- Recognize stylistic errors in Spanish composition and acquire the necessary strategies for their correction.
- Improve the knowledge of syntactic structures of Spanish.
- Enrich passive and active vocabularies of Spanish.
- Demonstrate competence in writing short essays in Spanish that conform to the "advanced" level as described in the ACTFL proficiency guidelines.
- Improve listening comprehension of authentic Spanish sources.

SPAN 441 : Survey of Spanish Literature. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: SPAN 339
DESCRIPTION: Literary masterpieces of Spain.

**Course Outcomes**

There are no course outcomes available

OR
SPAN 451 : Survey of Hispanic-American Literature. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
PREREQUISITE: SPAN 339
DESCRIPTION: Literary masterpieces of Spanish America.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, literary theory as well as other critical and philosophical concepts which may apply to Spanish American literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Define and recognize the periods, significant authors, schools or movements of Spanish American literature.
- Recognize and value the contributions, past and present, of Spanish American literature to the cultures of its respective countries.
- Develop the habits and skills of lifelong readers of Spanish American literature.
- Demonstrate and apply a strong understanding of the basic structures of the Spanish language as they apply to literature.
- Write analytical and descriptive essays in Spanish that demonstrate an advanced knowledge of the works studied, a proper command of the Spanish language, mastery of the tools of literary criticism, and familiarity with research methodologies.

6. Complete one course from the following:
SPAN 345 : Iberian Civilization. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spain.

**Course Outcomes**

- Students will be able to describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe and analyze historical periods and current events (e.g., political, social, artistic, and religious developments).
- Recognize and describe important cultural products (e.g., art, literature, architecture, and music, including important works and individuals), cultural institutions (e.g., family, religion, education, and government), and cultural practices (e.g., customs related to birth, marriage, death, holidays, and traditions).
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

SPAN 355 : Spanish American Culture and Civilization. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spanish America.

**Course Outcomes**

There are no course outcomes available

7. Complete the following courses in sequence:
SPAN 415A : Beginning Translation and Interpretation, English to Spanish. (1.5:3:1)
PREREQUISITE: SPAN 321 & SPAN 322

DESCRIPTION: Introduction to history, theory, and principles of translation and interpretation dealing specifically in English to Spanish.

**Course Outcomes**

- Explain and apply methods for resolving common translation problems
- Demonstrate the ability to translate basic texts, such as newspaper articles
- Apply the research skills needed to translate texts required by this course
- Use published research to analyze translator-training programs

SPAN 415B : Beginning Translation and Interpretation, Spanish to English. (1.5:3:1)

PREREQUISITE: SPAN 415A

DESCRIPTION: Introduction to history, theory, and principles of translation and interpretation, dealing specifically in Spanish to English.

**Course Outcomes**

- Explain and apply methods for resolving common translation problems
- Demonstrate the ability to translate basic texts, such as newspaper articles
- Apply the research skills needed to translate texts required by this course
- Use published research to analyze translator-training programs

SPAN 416A : Intermediate Translation and Interpretation, English to Spanish. (1.5:3:1)

PREREQUISITE: SPAN 415B

DESCRIPTION: Systematic study and contrastive exercises in translation and interpretation from English to Spanish. Translation of texts in general conceptual fields.

**Course Outcomes**

- Demonstrate the ability to interpret speeches on general topics
- Demonstrate the ability to translate technical texts—legal, medical, commercial—of moderate difficulty
- Apply the research skills needed to translate texts required by this course
- Apply principles of logic to evaluate arguments in different kinds of texts

SPAN 416B : Intermediate Translation and Interpretation, Spanish to English. (1.5:3:1)

PREREQUISITE: SPAN 416A

DESCRIPTION: Systematic study and contrastive exercises in translation and interpretation from Spanish to English. Translation of texts in general conceptual fields.

**Course Outcomes**

- Apply principles of logic to evaluate arguments in different kinds of texts
- Demonstrate the ability to translate technical texts—legal, medical, commercial—of moderate difficulty
- Apply the research skills needed to translate texts required by this course
- Apply principles of logic to evaluate arguments in different kinds of texts

SPAN 417A : Advanced Translation and Interpretation, English to Spanish. (1.5:3:1)

PREREQUISITE: SPAN 416B

DESCRIPTION: Translation of texts in specific fields. Simultaneous interpretation. From English to Spanish.

**Course Outcomes**

- Demonstrate the ability to interpret speeches on topics—legal, medical, commercial—requiring some specialized knowledge
- Demonstrate the ability to translate technical texts—literary, legal, medical, commercial, scientific—that would typically be found in academic journals
- Apply the research skills needed to translate texts required by this course
- Demonstrate an understanding of how translation theory has developed, particularly since the 1900s

SPAN 417B : Advanced Translation and Interpretation, Spanish to English. (1.5:3:1)

PREREQUISITE: SPAN 417A

DESCRIPTION: Translation of texts in specific fields. Simultaneous interpretation. From Spanish to English.

**Course Outcomes**

- Demonstrate the ability to interpret speeches on topics—legal, medical, commercial—requiring some specialized knowledge
- Demonstrate the ability to translate technical texts—literary, legal, medical, commercial, scientific—that would typically be found in academic journals
- Apply the research skills needed to translate texts required by this course
- Demonstrate an understanding of how translation theory has developed, particularly since the 1900s

SPAN 418 : Translation and Interpretation Project. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: SPAN 417A & SPAN 417B

DESCRIPTION: Individual translation and/or interpretation projects.

**Course Outcomes**

- Demonstrate an understanding of how translation theory has developed, particularly since the 1900s
- Demonstrate understanding of translation theory by completing a detailed theoretical introduction for the capstone project.

**Note:** Span 322, and either Span 345 or 355, must be taken before Span 415A.

8. Complete the following:
   SPAN 491 : Senior Proficiency Evaluation. (0:1:0)
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: Tool course to meet oral proficiency requirement for all majors and teaching minors.
   NOTE: No major or minor credit.

   **Course Outcomes**
   - Receive an Advanced Low or better on the Oral Proficiency Interview.

**Note:** The Senior Proficiency Evaluation is taken in connection with Span 491. It is expected that Spanish majors will pass with a rating of *advanced-low* or higher.

*Hours include courses that may fulfill university core requirements.

## Show all Spanish (Span) Courses

College of Humanities Home

Spanish and Portuguese Department Home

Portuguese

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

Spanish

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

Faculty

# Minor in Spanish (18–42 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following prerequisite courses (or equivalent experience):

SPAN 101 : Foundational Spanish 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

NOTE: For students with no previous Spanish.

**Course Outcomes**

- Respond in Spanish to simple ques-tions on the most commonfeatures of daily life
- Convey minimal meaning tointerlocutors experiencedwith dealing with foreign-ers by using isolated words,lists of words, memorizedphrases and some personal-ized recombinations ofwords and phrases
- Satisfy a very limited num-ber of immediate needs through the use of spoken Spanish.
- Respond in written Spanish at the same level as indicated in outcomes related to speaking.
- Understand common basic cultural practices and products related to greetings and family life in some Spanish-speaking countries.

SPAN 102 : Foundational Spanish 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 101.

DESCRIPTION: Continuation of Span 101. Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

**Course Outcomes**

- Using Spanish, participate in simple, directconversations on generallypredictable topics related todaily activities and personalenvironment.
- Create with the languageand communicate personalmeaning to sympatheticinterlocutors by combininglanguage elements in dis-crete sentences and stringsof sentences.
- Obtain and give informationby asking and answeringquestions.
- Sustain and bring to a closea number of basic, uncom-plicated communicativeexchanges, mostly in a reac-tive mode.
- Satisfy simple personalneeds and social demandsto survive in the target lan-guage culture.
- Respond in written Spanish at the same level as indicated in preceding objectives related to spoken Spanish.
- Understand common basic cultural practices and products related to travel in some Spanish-speaking countries.

SPAN 105 : University Spanish 1. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Two years of high school Spanish or Span 101/102 or placement by diagnostic test.

DESCRIPTION: Continued development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational courses. Students are expected to attain an *Intermediate-Mid* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 106 : University Spanish 2. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 105.

DESCRIPTION: Expanded development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational and intermediate courses. Students are expected to attain an *Intermediate-Mid* to *Intermediate-High* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 205 : University Spanish 3. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Four years of high school Spanish, Span 106, or placement by test.

DESCRIPTION: Continued development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain an *Intermediate-High* proficiency level.

NOTE: Fulfills the University Core Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Consolidate the student's understanding of the basic structures of the Spanish language and demonstrate intermediate proficiency in Spanish as defined by the American Council on the Teaching of Foreign Languages (ACTFL) proficiency guidelines for reading, writing, speaking, and listening.
- Provide students with a moderate knowledge of the Spanish language and cultures, thus broadening their perception of humanity and its varied manifestations.
- Interpret and analyze a selection of literary works in Spanish within their historical and cultural context.

SPAN 206 : University Spanish 4. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Spanish 205 or placement by test.

DESCRIPTION: Expanded development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain a strong *Intermediate-High* or *Advanced-Low* proficiency level.

**Course Outcomes**

- Consolidate the student's command of the basic structures of the Spanish language.
- Develop literacy and oral language skills at the intermediate-advanced range.
- Obtain an adequate knowledge of the Spanish language and cultures through the study of selected perceptions and manifestations.
- Understanding the natural speech of native speakers from any Spanish-speaking country and interpret the general idea in their proper cultural background.

2. Complete the following:

SPAN 321 : Third-Year Spanish Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Placement by test.

DESCRIPTION: Intensive study and practice with Spanish grammar, vocabulary, and writings incorporating cultural and literary readings.

NOTE: First class for returned Spanish-speaking missionaries. Fullfills the University Core Languages of Learning requirement. Required for Spanish major and minor.

**Course Outcomes**

There are no course outcomes available

SPAN 339 : Introduction to Spanish Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Readings in modern Hispanic literatures, focusing on formal literary analysis.

NOTE: Course is prerequisite to 400-level literature courses.

**Course Outcomes**

- Demonstrate a working knowledge of the most salient elements of the most important literary genres, including, for example, short story, novel, poetry, theater, essay, and film.
- Students will demonstrate a mastery of basic tools of literary analysis, including versification and basic elements of narratology, and interpretation through the study of a variety of works from authors from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstrate the ability to speak and write in Spanish about literature with a reasonable degree of grammatical correctness and fluency.

3. Complete one course from the following:

SPAN 345 : Iberian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department

PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spain.

**Course Outcomes**

- Students will be able to describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe and analyze historical periods and current events (e.g., political, social, artistic, and religious developments).
- Recognize and describe important cultural products (e.g., art, literature, architecture, and music, including important works and individuals), cultural institutions (e.g., family, religion, education, and government), and cultural practices (e.g., customs related to birth, marriage, death, holidays, and traditions).
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

SPAN 355 : Spanish American Culture and Civilization. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spanish America.

**Course Outcomes**

There are no course outcomes available

4. Complete one course from the following:

SPAN 441 : Survey of Spanish Literature. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: SPAN 339
DESCRIPTION: Literary masterpieces of Spain.

**Course Outcomes**

There are no course outcomes available

SPAN 451 : Survey of Hispanic-American Literature. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
PREREQUISITE: SPAN 339
DESCRIPTION: Literary masterpieces of Spanish America.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, literary theory as well as other critical and philosophical concepts which may apply to Spanish American literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Define and recognize the periods, significant authors, schools or movements of Spanish American literature.
- Recognize and value the contributions, past and present, of Spanish American literature to the cultures of its respective countries.
- Develop the habits and skills of lifelong readers of Spanish American literature.
- Demonstrate and apply a strong understanding of the basic structures of the Spanish language as they apply to literature.
- Write analytical and descriptive essays in Spanish that demonstrate an advanced knowledge of the works studied, a proper command of the Spanish language, mastery of the tools of literary criticism, and familiarity with research methodologies.

5. Complete 6 hours from upper-division courses outlined for the major.

*Hours include courses that may fulfill university core requirements.

## Show all Spanish (Span) Courses

**College of Humanities Home**

**Spanish and Portuguese Department Home**

**Portuguese**

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

**Spanish**

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

**Faculty**

# Minor in Spanish Teaching (21–37 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following prerequisite courses (or equivalent experience):

SPAN 101 : Foundational Spanish 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

NOTE: For students with no previous Spanish.

**Course Outcomes**

- Respond in Spanish to simple ques-tions on the most commonfeatures of daily life
- Convey minimal meaning tointerlocutors experiencedwith dealing with foreign-ers by using isolated words,lists of words, memorizedphrases and some personal-ized recombinations ofwords and phrases
- Satisfy a very limited num-ber of immediate needs through the use of spoken Spanish.
- Respond in written Spanish at the same level as indicated in outcomes related to speaking.
- Understand common basic cultural practices and products related to greetings and family life in some Spanish-speaking countries.

SPAN 102 : Foundational Spanish 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 101.

DESCRIPTION: Continuation of Span 101. Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

**Course Outcomes**

- Using Spanish, participate in simple, directconversations on generallypredictable topics related todaily activities and personalenvironment.
- Create with the languageand communicate personalmeaning to sympatheticinterlocutors by combininglanguage elements in dis-crete sentences and stringsof sentences.
- Obtain and give informationby asking and answeringquestions.
- Sustain and bring to a closea number of basic, uncom-plicated communicativeexchanges, mostly in a reac-tive mode.
- Satisfy simple personalneeds and social demandsto survive in the target lan-guage culture.
- Respond in written Spanish at the same level as indicated in preceding objectives related to spoken Spanish.
- Understand common basic cultural practices and products related to travel in some Spanish-speaking countries.

SPAN 105 : University Spanish 1. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Two years of high school Spanish or Span 101/102 or placement by diagnostic test.

DESCRIPTION: Continued development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational courses. Students are expected to attain an *Intermediate-Mid* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.

- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 106 : University Spanish 2. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 105.

DESCRIPTION: Expanded development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational and intermediate courses. Students are expected to attain an *Intermediate-Mid* to *Intermediate-High* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 205 : University Spanish 3. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Four years of high school Spanish, Span 106, or placement by test.

DESCRIPTION: Continued development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain an *Intermediate-High* proficiency level.

NOTE: Fulfills the University Core Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Consolidate the student's understanding of the basic structures of the Spanish language and demonstrate intermediate proficiency in Spanish as defined by the American Council on the Teaching of Foreign Languages (ACTFL) proficiency guidelines for reading, writing, speaking, and listening.
- Provide students with a moderate knowledge of the Spanish language and cultures, thus broadening their perception of humanity and its varied manifestations.
- Interpret and analyze a selection of literary works in Spanish within their historical and cultural context.

SPAN 206 : University Spanish 4. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Spanish 205 or placement by test.

DESCRIPTION: Expanded development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain a strong *Intermediate-High* or *Advanced-Low* proficiency level.

**Course Outcomes**

- Consolidate the student's command of the basic structures of the Spanish language.
- Develop literacy and oral language skills at the intermediate-advanced range.
- Obtain an adequate knowledge of the Spanish language and cultures through the study of selected perceptions and manifestations.
- Understanding the natural speech of native speakers from any Spanish-speaking country and interpret the general idea in their proper cultural background.

3. Complete the following:

SPAN 321 : Third-Year Spanish Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Placement by test.

DESCRIPTION: Intensive study and practice with Spanish grammar, vocabulary, and writings incorporating cultural and literary readings.

NOTE: First class for returned Spanish-speaking missionaries. Fullfills the University Core Languages of Learning requirement. Required for Spanish major and minor.

**Course Outcomes**

There are no course outcomes available

SPAN 322 : Third-Year Spanish Composition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: SPAN 321

DESCRIPTION: Study and practice of different writing styles, developing research skills.

NOTE: Strongly recommended for students continuing on to a graduate program.

**Course Outcomes**

- Demonstrate competence in writing a variety of genre types in Spanish that conform to the "advanced" level as described in the ACTFL proficiency guidelines.

SPAN 326 : Spanish Phonetics and Pronunciation. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: SPAN 321
DESCRIPTION: Spanish sound system; underlying concepts of Spanish speech production and applications to pronunciation.

**Course Outcomes**

- Students who successfully complete this class will:Understand the basic concepts of articulatory phonetics and phonology;
- Understand how the sounds of standard Spanish are pronounced;
- Be able to transcribe phonetically both oral and written texts in Spanish;

SPAN 339 : Introduction to Spanish Literature. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Readings in modern Hispanic literatures, focusing on formal literary analysis.
NOTE: Course is prerequisite to 400-level literature courses.

**Course Outcomes**

- Demonstrate a working knowledge of the most salient elements of the most important literary genres, including, for example, short story, novel, poetry, theater, essay, and film.
- Students will demonstrate a mastery of basic tools of literary analysis, including versification and basic elements of narratology, and interpretation through the study of a variety of works from authors from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstrate the ability to speak and write in Spanish about literature with a reasonable degree of grammatical correctness and fluency.

SPAN 377 : Spanish Teaching Methods 1. (3:3:2)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: SPAN 321 & SPAN 326 & SPAN 345; or SPAN 321 & SPAN 326 & SPAN 355; Spanish Teaching major or minor status.
DESCRIPTION: History of language teaching methods; standards-based unit and lesson planning; strategies for teaching speaking, listening, reading, writing, grammar, and vocabulary.

**Course Outcomes**

- explain the benefits of studying a foreign language
- discuss major historical trends in foreign language teaching
- discuss ways of setting up your classroom to motivate students to learn Spanish
- select and evaluate textbooks for your program
- use the Standards for Foreign Language Learning to plan units and lessons
- plan and implement various methods for teaching oral skills (including pronunciation, conversation, games, and songs)
- plan and implement methods for teaching listening, reading, and writing
- plan and implement methods for teaching grammar and vocabulary

SPAN 378 : Spanish Teaching Methods 2. (3:3:2)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: SPAN 377
DESCRIPTION: Strategies for teaching culture; use of instructional media and technology; assessment of learner performance; foreign language program models; planning for continuing professional development.

**Course Outcomes**

- Use professional reading to develop a research-based repertoire of instructional strategies that help secondary students meet each of the National Standards for Foreign Language Learning
- Design units, lessons, and activities that develop students' proficiency in Spanish across the three modes of communication
- Contextualize language learning experiences in cultural products, practices, and perspectives using various techniques for teaching and assessing culture learning
- Develop and adapt assessments to evaluate students' proficiency and provide them with feedback that will improve their performance
- Utilize a variety of emerging technologies to enhance instruction, develop language proficiency and cultural competence, improve your professional productivity, and support your professional
- Adapt learning experiences appropriately to better meet the needs of culturally diverse learners, including students with a variety of learning styles and special needs
- Compare and contrast various program models for world language learning
- Participate professionally in the school community, in professional organizations and professional development activities, and engage in professional dialogue and reflection with colleagues to improve teaching skills and your program

**Note 2:** Span 377 and 378 must be taken before student teaching. Span 377 will be waived for students majoring in another language who have had the course in that language. Students who waive the class will need to take 3 additional elective hours from the 300-, 400-, or 500-level courses in Spanish.

4. Complete one course from the following:
   SPAN 345 : Iberian Civilization. (3:3:0)
   WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
   PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Culture, history, art, music, and traditions of Spain.

**Course Outcomes**

- Students will be able to describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe and analyze historical periods and current events (e.g., political, social, artistic, and religious developments).
- Recognize and describe important cultural products (e.g., art, literature, architecture, and music, including important works and individuals), cultural institutions (e.g., family, religion, education, and government), and cultural practices (e.g., customs related to birth, marriage, death, holidays, and traditions).
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

SPAN 355 : Spanish American Culture and Civilization. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spanish America.

**Course Outcomes**

There are no course outcomes available

5. Complete one course from the following:

SPAN 441 : Survey of Spanish Literature. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: SPAN 339
DESCRIPTION: Literary masterpieces of Spain.

**Course Outcomes**

There are no course outcomes available

SPAN 451 : Survey of Hispanic-American Literature. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
PREREQUISITE: SPAN 339
DESCRIPTION: Literary masterpieces of Spanish America.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, literary theory as well as other critical and philosophical concepts which may apply to Spanish American literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Define and recognize the periods, significant authors, schools or movements of Spanish American literature.
- Recognize and value the contributions, past and present, of Spanish American literature to the cultures of its respective countries.
- Develop the habits and skills of lifelong readers of Spanish American literature.
- Demonstrate and apply a strong understanding of the basic structures of the Spanish language as they apply to literature.
- Write analytical and descriptive essays in Spanish that demonstrate an advanced knowledge of the works studied, a proper command of the Spanish language, mastery of the tools of literary criticism, and familiarity with research methodologies.

6. Complete the following:

SPAN 491 : Senior Proficiency Evaluation. (0:1:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Tool course to meet oral proficiency requirement for all majors and teaching minors.
NOTE: No major or minor credit.

**Course Outcomes**

- Receive an Advanced Low or better on the Oral Proficiency Interview.

**Note:** The Senior Proficiency Evaluation is taken in connection with Span 491. Before applying to student teach in the major, achieve a minimum OPI rating of *advanced-low* to obtain Utah state licensure and to graduate.

*Hours include courses that may fulfill university core requirements.

## Show all Spanish (Span) Courses

**College of Humanities Home**

**Spanish and Portuguese Department Home**

**Portuguese**

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

**Spanish**

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

**Faculty**

# Spanish Language Certificate (9 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This Language Certificate program is administered by the Center for Language Studies (3086 JFSB), http://languagecertificate.byu.edu.*

Any matriculated (degree-seeking) BYU student who meets the proficiency and course requirements may earn the Spanish Language Certificate. The proficiency requirement is met through the nationally recognized ACTFL Oral and Writing Proficiency Exams. Qualifying students will be awarded a certificate on one of three levels based on the following:

1. Advanced Certificate: An ACTFL "Advanced" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
2. Mastery Certificate: An ACTFL "Advanced High" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.
3. Professional Certificate: An ACTFL "Superior" rating on at least one of the two proficiency exams and 9 hours of coursework with a minimum of a B- grade in each of the three courses.

## Required Courses:

**Note:** Students who have completed all of the coursework required for a language major or a language minor will also have satisfied the coursework requirement for the language certificate.

1. Language:

SPAN 321 : Third-Year Spanish Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Placement by test.
DESCRIPTION: Intensive study and practice with Spanish grammar, vocabulary, and writings incorporating cultural and literary readings.
NOTE: First class for returned Spanish-speaking missionaries. Fullfills the University Core Languages of Learning requirement. Required for Spanish major and minor.

**Course Outcomes**

There are no course outcomes available

2. Civilization - complete one course from the following:

SPAN 345 : Iberian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spain.

**Course Outcomes**

- Students will be able to describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe and analyze historical periods and current events (e.g., political, social, artistic, and religious developments).
- Recognize and describe important cultural products (e.g., art, literature, architecture, and music, including important works and individuals), cultural institutions (e.g., family, religion, education, and government), and cultural practices (e.g., customs related to birth, marriage, death, holidays, and traditions).
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

SPAN 355 : Spanish American Culture and Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spanish America.

**Course Outcomes**

There are no course outcomes available

3. Literature:

SPAN 339 : Introduction to Spanish Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Readings in modern Hispanic literatures, focusing on formal literary analysis.
NOTE: Course is prerequisite to 400-level literature courses.

**Course Outcomes**

- Demonstrate a working knowledge of the most salient elements of the most important literary genres, including, for example, short story, novel, poetry, theater, essay, and film.
- Students will demonstrate a mastery of basic tools of literary analysis, including versification and basic elements of narratology, and interpretation through the study of a variety of works from authors from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstrate the ability to speak and write in Spanish about literature with a reasonable degree of grammatical correctness and fluency.

Students who successfully complete a certificate will receive an official document verifying their level of achievement. The certificate will be listed on the university transcript.

College of Humanities Home

Spanish and Portuguese Department Home

Portuguese

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

Spanish

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

Faculty

# Spanish (Span)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

SPAN 101 : Foundational Spanish 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

NOTE: For students with no previous Spanish.

**Course Outcomes**

- Respond in Spanish to simple ques-tions on the most commonfeatures of daily life
- Convey minimal meaning tointerlocutors experiencedwith dealing with foreign-ers by using isolated words,lists of words, memorizedphrases and some personal-ized recombinations ofwords and phrases
- Satisfy a very limited num-ber of immediate needs through the use of spoken Spanish.
- Respond in written Spanish at the same level as indicated in outcomes related to speaking.
- Understand common basic cultural practices and products related to greetings and family life in some Spanish-speaking countries.

SPAN 102 : Foundational Spanish 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 101.

DESCRIPTION: Continuation of Span 101. Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

**Course Outcomes**

- Using Spanish, participate in simple, directconversations on generallypredictable topics related todaily activities and personalenvironment.
- Create with the languageand communicate personalmeaning to sympatheticinterlocutors by combininglanguage elements in dis-crete sentences and stringsof sentences.
- Obtain and give informationby asking and answeringquestions.
- Sustain and bring to a closea number of basic, uncom-plicated communicativeexchanges, mostly in a reac-tive mode.
- Satisfy simple personalneeds and social demandsto survive in the target lan-guage culture.
- Respond in written Spanish at the same level as indicated in preceding objectives related to spoken Spanish.
- Understand common basic cultural practices and products related to travel in some Spanish-speaking countries.

SPAN 105 : University Spanish 1. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Two years of high school Spanish or Span 101/102 or placement by diagnostic test.

DESCRIPTION: Continued development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational courses. Students are expected to attain an *Intermediate-Mid* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 106 : University Spanish 2. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 105.

DESCRIPTION: Expanded development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational and intermediate courses. Students are expected to attain an *Intermediate-Mid* to *Intermediate-High* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 111R : Spanish Conversation 1. (2:2.5:1)

RECOMMENDED: Concurrent enrollment in Span 105.

DESCRIPTION: Development of conversation skills in Spanish.

**Course Outcomes**

- Communicate orally in Spanish in specific speaking situations at the interpersonal level, which may include various personal or social situations.
- Understand main ideas and some facts from interactive exchanges and aural texts.
- Demonstrate awareness of cultures and backgrounds other than the student's own.
- Present orally to an audience a topic related to Hispanic cultural products, practices and events.
- Ability to read consistently with increased understanding simple, connected texts dealing with a variety of basic and social needs.

SPAN 112R : Spanish Conversation 2. (2:2.5:1)

RECOMMENDED: Concurrent enrollment in Span 106.

DESCRIPTION: Continued development of conversation skills in Spanish.

**Course Outcomes**

- Communicate orally in Spanish in specific speaking situations at the interpersonal level, which may include various personal or social situations.
- Understand main ideas and some facts from interactive exchanges and aural texts.
- Demonstrate awareness of cultures and backgrounds other than the student's own
- Present orally to an audience a topic related to Hispanic cultural products, practices and events.
- Ability to read consistently with increased understanding simple, connected texts dealing with a variety of basic and social needs.

SPAN 199R : Academic Internship. (.5-3:ARR:ARR)

PREREQUISITE: Department chair's and internship coordinator's consent.

DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Demonstrate capacity to contextualize internship responsibilities and experiences within an academic framework.

**200-Level Courses**

SPAN 205 : University Spanish 3. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Four years of high school Spanish, Span 106, or placement by test.

DESCRIPTION: Continued development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain an *Intermediate-High* proficiency level.

NOTE: Fulfills the University Core Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Consolidate the student's understanding of the basic structures of the Spanish language and demonstrate intermediate proficiency in Spanish as defined by the American Council on the Teaching of Foreign Languages (ACTFL) proficiency guidelines for reading, writing, speaking, and listening.
- Provide students with a moderate knowledge of the Spanish language and cultures, thus broadening their perception of humanity and its varied manifestations.
- Interpret and analyze a selection of literary works in Spanish within their historical and cultural context.

SPAN 206 : University Spanish 4. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Spanish 205 or placement by test.

DESCRIPTION: Expanded development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain a strong *Intermediate-High* or *Advanced-Low* proficiency level.

**Course Outcomes**

- Consolidate the student's command of the basic structures of the Spanish language.
- Develop literacy and oral language skills at the intermediate-advanced range.
- Obtain an adequate knowledge of the Spanish language and cultures through the study of selected perceptions and manifestations.
- Understanding the natural speech of native speakers from any Spanish-speaking country and interpret the general idea in their proper cultural background.

SPAN 211R : Spanish Conversation 3. (2:2:1)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Concurrent enrollment in Span 205.
DESCRIPTION: Continued development of conversation skills in Spanish.

**Course Outcomes**

- Communicate effectively in most real-life situations at the interpersonal level, including academic, professional, or social situations.
- Understand main ideas and most facts from interactive exchanges and aural texts.
- Ability to handle successfully a variety of uncomplicated communicative tasks in straightforward social situations, including theverbal and nonverbal messages.
- Present orally to an audience a topic related to Hispanic cultural products, practices and events.
- Ability to read consistently with increased understanding uncomplicated, connected texts dealing with a variety of basic and social needs.

SPAN 212R : Spanish Conversation 4. (2:2:1)
WHEN TAUGHT: Fall; Winter
RECOMMENDED: Concurrent enrollment in Span 206.
DESCRIPTION: Continued development of conversation skills in Spanish.

**Course Outcomes**

- Communicate effectively in most real-life situations at the interpersonal level, including academic, professional, or social situations.
- Understand main ideas and most facts from interactive exchanges and aural texts.
- Ability to handle successfully a variety of uncomplicated communicative tasks in straightforward social situations, including theverbal and nonverbal messages.
- Present orally to an audience a topic related to Hispanic cultural products, practices and events.
- Ability to read consistently with increased understanding uncomplicated, connected texts dealing with a variety of basic and social needs.

**300-Level Courses**

SPAN 311R : Spanish Conversation 5. (2:2:1)
DESCRIPTION: Continued development of conversation skills in Spanish.
NOTE: Will not count for major or minor.

**Course Outcomes**

- Communicate orally in Spanish in real-life situations, including academic, specialized, and public contexts.
- Demonstrate proficiency in the comprehension of oral messages.
- Show skill at a synthesizing authentic text (such as a newspaper articles or a literary text) in an oral presentation.
- Present to an audience a variety of topics including the ability to develop and articulate positions in Spanish.
- Understand someone else speaking about a discipline-related topic and be able to engage that person in discussion.
- Evaluate the use of language to convey meaning, to inform, and to persuade.

SPAN 312R : Spanish Conversation 6. (2:2:1)
DESCRIPTION: Continued development of conversation skills in Spanish.
NOTE: Will not count for major or minor.

**Course Outcomes**

- · Communicate orally in Spanish in real-life situations, including academic, specialized, and public contexts.
- · Demonstrate proficiency in the comprehension of oral messages
- · Show syncretic skills by synthesizing authentic text (such as a newspaper articles or a literary text) in an oral presentation.
- · Present to an audience a variety of topics including the ability to develop and articulate positions in Spanish.
- · Understand someone else speaking about a discipline-related topic and be able to engage that person in discussion.
- · Evaluate the use of language to convey meaning, to inform, and to persuade.

SPAN 321 : Third-Year Spanish Reading, Grammar, and Culture. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Placement by test.
DESCRIPTION: Intensive study and practice with Spanish grammar, vocabulary, and writings incorporating cultural and literary readings.
NOTE: First class for returned Spanish-speaking missionaries. Fullfills the University Core Languages of Learning requirement. Required for Spanish major and minor.

**Course Outcomes**

There are no course outcomes available

SPAN 322 : Third-Year Spanish Composition. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: SPAN 321
DESCRIPTION: Study and practice of different writing styles, developing research skills.
NOTE: Strongly recommended for students continuing on to a graduate program.

**Course Outcomes**

- Demonstrate competence in writing a variety of genre types in Spanish that conform to the "advanced" level as described in the ACTFL proficiency guidelines.

SPAN 323R : Spanish for the Professions. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: SPAN 321

DESCRIPTION: Introduction to professional terminology, documentation, and correspondence.

**Course Outcomes**

- Discuss in general terms the economic and political realities of Spanish-speaking countries and regions (including the U.S.) and their impact on national and international business.
- Identify social and business-related cultural patterns in Spanish-speaking cultures and compare them with those of English-speaking cultures.
- Locate information on Spanish-speaking job opportunities in various professions and the necessary qualifications for each.
- Acquire a specialized Spanish working vocabulary in at least one profession.
- Write business letters, CVs, and other types of professional documents using appropriate writing conventions, register, and vocabulary.

SPAN 326 : Spanish Phonetics and Pronunciation. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: SPAN 321

DESCRIPTION: Spanish sound system; underlying concepts of Spanish speech production and applications to pronunciation.

**Course Outcomes**

- Students who successfully complete this class will:Understand the basic concepts of articulatory phonetics and phonology;
- Understand how the sounds of standard Spanish are pronounced;
- Be able to transcribe phonetically both oral and written texts in Spanish;

SPAN 329 : Survey of Hispanic Linguistics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer, Contact Department

PREREQUISITE: SPAN 321

DESCRIPTION: Introduction to linguistics of Spanish: phonetics, phonology, morphology, syntax, semantics, history of the Spanish language, philology, dialectology, sociolinguistics, and psycholinguistics.

**Course Outcomes**

- The objective of this course is to introduce students to the basic fields of linguistic study within the Hispanic context. Students should be able to identify and explain issues of phonetics, phonology, morphology, syntax, semantics, and types of variation as found in oral and written language.

SPAN 339 : Introduction to Spanish Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Readings in modern Hispanic literatures, focusing on formal literary analysis.

NOTE: Course is prerequisite to 400-level literature courses.

**Course Outcomes**

- Demonstrate a working knowledge of the most salient elements of the most important literary genres, including, for example, short story, novel, poetry, theater, essay, and film.
- Students will demonstrate a mastery of basic tools of literary analysis, including versification and basic elements of narratology, and interpretation through the study of a variety of works from authors from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstrate the ability to speak and write in Spanish about literature with a reasonable degree of grammatical correctness and fluency.

SPAN 345 : Iberian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Culture, history, art, music, and traditions of Spain.

**Course Outcomes**

- Students will be able to describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe and analyze historical periods and current events (e.g., political, social, artistic, and religious developments).
- Recognize and describe important cultural products (e.g., art, literature, architecture, and music, including important works and individuals), cultural institutions (e.g., family, religion, education, and government), and cultural practices (e.g., customs related to birth, marriage, death, holidays, and traditions).
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

SPAN 346R : Special Topics in Iberian Culture. (3:3:0)

WHEN Contact Department.

TAUGHT:

PREREQUISITE: SPAN 321

DESCRIPTION: An in-depth examination of some aspect of Iberian culture and civilization. Subject matter will vary. This course is recommended for those individuals who may already have a broad exposure to the culture and civilization of Spain and/or those who desire a more focused cultural experience.

**Course Outcomes**

No outcomes are available at this time.

SPAN 355 : Spanish American Culture and Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Culture, history, art, music, and traditions of Spanish America.

**Course Outcomes**

There are no course outcomes available

SPAN 356R : Special Topics in Spanish American Culture. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 321

DESCRIPTION: An in-depth examination of some aspect of Spanish American culture and civilization. Subject matter will vary. This course is recommended for those individuals who may already have a broad exposure to the culture and civilization of the Spanish-speaking countries of the Americas and/or those who desire a more focused cultural experience.

**Course Outcomes**

There are no course outcomes available

SPAN 365 : Mexican-American Culture. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Contemporary culture (education, popular and fine arts, worldview, attitudes, etc.) of the Mexican-American in the U.S.

**Course Outcomes**

- Recognize and describe important cultural products, such as art, literature, architecture, and music, including important works and individuals, as pertaining to Mexican American culture.
- Describe important cultural institutions, including family and religion.
- Discuss important cultural practices, including customs, traditions, celebrations, festivals, etc
- Analyze recent cultural and social developments, including political, social, religious, and artistic events, placing them in historical context.
- Students should be able to recognize, compare, and evaluate the influence of their own cultural background on their attitudes, beliefs, and worldview, in relation to the Mexican- American world.

SPAN 377 : Spanish Teaching Methods 1. (3:3:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SPAN 321 & SPAN 326 & SPAN 345; or SPAN 321 & SPAN 326 & SPAN 355; Spanish Teaching major or minor status.

DESCRIPTION: History of language teaching methods; standards-based unit and lesson planning; strategies for teaching speaking, listening, reading, writing, grammar, and vocabulary.

**Course Outcomes**

- explain the benefits of studying a foreign language
- discuss major historical trends in foreign language teaching
- discuss ways of setting up your classroom to motivate students to learn Spanish
- select and evaluate textbooks for your program
- use the Standards for Foreign Language Learning to plan units and lessons
- plan and implement various methods for teaching oral skills (including pronunciation, conversation, games, and songs)
- plan and implement methods for teaching listening, reading, and writing
- plan and implement methods for teaching grammar and vocabulary

SPAN 378 : Spanish Teaching Methods 2. (3:3:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SPAN 377

DESCRIPTION: Strategies for teaching culture; use of instructional media and technology; assessment of learner performance; foreign language program models; planning for continuing professional development.

**Course Outcomes**

- Use professional reading to develop a research-based repertoire of instructional strategies that help secondary students meet each of the National Standards for Foreign Language Learning
- Design units, lessons, and activities that develop students' proficiency in Spanish across the three modes of communication
- Contextualize language learning experiences in cultural products, practices, and perspectives using various techniques for teaching and assessing culture learning
- Develop and adapt assessments to evaluate students' proficiency and provide them with feedback that will

improve their performance
- Utilize a variety of emerging technologies to enhance instruction, develop language proficiency and cultural competence, improve your professional productivity, and support your professional
- Adapt learning experiences appropriately to better meet the needs of culturally diverse learners, including students with a variety of learning styles and special needs
- Compare and contrast various program models for world language learning
- Participate professionally in the school community, in professional organizations and professional development activities, and engage in professional dialogue and reflection with colleagues to improve teaching skills and your program

SPAN 380 : Practicum in Teaching Spanish. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SPAN 377; concurrent enrollment in Span 378; Spanish Teaching major status.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students in Spanish; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Craft meaningful, standards-based, developmentally and contextually appropriate language learning experiences in Spanish for students
- Contextualize language learning experiences in cultural products, practices, and perspectives using various techniques for engaging students in critical thinking and problem-solving regarding culture
- Use informal assessments to evaluate students' understanding
- Engage in professional dialogue and reflection with your mentor teacher to improve your own professional practice

SPAN 395R : Contemporary Culture. (.5-3:ARR:ARR)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Contemporary Spanish (or Spanish- American) culture: the people and their customs and institutions.

NOTE: For Study Abroad programs only.

**Course Outcomes**

- Through a series of cultural proofs (visits, interviews, observations), develop a familiarity with the host culture at the level of the individual.
- Through readings, develop a familiarity with macro forces (historical, political, economical) that have shaped the host culture.

SPAN 399R : Academic Internship: Spanish Language Field Experience. (.5-6:0:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Program coordinator's consent.

DESCRIPTION: On-the-job experience.

**Course Outcomes**

- Demonstrate capacity to contextualize internship responsibilities and experiences within an academic framework.

**400-Level Courses**

SPAN 414 : Introduction to Translation for Second Majors. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SPAN 321

DESCRIPTION: Readings, individual research projects, and group translation activities. How the translation profession works. Developing the ability to translate general financial and legal texts. Learning to read texts critically.

**Course Outcomes**

- Explain and apply methods for resolving common translation problems.
- Demonstrate the ability to evalute translation quality.
- Demonstrate understanding of the translation industry.

SPAN 415A : Beginning Translation and Interpretation, English to Spanish. (1.5:3:1)

PREREQUISITE: SPAN 321 & SPAN 322

DESCRIPTION: Introduction to history, theory, and principles of translation and interpretation dealing specifically in English to Spanish.

**Course Outcomes**

- Explain and apply methods for resolving common translation problems
- Demonstrate the ability to translate basic texts, such as newspaper articles
- Apply the research skills needed to translate texts required by this course
- Use published research to analyze translator-training programs

SPAN 415B : Beginning Translation and Interpretation, Spanish to English. (1.5:3:1)

PREREQUISITE: SPAN 415A

DESCRIPTION: Introduction to history, theory, and principles of translation and interpretation, dealing specifically in Spanish to English.

**Course Outcomes**

- Explain and apply methods for resolving common translation problems
- Demonstrate the ability to translate basic texts, such as newspaper articles
- Apply the research skills needed to translate texts required by this course
- Use published research to analyze translator-training programs

SPAN 416A : Intermediate Translation and Interpretation, English to Spanish. (1.5:3:1)

PREREQUISITE: SPAN 415B

DESCRIPTION: Systematic study and contrastive exercises in translation and interpretation from English to Spanish. Translation of texts in general conceptual fields.

**Course Outcomes**

- Demonstrate the ability to interpret speeches on general topics
- Demonstrate the ability to translate technical texts—legal, medical, commercial—of moderate difficulty
- Apply the research skills needed to translate texts required by this course
- Apply principles of logic to evaluate arguments in different kinds of texts

SPAN 416B : Intermediate Translation and Interpretation, Spanish to English. (1.5:3:1)

PREREQUISITE: SPAN 416A

DESCRIPTION: Systematic study and contrastive exercises in translation and interpretation from Spanish to English. Translation of texts in general conceptual fields.

**Course Outcomes**

- Apply principles of logic to evaluate arguments in different kinds of texts
- Demonstrate the ability to translate technical texts—legal, medical, commercial—of moderate difficulty
- Apply the research skills needed to translate texts required by this course
- Apply principles of logic to evaluate arguments in different kinds of texts

SPAN 417A : Advanced Translation and Interpretation, English to Spanish. (1.5:3:1)

PREREQUISITE: SPAN 416B

DESCRIPTION: Translation of texts in specific fields. Simultaneous interpretation. From English to Spanish.

**Course Outcomes**

- Demonstrate the ability to interpret speeches on topics—legal, medical, commercial—requiring some specialized knowledge
- Demonstrate the ability to translate technical texts—literary, legal, medical, commercial, scientific—that would typically be found in academic journals
- Apply the research skills needed to translate texts required by this course
- Demonstrate an understanding of how translation theory has developed, particularly since the 1900s

SPAN 417B : Advanced Translation and Interpretation, Spanish to English. (1.5:3:1)

PREREQUISITE: SPAN 417A

DESCRIPTION: Translation of texts in specific fields. Simultaneous interpretation. From Spanish to English.

**Course Outcomes**

- Demonstrate the ability to interpret speeches on topics—legal, medical, commercial—requiring some specialized knowledge
- Demonstrate the ability to translate technical texts—literary, legal, medical, commercial, scientific—that would typically be found in academic journals
- Apply the research skills needed to translate texts required by this course
- Demonstrate an understanding of how translation theory has developed, particularly since the 1900s

SPAN 418 : Translation and Interpretation Project. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: SPAN 417A & SPAN 417B

DESCRIPTION: Individual translation and/or interpretation projects.

**Course Outcomes**

- Demonstrate an understanding of how translation theory has developed, particularly since the 1900s
- Demonstrate understanding of translation theory by completing a detailed theoretical introduction for the capstone project.

SPAN 421 : Fourth-Year Grammar. (3:3:0)

WHEN TAUGHT: Contact Department. Fall

PREREQUISITE: SPAN 321

DESCRIPTION: Fourth-year study of Spanish grammar and usage.

**Course Outcomes**

- Recognize stylistic errors in Spanish composition and acquire the necessary strategies for their correction.
- Improve the knowledge of syntactic structures of Spanish.
- Enrich passive and active vocabularies of Spanish.
- Demonstrate competence in writing short essays in Spanish that conform to the "advanced" level as described in the ACTFL proficiency guidelines.
- Improve listening comprehension of authentic Spanish sources.

SPAN 423 : Border Spanish. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Span 326 or Span 329.
DESCRIPTION: Mexican-American speech patterns, including language contact and bilingualism.
NOTE: Previous course in linguistics strongly recommended.

**Course Outcomes**

- Students will demonstrate a knowledge of principal features of (Mexican-American) Popular Spanish in terms of semantics, morphosyntax, and phonetics/phonology.
- Students will understand and be able to describe succinctly S-E bilingual contact phenomena, such as borrowing, code-switching, and language maintenance/shift.
- Students will gain a greater understanding of and appreciation for Mexicans and Mexican-Americans living in the U.S.

SPAN 425 : Contrastive Analysis of the Structures of Spanish and English. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Span 326 or Span 329.
DESCRIPTION: Contrastive analysis of phonology, morphology, syntax, and semantics of Spanish and English.

**Course Outcomes**

- Students will be able to explain the chief differences and similarities between the structures of the English and Spanish languages.
- Learn the basic principles of Spanish phonology, morphology (both derivational and inflectional), syntax and sociolinguistics.
- Learn what the assumptions of modern linguistics are (e.g., natural language is based on the use of signs; language is a social phenomenon; oral language takes precedence over written language; linguistics is descriptive, not prescriptive; variation is intrinsic to language; language is highly structured; there are linguistic universals; etc.)
- Be able to solve linguistic problems in the teaching and learning of a second language.

SPAN 429R : Special Topics in Spanish Linguistics. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 326; or SPAN 329
DESCRIPTION: Course content varies yearly; focuses on specific area of linguistics such as dialectology or sociolinguistics.

**Course Outcomes**

There are no course outcomes available

: Dialectology.

**Course Outcomes**

: Sociolinguistics.

**Course Outcomes**

: Language Planning.

**Course Outcomes**

: Bilingualism.

**Course Outcomes**

: Syntax.

**Course Outcomes**

: Semantics.

**Course Outcomes**

SPAN 430R : Special Topics in Hispanic Culture. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Span 322 or concurrent enrollment.
DESCRIPTION: Regional and thematic approaches to Hispanic culture. Subject matter will vary.

**Course Outcomes**

There are no course outcomes available

SPAN 438 : Hispanic Cinema. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 339
DESCRIPTION: Introduction to study of film; background in appreciating best of motion picture art in Spain and Spanish America.
NOTE: Previous experience with film useful but not required.

**Course Outcomes**

- Students will demonstrate a mastery of basic tools of film analysis through the study of a variety of films from the various film industries from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.

- Students will demonstate the ability to speak and write in Spanish about film with a reasonable degree of grammatical correctness and fluency.

SPAN 439R : Hispanic Theatre Production. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Director's consent
DESCRIPTION: Theory and practice of dramatic performance. Includes participation in play to be performed during semester.
NOTE: No more than 3 hours of 439R credit may count toward any degree.

**Course Outcomes**

There are no course outcomes available

SPAN 440 : Medieval Spanish Literature. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: SPAN 441
DESCRIPTION: Spanish literature from *El Cantar de Mio Cid* (1140) through *La Celestina* (1499).

**Course Outcomes**

There are no course outcomes available

SPAN 441 : Survey of Spanish Literature. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: SPAN 339
DESCRIPTION: Literary masterpieces of Spain.

**Course Outcomes**

There are no course outcomes available

SPAN 443R : Golden Age Literature. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.; Spring
PREREQUISITE: SPAN 441
DESCRIPTION: Sixteenth- and seventeenth-century Spanish literature.

**Course Outcomes**

- Students will be able to demonstrate knowledge about one or more authors from the 16th and/or 17th centuries.
- Students will be able to analyze the texts studied in terms of the historical, cultural, and literary context of the Early Modern world.
- Students will be able to describe, analyze and discuss one or more of the genres of Early Modern Spanish literature and the conventions connected with the genre(s).
- Students will strengthen their research and writing skills by producing essays about, editions of, and/or translations of 16th and 17th-century Spanish texts.
- Students will develop the skills necessary to appreciate and enjoy reading Early Modern Spanish texts.

SPAN 444 : *Don Quijote.* (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
PREREQUISITE: SPAN 441
DESCRIPTION: In-depth study of Cervantes' *El ingenioso hidalgo don Quijote de la Mancha*.

**Course Outcomes**

- Students will read Don Quijote de la Mancha in its original version, taking into account plot and character development, symbolism, cultural and literary context, literary antecedents, and subsequent influence.
- Students will comment on different strategies for reading, writing and translating (using critical vocabulary) as discussed in the Quijote, and will explain the different critical stances, including the "hard" perspective and the "soft" perspective.
- Students will trace the stylistic innovations introduced by Cervantes in the Quijote, and its intersections with other genres (e.g. theater, poetry).
- Students willanswer the question of whether el Quijote really is the first modern novel as many claim it to be. Students will identify and analyze episodes in the novel that display realism and metafiction, and will recognize the impact the Quijote has had on the development of these modes in the subsequent development of the western novel.

SPAN 446R : Nineteenth-Century Literature. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 441
DESCRIPTION: Romanticism (1770s through 1870s) and/or the novels of Benito Perez Galdos and his contemporaries.

**Course Outcomes**

There are no course outcomes available

SPAN 448R : Twentieth-Century Spanish Literature. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: SPAN 441

DESCRIPTION: Genre (twentieth-century novel, drama, or poetry) or particular school (Generation of 1898, Generation of 1927, etc.) emphasized.

**Course Outcomes**

- Demonstrate thorough understanding of twentieth-century Spanish literary history.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to 20th-century Spanish Literature.

SPAN 449R : Special Topics in Spanish Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Summer Even Yrs.

PREREQUISITE: SPAN 441

DESCRIPTION: Specific topics in Spanish (peninsular) literature. Course content will vary each semester to offer optimum exposure to all areas of Spanish literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Spanish, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Spanish literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to special topics in Spanish Literature.

SPAN 450R : Early Spanish-American Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Winter Even Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Indigenous literature (Maya, Nahuatl, etc.) and other texts written in Spanish Colonial America through eighteenth century.

**Course Outcomes**

- Apply a variety of analytical and theoretical approaches to the study of early Spanish American writings as literature and as a reflection of the early cultures of the Spanish-speaking countries of the Americas.
- Demonstrate an ability to critically analyze early Spanish American literature through insightful in-class participation, oral presentations, and written assignments.
- Demonstrate a strong knowledge of a broad range of the important literary and historical texts of the early Spanish American period and of the historical and cultural contexts in which they were produced.

SPAN 451 : Survey of Hispanic-American Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department

PREREQUISITE: SPAN 339

DESCRIPTION: Literary masterpieces of Spanish America.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, literary theory as well as other critical and philosophical concepts which may apply to Spanish American literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Define and recognize the periods, significant authors, schools or movements of Spanish American literature.
- Recognize and value the contributions, past and present, of Spanish American literature to the cultures of its respective countries.
- Develop the habits and skills of lifelong readers of Spanish American literature.
- Demonstrate and apply a strong understanding of the basic structures of the Spanish language as they apply to literature.
- Write analytical and descriptive essays in Spanish that demonstrate an advanced knowledge of the works studied, a proper command of the Spanish language, mastery of the tools of literary criticism, and familiarity with research methodologies.

SPAN 454R : The Spanish American Novel. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Selected Spanish-American novelists such as Juan Rulfo, Gabriel Garcia Marquez, Alejo Carpentier, Mario Vargas-Llosa, etc.

**Course Outcomes**

There are no course outcomes available

SPAN 455R : Spanish-American Poetry. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Selected Spanish-American poets, movements, and national traditions.

**Course Outcomes**

- Demonstrate critical acuity in interpreting individual poems, making appropriate reference to formal poetic devices.
- Demonstrate a grasp of the historical, social, and literary contexts of the poems and poets studied.

- Express one's insights in a research paper which makes appropriate use of secondary sources.

SPAN 456R : Spanish American Drama. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Twentieth-century theatre from Spanish America and Brazil.

**Course Outcomes**

There are no course outcomes available

SPAN 458R : Hispanic-American Short Story. (3:3:0)

WHEN TAUGHT: Contact Department. Fall Odd Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Introduction and development of an important literary genre in Spanish America, including works of Jorge Luis Borges, Julio Cortazar, Juan Rulfo, Gabriel Garcia Marquez, etc.

**Course Outcomes**

- Master basic bibliographical techniques related to the short story genre.
- Demonstrate a firm grasp of the formal aspects of the short story genre.
- Gain a working knowledge of the history and principal figures of the Spanish American short story.

SPAN 459R : Special Topics in Spanish American Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Spring Even Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Specific topics in Latin American literature. Course content will vary each semester to offer optimum exposure to all areas of Latin American literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Spanish, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Spanish literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to special topics in Spanish-American Literature.

SPAN 461 : Spanish-Speaking American (Mexican-American) Literature. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Even Yrs.; Spring Contact Department; Summer Contact Department

PREREQUISITE: SPAN 451

DESCRIPTION: Spanish-English literature of the Mexican-American within the United States.

**Course Outcomes**

- Demonstrate thorough understanding of the history of Mexican-American literary history.
- Develop advanced skills in research techniques and academic writing.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Mexican-American Literature.

SPAN 476 : Secondary Spanish Student Teaching. (12:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Span 377, 378, and 380.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Critically integrate professional readings, coursework, and teaching experiences into a repertoire of options for professional thought and action
- Improve your Spanish language proficiency, your cultural understanding, and your ability to help students see patterns in the language.
- Craft standards-based, developmentally and contextually appropriate, meaningful learning experiences in Spanish that support the growth of students' language proficiency
- Contextualize language learning experiences in cultural products, practices, and perspectives and use various techniques for engaging students in critical thinking and problem-solving regarding culture
- Utilize a variety of communication techniques and emerging technologies to foster active inquiry and collaboration in the classroom, to develop language proficiency and cultural competence, to foster students' intrinsic motivation, and to support your own professional productivity and growth
- Develop and adapt a variety of traditional and alternative assessments (including performance-based assessments, portfolios, projects, and self-assessments) to inform instruction, to evaluate students' proficiency across all three modes of communication, to provide feedback that will improve student performance, and to report student progress
- Participate professionally in the school community, in professional organizations and professional development activities, and engage in professional dialogue and reflection with colleagues and community agencies to support students, improve your teaching, and strengthen your program
- Adapt learning experiences appropriately to better meet the needs of culturally diverse learners, including students with a variety of learning styles and special needs

SPAN 477 : Techniques of Spanish Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: SPAN 321 & SPAN 326 & SPAN 345; or SPAN 321 & SPAN 326 & SPAN 355

DESCRIPTION: Techniques for teaching the four language skills and grammar, vocabulary, and culture; use of technology; assessing language achievement.

NOTE: For students not enrolled in Spanish teaching major or minor.

**Course Outcomes**

- Discuss basic theories of language teaching and learning.
- Plan Standards-based units and lessons, aligning assessments with learning objectives.
- Teach beginning-level vocabulary, grammar, culture, and the four skills (speaking, listening, reading, writing).
- Assess students' language and culture learning.

SPAN 480R : Directed Research in Spanish. (.5-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Written proposal subject to department approval.

DESCRIPTION: Under faculty member's direction, designing and conducting research project covering material not normally presented in regular course work. Research paper required.

NOTE: Total Span 480R credit toward bachelor's degree not to exceed 3 hours.

**Course Outcomes**

- Conduct advanced, independent research on a topic in Hispanic studies.

SPAN 490 : Senior Seminar in Spanish. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Senior standing.

DESCRIPTION: Bibliography, research, and writing of senior thesis.

NOTE: Recommended for students planning graduate studies in Spanish.

**Course Outcomes**

There are no course outcomes available

SPAN 491 : Senior Proficiency Evaluation. (0:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Tool course to meet oral proficiency requirement for all majors and teaching minors.

NOTE: No major or minor credit.

**Course Outcomes**

- Receive an Advanced Low or better on the Oral Proficiency Interview.

SPAN 493 : Capstone Course in Spanish. (1:1:0)

WHEN TAUGHT: Contact Department. Fall; Winter; Summer

PREREQUISITE: Senior status or departmental advisor's consent.

DESCRIPTION: A culminating experience for Spanish as a first or second major. Students will be able to articulate the value of the Spanish BA and will develop strategies and a rationale for applying the skills acquired during their undergraduate studies.

NOTE: Course must be taken concurrently with an approved upper-division, senior-level (e.g. 400-level) course in the semester prior to graduation.

**Course Outcomes**

- Students will be able to articulate the value of the Spanish and Portuguese BA.
- Students will develop strategies and a rationale for applying the skills acquired during their undergraduate studies in all aspects of their future lives.

SPAN 496 : Secondary Spanish Teaching Internship. (12:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Span 377, 378, and 380.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Critically integrate professional readings, coursework, and teaching experiences into a repertoire of options for professional thought and action
- Improve your Spanish language proficiency, your cultural understanding, and your ability to help students see patterns in the language.
- Craft standards-based, developmentally and contextually appropriate, meaningful learning experiences in Spanish that support the growth of students' language proficiency
- Adapt learning experiences appropriately to better meet the needs of culturally diverse learners, including students with a variety of learning styles and special needs
- Contextualize language learning experiences in cultural products, practices, and perspectives and use various techniques for engaging students in critical thinking and problem-solving regarding culture
- Utilize a variety of communication techniques and emerging technologies to foster active inquiry and

collaboration in the classroom, to develop language proficiency and cultural competence, to foster students' intrinsic motivation, and to support your own professional productivity and growth
- Develop and adapt a variety of traditional and alternative assessments (including performance-based assessments, portfolios, projects, and self-assessments) to inform instruction, to evaluate students' proficiency across all three modes of communication, to provide feedback that will improve student performance, and to report student progress
- Participate professionally in the school community, in professional organizations and professional development activities, and engage in professional dialogue and reflection with colleagues and community agencies to support students, improve your teaching, and strengthen your program

## 500-Level Graduate Courses (available to advanced undergraduates)

SPAN 520 : Problems in Spanish Grammar. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs., Contact Department; Spring Contact Department; Summer Even Yrs.

PREREQUISITE: SPAN 326; or SPAN 329

DESCRIPTION: Application of contemporary grammatical concepts to problems in Spanish grammar.

**Course Outcomes**

- The student enrolled in Problems in Spanish Grammar will carefully examine and formulate more accurate and complete rules for several recalcitrant grammar "problems" by reading and studying selections from grammarians and researchers who provide insights into the problem in question. The student's ability to synthesize coherent and meaningful generalizations will be objectively tested by exams and further evaluated while he or she participates in classroom discussion.
- The student enrolled in Problems in Spanish Grammar will acquire a greater understanding of both descriptive and prescriptive grammars and their function and limitations. The student will also acquire specialized terms employed by grammarians and morphosyntacticians. The student's ability to understand and use these terms appropriately will also be objectively measured by examination.
- Complete a research paper/presentation on a particular grammar point or construction. This assignment will test a student's ability to locate appropriate refereed sources, read and synthesize them and prepare a written document and oral presentation according to a recognized style manual.

SPAN 521 : Romance Philology. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 326; or SPAN 329

DESCRIPTION: Comparative study of the evolution of Latin into modern Romance languages.

**Course Outcomes**

- Situate Latin and the Romance Languages in their "external" (i.e. political and literary) historical context.
- Recognize the "laws" of regular phonological evolution (e.g. syncope, lenition, diphthongization, etc.).
- Compare the "major" (i.e. literary) Romance languages as far as their phonological development is concerned.
- Summarize the major lexical differences across Romance languages and some of the basic principles of etymology.
- Become familiar with articles published in professional journals relating to the subject matter and produce accurate and meaningful written summaries and reactions to them.
- Learn the rudiments of transcribing medieval or Renaissance manuscripts.

SPAN 522 : History of the Spanish Language. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.; Summer Odd Yrs.

PREREQUISITE: SPAN 326; or SPAN 329

DESCRIPTION: Linguistic sources that contributed to formation of the Spanish language.

**Course Outcomes**

- Acquire a basic knowledge of the changes undergone by the nominal and verbal systems of Latin and Castilian (e.g. the demise of the case system, the development of new verbal tenses, etc.).
- Demonstrate the ability to summarize and discuss in a clear and concise manner several scholarly articles on the topic of the history of the Spanish language.
- Situate Latin and Castilian in their political and literary historical contexts.
- Recognize the laws of regular phonological development (e.g. syncope, lenition, diphthongization, etc.).
- Identify the sources of the Castilian lexicon.
- Understand the different theories that claim to understand the relation between Latin and the Romance languages, especially the relation between Latin and Castilian.
- Understand the process of linguistic standardization in Romance and its implications for the linguistic map of the Iberian Peninsula.

SPAN 529R : Special Topics in Spanish Linguistics. (3:3:0)

WHEN TAUGHT: Contact Department. Fall

PREREQUISITE: SPAN 326; or SPAN 329

DESCRIPTION: Topics include semantics, dialectology, and sociolinguistics.

**Course Outcomes**

- Read and analyze research articles related to special topic.
- Produce an original research paper/project centered on the theme of the seminar.

SPAN 577 : Spanish Language Teaching Procedures. (3:3:2)

WHEN TAUGHT: Contact Department.

PREREQUISITE: For public school teachers.

DESCRIPTION: Mastery of skills specific to foreign language instruction. Lectures, demonstrations, practical experience.

**Course Outcomes**

- Discuss basic theories of language teaching and learning.
- Plan Standards-based units and lessons, aligning assessments with learning objectives.
- Teach beginning-level vocabulary, grammar, culture, and the four skills (speaking, listening, reading, writing).
- Assess students' language and culture learning.

SPAN 599R : Academic Internship: Spanish Internship. (.5-3:0:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 321

NOTE: For supervised internship credit on BYU Study Abroad programs only.

**Course Outcomes**

- Successfully complete internship in a Spanish speaking country.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Portuguese**

Major

- BA in Portuguese
- BA in Portuguese Studies (secondary major program)

Minors

- Portuguese
- Portuguese Teaching

Language Certificate

- Portuguese

Course Information

- Portuguese (Port) Courses

**Spanish**

Majors

- BA in Spanish
- BA in Spanish Studies (secondary major program)
- BA in Spanish Teaching
- BA in Spanish Translation

Minors

- Spanish
- Spanish Teaching

Language Certificate

- Spanish

Course Information

- Spanish (Span) Courses

**Faculty**

# Spanish and Portuguese Faculty

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## Professors

Alba, Orlando
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Católica Madre y Maestra, 1972
MA, University of Puerto Rico, 1978
PhD, Univ. Nacional de Educación a Distancia, Madrid, Spain, 1988

Garcia, Mara Lucy
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, Brigham Young University, 1992
PhD, University of Kentucky, Lexington, 1997

Larson, Jerry W.
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Utah State University, 1969
MA, Brigham Young University, 1974
PhD, University of Minnesota, Minneapolis, 1977

Lund, Christopher C.
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1967
MA, University of Texas, Austin, 1970
PhD, University of Texas, Austin, 1974

Pratt, Dale Joseph
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1990
PhD, Cornell University, 1994

Quackenbush, Louis Howard
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1965
MA, Brigham Young University, 1967
PhD, University of Illinois, Urbana, 1970

Rosenberg, John R.
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1979
MA, Brigham Young University, 1981
PhD, Cornell University, 1985

Sherman, Jr., Alvin Franklin

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1985
MA, Brigham Young University, 1987
PhD, University of Virginia, 1990

Williams, Frederick Granger

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1965
MA, University of Wisconsin, Madison, 1967
PhD, University of Wisconsin, Madison, 1971

Williams, Geoffrey Lynn

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Professor
**DEGREES:** BA, University of London, 1973
BA, University of London, 1975
PhD, University of London, 1978

## Associate Professors

Alvord, Scott M.

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Weber State University, 1998
MA, University of Minnesota, 2003
PhD, University of Minnesota, 2006

Bateman, Blair Earl

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1991
MA, Brigham Young University, 1995
PhD, University of Minnesota, 2002

Fails, Willis Clark

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1975
MA, Brigham Young University, 1977
PhD, University of Texas, Austin, 1984

Hague, Daryl Robert

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
JD, University of Washington, 1990
MA, Brigham Young University, 1996
PhD, State University of New York, Binghamton, 2002

Hegstrom, Valerie

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1982
MA, Brigham Young University, 1986
MA, University of Kansas, 1988
PhD, University of Kansas, 1992

Laraway, David Phillip

**COLLEGE:** Humanities

**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, Brigham Young University, 1994
MA, Cornell University, 1997
PhD, Cornell University, 1998

Meredith, Robert Alan
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1969
MA, Brigham Young University, 1974
PhD, Ohio State University, Columbus, 1976

Smead, Robert N.
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1981
MA, Brigham Young University, 1983
PhD, University of Texas, Austin, 1988

Stallings, Gregory C.
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1989
MA, Brigham Young University, 1993
PhD, University of California, Irvine, 1999

Turley, Jeffrey Scott
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** MA, Brigham Young University, 1984
PhD, University of California, Berkeley, 1992

Weatherford, Douglas J.
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1988
PhD, Pennsylvania State University, 1997

## Assistant Professors

Fitzgibbon, Vanessa Clare
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Assistant Professor
**DEGREES:** MA, Brigham Young University, 1995
PhD, University of Wisconsin, Madison, 2006

Krause, James Remington
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2003
MA, Brigham Young University, 2005
PhD, Vanderbilt University, 2010

Larson, Erik Matthew
**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2006
MA, University of California, Davis, 2008
PhD, University of California, Davis, 2012

Martinsen, Rob

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Assistant Professor
**DEGREES:** BA, Arizona State University, 1999
MA, Northern Arizona University, 2003
PhD, University of Texas, Austin, 2007

Montgomery, Cherice

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Assistant Professor
**DEGREES:** BA, Wichita State University, 1992
MEd, Wichita State University, 2002

Nielson, Rex P.

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, Brown University, 2004
AM, Brown University, 2007
PhD, Brown University, 2010

Thompson, Gregory Lynn

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1999
MA, Brigham Young University, 2001
PhD, University of Arizona, 2006

## Associate Teaching Professors

Hoskisson, Joaquina V.

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1971
MA, Brigham Young University, 1974

Knapp, Nieves Perez

**COLLEGE:** Humanities
**DEPARTMENT:** Spanish and Portuguese
**RANK:** Associate Teaching Professor
**DEGREES:** BA, University of Oviedo, Spain, 1986
BA, University of Oviedo, Spain, 1990
MA, Brigham Young University, 1995
PhD, University of Oviedo, Spain, 2003

- Education
- Engineering and Technology
- Family, Home, and Social Sciences
- Fine Arts and Communications
- Humanities
- Law School
- Life Sciences
- Management
- Nursing
- Physical and Mathematical Sciences
- Religious Education
- Undergraduate Education

# J. Reuben Clark Law School

341 JRCB
(801) 422-4277

**Dean:** James R. Rasband
**Associate Dean:** Kif Augustine Adams
**Associate Dean:** Scott W. Cameron
**Associate Dean:** D. Gordon Smith
**Assistant Dean:** Wendy Archibald
**Assistant Dean:** Carl Hernandez III
**Assistant Dean:** Mary H. Hoagland

The J. Reuben Clark Law School offers a six-semester course of graduate professional study leading to the juris doctor (JD) degree. Information about legal education, admissions standards, and related matters can be obtained from the Law School Admissions Office or at www.law2.byu.edu/.

To be admitted to the Law School, an applicant must be a college graduate who has excelled academically and has scored in the upper range of the nationally administered Law School Admission Test. In addition, applicants must meet the general university admission requirements, including the personal standards required of all students.

Apply for admission online at www.lsac.org by February 1 preceding the fall of expected enrollment in the Law School. Enrollment takes place only in the fall of each year.

For more information regarding prelegal education, consult the Preprofessional Advisement Center (Law).

- Education
- Engineering and Technology
- Family, Home, and Social Sciences
- Fine Arts and Communications
- Humanities
- Law School
- Life Sciences
- Management
- Nursing
- Physical and Mathematical Sciences
- Religious Education
- Undergraduate Education

**Departments/Programs**

- Biology
- Exercise Sciences
- Health Science
- Life Sciences Student Services
- Microbiology and Molecular Biology
- Neuroscience Center
- Nutrition, Dietetics, and Food Science
- Physiology and Developmental Biology
- Plant and Wildlife Sciences

# College of Life Sciences

5000 LSB
(801) 422-3963
Internet: http://lifesciences.byu.edu

**Dean**: Rodney J. Brown, Professor, Nutrition, Dietetics, and Food Science
**Associate Dean**: Brad L. Neiger, Professor, Health Science
**Associate Dean**: James P. Porter, Professor, Physiology and Developmental Biology
**Assistant Dean**: Shauna C. Anderson Young, Professor, Microbiology and Molecular Biology
**Assistant Dean**: John D. Lee, Microbiology and Molecular Biology

The following departments are included within the College of Life Sciences:

- Biology (Bio)
- Exercise Sciences (ExSc)
- Health Science (Hlth)
- Microbiology and Molecular Biology (MMBio)
- Nutrition, Dietetics, and Food Science (NDFS)
- Physiology and Developmental Biology (PDBio)
- Plant and Wildlife Sciences (PWS)

Courses offered in the life sciences give students a general understanding of the fundamental principles of life that extend from the tiniest microbes to plants, animals, and human beings. Students also obtain the knowledge, skills, and motivation necessary to maintain a healthy lifestyle. Specialized courses emphasizing teaching and research in various life science disciplines are also offered. Disciplines range from basic science to applied science.

## Alphabetical List of Majors Offered in the College of Life Sciences

Athletic Training (ExSc)
Bioinformatics (Bio)
Biology (Bio)
Biological Science Education (Bio)
Biophysics (PDBio)
Conservation Biology (Bio)
Dietetics (NDFS)
Environmental Science (PWS)
Exercise and Wellness (ExSc)
Exercise Science (ExSc)
Food Science (NDFS)
Genetics and Biotechnology (PWS)
Landscape Management (PWS)
Medical Laboratory Science (MMBio)
Microbiology (MMBio)
Molecular Biology (MMBio)
Neuroscience (Neuro)
Nutritional Science (NDFS)
Physiology and Developmental Biology (PDBio)
Public Health (Hlth)
School Health Education (Hlth)
Wildlife and Wildlands Conservation (PWS)

See the departmental sections in this catalog for details regarding these programs.

## Student Services

### Life Sciences Student Services Center

Shauna C. Anderson Young, Assistant Dean
Jeanne M. Gubler, Manager Advisement
Farris Child, Advisement Assistant/Assessment
Lisa Buzan, Advisement Assistant
C. Gale Larson, Advisement Assistant
380 WIDB
(801) 422-3042
Hours: 8:00 a.m. to 5:00 p.m., Monday–Friday

Emily Stevens, LRC Manager
194 SFH
(801) 422-4579
Hours: 7:45 am to 7:00 pm, Monday through Friday
8:00 am to 4:00 pm, Saturday

The goal of the Life Sciences Student Services Center is to provide "one stop shopping for students and faculty." The center services students in five areas: advisement, assessment, career advisement, college life, and mentored experiences.

**Advisement**—Students are instructed in general education advisement as well as assistance in creating a graduation curriculum plan for their major. Advisement is regarded as an interactive, developmental experience between students and advisors. Among other advisement services are the change of major, academic success, and graduation processes, as well as other specific advisement needs. LfSc 101 is offered to all new students who are exploring Life Science majors. All majors and career options are presented in this course plus basic student development principles to assist new students in adapting to BYU and becoming familiar with its resources.

**Assessment**—Students are informed of the importance of maintaining the university's accreditation standing. Students assist the assessment process by providing input through surveys, exit interviews, one-year-out and five-year-out surveys, and results on national major field exams and other national and professional school admission exams.

**Career advisement**—Students are assisted in major exploration and basic developmental career issues. Information is provided regarding university resources for further career and major exploration.

**College life**—The "Empowering Others" philosophy encourages students to help and teach each other by creating a spirit of cooperation rather than competition. Study groups are fostered and organized to enhance learning. A learning facility provides tutoring services for students enrolled in the essential biology courses. This walk-in area allows a student access to tutors 10–12 hours per day. Leadership opportunities for students can be enhanced through participation on the Life Sciences Student Council and participation in clubs. The college also offers scholarship opportunites to its undergraduate and graduate students.

**Mentored experiences**—Internships provide students with opportunities to try out their prospective careers. The center provides resources for obtaining internships as well as processing all the paperwork and awarding grants to students who desire that experience. Assisting faculty with research constitutes a mentorship. Students learn invaluable skills and problem-solving techniques from their mentors. The center can help students seeking mentored experiences.

## M. L. Bean Life Science Museum

Larry St. Clair, Director
Leigh Johnson, Associate Director for Research and Collections
Marta Adair, Assistant Director for Education
290 MLBM

Robert Johnson, Collections Manager, Herbarium
John Bell, Curator of Mollusks and Crustaceans
Shawn Clark, Collections Manager, Arthropods
Jerald Johnson, Assistant Curator of Fish
Leigh Johnson, Curator, Herbarium
Randy Larsen, Assistant Curator of Birds
Riley Nelson, Assistant Curator of Insects
Duke Rogers, Curator of Mammals
Dennis Shiozawa, Curator of Fish
Jack Sites, Curator of Reptiles and Amphibians
Wesley Skidmore, Collections Manager, Vertebrates
Larry St. Clair, Curator of Nonvascular Cryptogams
Michael Whiting, Curator of Insects

The Bean Life Science Museum is fully accredited with the American Association of Museums. Its vast teaching and research collections include more than two million arthropods, fish, amphibians, reptiles, mammals, birds, and mollusks, and more than 700,000 plants, fungi, and bryophytes. Specimens for these collections, which represent creative work by university faculty members and students, have been gathered from around the world, making the museum a major repository of scientific-quality, biological collections in the western United States.

The museum and its collections are utilized by university classes in biology, plant and wildlife sciences, education, art, geography, and other disciplines. The museum also maintains and manages the Lytle Ranch Preserve. Located in the northernmost extension of the Mojave Desert southwest of St. George, Utah, this 600-acre desert classroom is situated in a part of Utah that is unique not only for its plant and animal communities, but also for its setting at the crossroads of three major bioregions.

Public programs include temporary and permanent exhibits of natural communities that illustrate complex relationships between plants, animals, and their physical environment. Educational programs serve more than 100,000 annual visitors and provide classes and programs for public and private schools and many other organizations. Museum hours are Monday through Friday from 10:00 a.m. to 9:00 p.m. and Saturday from 10:00 a.m. to 5:00 p.m. The museum is closed on Sunday. Admission is free.

*The Western North American Naturalist*, a nationally recognized peer-reviewed natural history journal, is housed in the museum. Other museum publications include professional and popular works such as *A Utah Flora, Bark and Ambrosia Beetles of South America, Snakes of Utah*, and *Common Rocky Mountain Lichens*.

College of Life Sciences Home

Biology Home

Major

- BS in Bioinformatics
- BS in Biological Science Education
- BS in Biology
- BS in Conservation Biology

Course Information

- Biology (Bio) Courses

Faculty

# Biology

Dennis K. Shizowa, Chair
4101 LSB, (801) 422-4972

Life Sciences Student Services
2060 LSB, (801) 422-3042

## Admission to Degree Program

All degrees within this department are open enrollment programs.

## The Discipline

Programs in the Department of Biology focus on training students in the organismal and broader perspectives of the biological sciences. Fields include systematics of taxonomic groups, ecology, and evolution, which often rely on the application of molecular biology and genetics.

## Career Opportunities

Biology entails rigorous, broad training and synthetic reasoning, which prepare students for careers in a wide variety of professional fields ranging from technical work in research laboratories to field technicians for environmental research companies or government agencies. Majors may develop their interest in such diverse areas as environmental biology, evolutionary biology, aquatic biology, molecular biology, plant biology, or taxonomy. Students satisfy the requirements for graduate studies in the biological sciences or professional schools.

The bioinformatics major is for students with interests in both the computer and the biological sciences. The degree merges these interests in the areas of bioinformatics and computational biology, giving students the skills for graduate or professional (medical, dental, law) schools or immediate employment opportunities after completing the undergraduate program, especially with biotechnology companies.

The biological science education program provides a solid foundation in courses that meet the National Science Teachers Association certification requirements for secondary education biology teaching. The program also prepares students for continuing their education in graduate school.

Preveterinary medicine students interested in veterinary medicine are encouraged to incorporate required preveterinarycurriculum into an academic program of their choosing. See the description of the biology major for additional information.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Bioinformatics** (Program Outcomes)
**BS in Biological Science Education** (Program Outcomes)
**BS in Biology** (Program Outcomes)
**BS in Conservation Biology** (Program Outcomes)

Students should see Life Sciences Student Services (379 WIDB) for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

This department offers MS and PhD degrees. See the graduate school Web site: http://www.byu.edu/gradstudies.

College of Life Sciences Home

Biology Home

Major

- BS in Bioinformatics
- BS in Biological Science Education
- BS in Biology
- BS in Conservation Biology

Course Information

- Biology (Bio) Courses

Faculty

# BS in Bioinformatics (67 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Objectives

Bioinformatics is an interdisciplinary program offering substantial training in both the biological sciences and the physical and mathematical sciences, with an emphasis on computer programming coupled with genetics and molecular biology. Students are expected to acquire programming, databasing, and operating system skills coupled with a foundation in mathematics and statistics. In addition, students will receive broad training in the basic concepts of biology and chemistry. Students attracted to this program have dual interests in math/computer science and biology, and find it an exceptional option for their broad interests.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following:

BIO 130 : Biology. (4:3:1)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: General biology course with laboratory for biology majors. Introduction to disciplines in the life sciences including methods for scientific inquiry, biochemical dynamics, cell structure and function, evolutionary theory, bioenergetics, and ecological interactions.

**Course Outcomes**

- Students will demonstrate basic literacy in the language of science and an understanding of the foundational theories of biology (i.e., be able to formulate appropriate hypotheses and predictions to test specific biological phenomena and use appropriate vocabulary to do so) o Atomic Molecular Theoryo Cell Theoryo Theories of Photosynthesis, Fermentation, and Cellular Respirationo Cell Division and Meiotic Theorieso Chromosomal and Mendelian Theories of Inheritanceo Watson and Crick's Theory of DNA Structure and Replicationo Protein Synthesis Theoryo Darwin's Theory of Natural Selectiono Hardy-Weinberg Theoryo Ecosystem Theoryo Population Growth Theoryo Competitive Exclusion and Behavioral Theory
- Students will demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process.
- Students willappreciate the excitement of discovery that has accompanied important scientific developments.
- Students will demonstrate how scientific methodology can be used to analyze real-world science-related problems.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public-policy science issues that affect their community.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.
- Students will be able to reflect rationally upon the interface between science and religion.
- Students will demonstrate sound scientific reasoning ability.

BIO 165 : Introduction to Bioinformatics. (3:3:0)
WHEN TAUGHT: Winter
DESCRIPTION: Introduction to basic concepts in bioinformatics. Standard bioinformatic applications.

**Course Outcomes**

There are no course outcomes available

BIO 370 : Bioethics. (2:1:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Introductory biology course.
DESCRIPTION: In-depth lecture and small group discussion of varied bioethical issues. LDS Church positions emphasized when appropriate.

**Course Outcomes**

- Students will understand the ethical and philosophical underpinnings of bioethics and to develop ethical intuitions on bioethical issues.
- Students will learn the terminology, vocabulary, and objectives of bioethics.

Students will understand the tools and approaches needed to make a bioethical decision and to communicate that decision in rationally informed ways.
- Students will understand the bioethical primary literature, to understand how to read case studies, and familiarity with the major issues being discussed in bioethics today.

BIO 420 : Evolutionary Biology. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240 & PWS 340
RECOMMENDED: Concurrent enrollment in Bio 421.
DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**

- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

BIO 421 : Evolutionary Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240
DESCRIPTION: Hands-on applications and analytical tools of evolutionary biology; emphasizing inference methodology and evidence complementing the theoretical constructs introduced in Bio 520, including comparative anatomy, phylogenetic inference, population genetics, species concepts, and human evolution.
NOTE: Concurrent enrollment with Bio 420 is strongly recommended.

**Course Outcomes**

- Students will gain a better understanding of the basic principles of evolution within a population including selection, drift, and founder effects by using computer simulations.
- Students will have a deeper understanding of the LDS position on evolution.
- Students will learn the details of phylogenetic reconstruction, tree searching, DNA sequence alignment, and other bioinformatics tools for deciphering patterns of evolution.
- Students will learn the details of species concepts and the criteria used for identifying and diagnosing species.
- Students will gain hands-on experience with hominid fossils and gain an understanding of the evidence that elucidates the biological history of humans.

BIO 465 : Bioinformatics and Proteomics. (3:2:1)

WHEN TAUGHT: Winter
PREREQUISITE: BIO 365
DESCRIPTION: 3-D protein structural comparisons, hidden Markov models for database comparisons, homology detection, multiple sequence analyses, and protein family comparisons. Exercises in computer programming in genomics.

**Course Outcomes**

- Students will learn and demonstrate mastery of advanced analytical bioinformatics techniques, including genome assembly, genome annotation, and protein analyses.
- Demonstrate ability to use and evaluate literature databases and primary literature directed to the bioinformatics community in terms of newly developed software, analytical algorithms, application to empirical data, etc.
- Apply and develop computational skills in secondary (i.e., helices, etc.) and tertiary (i.e., folding, etc.) prediction, and 3-dimensional (i.e., x-ray crystal structures, etc.) modeling of protein structures.
- Apply evolutionary concepts to modeling DNA/proteins to evaluate and/or predict function, utilizing 3D structures, physical and chemical amino acid properties, etc.
- Apply existing and develop new tools for genome assembly and annotation from next-generation DNA sequencing projects

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105
DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.
NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

2. Complete one course from the following:

BIO 365 : Computational Biology. (3:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: C S 240

DESCRIPTION: Computational analysis of DNA data; introduction to bioinformatics databasing using Perl and SQL; configuration of UNIX workstations for bioinformatics analyses.

**Course Outcomes**

- To provide practical experience in using computational approaches to address biological problems.
- Describe general areas of computational problems in biology (alignment, estimation, tree searches, molecular modeling, gene prediction) and learn about existing computational approaches to these general problems.
- Learn basic computational tools for statistical inference (Bayesian, Maximum likelihood, Markov Chain Monte Carlo, Hidden Markov Chain)
- Apply programming skills to alignment problems through the development of novel tools and software for alignment
- Apply programming skills to tree searching problems through the development of novel tools software
- Apply programming tools to gene prediction problems through the development of novel tools and software
- Develop ability to use existing and write new database code to access and manipulate genetic data

C S 418 : Bioinformatics. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department; Spring Contact Department; Summer Contact Department

PREREQUISITE: C S 312

DESCRIPTION: Computational methods for analyzing biological systems. Dynamic programming, Markov models, Neural Networks, and Bayesian analysis are used to predict secondary structure, tertiary structure, and active sites for drug docking given molecular DNA sequence data.

**Course Outcomes**

- Graph Theoretical algorithms, Regulatory Inference
- Large Memory Genomic Mapping, SNP calling
- Develop new research ideas and communicate them effectively

3. Complete the following:

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

C S 235 : Data Structures and Algorithms. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 142

DESCRIPTION: Fundamental data structures and algorithms of computer science; basic algorithm analysis;

recursion; sorting and searching; lists, stacks, queues, trees, hashing; object-oriented data abstraction.

**Course Outcomes**

- Use the fundamental data types of computing (lists, stacks, queues, priority queues, sets, maps, trees, etc.).
- Understand the major techniques for implementing the fundamental data types (linked lists, binary search trees, hashing, heaps, etc.) and implement several of them.
- Properly use and select data structures from language-provided data-structure libraries.
- Apply basic algorithm analysis.
- Understand how recursion works and write programs using recursion to solve problems.
- Make informed decisions about which sorting and searching algorithms to use in specific circumstances.
- Write programs that require ~500 lines of code.

C S 236 : Discrete Structures. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: C S 235

DESCRIPTION: Introduction to grammars and parsing; predicate and propositional logic; proof techniques; sets, functions, relations, relational data model; graphs and graph algorithms.

**Course Outcomes**

- Understand and be conversant with basic discrete mathematical structures (finite state machines, regular expressions, grammars, propositional calculus, proof techniques, predicate calculus, sets, relations, functions, graphs).Write complex programs by using mathematical concepts as the basis for solving programming problems (finite state machines for lexical analysis; grammars for parsing; propositional and predicate calculus for logic programming; sets and algebras for relational databases; algebras, graphs, and topological sorting for optimizing datalog query processing).Incrementally build sophisticated programs by a systematic design process based on discrete mathematics.Design a solution for a programming problem and justify the design as one that is maintainable and extendable by other programmers who understand and are conversant with discrete mathematical structures.
- Demonstrate ability to build large programs by writing and integrating code from a diverse spectrum of program components.

C S 240 : Advanced Programming Concepts. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 236

DESCRIPTION: Advanced software development with an object-oriented focus. Design, implementation, and testing of several large programs in a Java and Linux environment using current technologies.

**Course Outcomes**

- a. Use coding, testing, and debugging strategies. b. Follow basic object-oriented design concepts.
- Write programs in an Object Oriented programming language using inheritance, polymorphism and class hierarchies.
- Use the Linux programming environment to execute basic commands and to run the compiler, linker, debugger, memory checker, and profiler.
- Demonstrate the aptitude and work ethic necessary to succeed in computer science.

C S 360 : Internet Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240

DESCRIPTION: Internet application programming, including sockets, threads, CGI, database, e-commerce, Web services.

**Course Outcomes**

- Design and implement a variety of client-server and web applications.
- Analyze the performance of a web server, write convincingly to support your conclusions and give an oral report to describe your findings.
- Implement a web server using processes, semaphores, threads, sockets and signals.
- Use a set of web programming languages to implement an application.
- Use security to protect their web application.

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.

- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

4. Complete the following:

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MATH 112

RECOMMENDED: Concurrent enrollment in MATH 113.

DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

5. Complete six credit hours from the following upper-division electives in computer science, chemistry, mathematics, statistics, or biology:

BIO 450 : Conservation Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A & BIO 350; or BIO 220B & BIO 350

DESCRIPTION: Scientific principles of conservation: applying population genetics, and phylogenetic and ecological theory to preservation of biological diversity; developing sustainable ecological systems compatible with human resource use.

**Course Outcomes**

- Apply an understanding of ecological processes to conservation of populations, species, and ecosystems.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Demonstrate the ability to apply the scientific method and analytical thinking to ecological and conservation issues.
- Demonstrate the ability to synthesize literature relevant to a topic in conservation bioloigy
- Demonstrate the ability to write a scientific term paper

BIO 463 : Genetics of Human Disease. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 340

DESCRIPTION: Examining the application of genetics to understanding and treatment of human disease. Functional consequences of mutations; use of model organisms; linkage and association analysis of complex traits; pharmacogenetics; ethical considerations.

**Course Outcomes**

- Understand and explain the different types of genetic variants, how they can be typed and how they can be used to understand the genetic architecture of human disease.
- Understand linkage disequilibrium in the human genome and the role it plays in the search for genetic risk factors for human disease
- Understand and use basic statistics and software for analyzing the correlation between genetic markers and risk for disease.
- Understand and explain how model organisms contribute to our understanding of the genetics of human disease.
- Demonstrate the ability to obtain, aggregate and present information about the current knowledge of the genetics of a human disease.

BIO 468 : (Bio-MMBio-PWS) Genomics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & PWS 340

DESCRIPTION: Current analysis of genes and genomes; computational and statistical approaches for analyzing genomic data, including genome sequencing and annotation, gene expression and the transcriptome, proteomics and functional genomics, and genetic variation and SNPs.

**Course Outcomes**

- Students will complete a series of exercises with data representing genomic experiments (analysis and interpret).
- Students will describe how genomes are sequenced.
- Students will understand techniques and concepts to assess genomic features such as methylation, gene expression, etc.

BIO 555 : Evolutionary and Ecological Modeling. (2:2:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Senior status in bioinformatics program or graduate status; Stat 511, 512, or equivalent; instructor's consent.

DESCRIPTION: Using models in ecology. Practical experience in analytical, simulation, and agent-based models.

**Course Outcomes**

There are no course outcomes available

BIO 560 : Population Genetics. (4:4:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: Bio 420 or equivalent.

DESCRIPTION: Basic principles of population genetics applied to natural populations; drift, selection, and nonrandom mating; inferring population subdivision, migration, and gene flow.

**Course Outcomes**

- Students will gain a general introduction to the field a population genetics.
- Students will experience the broad application of population genetics to diverse fields from ecology to medicine.
- Students will manipulate and analyze population genetic data, especially molecular data.

C S 312 : Algorithm Design and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 240 & C S 252

DESCRIPTION: A study of the design and analysis of algorithms as solutions to problems, including dynamic programming, linear programming, greedy algorithms, divide-and-conquer algorithms, graph algorithms, and intelligent search algorithms.

**Course Outcomes**

There are no course outcomes available

C S 340 : Software Design and Testing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 240

DESCRIPTION: Principles of software design, design patterns, design representation, refactoring. Principles of software quality assurance and testing. Development and testing tools.

**Course Outcomes**

- Articulate the principles of effective software design.
- Know when and how to apply various design patterns.
- Demonstrate how to effectively document and communicate software designs.
- Understand what quality assurance is, know how to build quality into software using review techniques, and demonstrate quality evaluation through testing.
- Use a variety of software development tools, including IDEs, automation tools, static analysis tools, source code control systems, unit testing tools, and documentation tools.
- Work effectively in a group to produce quality software using 1-5 above.

C S 450 : Introduction to Digital Signal and Image Processing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 312 & C S 355 & MATH 313

RECOMMENDED: Stat 121.

DESCRIPTION: One- and two-dimensional signal-processing fundamentals, including sampling, noise, transforms, filtering, enhancement, and compression. Hands-on experimentation with speech, music, still images, and full-motion video.

**Course Outcomes**

- Understand and apply the following:Sampling and quantization of image informationCamera properties adn the acquisition of imagesMathematics of image-space transformationsFourier transforms adn filtering

C S 452 : Database Modeling Concepts. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 240

DESCRIPTION: Database models: relational, deductive, object-oriented. Integrity constraints, query languages, database design.

**Course Outcomes**

- Be able to use a variety of commercial query languages (SQL, XQuery, SPARQL), both stand-alone and embeded in high-level programming languages. Know how relational algebra and relational calculus provide a basis for commercial query languages.
- Understand performance issues and optimization strategies. This includes query rewriting, secondary storage characteristics, and access strategies.
- Be able to design and develop relational database applications. This includes conceptual modeling and normalization theory.
- Be familiar with some of the current challenges facing database professionals.

C S 470 : Introduction to Artificial Intelligence. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C S 312 & MATH 313 & STAT 121; or instructor's consent.

DESCRIPTION: Introduction to core areas of artifical intelligence; intelligent agents, problem solving and search, knowledge-based systems and inference, planning, uncertainty, learning, and perception.

**Course Outcomes**

- from business, medicine, robotics, gaming, and machine learning
- Does it require basic control?Does it involve uncertain reasoning?Does it have a simple goal, sophisticated utility, or multiple attributes?Does it require sequential choice or planning?How may decision makers are involved?
- What is the internal representation?What performance criteria are relevant?What is the nature of the environment?What are the actuators?What are the sensors?What are the agent's utilities?How is uncertainty represented?
- Uninformed, informed, constraint-satisfaction, hill-climbing, and stochastic (e.g., genetic algorithms) searchMarkov provesses, Bayes rule, Bayes nets, Hidden Markov Models, Grid Filters, and Kalman FiltersExpected utility theoryMulti-attribute utility theorySequential choice under uncertainty: value and policy iterationMinimax solutions from game theory: alpha-beta pruning
- Determine whether your solution is correctExpress the quality of your solutionValue the need to communicate your solution to others

C S 478 : Tools for Machine Learning and Data Mining. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: C S 312 & MATH 313 & STAT 121

DESCRIPTION: Machine learning and data mining models and other mechanisms allowing computers to learn and find knowledge from data.

**Course Outcomes**

- Take your computer to school
- You will be able to recognize when machine learning and data mining tools are applicable.
- You will be able to plan and execute successful machine learning and data mining projects, including selecting an adequate process for your specific task and avoiding the main data mining pitfalls.

C S 484 : Parallel Processing. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 360

DESCRIPTION: Theoretical and practical study of parallel processing including multi-core, fine-grained, and clustered architectures, parallel programming languages, and parallel algorithms.

**Course Outcomes**

- Use multiple processors to solve a problem faster
- Understand the metrics that are used to evaluate effective applications.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: CHEM 351; or CHEM 351M
DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).
DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.
NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120
DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.
NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

CHEM 482 : Mechanisms of Molecular Biology. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: CHEM 481M; or CHEM 481
DESCRIPTION: Second-semester biochemistry. Nucleic acid biochemistry and molecular biology: nucleotide metabolism, chromosome and chromatin structure, DNA structure and replication, RNA transcription and gene expression, protein synthesis and regulation, eukaryotic gene systems, signal transduction.

**Course Outcomes**

- Draw the structure of DNA, determine the topology of a plasmid, explain the chemical sequence of events that occur during DNA replication and draw structural changes that occur due to mutation.
- Determine how to perform and interpret an electrophoresis separation of DNA fragments, southern blot, restriction map, polymerase chain reaction, and a DNA sequencing reaction with necessary controls.
- Design a DNA cloning strategy, explain controls necessary, and write procedural plan.
- Draw and explain the mechanism of RNA transcription and how RNA is processed, spliced, and regulated. Understand the basic mechanisms of transcriptional regulation using the example of transcription of genes necessary for cholesterol synthesis.
- Determine when and how to use techniques that involve RNA: Northern blots, quantitative PCR, microarrays, S1 nuclease and primer extension mapping of the transcriptional start with appropriate controls.
- Determine the sequence of amino acids in a protein from a series of nucleotides.
- Draw and explain the process of protein translation and how it is regulated.
- Determine where a protein is localized in a tissue or cell: interpret a western blot, protein fusion assays.
- Determine with what a protein interacts: Interpret gel shift assays, Chromatin Immunoprecipitation, DNA footprinting, and yeast two hybrid reporter assays.

- Maintain faith through challenges and ethical boundaries in reporting and interpreting data.

CHEM 489 : Structural Biochemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 468

DESCRIPTION: Molecular structures of proteins, RNA and DNA as determinants of biological function. Topics include thermodynamics of folding and binding, structural determination, spectroscopy, modeling, protein recognition.

**Course Outcomes**

- Identify motifs and symmetries in macromolecular structures and chemical interactions that maintain structural integrity
- Relate the structure of a macromolecule to its biological function
- Describe how X-ray crystallography, nuclear magnetic resonance, cryogenic electron microscopy, and circular dichroism techniques give structural information for biological macromolecules
- Communicate scientific ideas (e.g. structure-function relationships) clearly and concisely to others orally and in writing, and use ethical standards in oral and written presentations
- Work with peers to answer scientific questions

CHEM 584 : Biochemistry Laboratory/Proteins. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Introduction to current biochemical research procedures including spectrophotometry, chromatography, electrophoresis, and immunological techniques. Protein over-expression; isolation and characterization methods. Enzyme kinetics and protein-ligand interactions. Introduction to bioinformatics.

NOTE: May be taken before or after Chem 586.

**Course Outcomes**

- Apply spectroscopic techniques to analyze proteins, both their enzymatic and binding reactions
- Use gel electrophoresis and immunoblotting techniques to determine the presence and purity of proteins in biological samples
- Identify protein binding partners using co-immunoprecipitation methods
- Purify proteins using state-of-the-art separations methods
- Characterize an enzyme using steady state kinetics methods
- Use enzymes as analytical and diagnostic tools
- Properly record and interpret data
- Present data they have collected in an oral presentation and in a written scientific paper
- Understand ethical means of reporting results and giving proper credit to the work of others
- Measure ligand binding to proteins; determine dissociation constants and the degree of cooperativity.

CHEM 586 : Biochemistry Laboratory/Nucleic Acids. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Laboratory course covering major techniques involved in isolation, amplification, and cloning of recombinant DNA as well as isolation, synthesis, translation, and identification of RNA.

NOTE: May be taken before or after Chem 584.

**Course Outcomes**

- Understand, design and execute experiments using basic DNA manipulation procedures that include isolation, purification and modification of DNA
- Explain and perform PCR amplification and use this technique to detect the presence of DNA “targets”, DNA cloning (subcloning) and DNA sequencing
- Understand and explain how to isolate, quantitate and manipulate RNA
- Design and perform experiments to reverse transcribe RNA into complementary DNA (cDNA) and assess gene expression by semi- and quantitative PCR
- Isolate total RNA and be able to purify mRNA from this material
- Introduce and express foreign DNA and/or RNA in mammalian cells using the techniques of electroporation, lipid-based transfection, calcium phosphate based transfection and retroviral transduction
- “Knockdown” an expressed gene in mammalian cells using RNA silencing
- Prepare laboratory notebooks that include the objective, results and methods of each laboratory experiment. Additionally, students will provide conclusions to each experiment, including when appropriate, potential explanations to unexpected results

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

RECOMMENDED: Math 290.

DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

MATH 334 : Ordinary Differential Equations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 113 and Math 313.

DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

MATH 410 : Introduction to Numerical Methods. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 314; C S 142 or equivalent.

DESCRIPTION: Root finding, interpolation, curve fitting, numerical differentiation and integration, multiple integrals, direct solvers for linear systems, least squares, rational approximations, Fourier and other orthogonal methods.

**Course Outcomes**

- Root finding, interpolation, curve fitting, numerical differentiation and integration, multiple integrals, direct solvers for linear systems, least squares, rational approximations, Fourier and other orthogonal methods. [This official course description appears to differ with current standard practice, in that iterative solvers of linear systems are taught in this course, while "Fourier and other orthogonal methods" are postponed until Math 411.] For more detailed information visit the Math 410 Wiki page.
- Students will master numerical solution of equations of one variable, interpolation, numerical differentiation, numerical integration, and numerical solution of linear systems.

MATH 411 : Numerical Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 334

DESCRIPTION: Iterative solvers for linear systems, eigenvalue, eigenvector approximations, numerical solutions to nonlinear systems, numerical techniques for initial and boundary value problems, elementary solvers for PDEs.

**Course Outcomes**

- Students should be able to describe, derive, and implement the numerical methods listed on the Math 411 Wiki page. They should be able to explain the advantages and disadvantages of each method. They should understand error analysis and be able to make practical decisions based on the outcomes of that analysis.

MATH 431 : (Math - EC En 370) Probability Theory. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: MATH 313

DESCRIPTION: Axiomatic probability theory, conditional probability, discrete / continuous random variables, expectation, conditional expectation, moments, functions of random variables, multivariate distributions, laws of large numbers, central limit theorem.

**Course Outcomes**

There are no course outcomes available

MATH 450 : Combinatorics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 371

DESCRIPTION: Permutations, combinations, recurrence relations, applications.

**Course Outcomes**

- Permutations and combinations basics, including the Pigeonhole Principle, binomial coefficients and the Binomial Theorem, Stirling's Approximation, Inclusion/exclusion, Generating functions and recurrence relations (rational functions), Groups, permutations and counting problems -- Polya's Theorem. For more detailed information visit the Math 450 Wiki page.

MMBIO 360 : Microbial Genetics. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBIO 240

DESCRIPTION: How DNA governs complex bacterial functions. Classical and modern approaches to gene discovery, including genetic screens, gene mapping, targeted genetic manipulations, and analyzing gene activity.

**Course Outcomes**

There are no course outcomes available

MMBIO 465 : Virology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBio 261 or equivalent.
DESCRIPTION: Basic principles of virology, emphasizing selected molecular aspects of virus life cycles and disease processes.

**Course Outcomes**

- Be able to answer basic questions about Virology: Why are viruses organized as they are? How do viruses replicate? How do viruses cause disease? What are the interactions between viruses and the host immune system? How to prevent/treat/cure viral infections? How can viruses be used as tools to study biological processes and for gene transfer? How can an understanding of viruses help you in your future career? *Relates to Program Learning Outcome: "Exhibit mastery of four of the principal areas of the discipline", one of which is Virology.
- Understand experimental tools used to study viruses (these are broadly applicable to molecular biology, cell biology, and microbiology) and be able to develop experiments and interpret data.*Relates to Program Learning Outcomes: "Devise experiments with appropriate hypotheses and controls" and "Interpret experiments from primary scientific literature"
- Write about a current, pressing issue in the field of Virology.*Relates to Program Learning Outcome: "Communicate scientific information"
- Understand how research of viruses "by study and also by faith" can lead to alleviation of human disease and suffering.*Relates to Program Learning Outcome: "Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological processes"

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481
DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies
- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220
DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.
NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

PDBIO 482 : Developmental Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 240 & PDBIO 360
RECOMMENDED: PDBio 325.
DESCRIPTION: Invertebrate and vertebrate developmental biology. Embryonic gastrulation, neurulation, pattering, etc. Modern approaches and research strategies. Emphasizes gene function, cell signaling, signal transduction during embryogenesis.

**Course Outcomes**

- Students will be able to generally describe the early development (from fertilization to axis formation) of one invertebrate and one vertebrate model organism.
- Students will be able to generally describe the concepts of cellular competence, induction, specification, commitment and differentiation in embryonic development.
- Students will be able to give two examples of organogenesis, including genes and signal transduction pathways that lead to organ system formation.
- Students will be able to explain embryonic patterning, using examples that include genes known to act in patterning events.
- Students will be able to explain at least two concepts in developmental biology that overlap with other sciences, such as stem cell research, cancer research, evolutionary sciences, or neuroscience.
- Students will be able to discern and summarize the current state of knowledge on a given topic, construct pioneering research questions on that topic, and propose experiments aimed at answering those questions.

PDBIO 582 : Developmental Genetics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PDBio 482 or equivalent.

DESCRIPTION: Gene function and regulation during cell specification and differentiation, pattern formation, and organogenesis in developing embryo.

**Course Outcomes**

- Students will demonstrate understanding of, and the ability to think critically about, primary developmental biology research articles.
- Students will demonstrate confidence in contributing to scientific discussions.
- Students will demonstrate the ability to think scientifically by formulating a research proposal.

STAT 424 : Statistical Computing. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 223 & STAT 224 & STAT 330

DESCRIPTION: Create and interact with relational databases comprised of large real world data; integrate previous course work into a single research project from formulation to final report; solve statistical problems using a combination of SAS, R, and SQL skills.

**Course Outcomes**

There are no course outcomes available

STAT 431 : Experimental Design. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 330

DESCRIPTION: Basic designs, power and sample size, Latin squares, incomplete blocks, change-over designs, factorials, fractional factorials, confounding, split-plots, response surface designs.

**Course Outcomes**

- Choose an experimental design plan that is appropriate for the research problem at hand
- Construct the design, including determining the proper number of replicates and the creation of a randomized data collection form
- Execute the plan to collect the data, or advise a colleague to do it
- Determine the model appropriate for the data
- Fit the model to the data, and verify that the assumptions have been satisfied
- Interpret the results and present the data in a meaningful way to answer the research problem at hand

STAT 435 : Nonparametric Statistical Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 511

DESCRIPTION: Permutation tests, rank-based methods, analysis of contingency tables, bootstrap methods, curve fitting.

**Course Outcomes**

- Explain and provide examples of the trade-off between parametric assumptions and efficiency of statistical inference
- Compute the following rank-based methods: Wilcoxon Rank-Sum test, Mann-Whitney test, Signed-Rank test, Kruskal-Wallis test, Spearman Rank Correlation
- Formulate and compute permutation tests for 2-sample, K-sample, and contingency tables
- Compute the following tests for contingency tables: Fisher's exact test, Mantel-Haenszel test, McNemar's test
- Formulate and compute bootstrap (resampling) confidence intervals
- Compute generalized additive models (GAM) with splines or smoothers for possible nonlinear effects in R

*Hours include courses that may fulfill university core requirements.

## Show all Biology (Bio) Courses

College of Life Sciences Home

Biology Home

Major

- BS in Bioinformatics
- BS in Biological Science Education
- BS in Biology
- BS in Conservation Biology

Course Information

- Biology (Bio) Courses

Faculty

# BS in Biological Science Education (83 hours*, including licensure hours)

Show All Course Descriptions
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*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

## Program Objectives

The biological science education program involves formal training in the field of biology as well as preparation of students as professional educators. The discipline portion of the program is designed to give broad training in the life sciences. Students take classes in plant and animal diversity, molecular biology, genetics, ecology, evolution, and bioethics. This training provides students with significant background and expertise in the biological sciences. In addition to the discipline-level training, the program also requires courses in the physical sciences including chemistry, biochemistry, and physics. The physical science course work is comprehensive enough to place students two or three courses away from receiving additional teaching endorsements in physical science, earth systems, or integrated science. The educational component involves training in laboratory methods, laboratory safety, classroom management, pedagogy, and student teaching.

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following biology core courses:

BIO 130 : Biology. (4:3:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: General biology course with laboratory for biology majors. Introduction to disciplines in the life sciences including methods for scientific inquiry, biochemical dynamics, cell structure and function, evolutionary theory, bioenergetics, and ecological interactions.

**Course Outcomes**

- Students will demonstrate basic literacy in the language of science and an understanding of the foundational theories of biology (i.e., be able to formulate appropriate hypotheses and predictions to test specific biological phenomena and use appropriate vocabulary to do so) o Atomic Molecular Theoryo Cell Theoryo Theories of Photosynthesis, Fermentation, and Cellular Respirationo Cell Division and Meiotic Theorieso Chromosomal and Mendelian Theories of Inheritanceo Watson and Crick's Theory of DNA Structure and Replicationo Protein Synthesis Theoryo Darwin's Theory of Natural Selectiono Hardy-Weinberg Theoryo Ecosystem Theoryo Population Growth Theoryo Competitive Exclusion and Behavioral Theory
- Students will demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process.
- Students willappreciate the excitement of discovery that has accompanied important scientific developments.
- Students will demonstrate how scientific methodology can be used to analyze real-world science-related problems.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public-policy science issues that affect their community.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.
- Students will be able to reflect rationally upon the interface between science and religion.
- Students will demonstrate sound scientific reasoning ability.

BIO 220A : Biological Diversity: Animals. (4:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in invertebrates and vertebrates. Laboratory included.

**Course Outcomes**

- Students will be able to discuss the broad patterns of the evolution of the clade Animalia, emphasizing the relationships among major sub-clades (phyla), the unique biological attributes that define these clades, and the novel changes in morphology over major transitions (unicellular to multicellular; acoelomate to pseudocoelomate to coelomate body plans, bilaterial vs radial symmetry, origins of

exoskeletons, gill slits, notochord, crania & vertebral columns, etc.).
- Students will develop the skills necessary to understand the terminology of phylogenetic systematics and methods used to recover the "tree of life", the logic behind the hierarchy (i.e., the only possible outcome of the process of "descent with modification"), and critically apply evolutionary reasoning, including the use of phylogeny and tree-thinking, to formulate and test hypotheses that explain biological diversity.
- Students will have the intellectual tools to continue to explore related topics with confidence and understanding throughout their lives, and a deeper appreciation for the diversity of life on earth.

BIO 220B : Biological Diversity: Plants. (4:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in fungi, algae, and principal groups of land plants. Laboratory included.

**Course Outcomes**

- Students will be able to discuss differences between cyanobacteria, algae, bryophytes, non-seed vascular plants, gymnosperms, flowering plants, and fungi with repsect to their lifecycles, characteristic morphologies, and biological roles.
- Students will develop the skills necessary to understand and critically apply evolutionary logic including the use of phylogeny and tree-thinking to formulate and test hypotheses that explain biological diversity
- Students will be able to continue to explore related topics with confidence and understanding throughout their lives.

BIO 350 : Ecology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth.

**Course Outcomes**

- Understand the major physical processes that form and characterize the biosphere, including global scale energy flow, the carbon cycle, climate, and soil formation.
- Understand the processes that drive major levels of organization of the biotic world, including energetics in the ecosystem, population dynamics, and species interactions.
- Understand the importance of writing as a way of synthesizing and solidifying critical thought.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Understand the importance of ecology to issues regarding human well-being
- See the connectivity and relevance of ecology to other fields of study

BIO 420 : Evolutionary Biology. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PWS 340

RECOMMENDED: Concurrent enrollment in Bio 421.

DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**

- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

BIO 421 : Evolutionary Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240

DESCRIPTION: Hands-on applications and analytical tools of evolutionary biology; emphasizing inference methodology and evidence complementing the theoretical constructs introduced in Bio 520, including comparative anatomy, phylogenetic inference, population genetics, species concepts, and human evolution.

NOTE: Concurrent enrollment with Bio 420 is strongly recommended.

**Course Outcomes**

- Students will gain a better understanding of the basic principles of evolution within a population including selection, drift, and founder effects by using computer simulations.
- Students will have a deeper understanding of the LDS position on evolution.
- Students will learn the details of phylogenetic reconstruction, tree searching, DNA sequence alignment, and other bioinformatics tools for deciphering patterns of evolution.
- Students will learn the details of species concepts and the criteria used for identifying and diagnosing species.
- Students will gain hands-on experience with hominid fossils and gain an understanding of the evidence that elucidates the biological history of humans.

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105

DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.

NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

**Note:** Bio 420, 421 must be taken at BYU.

3. Complete the following:

BIO 235 : Field Botany. (3:3:6)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Recognition, characteristics, and uses of common trees and shrubs.

**Course Outcomes**

- Students will demonstrate a fundamental knowledge of biology
- Students will develop the discovery skills and tools used by biologists
- Students will use biological knowledge to enhance their personal lives
- Students will use their skills and knowledge in biology to secure employment or to advance in higher education in biology-related disciplines

BIO 370 : Bioethics. (2:1:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Introductory biology course.

DESCRIPTION: In-depth lecture and small group discussion of varied bioethical issues. LDS Church positions emphasized when appropriate.

**Course Outcomes**

- Students will understand the ethical and philosophical underpinnings of bioethics and to develop ethical intuitions on bioethical issues.
- Students will learn the terminology, vocabulary, and objectives of bioethics.
- Students will understand the tools and approaches needed to make a bioethical decision and to communicate that decision in rationally informed ways.
- Students will understand the bioethical primary literature, to understand how to read case studies, and familiarity with the major issues being discussed in bioethics today.

BIO 380 : Comparative Animal Physiology and Anatomy. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: Bio 220A or instructor's consent.

DESCRIPTION: Structure and function of animal organ systems; structural and physiological responses to demands of and changes in environment; evolutionary constraints on anatomy and physiology.

**Course Outcomes**

- Students will demonstrate a fundamental knowledge of comparative vertebrate animal physiology and anatomy.
- Students will develop critical thinking skills while learning concepts and understanding the tools used by comparative vertebrate animal physiologists and anatomists to study function and structure.
- Students will use physiological and anatomical knowledge to enhance their personal lives.
- Students will use their skills and knowledge in comparative vertebrate animal physiology and anatomy to secure employment or to advance in higher education in biology-related disciplines.

- Students will develop an understanding of physiologic isotopic techniques utilized to indicate energy sources, trophic levels, body water, and latitudinal and altitudinal animal migration reflected by stable isotopes of carbon, nitrogen, hydrogen and oxygen.

BIO 441 : Entomology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: Bio 220A or equivalent.

DESCRIPTION: External morphology, natural history, evolution, distribution, and phylogeny of insects. Insect collection required.

**Course Outcomes**

- Understand basic principles of morphology and systematics and apply these principles to your own knowledge of insects.
- Judge genetic relationships. Be able to recall current hypotheses of insect phylogeny at the ordinal level and have the tools needed to judge validity of new hypotheses of phylogeny that might be proposed. You will also study carefully the modifications associated with phylogenies that led to insect diversification and success.
- Understand details of insect morphology, and be well versed in both internal and external body structures.
- Recognize common insect families and be able to quickly identify them on sight.
- Gain or regain a sense of wonder for the natural world, especially as it relates to insects and other arthropods. Gain perspectives of the diversity and complexity in the insect world. Enhance your appreciation for the natural world we share with them.
- Learn life histories and specific collecting techniques for insects in their own habitats. You will learn how they fit in the natural world.
- Learn the protocols for detailed identificiations. Many insects will be totally new in appearance to you. You will use identification guides and illustrations to help you decide what the name of an insect is at the Order and Family levels.
- Use a variety of identification techniques to correctly identify insects and other arthropods. Throughout your life you will be asked by employers, friends, and family to answer the question, "What is this?" This course will give you these exact skills. A correct identification is a beginning step to learning more about a species and its relationships to the natural world and its pragmatic relationship to humans.

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent.

DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

GEOL 101 : Introduction to Geology. (3:2:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Cultural focus on physical and environmental geology for nonscience majors; rocks and minerals. Field trips.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- 1. Understand the difference between minerals and rocks.2. Be able to identify common rocks and minerals.3. Know where and when the basic rock and mineral types form and how they are related to the hydrologic and tectonic systems.
- 1. Understand how the hydrologic system helps to shape the Earth and how the different sub-systems interact.2. Learn the reasons for climate change in both ancient and modern times.
- 1. Learn the basic evidences and ideas that support the Theory of Plate Tectonics.2. Understand how the plate tectonic system works, including the role of the different types of plate boundaries and the forces that help to drive the system.3. Learn how the plate tectonic system has helped to shape the Earth's surface.
- 1. Gain a greater insight into the enormous length of geologic time and the evidences that support this claim.2. Learn the different ways that scientists can determine geologic ages.
- Learn how and why the other planets and moons in our solar system are different from Earth.

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: High school algebra and trigonometry.
RECOMMENDED: Concurrent enrollment in Phscs 107.
DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

4. Complete one course from the following:

BIO 470 : History and Philosophy of Biology. (3:1.5:1.5)

WHEN TAUGHT: Fall
PREREQUISITE: BIO 350
DESCRIPTION: Development of fundamental generalizations of biology; nature of science; applications to major philosophical issues of current science.

**Course Outcomes**

- Students will demonstrate an understanding of the history of biology. This will include an understanding of the major figures and the historical development of modern biology. This will include having read original texts from the periods covered (Aristotle to Current Biology).
- Students will also have an understanding of principal philosophical issues confronting modern biology, including major research trends in philosophy of biology. The students will also have a grasp of what 'science' is, how it is practiced, and what expectations for knowledge can be justified using science.
- Students will have the ability to read and write about the primary literature both on the history, and the philosophy, of science. They will have a grasp of the terminology used in philosophy, and how philosophy of biology is currently practiced. Writing will be emphasized.

PHIL 423 : History and Philosophy of Science. (3:3:0)

PREREQUISITE: Phy S 100 or instructor's consent; Phil 300.
DESCRIPTION: Scientific explanation, concepts, and models. Philosophical assumptions and criteria for theory selection, as exemplified by historical development of basic ideas in science.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in the history and philosophy of Western science from antiquity to the contemporary era.
- Read and critically discuss figures and texts in the philosophy of science.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of science.
- Be able to explain the practice and value of philosophy of science.

5. Complete the Professional Education Component:
    - Complete the following:

BIO 276 : Exploration of Teaching in Biological Sciences. (3:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A & BIO 220B & CHEM 105; major GPA of 2.85 or higher, FBI fingerprint and background clearance; previous application required.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

There are no course outcomes available

BIO 377 : Teaching Methods and Instruction in Biology. (3:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 276; concurrent enrollment in Bio 378, 379, Sc Ed 380; major GPA of 2.85 or higher.

DESCRIPTION: Developing meaningful and engaging instruction for secondary students in biological sciences; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Students will demonstrate an understanding of key learning theories by explaining how students learn.
- Students will demonstrate proper pedagogical practices in a biological teaching setting.
- Students will develop effective unit and lesson plans to promote science learning.

BIO 378 : Practicum in Biology Teaching. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Bio 377, 379, Sc Ed 380.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students in biology; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Students will be able to identify best practices in teaching.
- Students will show active involvement with mentor teacher in creating and teaching lessons, grading papers, or any other classroom work.
- Students will be able to identify practices that they can incorporate into their own teaching.

BIO 379 : Classroom Management and Laboratory Safety. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Bio 377, 378, Sc Ed 380.

DESCRIPTION: Current theory, research, and application in classroom management; creating positive teacher-student and peer relationships; developing optimal learning environments.

**Course Outcomes**

- Students will integrate current theory, research, and application in classroom management to create an optimal learning environment.
- Students will demonstrate appropriate and effective classroom management strategies.
- Students will demonstrate an understanding of proper laboratory safety protocols.

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence

disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

SC ED 350 : Adolescent Development in an Education Context. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or HIth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Adolescent development and its implications for integrated school culture, curriculum design, instructional practices, and assessment.

**Course Outcomes**

- The students will demonstrate how the stages of development impact instructional practices.
- The students will understand the social, physical, and cognitive developmental stages of adolescence in relation to the tasks of automony, identity and intimacy.
- The students will demonstrate how the stages of development impact classroom environments and management.

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or HIth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

**Note 1:** FBI fingerprint and background clearance must be completed prior to enrollment in Bio 276.

**Note 2:** Bio 377, 378, and 379 should be taken concurrently in the semester prior to taking Sc Ed 476R.

**Note 3:** Most states require the Biology Praxis Exam for employment in High School and the Middle Level Praxis Exam for teaching in grades 6-8.

- Complete 12 hours from the following:

SC ED 476R : Secondary Student-Teaching. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will put into practice the theories they have learned in content and pedagogy courses including planning lessons, assessing students of all abilities and cultural backgrounds, using a variety of instructional strategies, and collaborating with other teachers and with the community.

: Secondary Student Teaching - Art.

**Course Outcomes**

: Secondary Student Teaching - Foreign Language. (12:ARR:ARR)

**Course Outcomes**

: Secondary Student Teaching - French.

**Course Outcomes**

: Secondary Student Teaching - Mathematics.

**Course Outcomes**

: Secondary Student Teaching - Physical Science.

**Course Outcomes**

: Secondary Student Teaching - Social Science.

**Course Outcomes**

: Secondary Student Teaching - Spanish.

**Course Outcomes**

## Recommended Courses

BIO 430 : Plant Classification and Identification. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: Bio 100 or Bio 130 or PDBio 120 or PWS 100 or instructor's consent.

DESCRIPTION: Principles of plant systematics, taxonomy, and classification, emphasizing family recognition by sight, terminology, and use of identification keys to the temperate flora.

**Course Outcomes**

- Students will apply correct vocabulary for describing plant parts and be able to deduce the meaning of new terms based on knowledge of common roots, prefixes, and suffixes.
- Students will recognize the major groups of vascular plants, be able to differentiate them by their principal characters, and understand their phylogenetic relationships.
- Students will identify by sight 40 families of flower plants as well as common families of ferns and gymnosperms, by recognizing differentiating features of each family.
- Students will gain proficiency in the use of keys and identification manuals for identifying any unknown plant to species.

BIO 443 : Ichthyology. (3:2:3)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: BIO 220A

DESCRIPTION: Fish systematics, evolution, morphology, distribution, and natural history.

**Course Outcomes**

- Students will have a general understanding of fish respiration.
- Students will have a general understanding of fish body structure.
- Students will have a general understanding of fish food processing.
- Students will have a general understanding of fish behavior and communication.

BIO 445 : Herpetology. (4:3:2)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: BIO 220A

DESCRIPTION: Reptile and amphibian evolution, systematics, morphology, distribution, and natural history. Lab emphasizes taxonomy, classification, and distribution of western U.S. species.

**Course Outcomes**

- Each student will gain a deeper understanding of some details of the origin of tetrapods, and the origin of the amniotes.
- Each student will gain a deeper understanding of the phylogenetic position of extinct and extant clades of amphibians & reptiles within the clade Vertebrate.
- Each student will acquire a detailed knowledge of the evolution and natural history (natural history, behavior, etc.) of the major clades of extant amphibians and reptiles .
- Through lab and field experiences, each student will acquire a detailed knowledge of diagnostic characters, taxonomy & distributions, and some aspects of ecology of native western species.
- Each student will acquire some knowledge of the conservation status of selected species in the US and abroad.

BIO 446 : (Bio - PWS) Ornithology. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: Bio 100 or Bio 130 or PDBio 120 or PWS 100 or equivalent or instructor's consent.

DESCRIPTION: Avian systematics, evolution, distribution, identification, and natural history.

NOTE: One three-day field trip required.

**Course Outcomes**

- Define ornithology and what it encompasses.
- Discuss the global diversity of birds in both form and function
- Articulate the current thinking regarding the evolution of birds.
- Identify 200 birds common to western North America.

BIO 447 : Mammalogy. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A; or PWS 344

DESCRIPTION: Mammalian diversity, evolution, distribution, and natural history. Two three-day field trips required.

**Course Outcomes**

- Be able to recognize the more common species of Utah mammals based on external and skull features
- Be able to recognize and identify most orders of mammals based on features of the skull
- Understand the evolutionary history of mammals and the modern diversity of mammalian orders
- Enhance skills directed toward understanding and interpreting original scientific literature dealing with mammalian biology

BIO 452 : Marine Biology. (4:3:1)

WHEN TAUGHT: Spring Even Yrs.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Principles of physical and biological oceanography, biodiversity, and ecology of numerous ocean habitats. Extensive field trips.

**Course Outcomes**

No outcomes are available at this time.

BIO 463 : Genetics of Human Disease. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 340

DESCRIPTION: Examining the application of genetics to understanding and treatment of human disease. Functional consequences of mutations; use of model organisms; linkage and association analysis of complex traits; pharmacogenetics; ethical considerations.

**Course Outcomes**

- Understand and explain the different types of genetic variants, how they can be typed and how they can be used to understand the genetic architecture of human disease.
- Understand linkage disequilibrium in the human genome and the role it plays in the search for genetic risk factors for human disease
- Understand and use basic statistics and software for analyzing the correlation between genetic markers and risk for disease.
- Understand and explain how model organisms contribute to our understanding of the genetics of human disease.
- Demonstrate the ability to obtain, aggregate and present information about the current knowledge of the genetics of a human disease.

GEOL 103 : Life of the Past. (3:2:1)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Cultural focus on historical geology for nonscience majors; fossils. Field trips.

**Course Outcomes**

There are no course outcomes available

GEOL 112 : Historical Geology. (4:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 111

DESCRIPTION: Developmental history of the earth, its landforms, and life forms, emphasizing the North American continent. Field trips and lab studies.

**Course Outcomes**

- Demonstrate understanding of the fundamentals of uniformitarianism and the scientific methods for determining the relative and absolute ages of Earth materials and events.
- Demonstrate a basic understanding of the origin and historical significance of sedimentary rocks. Be able to identify common clastic and non-clastic sedimentary rock types in hand sample and on outcrop. Be able to determine the depositional environment from rock type and outcrop pattern. Understand the age and significance of Sloss' depositional sequences.
- Be able to recognize the nature and mode of fossil preservation. Be able to identify the major invertebrate fossil groups and signify the environmental significance of each. Use fossils to recognize the age of sedimentary strata.
- Demonstrate a basic knowledge of organic evolution including the key concepts of natural selection and its role in producing the fossil record. Be able to explain the evidence that led Darwin to the theory of natural selection as well as post-Darwinian discoveries.
- Understand that modern Earth is a product of the coevolution of the biosphere, lithosphere, atmosphere, and hydrosphere over 4.6 billion years of earth history. Demonstrate knowledge of key biological, depositional, tectonic, and climatic events in the context of the geological timescale.
- Be able to decipher the geological history of an area from a geological map.
- Demonstrate mastery of a scientific concept and ability to convey that concept to a body of peers using PowerPoint and/or other professional means.

MATH 119 : Introduction to Calculus. (4:4:1)

OFFERED: Independent Study only.

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 and Math 111; or equivalent.
DESCRIPTION: Introduction to plane analytic geometry and calculus.

**Course Outcomes**

- This course is designed to provide beginning undergraduate students a first exposure to Calculus concepts, theorems, and techniques. In general, theorems will not be proved. An understanding of the theorems and their applications to solve calculus problems will be taught. Students will be expected to develop effective problem solving skills based on their understanding of the theory and not just memorize a set of routines to solve problems. For a more detailed course description, visit the Math 119 Wiki page.

PWS 282 : Introduction to Soil Science. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PWS 283 or concurrent enrollment.
DESCRIPTION: Physical, chemical and microbiological properties of soils that affect plant growth in natural, agricultural, and urban environments.

**Course Outcomes**

- Enhance critically thinking skills as they apply to soil resource management and conservation
- Demonstrate a fundamental knowledge of soil chemistry, genesis, microbiology, physics, taxonomy, and nutrient and water relations
- Create a conceptual framework to help manage soil resources (i.e., animal habitat, plant nutrient fertility, salinity, soil and water quality, and wind and water erosion) in agricultural, urban, and ecological settings
- Understand the historical and current problems, and cultural concerns facing soils as a natural resource essential to human life

PWS 283 : Introduction to Soil Science Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PWS 282 or concurrent enrollment.
DESCRIPTION: Laboratory techniques in determining soil physical, chemical, and fertility properties.

**Course Outcomes**

- Understand basic soil assessments related to soil chemistry, physics, biology, and nutrient fertility
- Apply laboratory techniques to determine problems associated with soil resource conservation and management
- Conduct basic soil methods in nutrient analysis; textural classification; and organic matter, cation exchange capacity, acidity, and alkalinity content

*Hours include courses that may fulfill university core requirements.

## Show all Biology (Bio) Courses

College of Life Sciences Home

Biology Home

Major

- BS in Bioinformatics
- BS in Biological Science Education
- BS in Biology
- BS in Conservation Biology

Course Information

- Biology (Bio) Courses

Faculty

# BS in Biology (60–67 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## The Discipline

The biology degree provides students with current, practical knowledge of plants and animals, emphasizing whole organism biology in both ecological and evolutionary contexts. Broad, synthetic training, from molecular to community levels of organization, equips students to address critical issues and contemporary biological problems associated with the long-term preservation of earth's biodiversity. Elective flexibility allows students to emphasize the botanical or zoological fields, or create a combined program of study. Undergraduate research opportunities may include internships, museum collections curation, bioinventory and data-basing activities, applied molecular genetics, and field and laboratory research in ecology, conservation biology, or evolutionary biology.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following:

BIO 130 : Biology. (4:3:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: General biology course with laboratory for biology majors. Introduction to disciplines in the life sciences including methods for scientific inquiry, biochemical dynamics, cell structure and function, evolutionary theory, bioenergetics, and ecological interactions.

**Course Outcomes**

- Students will demonstrate basic literacy in the language of science and an understanding of the foundational theories of biology (i.e., be able to formulate appropriate hypotheses and predictions to test specific biological phenomena and use appropriate vocabulary to do so) o Atomic Molecular Theoryo Cell Theoryo Theories of Photosynthesis, Fermentation, and Cellular Respirationo Cell Division and Meiotic Theorieso Chromosomal and Mendelian Theories of Inheritanceo Watson and Crick's Theory of DNA Structure and Replicationo Protein Synthesis Theoryo Darwin's Theory of Natural Selectiono Hardy-Weinberg Theoryo Ecosystem Theoryo Population Growth Theoryo Competitive Exclusion and Behavioral Theory
- Students will demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process.
- Students willappreciate the excitement of discovery that has accompanied important scientific developments.
- Students will demonstrate how scientific methodology can be used to analyze real-world science-related problems.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public-policy science issues that affect their community.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.
- Students will be able to reflect rationally upon the interface between science and religion.
- Students will demonstrate sound scientific reasoning ability.

BIO 220A : Biological Diversity: Animals. (4:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in invertebrates and vertebrates. Laboratory included.

**Course Outcomes**

- Students will be able to discuss the broad patterns of the evolution of the clade Animalia, emphasizing the relationships among major sub-clades (phyla), the unique biological attributes that define these clades, and the novel changes in morphology over major transitions (unicellular to multicellular; acoelomate to pseudocoelomate to coelomate body plans, bilaterial vs radial symmetry, origins of exoskeletons, gill slits, notochord, crania & vertebral columns, etc.).
- Students will develop the skills necessary to understand the terminology of phylogenetic systematics and methods used to recover the "tree of life", the logic behind the hierarchy (i.e., the only possible outcome of the process of "descent with modification"), and critically apply evolutionary reasoning, including the use of phylogeny and tree-thinking, to formulate and test hypotheses that explain biological diversity.
- Students will have the intellectual tools to continue to explore related topics with confidence and understanding throughout their lives, and a deeper appreciation for the diversity of life on earth.

BIO 220B : Biological Diversity: Plants. (4:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in fungi, algae, and principal groups of land plants. Laboratory included.

**Course Outcomes**

- Students will be able to discuss differences between cyanobacteria, algae, bryophytes, non-seed vascular plants, gymnosperms, flowering plants, and fungi with repsect to their lifecycles, characteristic morphologies, and biological roles.
- Students will develop the skills necessary to understand and critically apply evolutionary logic including the use of phylogeny and tree-thinking to formulate and test hypotheses that explain biological diversity
- Students will be able to continue to explore related topics with confidence and understanding throughout their lives.

BIO 350 : Ecology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth.

**Course Outcomes**

- Understand the major physical processes that form and characterize the biosphere, including global scale energy flow, the carbon cycle, climate, and soil formation.
- Understand the processes that drive major levels of organization of the biotic world, including energetics in the ecosystem, population dynamics, and species interactions.
- Understand the importance of writing as a way of synthesizing and solidifying critical thought.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Understand the importance of ecology to issues regarding human well-being
- See the connectivity and relevance of ecology to other fields of study

BIO 420 : Evolutionary Biology. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PWS 340

RECOMMENDED: Concurrent enrollment in Bio 421.

DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**

- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

BIO 421 : Evolutionary Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240

DESCRIPTION: Hands-on applications and analytical tools of evolutionary biology; emphasizing inference methodology and evidence complementing the theoretical constructs introduced in Bio 520, including comparative anatomy, phylogenetic inference, population genetics, species concepts, and human evolution.

NOTE: Concurrent enrollment with Bio 420 is strongly recommended.

**Course Outcomes**

- Students will gain a better understanding of the basic principles of evolution within a population including selection, drift, and founder effects by using computer simulations.
- Students will have a deeper understanding of the LDS position on evolution.
- Students will learn the details of phylogenetic reconstruction, tree searching, DNA sequence alignment, and other bioinformatics tools for deciphering patterns of evolution.
- Students will learn the details of species concepts and the criteria used for identifying and diagnosing species.
- Students will gain hands-on experience with hominid fossils and gain an understanding of the evidence that elucidates the biological history of humans.

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105

DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.

NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

2. Complete one course from the following:

BIO 370 : Bioethics. (2:1:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Introductory biology course.

DESCRIPTION: In-depth lecture and small group discussion of varied bioethical issues. LDS Church positions emphasized when appropriate.

**Course Outcomes**

- Students will understand the ethical and philosophical underpinnings of bioethics and to develop ethical intuitions on bioethical issues.
- Students will learn the terminology, vocabulary, and objectives of bioethics.
- Students will understand the tools and approaches needed to make a bioethical decision and to communicate that decision in rationally informed ways.
- Students will understand the bioethical primary literature, to understand how to read case studies, and familiarity with the major issues being discussed in bioethics today.

BIO 470 : History and Philosophy of Biology. (3:1.5:1.5)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 350

DESCRIPTION: Development of fundamental generalizations of biology; nature of science; applications to major philosophical issues of current science.

**Course Outcomes**

- Students will demonstrate an understanding of the history of biology. This will include an understanding of the major figures and the historical development of modern biology. This will include having read original texts from the periods covered (Aristotle to Current Biology).
- Students will also have an understanding of principal philosophical issues confronting modern biology, including major research trends in philosophy of biology. The students will also have a grasp of what 'science' is, how it is practiced, and what expectations for knowledge can be justified using science.
- Students will have the ability to read and write about the primary literature both on the history, and the philosophy, of science. They will have a grasp of the terminology used in philosophy, and how philosophy of biology is currently practiced. Writing will be emphasized.

3. Complete one of the following options:

a. Complete the following:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.

- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent.

DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

b. Complete the following:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.

NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

4. Complete one of the following options:

a. Complete the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Calculus or concurrent enrollment.
DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 121 or equivalent. Calculus.
DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

b. Complete the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: High school algebra and trigonometry.
RECOMMENDED: Concurrent enrollment in Phscs 107.
DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 105 or equivalent.
RECOMMENDED: Concurrent enrollment in Phscs 108.
DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 105 or concurrent enrollment.
DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 106 or concurrent enrollment
DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

5. Complete 12 hours of electives from the following:

BIO 352 : Introduction to Marine Biology. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: BIO 220A
DESCRIPTION: Marine life, the sea as an environment, and research methods.

**Course Outcomes**

There are no course outcomes available

BIO 380 : Comparative Animal Physiology and Anatomy. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: Bio 220A or instructor's consent.

DESCRIPTION: Structure and function of animal organ systems; structural and physiological responses to demands of and changes in environment; evolutionary constraints on anatomy and physiology.

**Course Outcomes**

- Students will demonstrate a fundamental knowledge of comparative vertebrate animal physiology and anatomy.
- Students will develop critical thinking skills while learning concepts and understanding the tools used by comparative vertebrate animal physiologists and anatomists to study function and structure.
- Students will use physiological and anatomical knowledge to enhance their personal lives.
- Students will use their skills and knowledge in comparative vertebrate animal physiology and anatomy to secure employment or to advance in higher education in biology-related disciplines.
- Students will develop an understanding of physiologic isotopic techniques utilized to indicate energy sources, trophic levels, body water, and latitudinal and altitudinal animal migration reflected by stable isotopes of carbon, nitrogen, hydrogen and oxygen.

BIO 430 : Plant Classification and Identification. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: Bio 100 or Bio 130 or PDBio 120 or PWS 100 or instructor's consent.

DESCRIPTION: Principles of plant systematics, taxonomy, and classification, emphasizing family recognition by sight, terminology, and use of identification keys to the temperate flora.

**Course Outcomes**

- Students will apply correct vocabulary for describing plant parts and be able to deduce the meaning of new terms based on knowledge of common roots, prefixes, and suffixes.
- Students will recognize the major groups of vascular plants, be able to differentiate them by their principal characters, and understand their phylogenetic relationships.
- Students will identify by sight 40 families of flower plants as well as common families of ferns and gymnosperms, by recognizing differentiating features of each family.
- Students will gain proficiency in the use of keys and identification manuals for identifying any unknown plant to species.

BIO 441 : Entomology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: Bio 220A or equivalent.

DESCRIPTION: External morphology, natural history, evolution, distribution, and phylogeny of insects. Insect collection required.

**Course Outcomes**

- Understand basic principles of morphology and systematics and apply these principles to your own knowledge of insects.
- Judge genetic relationships. Be able to recall current hypotheses of insect phylogeny at the ordinal level and have the tools needed to judge validity of new hypotheses of phylogeny that might be proposed. You will also study carefully the modifications associated with phylogenies that led to insect diversification and success.
- Understand details of insect morphology, and be well versed in both internal and external body structures.
- Recognize common insect families and be able to quickly identify them on sight.
- Gain or regain a sense of wonder for the natural world, especially as it relates to insects and other arthropods. Gain perspectives of the diversity and complexity in the insect world. Enhance your appreciation for the natural world we share with them.
- Learn life histories and specific collecting techniques for insects in their own habitats. You will learn how they fit in the natural world.
- Learn the protocols for detailed identificiations. Many insects will be totally new in appearance to you. You will use identification guides and illustrations to help you decide what the name of an insect is at the Order and Family levels.
- Use a variety of identification techniques to correctly identify insects and other arthropods. Throughout your life you will be asked by employers, friends, and family to answer the question, "What is this?" This course will give you these exact skills. A correct identification is a beginning step to learning more about a species and its relationships to the natural world and its pragmatic relationship to humans.

BIO 442 : Advanced Invertebrate Zoology. (5:6:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: BIO 220A

DESCRIPTION: Functional morphology, cladistics, ecology, behavior, and interrelationships of invertebrates.

**Course Outcomes**

There are no course outcomes available

BIO 443 : Ichthyology. (3:2:3)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: BIO 220A

DESCRIPTION: Fish systematics, evolution, morphology, distribution, and natural history.

**Course Outcomes**

- Students will have a general understanding of fish respiration.
- Students will have a general understanding of fish body structure.

- Students will have a general understanding of fish food processing.
- Students will have a general understanding of fish behavior and communication.

BIO 445 : Herpetology. (4:3:2)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: BIO 220A

DESCRIPTION: Reptile and amphibian evolution, systematics, morphology, distribution, and natural history. Lab emphasizes taxonomy, classification, and distribution of western U.S. species.

**Course Outcomes**

- Each student will gain a deeper understanding of some details of the origin of tetrapods, and the origin of the amniotes.
- Each student will gain a deeper understanding of the phylogenetic position of extinct and extant clades of amphibians & reptiles within the clade Vertebrate.
- Each student will acquire a detailed knowledge of the evolution and natural history (natural history, behavior, etc.) of the major clades of extant amphibians and reptiles .
- Through lab and field experiences, each student will acquire a detailed knowledge of diagnostic characters, taxonomy & distributions, and some aspects of ecology of native western species.
- Each student will acquire some knowledge of the conservation status of selected species in the US and abroad.

BIO 446 : (Bio - PWS) Ornithology. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: Bio 100 or Bio 130 or PDBio 120 or PWS 100 or equivalent or instructor's consent.

DESCRIPTION: Avian systematics, evolution, distribution, identification, and natural history.

NOTE: One three-day field trip required.

**Course Outcomes**

- Define ornithology and what it encompasses.
- Discuss the global diversity of birds in both form and function
- Articulate the current thinking regarding the evolution of birds.
- Identify 200 birds common to western North America.

BIO 447 : Mammalogy. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A; or PWS 344

DESCRIPTION: Mammalian diversity, evolution, distribution, and natural history. Two three-day field trips required.

**Course Outcomes**

- Be able to recognize the more common species of Utah mammals based on external and skull features
- Be able to recognize and identify most orders of mammals based on features of the skull
- Understand the evolutionary history of mammals and the modern diversity of mammalian orders
- Enhance skills directed toward understanding and interpreting original scientific literature dealing with mammalian biology

BIO 450 : Conservation Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A & BIO 350; or BIO 220B & BIO 350

DESCRIPTION: Scientific principles of conservation: applying population genetics, and phylogenetic and ecological theory to preservation of biological diversity; developing sustainable ecological systems compatible with human resource use.

**Course Outcomes**

- Apply an understanding of ecological processes to conservation of populations, species, and ecosystems.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Demonstrate the ability to apply the scientific method and analytical thinking to ecological and conservation issues.
- Demonstrate the ability to synthesize literature relevant to a topic in conservation bioloigy
- Demonstrate the ability to write a scientific term paper

BIO 452 : Marine Biology. (4:3:1)

WHEN TAUGHT: Spring Even Yrs.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Principles of physical and biological oceanography, biodiversity, and ecology of numerous ocean habitats. Extensive field trips.

**Course Outcomes**

No outcomes are available at this time.

BIO 455 : Plant Ecology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: BIO 220B

RECOMMENDED: Bio 350.
DESCRIPTION: Fundamental principles governing interactions among plants and their environments with respect to their success. Students will be able to apply their knowledge to land management, conservation and agriculture.

**Course Outcomes**

There are no course outcomes available

BIO 463 : Genetics of Human Disease. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: PWS 340
DESCRIPTION: Examining the application of genetics to understanding and treatment of human disease. Functional consequences of mutations; use of model organisms; linkage and association analysis of complex traits; pharmacogenetics; ethical considerations.

**Course Outcomes**

- Understand and explain the different types of genetic variants, how they can be typed and how they can be used to understand the genetic architecture of human disease.
- Understand linkage disequilibrium in the human genome and the role it plays in the search for genetic risk factors for human disease
- Understand and use basic statistics and software for analyzing the correlation between genetic markers and risk for disease.
- Understand and explain how model organisms contribute to our understanding of the genetics of human disease.
- Demonstrate the ability to obtain, aggregate and present information about the current knowledge of the genetics of a human disease.

BIO 465 : Bioinformatics and Proteomics. (3:2:1)

WHEN TAUGHT: Winter
PREREQUISITE: BIO 365
DESCRIPTION: 3-D protein structural comparisons, hidden Markov models for database comparisons, homology detection, multiple sequence analyses, and protein family comparisons. Exercises in computer programming in genomics.

**Course Outcomes**

- Students will learn and demonstrate mastery of advanced analytical bioinformatics techniques, including genome assembly, genome annotation, and protein analyses.
- Demonstrate ability to use and evaluate literature databases and primary literature directed to the bioinformatics community in terms of newly developed software, analytical algorithms, application to empirical data, etc.
- Apply and develop computational skills in secondary (i.e., helices, etc.) and tertiary (i.e., folding, etc.) prediction, and 3-dimensional (i.e., x-ray crystal structures, etc.) modeling of protein structures.
- Apply evolutionary concepts to modeling DNA/proteins to evaluate and/or predict function, utilizing 3D structures, physical and chemical amino acid properties, etc.
- Apply existing and develop new tools for genome assembly and annotation from next-generation DNA sequencing projects

BIO 475 : Plant Developmental Biology. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: PWS 340
RECOMMENDED: Bio 220B.
DESCRIPTION: Developmental mechanisms controlling plant development, with particular emphasis on genetic and molecular regulation.

**Course Outcomes**

There are no course outcomes available

BIO 494R : Mentored Research. (1-6:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Supervisor's consent.
DESCRIPTION: Independent student research under faculty supervision.

**Course Outcomes**

- Students will demonstrate an understanding of the methods of scientific inquiry.
- Students will demonstrate an ability to design and implement a research project in a specialized area.
- Students will effectively interpret, analyze, and present results of experimentation to others.
- Students will show an appreciation for and understanding of the specialized field.

: Aquatic Biology.

**Course Outcomes**

: Bioinformatics.

**Course Outcomes**

: Ecology.

**Course Outcomes**

: Electron Microscopy.

**Course Outcomes**

: Entomology.

**Course Outcomes**

: Evolution.

**Course Outcomes**

: Marine Biology.

**Course Outcomes**

: Plant Biology.

**Course Outcomes**

: Systematics.

**Course Outcomes**

: Veterinary Science.

**Course Outcomes**

: Medicinal Botany.

**Course Outcomes**

: Plant Biochemistry.

**Course Outcomes**

: Fungal Biology.

**Course Outcomes**

BIO 510 : Biological Systematics and Curation. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Principles, methods, and tools of taxonomy and systematics as applied to species delimitation, specimen-based research, nomenclatural codes, and the curation of biological specimens.

**Course Outcomes**

- Students will be able to discuss species as the fundamental unit of biodiversity and the difference between species definitions and criteria used to delimit species.
- Students will be able to discuss basic philosophies of classification and the relationship between classification, phylogeny, and nomenclature.
- Students will gain proficiency with nomenclatural codes and their relationship to specimen-based research products such new species descriptions, monographs, floras, and faunas.
- Students will gain experience with a variety of specimen-based research tools.
- Students will understand responsibilities of biological collections management and curation.

BIO 511 : Lichenology. (3:2:3)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Classification, morphology, and ecology on lichens. Field trip required.

**Course Outcomes**

- Research and characterize the nature of the lichen symbiosis.
- Develop a working knowledge of lichen biology.
- Demonstrate an understanding of the role of lichens as biomonitors of air quality.
- Develop basic skills for collecting, processing, and identifying lichens.
- Develop basic skills with:- Thin-layer chromatography – lichen secondary chemistry.- Molecular techniques – to characterize genetic patterns and relationships at the population level.
- Prepare research manuscripts for review and publication consideration.
- Present a research proposal for a project using lichens as air quality biomonitors.

BIO 512 : Angiosperm Phylogeny. (3:2:4)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Bio 430 or equivalent.

DESCRIPTION: Description, classification, phylogeny, and geographic distribution of flowering plant families.

**Course Outcomes**

- Students will be able to discuss the primary pattern of relationships among flowering plants as supported by contemporary research.â ¨â ¨
- Students will demonstrate proficiency in tree-thinking and the application of phylogenetic terminology in discussing angiosperm relationships.
- Students will demonstrate knowledge of world-wide flowering plant diversity, including examples of model organisms, convergence, and evolutionary novelties.

Students will be able to discuss contemporary research in flowering plant diversity, including outstanding problems where additional research is needed.

BIO 525 : Animal Disease, Biosecurity, and Zoonoses. (3:3.0:0)

WHEN TAUGHT: Winter

PREREQUISITE: Bio 380 or instructor's consent.

DESCRIPTION: Animal disease emphasizing prevention, organ systems affected, biosecurity, and zoonotic potential.

**Course Outcomes**

- Comparative pathophysiology will be taught using canine, feline, bovine, ovine, caprine, equine, lab animals, and wildlife examples
- Understand basic animal pathophysiology of disease on an organ system basis and preventive measures to maintain animal health
- Identify biosecurity practices to prevent animal disease
- Differentiate between zoonoses, sapronoses and anthroponoses and understand how to institute preventive measures and management practices to avert these health problems
- Design a herd health program with preventive measures that addresses nutrition, sanitation, housing, ventilation, lighting, and other components for a particular species the student wants to work with as a producer
- Understand how to institute good management procedures that can prevent the occurrence of animal disease
- Develop a basic knowledge of animal immunology as it pertains to disease induction and prevention, with natural and artificial immunity practices that should be implemented to enhance disease prevention, and nutritional practices to optimize animal immunity

BIO 541 : Aquatic Entomology. (4:2:4)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Bio 441 or equivalent.

DESCRIPTION: Morphology, classification, biology, and functional ecology of aquatic insects. Field trips required.

**Course Outcomes**

- Develop an appreciation for the diversity of the living aquatic insect world.
- Learn to become better stewards of the earth and its living inhabitants.
- Understanding of all aquatic biology.

BIO 556 : Limnology. (3:2:4)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Bio 350, Chem 106; or equivalents.

DESCRIPTION: Lakes, reservoirs; their biota and physical/chemical properties.

**Course Outcomes**

- Understand the major physical processes that form and characterize lentic habitats.
- Understand the dominant chemical processes that occur in lake systems.
- Understand how organisms adapt to the above physical and chemical constraints.
- Gain teaching experience through preparing a Powerpoint presenting your study presentation to the class.
- Experience pursuing a focused research topic from the initial question to a competed report.

BIO 557 : Stream and Wetland Ecology. (4:3:4)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Bio 350, Chem 106; or equivalent.

DESCRIPTION: Stream and wetland ecology; their biota and their physical/chemical properties.

**Course Outcomes**

- Develop an understanding of streams and wetlands within the broader context of ecology and conservation.
- Become familiar with the major conservation issue in streams and wetlands and the underlying ecological concepts.
- Initial exposure to the current literature.
- Develop skills related to critical thinking. That is, learn how to: a) read critically and summarize information, b) draw conclusions and synthesize information to develop new questions and hypotheses, and c) design experiments or comparative studies. It is important to start early to learn how to think, read, and write critically.

BIO 560 : Population Genetics. (4:4:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: Bio 420 or equivalent.

DESCRIPTION: Basic principles of population genetics applied to natural populations; drift, selection, and nonrandom mating; inferring population subdivision, migration, and gene flow.

**Course Outcomes**

- Students will gain a general introduction to the field a population genetics.
- Students will experience the broad application of population genetics to diverse fields from ecology to medicine.
- Students will manipulate and analyze population genetic data, especially molecular data.

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

MMBIO 461 : Advanced Bacterial Physiology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481 & MMBIO 151

DESCRIPTION: Principles of prokaryotic physiology, including cell structure and function, gene regulation, and biochemical processes; focusing on the unique aspects of prokaryotic biology.

**Course Outcomes**

- Students will demonstrate an advanced understanding of selected topics in microbial physiology (cell structure, growth, biosynthesis, transport, etc.) through their participation in classroom discussions, writing assignments and oral presentations.
- Students will demonstrate the ability to read, comprehend and communicate current research in microbial physiology by making Powerpoint presentations to the class.
- Students will write a scientific review article on a topic of their choice related to microbial physiology.

MMBIO 465 : Virology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBio 261 or equivalent.

DESCRIPTION: Basic principles of virology, emphasizing selected molecular aspects of virus life cycles and disease processes.

**Course Outcomes**

- Be able to answer basic questions about Virology: Why are viruses organized as they are? How do viruses replicate? How do viruses cause disease? What are the interactions between viruses and the host immune system? How to prevent/treat/cure viral infections? How can viruses be used as tools to study biological processes and for gene transfer? How can an understanding of viruses help you in your future career? *Relates to Program Learning Outcome: “Exhibit mastery of four of the principal areas of the discipline”, one of which is Virology.
- Understand experimental tools used to study viruses (these are broadly applicable to molecular biology, cell biology, and microbiology) and be able to develop experiments and interpret data.*Relates to Program Learning Outcomes: “Devise experiments with appropriate hypotheses and controls” and “Interpret experiments from primary scientific literature”
- Write about a current, pressing issue in the field of Virology.*Relates to Program Learning Outcome: “Communicate scientific information”
- Understand how research of viruses “by study and also by faith” can lead to alleviation of human disease and suffering.*Relates to Program Learning Outcome: “Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological processes”

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies

- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220

DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.

NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

PWS 440 : Plant Physiology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GE Biological Science requirement; college chemistry

RECOMMENDED: Chem 285; or 351, 352.

DESCRIPTION: Photosynthesis, respiration, water relations, mineral nutrition, growth of flowering plants.

**Course Outcomes**

- Students will be fluent in understanding plant function at the molecular, biochemical and whole plant levels
- Students will understand the connections between plant function and ecosystem processes
- Student will practice applying the scientific method in order to develop critical thinking and problem solving skills
- Student will engage in learning activities that increase there writing and speaking proficiency

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

6. Complete an exit interview.

## Recommended Courses for Career Options

### Botany

Students seeking career and graduate school opportunities in botanical fields should build their electives on a foundation of basic plant biology courses. Coupled with the broad integrative biology core, the following courses provide students with the greatest diversity of options for postgraduate work or training in plant biology:

Bio 430, 455, 475, 510, 511, 512.

PWS 282, 283, 355, 440, 515.

Students completing Bio 430 and PWS 330 and 355 often find summer employment opportunities with government land agencies.

## Preveterinary Medicine

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Students interested in applying to veterinary medicine schools should take the following courses as part of the biology major:

BIO 270 : Animal Restraint. (1:0:2)

WHEN TAUGHT: Winter

DESCRIPTION: Restraint and first aid techniques for pet, laboratory, domestic, and wild animals.

**Course Outcomes**

- Know how to safely restrain domestic animals and wildlife species
- Understand basic animal restraint techniques for a number of domestic and wildlife species
- Understand why certain restraint techniques work with only certain animals and not others
- Develop a basic knowledge of animal chemical restraint methods and their indications
- Understand why the use of pharmaceutical agents by lay persons is not advocated without a veterinarian's prescription or special knowledge and training of non-veterinarian personnel, such as wildlife biologists

BIO 291R : Veterinary Medicine Seminar. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Preview into veterinary medicine as a profession. Application procedure and preparation for veterinary school.

**Course Outcomes**

- Develop a working knowledge of the educational requirements and preveterinary medicine prerequisite coursework required by the majority of USA colleges of veterinary medicine (CVM)
- Learn how to navigate the application process for admission to colleges of veterinary medicine, understand the different sections of the online veterinary medicine college application service (VMCAS) form, and know what information is needed for supplemental application forms required by individual CVMs
- Knowledge of state contracts, the Western Interstate Commission for Higher Education (WICHE) Professional Student Exchange Program (PSEP), state residency requirements
- Understand the cost of a veterinary medicine education, and learn how to minimize educational debt with scholarships, grants, research stipends, and military or government programs
- Career alternatives, general or specialty practices in veterinary medicine
- Understand the issues concerning animal welfare, animal research, and responsibilities as a member of the veterinary profession
- Statistics with data on need (based on demographic or other data), employment placement, salary, employer requirements, market research information, and advanced degrees to enhance employment opportunities in veterinary medicine

BIO 392R : Preveterinary Preceptorship. (3:1:5)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Supervised on-the-job exposure to veterinary medicine under a clinical setting, supplemented with academic assignments.

**Course Outcomes**

- I. Skills student should master during the preveterinary medicine preceptorship experience:Husbandry: feeding, sanitation, handling, breed recognitionRestraint of animals for examination, treatment and radiographyLogging medical data and recording information in patient chartsGrooming for medical reasonsObserve and recognize normal and abnormal body functions and vital signsConcepts of animal welfare and humane treatment of animalsIntroduce methods and explain necessity of animal population controlObtain knowledge of and competency with routine preventive medicine including vaccination protocols, parasite identification-treatment-prevention, routine physical examination, geriatric health care
- II. The student should observe and participate in these activities:Client-doctor relations and dialogue; demonstration of veterinary ethics and integrity; diagnostic thought process and rationalePatent examination; administration of medication and therapy; collection of body fluids and specimensMedical record information entryClinical diagnostic laboratory techniquesDeveloping and interpreting radiographsSurgical suite protocols:preparation of instrument packs, drapes, surgical gownsaseptic techniqueanesthesia administration and monitoringsurgical preparation of patientsurgery protocols and surgical assistanceintensive and post-operative nursing careEuthanasia
- III. Areas of hospital student should receive exposure to:Kennel and quarantine wardsTreatment areasSurgery and examination roomsOffice proceduresTelephone etiquetteLaboratory and pharmacyLibrary search and literature review of clinical case information and current treatments based on veterinary research

BIO 525 : Animal Disease, Biosecurity, and Zoonoses. (3:3.0:0)

WHEN TAUGHT: Winter

PREREQUISITE: Bio 380 or instructor's consent.

DESCRIPTION: Animal disease emphasizing prevention, organ systems affected, biosecurity, and zoonotic potential.

**Course Outcomes**

- Comparative pathophysiology will be taught using canine, feline, bovine, ovine, caprine, equine, lab animals, and wildlife examples
- Understand basic animal pathophysiology of disease on an organ system basis and preventive measures to maintain animal health
- Identify biosecurity practices to prevent animal disease
- Differentiate between zoonoses, sapronoses and anthroponoses and understand how to institute preventive measures and management practices to avert these health problems
- Design a herd health program with preventive measures that addresses nutrition, sanitation, housing,

ventilation, lighting, and other components for a particular species the student wants to work with as a producer
- Understand how to institute good management procedures that can prevent the occurrence of animal disease
- Develop a basic knowledge of animal immunology as it pertains to disease induction and prevention, with natural and artificial immunity practices that should be implemented to enhance disease prevention, and nutritional practices to optimize animal immunity

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.

NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

(1 hour required)

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways

- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

(or higher)

MMBIO 221 : General Microbiology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Any biology course.
RECOMMENDED: Any chemistry course.
DESCRIPTION: Microbial world, emphasizing communicable diseases, their causes and control.
NOTE: Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses.

**Course Outcomes**

- Explain and discuss the ways by which microbiologists study microorganisms.
- Discuss the principle infectious diseases that affect mankind, including how they are transmitted, treated, controlled and prevented.
- Differentiate between the types of microorganisms by identifying relevant structure and their function in the biosphere.
- Propose microbial solutions to global problems.
- Describe how the human body defends itself against infectious agents.

MMBIO 222 : General Microbiology Laboratory. (1:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: MMBio 221 or concurrent enrollment.

**Course Outcomes**

- Use the bright field microscope to view and interpret microbiological specimens
- Use proper aseptic techniques int he handling and transfer of microbiological specimens
- Use standard microbiological media to culture and identify common microbiological specimens

Use standard microbiology laboratory equipment correctly
- Follow an experimental protocol, collect and organize data, present data in an appropriate form, assess the validity of the data, and draw appropriate comclusions based on the results
- Integrate information and skills gained int eh course to make informed judgements about the role of microorganisms in everyday life
- Use accepted safety protocols when handling microbiological specimens and chemicals

NDFS 330 : Comparative Animal Nutrition. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Comparative digestion, absorption, and utilization of nutrients and nutritional applications of domestic, pet, and wildlife species.

**Course Outcomes**

- Demonstrate an understanding of the diverse digestive systems in the animal kingdom.
- Demonstrate an understanding how changes in digestive systems affect both nutrient requirements and affect feeding types and systems.
- Apply the roles of nutrients in cellular metabolism.
- Explain how nutrient deficiencies affect body function and performance.
- Demonstrate knowledge of animal feed formulation.

PDBIO 484 : Human Embryology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBio 360 or equivalent.

RECOMMENDED: PDBio 325.

DESCRIPTION: Developmental milestones of prenatal life: etiology of congenital malformations, emphasizing molecular and cellular changes and their functional consequences.

**Course Outcomes**

- Students will identify the developmental trajectories of the various organ systems and why abnormalities at any step in the lineage of organogenesis may cause birth defects.
- Students will be able to communicate with health professionals effectively regarding embryonic events from conception to birth and the ramifications of each event in instances of health and disease.
- Students will demonstrate how signaling between participating cells leads to important events during the first, second, third, and fourth weeks of development.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

TMA 150 : Public Speaking. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Principles and methods of public speaking; speaking experiences.

**Course Outcomes**

- Develop analytical listening and observation skills.
- Know how to speak publicly so your audience will really listen and understand.
- Construct and deliver effective extemporaneous public speeches.
- Manage speech anxiety and effective use nonverbal communication to inform, persuade, enlighten, and impact your audience.
- Be able to produce and employ effective visual aids in your presentations.

*Hours include courses that may fulfill university core requirements.

**Show all Biology (Bio) Courses**

College of Life Sciences Home

Biology Home

Major

- BS in Bioinformatics
- BS in Biological Science Education
- BS in Biology
- BS in Conservation Biology

Course Information

- Biology (Bio) Courses

Faculty

# BS in Conservation Biology (64–68 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## The Discipline

The conservation biology major is designed to provide students with a broad scientific background in preparation for a career in conservation fields. Graduates will be equipped to deal with the issues and problems of sustainable resource usage, conservation of endangered biota, long-term preservation of biodiversity, development and preservation of natural resources, and management and conservation of ecosystems. This major is recommended for those seeking graduate programs in a variety of areas of biology, especially conservation biology. The major also prepares students well for obtaining positions in Non-Government Organizations (NGOs) focusing on conservation biology.

Students majoring in conservation biology should consider completing a minor to strengthen their technical or applied sociological skills. Possible minors include anthropology, geography (geography; geographic information systems; urban, rural, and environmental planning), international development, management (global management), political science, recreation management and youth leadership (nonprofit management), sociology, women's studies.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following:

BIO 130 : Biology. (4:3:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: General biology course with laboratory for biology majors. Introduction to disciplines in the life sciences including methods for scientific inquiry, biochemical dynamics, cell structure and function, evolutionary theory, bioenergetics, and ecological interactions.

**Course Outcomes**

- Students will demonstrate basic literacy in the language of science and an understanding of the foundational theories of biology (i.e., be able to formulate appropriate hypotheses and predictions to test specific biological phenomena and use appropriate vocabulary to do so) o Atomic Molecular Theoryo Cell Theoryo Theories of Photosynthesis, Fermentation, and Cellular Respirationo Cell Division and Meiotic Theorieso Chromosomal and Mendelian Theories of Inheritanceo Watson and Crick's Theory of DNA Structure and Replicationo Protein Synthesis Theoryo Darwin's Theory of Natural Selectiono Hardy-Weinberg Theoryo Ecosystem Theoryo Population Growth Theoryo Competitive Exclusion and Behavioral Theory
- Students will demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process.
- Students willappreciate the excitement of discovery that has accompanied important scientific developments.
- Students will demonstrate how scientific methodology can be used to analyze real-world science-related problems.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public-policy science issues that affect their community.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.
- Students will be able to reflect rationally upon the interface between science and religion.
- Students will demonstrate sound scientific reasoning ability.

BIO 220A : Biological Diversity: Animals. (4:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in invertebrates and vertebrates. Laboratory included.

**Course Outcomes**

- Students will be able to discuss the broad patterns of the evolution of the clade Animalia, emphasizing the relationships among major sub-clades (phyla), the unique biological attributes that define these clades, and the novel changes in morphology over major transitions (unicellular to multicellular; acoelomate to pseudocoelomate to coelomate body plans, bilaterial vs radial symmetry, origins of exoskeletons, gill slits, notochord, crania & vertebral columns, etc.).
- Students will develop the skills necessary to understand the terminology of phylogenetic systematics and methods used to recover the "tree of life", the logic behind the hierarchy (i.e., the only possible outcome of the process of "descent with modification"), and critically apply evolutionary reasoning, including the use of phylogeny and tree-thinking, to formulate and test hypotheses that explain

biological diversity.
- Students will have the intellectual tools to continue to explore related topics with confidence and understanding throughout their lives, and a deeper appreciation for the diversity of life on earth.

BIO 220B : Biological Diversity: Plants. (4:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in fungi, algae, and principal groups of land plants. Laboratory included.

**Course Outcomes**

- Students will be able to discuss differences between cyanobacteria, algae, bryophytes, non-seed vascular plants, gymnosperms, flowering plants, and fungi with repsect to their lifecycles, characteristic morphologies, and biological roles.
- Students will develop the skills necessary to understand and critically apply evolutionary logic including the use of phylogeny and tree-thinking to formulate and test hypotheses that explain biological diversity
- Students will be able to continue to explore related topics with confidence and understanding throughout their lives.

BIO 350 : Ecology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth.

**Course Outcomes**

- Understand the major physical processes that form and characterize the biosphere, including global scale energy flow, the carbon cycle, climate, and soil formation.
- Understand the processes that drive major levels of organization of the biotic world, including energetics in the ecosystem, population dynamics, and species interactions.
- Understand the importance of writing as a way of synthesizing and solidifying critical thought.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Understand the importance of ecology to issues regarding human well-being
- See the connectivity and relevance of ecology to other fields of study

BIO 370 : Bioethics. (2:1:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Introductory biology course.

DESCRIPTION: In-depth lecture and small group discussion of varied bioethical issues. LDS Church positions emphasized when appropriate.

**Course Outcomes**

- Students will understand the ethical and philosophical underpinnings of bioethics and to develop ethical intuitions on bioethical issues.
- Students will learn the terminology, vocabulary, and objectives of bioethics.
- Students will understand the tools and approaches needed to make a bioethical decision and to communicate that decision in rationally informed ways.
- Students will understand the bioethical primary literature, to understand how to read case studies, and familiarity with the major issues being discussed in bioethics today.

BIO 420 : Evolutionary Biology. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PWS 340

RECOMMENDED: Concurrent enrollment in Bio 421.

DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**

- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

BIO 421 : Evolutionary Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240

DESCRIPTION: Hands-on applications and analytical tools of evolutionary biology; emphasizing inference methodology and evidence complementing the theoretical constructs introduced in Bio 520, including comparative anatomy, phylogenetic inference, population genetics, species concepts, and human evolution.

NOTE: Concurrent enrollment with Bio 420 is strongly recommended.

**Course Outcomes**

- Students will gain a better understanding of the basic principles of evolution within a population including selection, drift, and founder effects by using computer simulations.
- Students will have a deeper understanding of the LDS position on evolution.
- Students will learn the details of phylogenetic reconstruction, tree searching, DNA sequence alignment, and other bioinformatics tools for deciphering patterns of evolution.
- Students will learn the details of species concepts and the criteria used for identifying and diagnosing species.
- Students will gain hands-on experience with hominid fossils and gain an understanding of the evidence that elucidates the biological history of humans.

BIO 450 : Conservation Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A & BIO 350; or BIO 220B & BIO 350

DESCRIPTION: Scientific principles of conservation: applying population genetics, and phylogenetic and ecological theory to preservation of biological diversity; developing sustainable ecological systems compatible with human resource use.

**Course Outcomes**

- Apply an understanding of ecological processes to conservation of populations, species, and ecosystems.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Demonstrate the ability to apply the scientific method and analytical thinking to ecological and conservation issues.
- Demonstrate the ability to synthesize literature relevant to a topic in conservation bioloigy
- Demonstrate the ability to write a scientific term paper

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105

DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.

NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary

phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

2. Complete one of the following chemistry options:

**Either**

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent.

DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

**Or**

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: CHEM 105; or CHEM 111
DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.
NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: CHEM 351; or CHEM 351M
DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).
DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.
NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

**Note:** Students considering graduate or professional school should choose the second option.

3. Complete at least five hours from the following tools courses:

BIO 555 : Evolutionary and Ecological Modeling. (2:2:0)

WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: Senior status in bioinformatics program or graduate status; Stat 511, 512, or equivalent; instructor's consent.
DESCRIPTION: Using models in ecology. Practical experience in analytical, simulation, and agent-based models.

**Course Outcomes**

There are no course outcomes available

GEOG 211 : Map Use and Interpretation. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Maps as tools for spatial analysis of problems in physical and cultural geography.

**Course Outcomes**

- Identify each component of the â Big Threeâ when using or observing geographic technologies. The Big Three includes 1) Geographic Information Systems, 2) Global Positioning Systems, and 3) Remote Sensing.
- Complete all typical map scale calculations related to land distance and area including unit conversions.
- Give and take coordinate references in UTM and lat / long and convert between the two. select a datum and coordinate system appropriate for a given job-related task. Explain the logic of and give / take a reference in the PLSS
- Configure a GPS receiver properly to use both with and without a map. Lay-in and follow the course in a GPS receiver.
- Measure elevation, distance, direction, slope, and aspect from digital or paper topographic maps. Perform a simple statistical analysis of data on a USGS topographic map.
- When presented with a typical specimen, perform a simple interpretation of a thematic map (e.g. Choropleth, Isoline)

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MMBIO 241 : Molecular and Cellular Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBio 240 or concurrent enrollment.

DESCRIPTION: Molecular and cellular biology techniques laboratory.

**Course Outcomes**

- Practice ethics and integrity by working with groups and following lab rules.*Relates to Program Learning Outcome: A commitment to professional integrity and ethical behavior consistent with themission of the university.
- Learn the basics of experimental design, how to formulate a hypothesis, what controls to use, how to interpret experimental data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Practice scientific communication through written lab questions, exams and oral presentations.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Learn molecular biology laboratory techniques through practical laboratory exercises. Techniques include, spectrophotometry,isolation of DNA and protein, quantification of DNA and protein, techniques used to purify or detect specific proteins, such aschromatography, western blot and ELISA, DNA fingerprinting, polymerase chain reaction and enzyme assays.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology.

PWS 551 : Quantitative Ecology. (3:2:3)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Bio 350 or equivalent; Stat 121 or 511 or concurrent enrollment.

DESCRIPTION: Quantitative methods for ecological sampling and data analysis.

**Course Outcomes**

- Demonstrate application of the scientific and analytical methods in ecological research.
- Learn how and when to use appropriate sampling and a data analysis techniques for ecological inquiry.
- Demonstrate ability to synthesize literature relevant to a research project.
- Demonstrate oral and written scientific communications skills.

STAT 230 : Analysis of Variance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

RECOMMENDED: Concurrent enrollment in MATH 112.

DESCRIPTION: Scientific method, statistical thinking, sources of variation, completely randomized design, ANOVA, power and sample size considerations, multiple testing, randomized complete blocks, factorial designs, interactions. Introduction to statistical software.

**Course Outcomes**

- Define the experimental unit, response variable, factor(s), and level(s) of a basic experiment
- Understand the role of randomization and replication in inferring causation
- Perform a completely randomized design and construct the ANOVA table in SAS and R
- Compute the minimum number of replicates in a completely randomized design to achieve a given level of power
- Compute pairwise tests of differences in means in SAS and R to understand a significant overall F-test
- Perform a randomized complete block design and construct the ANOVA table in SAS and R
- Perform a factorial design and construct the ANOVA table in SAS and R
- Explain a statistically significant interaction
- Describe the differences between a split plot and a two-way ANOVA

STAT 234 : Methods of Survey Sampling. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Sampling frames; questionnaire design; simple random, systematic, stratified, and cluster sampling methods; comparing domain means; contingency table analysis.

**Course Outcomes**

- Identify and sample using simple random sampling and various forms of stratified sampling, cluster sampling, and systematic sampling
- Accurately identify and perform variance calculations for basic designs
- Participate in a real project involving sampling methodologies and appropriate point estimate and variance calculations
- Create graphical representations of results
- Demonstrate effective written and oral communication skills as they present their findings

4. Complete at least six hours from the following management and policy elective courses:

ECON 440 : Natural Resources and Environmental Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 380 & ECON 388

RECOMMENDED: Econ 382.

DESCRIPTION: Economic theory applied to allocation of natural resources and environmental amenities. Issues relating to externalities, common property resources, public goods, allocation of depletable natural resources over time, economic factors of environmental polarization, and others.

**Course Outcomes**

- Utilize economic principles and models to address private and public policy issues related to allocating natural resources and environmental amenities.Demonstrate an active understanding of the following elements of economic theory as it relates to natural resource and environmental economics:Welfare economics and concepts of Pareto optimality, efficiency, and equityThe role of property, property rights, and the bundle of rights conceptThe role of externalities, common property resources, and public goodsConcepts and measures of economic value including non-market valuation.Demonstrate a basic knowledge of the role of markets and market failure with regards to the allocation of natural resources and environmental amenities.Gain a basic understanding of the effects and relative merits of public environmental policy efforts, including cap-and-trade schemes, Pigovian taxes, regulation, and public ownership and/or management.Become knowledgeable about and be able to use economic principles and non-market valuation techniques to address a variety of continuing and contemporary natural resource and environmental issues. These issues may include, but are not exclusive to:Population growth and the environmentGlobal warmingWilderness protection and related public lands issuesAir pollution and public healthIntergenerational allocation of soil, forest, and other depleteable natural resourcesImpacts of environmental features on property values.

GEOG 303 : Biogeography. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 101.

DESCRIPTION: Broad-scale distribution of plants and animals. Theoretical and practical applications to conservation and effects of global environmental change.

**Course Outcomes**

- Demonstrate an understanding of basic concepts and processes in biogeography
- Recognize and be able to explain patterns of plant and animal life at many different scales
- Explain how humans have affected the distribution and diversity of plants and animals, and apply concepts to decisions regarding human use of the environment
- Demonstrate a knowledge of prominent professional biogeographers and ecologists and their current research themes
- Plan for future changes in species distributions and diversity as a result of environmental and human-induced pressures

GEOG 306 : Public Land Conservation. (3:3:0)

WHEN Fall

TAUGHT:
DESCRIPTION: Environmental and social geography of public lands; analyzing historical, planning, management, and ecological issues.

**Course Outcomes**

There are no course outcomes available

GEOG 307 : Landscape Ecology. (3:3:0)

WHEN TAUGHT: Winter
RECOMMENDED: Geog 101, 212, 213.
DESCRIPTION: Interaction between spatial patterns and spatial processes in an ecological context. Methods, theories, and practical applications of landscapes at various scales.

**Course Outcomes**

- Demonstrate an understanding of the basic concepts of landscape ecology
- Understand the relation between pattern and process in landscapes across multiple spatial and temporal scales
- Read, understand, and critique research articles in scholarly journals related to landscape ecology
- Understand and be able to use landscape metrics and associated methodologies and technologies to quantitatively analyze landscapes
- Identify and address a research question in landscape ecology, and effectively communicate the results orally and in writing
- Apply landscape ecology concepts to environmental planning and conservation biology

GEOG 310 : Introduction to Urban and Regional Planning. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: Introduction to the profession and practice of urban and regional planning.

**Course Outcomes**

There are no course outcomes available

HIST 290 : Nature and History: The Earth's Environmental Past. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Human historical interactions with animals, plants, and landscapes. Global histories of climate, population, whaling, fossil fuels, the car, animal rights, suburban sprawl, eco-theology, environmentalism, ecotourism, etc.

**Course Outcomes**

- Students will become academically conversant with the major historical developments in our global relationship with nature.
- Students will be able to analyze and evaluate the content and meaning of primary sources, and through critical interpretation, draw reasonable conclusions.
- Students will be able to formulate historical questions and answer them by careful and systematic research in primary and secondary sources.
- Students will be able to write history that is coherent and persuasive by following discipline's norms for writing and careful documentation.

PWS 411 : Watershed Management. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: BIO 350; or PWS 350
DESCRIPTION: Processes and management of the hydrologic cycle of forests and rangelands.

**Course Outcomes**

- Students will understand the history and policy that drives water management in the western US.
- Students will understand ecological and hydrological processes and concepts and apply them to watershed management actions such as harvesting, grazing, and restoration.
- Students will be able to apply assessment and classification tools to watersheds and their components to determine how management actions affect hydrologic responses.

PWS 419 : Forest Management and Ecology. (3:2:3)

WHEN TAUGHT: Fall
DESCRIPTION: Managing forests, emphasizing ecosystem managment.
NOTE: Field trips required.

**Course Outcomes**

- 1. Articulate their role as stewards over forested environments.
- 2. Appreciate the diversity of forests world-wide and their importance to human populations.
- 3. Apply knowledge of forest structure, function, and process in making management decisions
- 4. Be able to quantify forest structure and production
- 5. Recognize forest pests and diseases and know appropriate control techniques.
- 6. Relate forests to wildlife habitat
- 7. Identify 75 tree species located in Utah and on BYU campus.

5. Complete at least five hours from the following biology electives:

BIO 352 : Introduction to Marine Biology. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: BIO 220A
DESCRIPTION: Marine life, the sea as an environment, and research methods.

**Course Outcomes**

There are no course outcomes available

BIO 380 : Comparative Animal Physiology and Anatomy. (4:3:3)

WHEN TAUGHT: Fall
PREREQUISITE: Bio 220A or instructor's consent.
DESCRIPTION: Structure and function of animal organ systems; structural and physiological responses to demands of and changes in environment; evolutionary constraints on anatomy and physiology.

**Course Outcomes**

- Students will demonstrate a fundamental knowledge of comparative vertebrate animal physiology and anatomy.
- Students will develop critical thinking skills while learning concepts and understanding the tools used by comparative vertebrate animal physiologists and anatomists to study function and structure.
- Students will use physiological and anatomical knowledge to enhance their personal lives.
- Students will use their skills and knowledge in comparative vertebrate animal physiology and anatomy to secure employment or to advance in higher education in biology-related disciplines.
- Students will develop an understanding of physiologic isotopic techniques utilized to indicate energy sources, trophic levels, body water, and latitudinal and altitudinal animal migration reflected by stable isotopes of carbon, nitrogen, hydrogen and oxygen.

BIO 430 : Plant Classification and Identification. (4:3:3)

WHEN TAUGHT: Fall
PREREQUISITE: Bio 100 or Bio 130 or PDBio 120 or PWS 100 or instructor's consent.
DESCRIPTION: Principles of plant systematics, taxonomy, and classification, emphasizing family recognition by sight, terminology, and use of identification keys to the temperate flora.

**Course Outcomes**

- Students will apply correct vocabulary for describing plant parts and be able to deduce the meaning of new terms based on knowledge of common roots, prefixes, and suffixes.
- Students will recognize the major groups of vascular plants, be able to differentiate them by their principal characters, and understand their phylogenetic relationships.
- Students will identify by sight 40 families of flower plants as well as common families of ferns and gymnosperms, by recognizing differentiating features of each family.
- Students will gain proficiency in the use of keys and identification manuals for identifying any unknown plant to species.

BIO 441 : Entomology. (3:2:3)

WHEN TAUGHT: Fall
PREREQUISITE: Bio 220A or equivalent.
DESCRIPTION: External morphology, natural history, evolution, distribution, and phylogeny of insects. Insect collection required.

**Course Outcomes**

- Understand basic principles of morphology and systematics and apply these principles to your own knowledge of insects.
- Judge genetic relationships. Be able to recall current hypotheses of insect phylogeny at the ordinal level and have the tools needed to judge validity of new hypotheses of phylogeny that might be proposed. You will also study carefully the modifications associated with phylogenies that led to insect diversification and success.
- Understand details of insect morphology, and be well versed in both internal and external body structures.
- Recognize common insect families and be able to quickly identify them on sight.
- Gain or regain a sense of wonder for the natural world, especially as it relates to insects and other arthropods. Gain perspectives of the diversity and complexity in the insect world. Enhance your appreciation for the natural world we share with them.
- Learn life histories and specific collecting techniques for insects in their own habitats. You will learn how they fit in the natural world.
- Learn the protocols for detailed identificiations. Many insects will be totally new in appearance to you. You will use identification guides and illustrations to help you decide what the name of an insect is at the Order and Family levels.
- Use a variety of identification techniques to correctly identify insects and other arthropods. Throughout your life you will be asked by employers, friends, and family to answer the question, "What is this?" This course will give you these exact skills. A correct identification is a beginning step to learning more about a species and its relationships to the natural world and its pragmatic relationship to humans.

BIO 442 : Advanced Invertebrate Zoology. (5:6:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: BIO 220A
DESCRIPTION: Functional morphology, cladistics, ecology, behavior, and interrelationships of invertebrates.

**Course Outcomes**

There are no course outcomes available

BIO 443 : Ichthyology. (3:2:3)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: BIO 220A

DESCRIPTION: Fish systematics, evolution, morphology, distribution, and natural history.

**Course Outcomes**

- Students will have a general understanding of fish respiration.
- Students will have a general understanding of fish body structure.
- Students will have a general understanding of fish food processing.
- Students will have a general understanding of fish behavior and communication.

BIO 445 : Herpetology. (4:3:2)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: BIO 220A

DESCRIPTION: Reptile and amphibian evolution, systematics, morphology, distribution, and natural history. Lab emphasizes taxonomy, classification, and distribution of western U.S. species.

**Course Outcomes**

- Each student will gain a deeper understanding of some details of the origin of tetrapods, and the origin of the amniotes.
- Each student will gain a deeper understanding of the phylogenetic position of extinct and extant clades of amphibians & reptiles within the clade Vertebrate.
- Each student will acquire a detailed knowledge of the evolution and natural history (natural history, behavior, etc.) of the major clades of extant amphibians and reptiles .
- Through lab and field experiences, each student will acquire a detailed knowledge of diagnostic characters, taxonomy & distributions, and some aspects of ecology of native western species.
- Each student will acquire some knowledge of the conservation status of selected species in the US and abroad.

BIO 446 : (Bio - PWS) Ornithology. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: Bio 100 or Bio 130 or PDBio 120 or PWS 100 or equivalent or instructor's consent.

DESCRIPTION: Avian systematics, evolution, distribution, identification, and natural history.

NOTE: One three-day field trip required.

**Course Outcomes**

- Define ornithology and what it encompasses.
- Discuss the global diversity of birds in both form and function
- Articulate the current thinking regarding the evolution of birds.
- Identify 200 birds common to western North America.

BIO 447 : Mammalogy. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A; or PWS 344

DESCRIPTION: Mammalian diversity, evolution, distribution, and natural history. Two three-day field trips required.

**Course Outcomes**

- Be able to recognize the more common species of Utah mammals based on external and skull features
- Be able to recognize and identify most orders of mammals based on features of the skull
- Understand the evolutionary history of mammals and the modern diversity of mammalian orders
- Enhance skills directed toward understanding and interpreting original scientific literature dealing with mammalian biology

BIO 452 : Marine Biology. (4:3:1)

WHEN TAUGHT: Spring Even Yrs.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Principles of physical and biological oceanography, biodiversity, and ecology of numerous ocean habitats. Extensive field trips.

**Course Outcomes**

No outcomes are available at this time.

BIO 494R : Mentored Research. (1-6:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Supervisor's consent.

DESCRIPTION: Independent student research under faculty supervision.

**Course Outcomes**

- Students will demonstrate an understanding of the methods of scientific inquiry.
- Students will demonstrate an ability to design and implement a research project in a specialized area.
- Students will effectively interpret, analyze, and present results of experimentation to others.
- Students will show an appreciation for and understanding of the specialized field.

: Aquatic Biology.

**Course Outcomes**

: Bioinformatics.

**Course Outcomes**

: Ecology.

**Course Outcomes**

: Electron Microscopy.

**Course Outcomes**

: Entomology.

**Course Outcomes**

: Evolution.

**Course Outcomes**

: Marine Biology.

**Course Outcomes**

: Plant Biology.

**Course Outcomes**

: Systematics.

**Course Outcomes**

: Veterinary Science.

**Course Outcomes**

: Medicinal Botany.

**Course Outcomes**

: Plant Biochemistry.

**Course Outcomes**

: Fungal Biology.

**Course Outcomes**

Or

LFSCI 494R : Mentored Research. (1-6:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Mentor's consent.

**Course Outcomes**

- 1. Demonstrate critical or analytical thinking skills by analyzing and interpreting experimental data.2. Exhibit proficient writing skills by producing a portfolio, research paper, scientific journal article, and/or scientific poster.3. Critically read scientific literature and evaluate the ability of an argument or evidence to support a conclusion.4. Function as a collaborative team member by participating in student mentored learning groups or research groups.

(3 hours maximum)

BIO 510 : Biological Systematics and Curation. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Principles, methods, and tools of taxonomy and systematics as applied to species delimitation, specimen-based research, nomenclatural codes, and the curation of biological specimens.

**Course Outcomes**

- Students will be able to discuss species as the fundamental unit of biodiversity and the difference between species definitions and criteria used to delimit species.
- Students will be able to discuss basic philosophies of classification and the relationship between classification, phylogeny, and nomenclature.
- Students will gain proficiency with nomenclatural codes and their relationship to specimen-based research products such new species descriptions, monographs, floras, and faunas.
- Students will gain experience with a variety of specimen-based research tools.
- Students will understand responsibilities of biological collections management and curation.

BIO 511 : Lichenology. (3:2:3)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Classification, morphology, and ecology on lichens. Field trip required.

**Course Outcomes**

- Research and characterize the nature of the lichen symbiosis.
- Develop a working knowledge of lichen biology.
- Demonstrate an understanding of the role of lichens as biomonitors of air quality.
- Develop basic skills for collecting, processing, and identifying lichens.
- Develop basic skills with:- Thin-layer chromatography – lichen secondary chemistry.- Molecular techniques – to characterize genetic patterns and relationships at the population level.
- Prepare research manuscripts for review and publication consideration.
- Present a research proposal for a project using lichens as air quality biomonitors.

BIO 512 : Angiosperm Phylogeny. (3:2:4)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Bio 430 or equivalent.

DESCRIPTION: Description, classification, phylogeny, and geographic distribution of flowering plant families.

**Course Outcomes**

- Students will be able to discuss the primary pattern of relationships among flowering plants as supported by contemporary research.â ¨â ¨
- Students will demonstrate proficiency in tree-thinking and the application of phylogenetic terminology in discussing angiosperm relationships.
- Students will demonstrate knowledge of world-wide flowering plant diversity, including examples of model organisms, convergence, and evolutionary novelties.
- Students will be able to discuss contemporary research in flowering plant diversity, including outstanding problems where additional research is needed.

BIO 541 : Aquatic Entomology. (4:2:4)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Bio 441 or equivalent.

DESCRIPTION: Morphology, classification, biology, and functional ecology of aquatic insects. Field trips required.

**Course Outcomes**

- Develop an apprecitation for the diversity of the living aquatic insect world.
- Learn to become better stewards of the earth and its living inhabitants.
- Understanding of all aquatic biology.

BIO 556 : Limnology. (3:2:4)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Bio 350, Chem 106; or equivalents.

DESCRIPTION: Lakes, reservoirs; their biota and physical/chemical properties.

**Course Outcomes**

- Understand the major physical processes that form and characterize lentic habitats.
- Understand the dominant chemical processes that occur in lake systems.
- Understand how organisms adapt to the above physical and chemical constraints.
- Gain teaching experience through preparing a Powerpoint presenting your study presentation to the class.
- Experience pursuing a focused research topic from the initial question to a competed report.

BIO 557 : Stream and Wetland Ecology. (4:3:4)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Bio 350, Chem 106; or equivalent.

DESCRIPTION: Stream and wetland ecology; their biota and their physical/chemical properties.

**Course Outcomes**

- Develop an understanding of streams and wetlands within the broader context of ecology and conservation.
- Become familiar with the major conservation issue in streams and wetlands and the underlying ecological concepts.
- Initial exposure to the current literature.
- Develop skills related to critical thinking. That is, learn how to: a) read critically and summarize information, b) draw conclusions and synthesize information to develop new questions and hypotheses, and c) design experiments or comparative studies. It is important to start early to learn how to think, read, and write critically.

BIO 559R : Advanced Topics in Ecology and Evolution. (1-6:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Current topics in ecology, evolution, and systematics.

**Course Outcomes**

- Students will demonstrate an understanding of the methods of scientific inquiry.
- Students will demonstrate an ability to design and implement a research project in ecology and evolution.
- Students will effectively interpret, analyze, and present results of experimentation to others.
- Students will show an appreciation for and understanding of ecology and evolution.

: Advanced Ecology.

**Course Outcomes**

: Advanced Systematics.

**Course Outcomes**

: Evolutionary Biology.

**Course Outcomes**

: Biogeography.

**Course Outcomes**

: Physiological Ecology.

**Course Outcomes**

: Tropical Biology.

**Course Outcomes**

: Biological Science Education.

**Course Outcomes**

: Field Biology.

**Course Outcomes**

BIO 560 : Population Genetics. (4:4:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: Bio 420 or equivalent.

DESCRIPTION: Basic principles of population genetics applied to natural populations; drift, selection, and nonrandom mating; inferring population subdivision, migration, and gene flow.

**Course Outcomes**

- Students will gain a general introduction to the field a population genetics.
- Students will experience the broad application of population genetics to diverse fields from ecology to medicine.
- Students will manipulate and analyze population genetic data, especially molecular data.

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

PWS 282 : Introduction to Soil Science. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 283 or concurrent enrollment.

DESCRIPTION: Physical, chemical and microbiological properties of soils that affect plant growth in natural, agricultural, and urban environments.

**Course Outcomes**

- Enhance critically thinking skills as they apply to soil resource management and conservation
- Demonstrate a fundamental knowledge of soil chemistry, genesis, microbiology, physics, taxonomy, and nutrient and water relations
- Create a conceptual framework to help manage soil resources (i.e., animal habitat, plant nutrient fertility, salinity, soil and water quality, and wind and water erosion) in agricultural, urban, and ecological settings
- Understand the historical and current problems, and cultural concerns facing soils as a natural resource essential to human life

PWS 440 : Plant Physiology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GE Biological Science requirement; college chemistry

RECOMMENDED: Chem 285; or 351, 352.

DESCRIPTION: Photosynthesis, respiration, water relations, mineral nutrition, growth of flowering plants.

**Course Outcomes**

- Students will be fluent in understanding plant function at the molecular, biochemical and whole plant levels
- Students will understand the connections between plant function and ecosystem processes
- Student will practice applying the scientific method in order to develop critical thinking and problem solving skills
- Student will engage in learning activities that increase there writing and speaking proficiency

6. Complete an exit interview.

*Hours include courses that may fulfill university core requirements.

## Show all Biology (Bio) Courses

College of Life Sciences Home

Biology Home

Major

- BS in Bioinformatics
- BS in Biological Science Education
- BS in Biology
- BS in Conservation Biology

Course Information

- Biology (Bio) Courses

Faculty

# Biology (Bio)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

BIO 100 : Principles of Biology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Introductory course for general education students.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

BIO 130 : Biology. (4:3:1)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: General biology course with laboratory for biology majors. Introduction to disciplines in the life sciences including methods for scientific inquiry, biochemical dynamics, cell structure and function, evolutionary theory, bioenergetics, and ecological interactions.

**Course Outcomes**

- Students will demonstrate basic literacy in the language of science and an understanding of the foundational theories of biology (i.e., be able to formulate appropriate hypotheses and predictions to test specific biological phenomena and use appropriate vocabulary to do so) o Atomic Molecular Theoryo Cell Theoryo Theories of Photosynthesis, Fermentation, and Cellular Respirationo Cell Division and Meiotic Theorieso Chromosomal and Mendelian Theories of Inheritanceo Watson and Crick's Theory of DNA Structure and Replicationo Protein Synthesis Theoryo Darwin's Theory of Natural Selectiono Hardy-Weinberg Theoryo Ecosystem Theoryo Population Growth Theoryo Competitive Exclusion and Behavioral Theory
- Students will demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process.
- Students willappreciate the excitement of discovery that has accompanied important scientific developments.
- Students will demonstrate how scientific methodology can be used to analyze real-world science-related problems.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public-policy science issues that affect their community.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.
- Students will be able to reflect rationally upon the interface between science and religion.
- Students will demonstrate sound scientific reasoning ability.

BIO 165 : Introduction to Bioinformatics. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Introduction to basic concepts in bioinformatics. Standard bioinformatic applications.

**Course Outcomes**

There are no course outcomes available

BIO 175 : Principles of Biology Laboratory. (1:0:2)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Elementary education or early childhood education pre-major or major status; concurrent enrollment in Bio 100.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

BIO 220A : Biological Diversity: Animals. (4:3:3)

WHEN TAUGHT: Fall; Winter

TAUGHT:

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in invertebrates and vertebrates. Laboratory included.

**Course Outcomes**

- Students will be able to discuss the broad patterns of the evolution of the clade Animalia, emphasizing the relationships among major sub-clades (phyla), the unique biological attributes that define these clades, and the novel changes in morphology over major transitions (unicellular to multicellular; acoelomate to pseudocoelomate to coelomate body plans, bilaterial vs radial symmetry, origins of exoskeletons, gill slits, notochord, crania & vertebral columns, etc.).
- Students will develop the skills necessary to understand the terminology of phylogenetic systematics and methods used to recover the “tree of life”, the logic behind the hierarchy (i.e., the only possible outcome of the process of “descent with modification”), and critically apply evolutionary reasoning, including the use of phylogeny and tree-thinking, to formulate and test hypotheses that explain biological diversity.
- Students will have the intellectual tools to continue to explore related topics with confidence and understanding throughout their lives, and a deeper appreciation for the diversity of life on earth.

BIO 220B : Biological Diversity: Plants. (4:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in fungi, algae, and principal groups of land plants. Laboratory included.

**Course Outcomes**

- Students will be able to discuss differences between cyanobacteria, algae, bryophytes, non-seed vascular plants, gymnosperms, flowering plants, and fungi with repsect to their lifecycles, characteristic morphologies, and biological roles.
- Students will develop the skills necessary to understand and critically apply evolutionary logic including the use of phylogeny and tree-thinking to formulate and test hypotheses that explain biological diversity
- Students will be able to continue to explore related topics with confidence and understanding throughout their lives.

BIO 235 : Field Botany. (3:3:6)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Recognition, characteristics, and uses of common trees and shrubs.

**Course Outcomes**

- Students will demonstrate a fundamental knowledge of biology
- Students will develop the discovery skills and tools used by biologists
- Students will use biological knowledge to enhance their personal lives
- Students will use their skills and knowledge in biology to secure employment or to advance in higher education in biology-related disciplines

BIO 270 : Animal Restraint. (1:0:2)

WHEN TAUGHT: Winter

DESCRIPTION: Restraint and first aid techniques for pet, laboratory, domestic, and wild animals.

**Course Outcomes**

- Know how to safely restrain domestic animals and wildlife species
- Understand basic animal restraint techniques for a number of domestic and wildlife species
- Understand why certain restraint techniques work with only certain animals and not others
- Develop a basic knowledge of animal chemical restraint methods and their indications
- Understand why the use of pharmaceutical agents by lay persons is not advocated without a veterinarian's prescription or special knowledge and training of non-veterinarian personnel, such as wildlife biologists

BIO 276 : Exploration of Teaching in Biological Sciences. (3:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A & BIO 220B & CHEM 105; major GPA of 2.85 or higher, FBI fingerprint and background clearance; previous application required.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

There are no course outcomes available

BIO 291R : Veterinary Medicine Seminar. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Preview into veterinary medicine as a profession. Application procedure and preparation for veterinary school.

**Course Outcomes**

- Develop a working knowledge of the educational requirements and preveterinary medicine prerequisite coursework required by the majority of USA colleges of veterinary medicine (CVM)
- Learn how to navigate the application process for admission to colleges of veterinary medicine, understand the different sections of the online veterinary medicine college application service (VMCAS) form, and know what information is needed for supplemental application forms required by individual CVMs
- Knowledge of state contracts, the Western Interstate Commission for Higher Education (WICHE) Professional

Student Exchange Program (PSEP), state residency requirements
- Understand the cost of a veterinary medicine education, and learn how to minimize educational debt with scholarships, grants, research stipends, and military or government programs
- Career alternatives, general or specialty practices in veterinary medicine
- Understand the issues concerning animal welfare, animal research, and responsibilities as a member of the veterinary profession
- Statistics with data on need (based on demographic or other data), employment placement, salary, employer requirements, market research information, and advanced degrees to enhance employment opportunities in veterinary medicine

**300-Level Courses**

BIO 350 : Ecology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth.

**Course Outcomes**

- Understand the major physical processes that form and characterize the biosphere, including global scale energy flow, the carbon cycle, climate, and soil formation.
- Understand the processes that drive major levels of organization of the biotic world, including energetics in the ecosystem, population dynamics, and species interactions.
- Understand the importance of writing as a way of synthesizing and solidifying critical thought.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Understand the importance of ecology to issues regarding human well-being
- See the connectivity and relevance of ecology to other fields of study

BIO 352 : Introduction to Marine Biology. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: BIO 220A

DESCRIPTION: Marine life, the sea as an environment, and research methods.

**Course Outcomes**

There are no course outcomes available

BIO 365 : Computational Biology. (3:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: C S 240

DESCRIPTION: Computational analysis of DNA data; introduction to bioinformatics databasing using Perl and SQL; configuration of UNIX workstations for bioinformatics analyses.

**Course Outcomes**

- To provide practical experience in using computational approaches to address biological problems.
- Describe general areas of computational problems in biology (alignment, estimation, tree searches, molecular modeling, gene prediction) and learn about existing computational approaches to these general problems.
- Learn basic computational tools for statistical inference (Bayesian, Maximum likelihood, Markov Chain Monte Carlo, Hidden Markov Chain)
- Apply programming skills to alignment problems through the development of novel tools and software for alignment
- Apply programming skills to tree searching problems through the development of novel tools software
- Apply programming tools to gene prediction problems through the development of novel tools and software
- Develop ability to use existing and write new database code to access and manipulate genetic data

BIO 370 : Bioethics. (2:1:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Introductory biology course.

DESCRIPTION: In-depth lecture and small group discussion of varied bioethical issues. LDS Church positions emphasized when appropriate.

**Course Outcomes**

- Students will understand the ethical and philosophical underpinnings of bioethics and to develop ethical intuitions on bioethical issues.
- Students will learn the terminology, vocabulary, and objectives of bioethics.
- Students will understand the tools and approaches needed to make a bioethical decision and to communicate that decision in rationally informed ways.
- Students will understand the bioethical primary literature, to understand how to read case studies, and familiarity with the major issues being discussed in bioethics today.

BIO 377 : Teaching Methods and Instruction in Biology. (3:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 276; concurrent enrollment in Bio 378, 379, Sc Ed 380; major GPA of 2.85 or higher.

DESCRIPTION: Developing meaningful and engaging instruction for secondary students in biological sciences; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

Students will demonstrate an understanding of key learning theories by explaining how students learn.
- Students will demonstrate proper pedagogical practices in a biological teaching setting.
- Students will develop effective unit and lesson plans to promote science learning.

BIO 378 : Practicum in Biology Teaching. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Bio 377, 379, Sc Ed 380.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students in biology; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Students will be able to identify best practices in teaching.
- Students will show active involvement with mentor teacher in creating and teaching lessons, grading papers, or any other classroom work.
- Students will be able to identify practices that they can incorporate into their own teaching.

BIO 379 : Classroom Management and Laboratory Safety. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Bio 377, 378, Sc Ed 380.

DESCRIPTION: Current theory, research, and application in classroom management; creating positive teacher-student and peer relationships; developing optimal learning environments.

**Course Outcomes**

- Students will integrate current theory, research, and application in classroom management to create an optimal learning environment.
- Students will demonstrate appropriate and effective classroom management strategies.
- Students will demonstrate an understanding of proper laboratory safety protocols.

BIO 380 : Comparative Animal Physiology and Anatomy. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: Bio 220A or instructor's consent.

DESCRIPTION: Structure and function of animal organ systems; structural and physiological responses to demands of and changes in environment; evolutionary constraints on anatomy and physiology.

**Course Outcomes**

- Students will demonstrate a fundamental knowledge of comparative vertebrate animal physiology and anatomy.
- Students will develop critical thinking skills while learning concepts and understanding the tools used by comparative vertebrate animal physiologists and anatomists to study function and structure.
- Students will use physiological and anatomical knowledge to enhance their personal lives.
- Students will use their skills and knowledge in comparative vertebrate animal physiology and anatomy to secure employment or to advance in higher education in biology-related disciplines.
- Students will develop an understanding of physiologic isotopic techniques utilized to indicate energy sources, trophic levels, body water, and latitudinal and altitudinal animal migration reflected by stable isotopes of carbon, nitrogen, hydrogen and oxygen.

BIO 392R : Preveterinary Preceptorship. (3:1:5)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Supervised on-the-job exposure to veterinary medicine under a clinical setting, supplemented with academic assignments.

**Course Outcomes**

- I. Skills student should master during the preveterinary medicine preceptorship experience:Husbandry: feeding, sanitation, handling, breed recognitionRestraint of animals for examination, treatment and radiographyLogging medical data and recording information in patient chartsGrooming for medical reasonsObserve and recognize normal and abnormal body functions and vital signsConcepts of animal welfare and humane treatment of animalsIntroduce methods and explain necessity of animal population controlObtain knowledge of and competency with routine preventive medicine including vaccination protocols, parasite identification-treatment-prevention, routine physical examination, geriatric health care
- II. The student should observe and participate in these activities:Client-doctor relations and dialogue; demonstration of veterinary ethics and integrity; diagnostic thought process and rationalePatent examination; administration of medication and therapy; collection of body fluids and specimensMedical record information entryClinical diagnostic laboratory techniquesDeveloping and interpreting radiographsSurgical suite protocols:preparation of instrument packs, drapes, surgical gownsaseptic techniqueanesthesia administration and monitoringsurgical preparation of patientsurgery protocols and surgical assistanceintensive and post-operative nursing careEuthanasia
- III. Areas of hospital student should receive exposure to:Kennel and quarantine wardsTreatment areasSurgery and examination roomsOffice proceduresTelephone etiquetteLaboratory and pharmacyLibrary search and literature review of clinical case information and current treatments based on veterinary research

**400-Level Courses**

BIO 420 : Evolutionary Biology. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PWS 340

RECOMMENDED: Concurrent enrollment in Bio 421.

DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**

- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

BIO 421 : Evolutionary Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240

DESCRIPTION: Hands-on applications and analytical tools of evolutionary biology; emphasizing inference methodology and evidence complementing the theoretical constructs introduced in Bio 520, including comparative anatomy, phylogenetic inference, population genetics, species concepts, and human evolution.

NOTE: Concurrent enrollment with Bio 420 is strongly recommended.

**Course Outcomes**

- Students will gain a better understanding of the basic principles of evolution within a population including selection, drift, and founder effects by using computer simulations.
- Students will have a deeper understanding of the LDS position on evolution.
- Students will learn the details of phylogenetic reconstruction, tree searching, DNA sequence alignment, and other bioinformatics tools for deciphering patterns of evolution.
- Students will learn the details of species concepts and the criteria used for identifying and diagnosing species.
- Students will gain hands-on experience with hominid fossils and gain an understanding of the evidence that elucidates the biological history of humans.

BIO 430 : Plant Classification and Identification. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: Bio 100 or Bio 130 or PDBio 120 or PWS 100 or instructor's consent.

DESCRIPTION: Principles of plant systematics, taxonomy, and classification, emphasizing family recognition by sight, terminology, and use of identification keys to the temperate flora.

**Course Outcomes**

- Students will apply correct vocabulary for describing plant parts and be able to deduce the meaning of new terms based on knowledge of common roots, prefixes, and suffixes.
- Students will recognize the major groups of vascular plants, be able to differentiate them by their principal characters, and understand their phylogenetic relationships.
- Students will identify by sight 40 families of flower plants as well as common families of ferns and gymnosperms, by recognizing differentiating features of each family.
- Students will gain proficiency in the use of keys and identification manuals for identifying any unknown plant to species.

BIO 441 : Entomology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: Bio 220A or equivalent.

DESCRIPTION: External morphology, natural history, evolution, distribution, and phylogeny of insects. Insect collection required.

**Course Outcomes**

- Understand basic principles of morphology and systematics and apply these principles to your own knowledge of insects.
- Judge genetic relationships. Be able to recall current hypotheses of insect phylogeny at the ordinal level and have the tools needed to judge validity of new hypotheses of phylogeny that might be proposed. You will also study carefully the modifications associated with phylogenies that led to insect diversification and success.
- Understand details of insect morphology, and be well versed in both internal and external body structures.
- Recognize common insect families and be able to quickly identify them on sight.
- Gain or regain a sense of wonder for the natural world, especially as it relates to insects and other arthropods. Gain perspectives of the diversity and complexity in the insect world. Enhance your appreciation for the natural world we share with them.
- Learn life histories and specific collecting techniques for insects in their own habitats. You will learn how they fit in the natural world.
- Learn the protocols for detailed identificiations. Many insects will be totally new in appearance to you. You will use identification guides and illustrations to help you decide what the name of an insect is at the Order and Family levels.
- Use a variety of identification techniques to correctly identify insects and other arthropods. Throughout your life you will be asked by employers, friends, and family to answer the question, "What is this?" This course will give you these exact skills. A correct identification is a beginning step to learning more about a species and its relationships to the natural world and its pragmatic relationship to humans.

BIO 442 : Advanced Invertebrate Zoology. (5:6:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: BIO 220A

DESCRIPTION: Functional morphology, cladistics, ecology, behavior, and interrelationships of invertebrates.

**Course Outcomes**

There are no course outcomes available

BIO 443 : Ichthyology. (3:2:3)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: BIO 220A

DESCRIPTION: Fish systematics, evolution, morphology, distribution, and natural history.

**Course Outcomes**

- Students will have a general understanding of fish respiration.
- Students will have a general understanding of fish body structure.
- Students will have a general understanding of fish food processing.
- Students will have a general understanding of fish behavior and communication.

BIO 445 : Herpetology. (4:3:2)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: BIO 220A

DESCRIPTION: Reptile and amphibian evolution, systematics, morphology, distribution, and natural history. Lab emphasizes taxonomy, classification, and distribution of western U.S. species.

**Course Outcomes**

- Each student will gain a deeper understanding of some details of the origin of tetrapods, and the origin of the amniotes.
- Each student will gain a deeper understanding of the phylogenetic position of extinct and extant clades of amphibians & reptiles within the clade Vertebrate.
- Each student will acquire a detailed knowledge of the evolution and natural history (natural history, behavior, etc.) of the major clades of extant amphibians and reptiles .
- Through lab and field experiences, each student will acquire a detailed knowledge of diagnostic characters, taxonomy & distributions, and some aspects of ecology of native western species.
- Each student will acquire some knowledge of the conservation status of selected species in the US and abroad.

BIO 446 : (Bio - PWS) Ornithology. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: Bio 100 or Bio 130 or PDBio 120 or PWS 100 or equivalent or instructor's consent.

DESCRIPTION: Avian systematics, evolution, distribution, identification, and natural history.

NOTE: One three-day field trip required.

**Course Outcomes**

- Define ornithology and what it encompasses.
- Discuss the global diversity of birds in both form and function
- Articulate the current thinking regarding the evolution of birds.
- Identify 200 birds common to western North America.

BIO 447 : Mammalogy. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A; or PWS 344

DESCRIPTION: Mammalian diversity, evolution, distribution, and natural history. Two three-day field trips required.

**Course Outcomes**

- Be able to recognize the more common species of Utah mammals based on external and skull features
- Be able to recognize and identify most orders of mammals based on features of the skull
- Understand the evolutionary history of mammals and the modern diversity of mammalian orders
- Enhance skills directed toward understanding and interpreting original scientific literature dealing with mammalian biology

BIO 450 : Conservation Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A & BIO 350; or BIO 220B & BIO 350

DESCRIPTION: Scientific principles of conservation: applying population genetics, and phylogenetic and ecological theory to preservation of biological diversity; developing sustainable ecological systems compatible with human resource use.

**Course Outcomes**

- Apply an understanding of ecological processes to conservation of populations, species, and ecosystems.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Demonstrate the ability to apply the scientific method and analytical thinking to ecological and conservation issues.
- Demonstrate the ability to synthesize literature relevant to a topic in conservation bioloigy
- Demonstrate the ability to write a scientific term paper

BIO 452 : Marine Biology. (4:3:1)

WHEN TAUGHT: Spring Even Yrs.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Principles of physical and biological oceanography, biodiversity, and ecology of numerous ocean habitats. Extensive field trips.

**Course Outcomes**

No outcomes are available at this time.

BIO 455 : Plant Ecology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: BIO 220B

RECOMMENDED: Bio 350.

DESCRIPTION: Fundamental principles governing interactions among plants and their environments with respect to their success. Students will be able to apply their knowledge to land management, conservation and agriculture.

**Course Outcomes**

There are no course outcomes available

BIO 463 : Genetics of Human Disease. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 340

DESCRIPTION: Examining the application of genetics to understanding and treatment of human disease. Functional consequences of mutations; use of model organisms; linkage and association analysis of complex traits; pharmacogenetics; ethical considerations.

**Course Outcomes**

- Understand and explain the different types of genetic variants, how they can be typed and how they can be used to understand the genetic architecture of human disease.
- Understand linkage disequilibrium in the human genome and the role it plays in the search for genetic risk factors for human disease
- Understand and use basic statistics and software for analyzing the correlation between genetic markers and risk for disease.
- Understand and explain how model organisms contribute to our understanding of the genetics of human disease.
- Demonstrate the ability to obtain, aggregate and present information about the current knowledge of the genetics of a human disease.

BIO 465 : Bioinformatics and Proteomics. (3:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: BIO 365

DESCRIPTION: 3-D protein structural comparisons, hidden Markov models for database comparisons, homology detection, multiple sequence analyses, and protein family comparisons. Exercises in computer programming in genomics.

**Course Outcomes**

- Students will learn and demonstrate mastery of advanced analytical bioinformatics techniques, including genome assembly, genome annotation, and protein analyses.
- Demonstrate ability to use and evaluate literature databases and primary literature directed to the bioinformatics community in terms of newly developed software, analytical algorithms, application to empirical data, etc.
- Apply and develop computational skills in secondary (i.e., helices, etc.) and tertiary (i.e., folding, etc.) prediction, and 3-dimensional (i.e., x-ray crystal structures, etc.) modeling of protein structures.
- Apply evolutionary concepts to modeling DNA/proteins to evaluate and/or predict function, utilizing 3D structures, physical and chemical amino acid properties, etc.
- Apply existing and develop new tools for genome assembly and annotation from next-generation DNA sequencing projects

BIO 468 : (Bio-MMBio-PWS) Genomics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & PWS 340

DESCRIPTION: Current analysis of genes and genomes; computational and statistical approaches for analyzing genomic data, including genome sequencing and annotation, gene expression and the transcriptome, proteomics and functional genomics, and genetic variation and SNPs.

**Course Outcomes**

- Students will complete a series of exercises with data representing genomic experiments (analysis and interpret).
- Students will describe how genomes are sequenced.
- Students will understand techniques and concepts to assess genomic features such as methylation, gene expression, etc.

BIO 470 : History and Philosophy of Biology. (3:1.5:1.5)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 350

DESCRIPTION: Development of fundamental generalizations of biology; nature of science; applications to major philosophical issues of current science.

**Course Outcomes**

- Students will demonstrate an understanding of the history of biology. This will include an understanding of the major figures and the historical development of modern biology. This will include having read original texts from the periods covered (Aristotle to Current Biology).
- Students will also have an understanding of principal philosophical issues confronting modern biology, including

major research trends in philosophy of biology. The students will also have a grasp of what 'science' is, how it is practiced, and what expectations for knowledge can be justified using science.
- Students will have the ability to read and write about the primary literature both on the history, and the philosophy, of science. They will have a grasp of the terminology used in philosophy, and how philosophy of biology is currently practiced. Writing will be emphasized.

BIO 475 : Plant Developmental Biology. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: PWS 340

RECOMMENDED: Bio 220B.

DESCRIPTION: Developmental mechanisms controlling plant development, with particular emphasis on genetic and molecular regulation.

**Course Outcomes**

There are no course outcomes available

BIO 476 : Biology Student Teaching. (12:0:0)

WHEN TAUGHT: Winter

PREREQUISITE: Completion of all course work or departmental approval; major GPA of 2.85; at least a C in Sc Ed 377.

DESCRIPTION: Field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar (Sc Ed 490R) required.

**Course Outcomes**

- Students will integrate all ten principles of the Interstate New Teacher Assessment and Support Consortium (INTASC) in the design of an instructional unit.
- Students will demonstrate the ten goals and standards of the Interstate New Teacher Assessment and Support consortium.
- Students will demonstrate increased competence and confidence in their teaching abilities.
- Students will demonstrate appropriate classroom management techniques in a public school setting.

BIO 494R : Mentored Research. (1-6:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Supervisor's consent.

DESCRIPTION: Independent student research under faculty supervision.

**Course Outcomes**

- Students will demonstrate an understanding of the methods of scientific inquiry.
- Students will demonstrate an ability to design and implement a research project in a specialized area.
- Students will effectively interpret, analyze, and present results of experimentation to others.
- Students will show an appreciation for and understanding of the specialized field.

: Aquatic Biology.

**Course Outcomes**

: Bioinformatics.

**Course Outcomes**

: Ecology.

**Course Outcomes**

: Electron Microscopy.

**Course Outcomes**

: Entomology.

**Course Outcomes**

: Evolution.

**Course Outcomes**

: Marine Biology.

**Course Outcomes**

: Plant Biology.

**Course Outcomes**

: Systematics.

**Course Outcomes**

: Veterinary Science.

**Course Outcomes**

: Medicinal Botany.

**Course Outcomes**

: Plant Biochemistry.

**Course Outcomes**

: Fungal Biology.

**Course Outcomes**

## 500-Level Graduate Courses (available to advanced undergraduates)

BIO 503 : Research Orientation. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to graduate school and research techniques.

**Course Outcomes**

- Create personalized literature databases and use these to correctly cite and format bibliographic information.
- Generate an effective CV that targets their next level of employment.
- Optimize opportunities available to them at scientific meetings to establish collaborative networks with other students, postdocs and faculty.
- Prepare an effective poster and oral presentation.
- Prepare and submit a competitive grant proposal.
- Prepare publication quality illustrations, figures, charts & graphs and eventually a manuscript for publication.
- Communicate their ideas effectively and appropriately through electronic media.
- Devise an active learning lesson plan for effectively teaching a biological principle.

BIO 510 : Biological Systematics and Curation. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Principles, methods, and tools of taxonomy and systematics as applied to species delimitation, specimen-based research, nomenclatural codes, and the curation of biological specimens.

**Course Outcomes**

- Students will be able to discuss species as the fundamental unit of biodiversity and the difference between species definitions and criteria used to delimit species.
- Students will be able to discuss basic philosophies of classification and the relationship between classification, phylogeny, and nomenclature.
- Students will gain proficiency with nomenclatural codes and their relationship to specimen-based research products such new species descriptions, monographs, floras, and faunas.
- Students will gain experience with a variety of specimen-based research tools.
- Students will understand responsibilities of biological collections management and curation.

BIO 511 : Lichenology. (3:2:3)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Classification, morphology, and ecology on lichens. Field trip required.

**Course Outcomes**

- Research and characterize the nature of the lichen symbiosis.
- Develop a working knowledge of lichen biology.
- Demonstrate an understanding of the role of lichens as biomonitors of air quality.
- Develop basic skills for collecting, processing, and identifying lichens.
- Develop basic skills with:- Thin-layer chromatography – lichen secondary chemistry.- Molecular techniques – to characterize genetic patterns and relationships at the population level.
- Prepare research manuscripts for review and publication consideration.
- Present a research proposal for a project using lichens as air quality biomonitors.

BIO 512 : Angiosperm Phylogeny. (3:2:4)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Bio 430 or equivalent.

DESCRIPTION: Description, classification, phylogeny, and geographic distribution of flowering plant families.

**Course Outcomes**

- Students will be able to discuss the primary pattern of relationships among flowering plants as supported by contemporary research.â ¨â ¨
- Students will demonstrate proficiency in tree-thinking and the application of phylogenetic terminology in discussing angiosperm relationships.
- Students will demonstrate knowledge of world-wide flowering plant diversity, including examples of model organisms, convergence, and evolutionary novelties.
- Students will be able to discuss contemporary research in flowering plant diversity, including outstanding problems where additional research is needed.

BIO 525 : Animal Disease, Biosecurity, and Zoonoses. (3:3.0:0)

WHEN TAUGHT: Winter

PREREQUISITE: Bio 380 or instructor's consent.

DESCRIPTION: Animal disease emphasizing prevention, organ systems affected, biosecurity, and zoonotic potential.

**Course Outcomes**

- Comparative pathophysiology will be taught using canine, feline, bovine, ovine, caprine, equine, lab animals, and wildlife examples
- Understand basic animal pathophysiology of disease on an organ system basis and preventive measures to maintain animal health
- Identify biosecurity practices to prevent animal disease
- Differentiate between zoonoses, sapronoses and anthroponoses and understand how to institute preventive measures and management practices to avert these health problems
- Design a herd health program with preventive measures that addresses nutrition, sanitation, housing, ventilation, lighting, and other components for a particular species the student wants to work with as a producer
- Understand how to institute good management procedures that can prevent the occurrence of animal disease
- Develop a basic knowledge of animal immunology as it pertains to disease induction and prevention, with natural and artificial immunity practices that should be implemented to enhance disease prevention, and nutritional practices to optimize animal immunity

BIO 541 : Aquatic Entomology. (4:2:4)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Bio 441 or equivalent.

DESCRIPTION: Morphology, classification, biology, and functional ecology of aquatic insects. Field trips required.

**Course Outcomes**

- Develop an appreciation for the diversity of the living aquatic insect world.
- Learn to become better stewards of the earth and its living inhabitants.
- Understanding of all aquatic biology.

BIO 555 : Evolutionary and Ecological Modeling. (2:2:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Senior status in bioinformatics program or graduate status; Stat 511, 512, or equivalent; instructor's consent.

DESCRIPTION: Using models in ecology. Practical experience in analytical, simulation, and agent-based models.

**Course Outcomes**

There are no course outcomes available

BIO 556 : Limnology. (3:2:4)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Bio 350, Chem 106; or equivalents.

DESCRIPTION: Lakes, reservoirs; their biota and physical/chemical properties.

**Course Outcomes**

- Understand the major physical processes that form and characterize lentic habitats.
- Understand the dominant chemical processes that occur in lake systems.
- Understand how organisms adapt to the above physical and chemical constraints.
- Gain teaching experience through preparing a Powerpoint presenting your study presentation to the class.
- Experience pursuing a focused research topic from the initial question to a competed report.

BIO 557 : Stream and Wetland Ecology. (4:3:4)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Bio 350, Chem 106; or equivalent.

DESCRIPTION: Stream and wetland ecology; their biota and their physical/chemical properties.

**Course Outcomes**

- Develop an understanding of streams and wetlands within the broader context of ecology and conservation.
- Become familiar with the major conservation issue in streams and wetlands and the underlying ecological concepts.
- Initial exposure to the current literature.
- Develop skills related to critical thinking. That is, learn how to: a) read critically and summarize information, b) draw conclusions and synthesize information to develop new questions and hypotheses, and c) design experiments or comparative studies. It is important to start early to learn how to think, read, and write critically.

BIO 559R : Advanced Topics in Ecology and Evolution. (1-6:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Current topics in ecology, evolution, and systematics.

**Course Outcomes**

- Students will demonstrate an understanding of the methods of scientific inquiry.
- Students will demonstrate an ability to design and implement a research project in ecology and evolution.
- Students will effectively interpret, analyze, and present results of experimentation to others.
- Students will show an appreciation for and understanding of ecology and evolution.

: Advanced Ecology.

**Course Outcomes**

: Advanced Systematics.

**Course Outcomes**

: Evolutionary Biology.

**Course Outcomes**

: Biogeography.

**Course Outcomes**

: Physiological Ecology.

**Course Outcomes**

: Tropical Biology.

**Course Outcomes**

: Biological Science Education.

**Course Outcomes**

: Field Biology.

**Course Outcomes**

BIO 560 : Population Genetics. (4:4:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: Bio 420 or equivalent.

DESCRIPTION: Basic principles of population genetics applied to natural populations; drift, selection, and nonrandom mating; inferring population subdivision, migration, and gene flow.

**Course Outcomes**

- Students will gain a general introduction to the field a population genetics.
- Students will experience the broad application of population genetics to diverse fields from ecology to medicine.
- Students will manipulate and analyze population genetic data, especially molecular data.

BIO 580 : Scanning Electron Microscopy. (3:2:4)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Theoretical and practical scanning electron microscopy of biological, physical science, and engineering samples, emphasizing practical applications.

**Course Outcomes**

- Students will be able to prepare specimens for the ESEM.
- Students will be able to collect publishable data from the ESEM.
- Students will make a presentation of the research they conducted on the ESEM.

BIO 581 : Transmission Electron Microscopy. (3:2:4)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Theoretical and practical transmission electron microscopy of biological, physical science, and engineering samples, emphasizing practical applications.

**Course Outcomes**

- Students will be able to perform routine biological specimen preparation.
- Students will be able to operate the Transmission Electron Microscope to acquire images.
- Students will be able to appropriately interpret and present TEM data.
- Students will understand the reasons for various techniques that are used, the major components of the microscope, and the several applications of the technology.

BIO 589R : Advanced Science In-Service. (1-5:ARR:ARR)

WHEN TAUGHT: Summer

DESCRIPTION: In-service course for science teachers. Topics vary.

**Course Outcomes**

There are no course outcomes available

: Ecology Science In-Service.

**Course Outcomes**

: Genetics Science In-Service.

**Course Outcomes**

: Evolution Science In-Service.

**Course Outcomes**

: Botany Science In-Service.

**Course Outcomes**

: Meterology Science In-Service.

**Course Outcomes**

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Biology Department Home**

College of Life Sciences Home

Biology Home

Major

- BS in Bioinformatics
- BS in Biological Science Education
- BS in Biology
- BS in Conservation Biology

Course Information

- Biology (Bio) Courses

Faculty

# Biology Faculty

Show All
Hide All

## Professors

Belk, Mark C.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** AS, Ricks College, 1983
BS, Brigham Young University, 1985
MS, Brigham Young University, 1987
PhD, University of Georgia, 1992

Johnson, Leigh A.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1991
PhD, Washington State University, 1996

Koide, Roger T.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BA, Pamona College, 1980
PhD, University of California, Berkeley, 1984

Nelson, Charles Riley

**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1980
MS, Utah State University, 1984
PhD, Brigham Young University, 1986

Rader, Russell Ben

**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
MS, Brigham Young University, 1982
PhD, Colorado State University, 1987

Roeder, Beverly L.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BA, Wittenberg University, 1978
DVM, Ohio State University, 1982
MS, Kansas State University, 1986
PhD, Pennsylvania State University, 1990

Rogers, Duke S.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BS, Texas A&M University, 1976
MS, Texas A&M University, 1979

PhD, University of California, Berkeley, 1986

Shiozawa, Dennis Kenji
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BA, Weber State College, 1972
MS, Brigham Young University, 1974
PhD, University of Minnesota, St. Paul, 1978

Sites, Jr., Jack W.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BS, Austin Peay State University, 1973
MS, Austin Peay State University, 1975
PhD, Texas A & M University, 1980

St Clair, Larry Lee
**COLLEGE:** Life sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, Brigham Young University, 1975
PhD, University of Colorado, 1984

Whiting, Michael F.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
PhD, Cornell University, 1994

## Associate Professors

Adams, Byron
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
PhD, University of Nebraska, 1998

Gill, Richard
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
PhD, Colorado State University, 1998

Johnson, Jerald B.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1995
PhD, University of Vermont, 2000

Peck, Steven L.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, University of North Carolina, Chapel Hill, 1988
PhD, North Carolina State University, 1997

## Assistant Professors

Bybee, Seth M.
**COLLEGE:** Life Sciences

**DEPARTMENT:** Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2004
PhD, University of Florida, 2008

Jensen, Jamie L.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2003
PhD, Arizona State University, 2008

Kauwe, John
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2001
PhD, Washington University, St. Louis, 2007

Ridge, Perry G.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2005
MS, University of Nebraska-Lincoln, 2008
PhD, Brigham Young University, 2013

Whipple, Clint
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
PhD, University of California, San Diego, 2006

## Associate Teaching Professor

Adair, Marta Jean
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, Brigham Young University, 1990

## Associate Research Professors

Clark, Shawn
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Research Associate Professor
**DEGREES:** BS, Brigham Young University, 1979
MS, Brigham Young University, 1982
**DEGREES:** PhD, Ohio State, 1987

Johnson, Robert L.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Research Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MS, Brigham Young University, 1993
**DEGREES:** PhD, Brigham Young University, 2008

Wilcox, Edward R.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Biology
**RANK:** Research Associate Professor
**DEGREES:** BA, University of California, Davis, 1977

PhD, University of California, Davis, 1982

**College of Life Sciences Home**

**Exercise Sciences Department Home**

**Majors**

- BS in Athletic Training
- BS in Exercise and Wellness
- BS in Exercise Science

**Course Information**

- Exercise Sciences Courses

**Faculty**

# Exercise Sciences

Gary Mack, Chair
106F SFH, (801) 422-2466

Life Sciences Student Services
2060 LSB, (801) 422-3042

## Admission to Degree Program

Please see Life Sciences Student Services for specific details on enrolling in each major.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Athletic Training** (Program Outcomes)
**BS in Exercise and Wellness** (Program Outcomes)
**BS in Exercise Science** (Program Outcomes)

Students should see Life Sciences Student Services for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Exercise Sciences
PhD in Exercise Sciences

For more information see the BYU 2014–2015 Graduate Catalog.

College of Life Sciences Home

Exercise Sciences Department Home

Majors

- BS in Athletic Training
- BS in Exercise and Wellness
- BS in Exercise Science

Course Information

- Exercise Sciences Courses

Faculty

# BS in Athletic Training (64 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## The Discipline

The study of athletic training appeals to those who would like to work in a field that combines an athletic setting with health and medical care. A student in athletic training will learn to apply knowledge of human anatomy, exercise physiology, conditioning, nutrition, and therapy in the prevention, diagnosis, immediate care, and rehabilitation of athletic injuries.

Students must graduate from an accredited athletic training program and pass the Board of Certification (BOC) examination to certify as an athletic trainer.

## Career Opportunities

Career possibilities include working with athletic teams at all levels of competition or in a sports medicine clinical setting or other allied health facilities or in a corporate/industrial setting. BOC certification is required and an advanced degree is recommended.

## Program Requirements | View MAP | View Program Outcomes

1. The Exercise Sciences Department requires a minimum of 45 major hours to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
2. Complete application into the athletic training program during semester of enrollment in ExSc 320. See the program director or ExSc 320 instructor for an application packet.
   - Have a physical examination and provide an immunization record to verify technical standards.
   - Submit one letter of recommendation.
   - Interview with the athletic training staff.
   - Complete 30 hours of clinical observation or experience in a college or high school athletic training setting and complete observation objectives.
3. Complete the senior exit interview.
4. Maintain CPR/AED certification for the professional rescuer.
5. Meet the technical standards associated with the athletic training education program.
6. Complete the following:

EXSC 302 : Philosophical and Ethical Issues in Exercise Sciences. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Philosophical and ethical issues common to exercise sciences majors. Concept of mind, body, spirit.

**Course Outcomes**

- Learn contemporary tenets of philosophy that will serve as a basis for understanding important ideas in our own cultural tradition as well as that of others.
- Comprehend philosophical worldviews to facilitate respectful relationships with others.
- Pursue truth, think clearly and communicate effectively one's own beliefs and values; deepen one's understanding of the nature of being.
- Comprehend and apply the truths of the gospel of Jesus Christ. Reflect devout love of God and a loving, genuine concern for the welfare of others in the learning environment.
- Acquire/reinforce a profound respect for the divine nature of one's own life, a reverence for one's value, the purpose of one's life and a desire to live a healthy lifestyle.
- Articulate one's valuing of the entire self, bodymindspirit, with particular focus on the meaning and importance of the physical body.
- Strengthen the formulation of own personal and professional philosophy establishing clear standards of integrity. Improve the communication of one's beliefs, written and verbal.
- Analyze contemporary issues from an ethical standpoint. Demonstrate own professional ethical behavior, think critically and take an informed position on an issue.

EXSC 320 : Basic Athletic Training. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 220; Some majors require concurrent enrollment in ExSc 321. Check MAP requirements for major.

DESCRIPTION: Recognition, evaluation, and care of athletic injuries. Techniques in taping, preventing, and rehabilitating injuries.

**Course Outcomes**

- Review general responsibilities, roles, and tasks of athletic trainers, physical therapists, and otherallied health professionals involved in sports medicine.
- Learn assessment, first aid, and treatments for common musculoskeletal injuries.
- Examine methods of injury prevention including conditioning principles, environmental hazards,and protective equipment.
- Learn and utilize resources available to sports medicine professionals.
- Apply knowledge to practical situations.

EXSC 321 : Basic Athletic Training Lab. (.5:0:.5)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Concurrent enrollment in ExSc 320.
NOTE: Fee.

**Course Outcomes**

- Demonstrate competency and proficiency in taping the ankle, foot, lower leg, knee, thigh/hip,shoulder, elbow, wrist, thumb, and finger joints.
- Demonstrate competency and proficiency in wrapping the ankle, foot, lower leg, thigh/hip,shoulder, elbow, wrist, thumb, and finger joints.
- Demonstrate competency and profiency in wound care management.
- Demonstrate competency and profiency in injury evaluation.
- Demonstrate competency and profiency in injury treatment management.
- Demonstrate competency and profiency in spineboarding and splinting.

EXSC 362 : Kinesiology and Biomechanics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Math 110 or higher.
RECOMMENDED: Phscs 105 or 121; PDBio 220.

**Course Outcomes**

- Demonstrate application of physical laws to human performance.
- Calculate kinematics of human motion.
- Show comprehension of projectile motion equations.
- Determine changes of motion due to forces.
- Demonstrate understanding of how fluids generate force.

EXSC 390 : Advanced Musculoskeletal Human Anatomy (includes lab). (4:3:2)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PDBIO 220; Majors Only
RECOMMENDED: ExSc 362 or equivalent.
DESCRIPTION: Advanced examination of structure and function of skeletal, articular, muscular, and peripheral nervous systems with clinical applications; cadaver lab included.

**Course Outcomes**

- Upon completion of this class students will be able to accomplish the following:Be familiar with the anatomical terms and their meanings for the human skeletal, peripheral nervous, articular, and muscular systems in relation to movement and orthopaedics.
- Identify and discuss the structures, functions and inter-relationships of the human skeletal, peripheral nervous, articular, and muscular systems with respect to movement.

EXSC 414 : Advanced Athletic Training Lab. (1:0:2)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Athletic training major status.
DESCRIPTION: Advanced athletic training skills, including taping, bracing and splinting, custom-fitted equipment, massage and stretching techniques, and emergency splinting and transport.

**Course Outcomes**

- At the end of this course, the student will demonstrate competency in each of the following CAATE competencies:Select and fit appropriate standard protective equipment on the patient for safe participation in sport and/or physical activity. This includes but is not limited to: Shoulder Pads, Helmet/Headgear, Footwear, Mouthguard, Prophylactic Knee Brace, Prophylactic Ankle Brace, Other Equipment (as appropriate)
- Select, fabricate, and apply appropriate preventive taping and wrapping procedures, splints, braces, and other special protective devices. Procedures and devices should be consistent with sound anatomical and biomechanical principles.
- Obtain, interpret, and make decisions regarding environmental data. This includes, but is not limited to the ability to:RM-P6.2. Formulate and implement a comprehensive, proactive emergency action plan specific to lightening safety
- Apply commonly used special tests and instruments (e.g., otoscope, stethoscope, ophthalmoscope, peak flowmeter, chemical “dipsticks” [or similar devices]) and document the results for the assessment of: Vital signs including respiration (including asthma), pulse and circulation, and blood pressure
- Implement appropriate emergency treatment strategies, including but not limited to:AC-P3c Establish and maintain an airway in a patient wearing shoulder pads, headgear or other protective equipment and/or with a suspected spine injury
- Instruct the patient in proper techniques of commonly prescribed therapeutic exercises.
- Develop risk management plans, including facility design, for safe and efficient health care facilities.
- Develop a risk management plan that addresses issues of liability reduction; security, fire, and facility hazards; electrical and equipment safety; and emergency preparedness.
- Develop policy and write procedures to guide the intended operation of athletic training services within a health care facility.

EXSC 415 : Therapeutic Modalities. (3:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Athletic training major status.

DESCRIPTION: Hydrotherapy, massage, traction, radiant energy, heat, cold, and electrotherapy.

**Course Outcomes**

- The student will demonstratethe ability to properly select the appropriateparameters, prepare, and apply a(n):a.cold whirlpool treatmentb.controlled cold therapy unitc.ice bagd.vapo-coolant spraye.ice immersionf.ice massageg.contrast bathh.cryokinetics
- The student will demonstratethe ability to properly select appropriateparameters, prepare, and apply a(n):a.moist heat packb.paraffin treatmentc.warm whirlpool treatmentd.fluidotherapye.diathermyf.infrared
- The student will demonstratethe ability to properly select appropriateparameters, prepare, and apply a(n):a.sensory-level pain control treatmentb.noxious-level pain control treatmentc.motor-level pain control treatmentd.muscle re-education treatmente.muscle pumping treatmentf.acute edema treatmentg.chronic edema treatmenth.muscle spasm treatmenti.muscle splinting treatmentj.muscle atrophy retardation treatmentk.iontophoresis treatmentl.MENS treatment
- The student will demonstrate proficiency in thesetup and application of the following types ofelectrical stimulation units:a.Monophasic stimulator (e.g., high voltstimulation)b.Biphasic stimulator (e.g., TENS, NMES)c.Direct current (e.g., iontophoresis)d.Alternating current (e.g., interferential,NMES)
- The student will demonstrate theability to properly select appropriateparameters, prepare, and apply a:a.thermal direct/indirect ultrasound treatmentb.non-thermal direct/indirect ultrasoundtreatmentc.combination electric-stimulation/ultrasoundtreatmentd.phonophoresis treatment
- The student will demonstrate theability to properly select appropriateparameters, prepare, and apply:a.mechanical tractionb.manual tractionc.positional traction
- The student willdemonstrate the ability to properly selectappropriate parameters, prepare, and applyintermittent compression.
- The student will demonstrate theability to prepare and apply a massagetreatment.The student will demonstrate the ability toproperly perform massage strokes.a.effleurageb.petrissagec.frictiond.tapotemente.vibration

EXSC 416 : Injury Evaluation: Lower Extremities. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Athletic training major status.

DESCRIPTION: Basic principles of injury evaluation; evaluation techniques specific to lower-extremity injuries.

**Course Outcomes**

- Instruct the patient how to properly perform fitness tests to assess his or her physical status and readiness for physical activity. Interpret the results of these tests according to requirements established by appropriate governing agencies and/or a physician. These tests should assess: Muscular Endurance, Agility, Speed.
- Develop a fitness program appropriate to the patient's needs and selected activity or activities that meet the requirements established by the appropriate governing agency and/or physician for enhancing: Cardiovascular Endurance, Speed
- Perform inspection/observation of the clinical signs associated with common injuries including deformity, posturing and guarding, edema/swelling, hemarthrosis, and discoloration.Palpate the bones and soft tissues to determine normal or pathological characteristics.Measure the active and passive joint range of motion using commonly accepted techniques, including the use of a goniometer and inclinometer.Grade the resisted joint range of motion/manual muscle testing and break tests.Apply appropriate stress tests for ligamentous or capsular stability, soft tissue and muscle, and fractures.Apply appropriate special tests for injuries to the specific areas of the body as listed above.Assess neurological status, including cranial nerve function, myotomes, dermatomes and reflexes, and circulatory status. Document the results of the assessment including the diagnosis.
- Obtain a medical history of the patient that includes a previous history and a history of the present condition. Perform a visual observation of the clinical signs associated with common injuries and/or illnesses including deformity, edema/swelling, discoloration, and skin abnormalities.Palpate the bones and soft tissues, including the abdomen, to determine normal or pathological characteristics.

EXSC 417 : Injury Evaluation: Upper Extremities and Trunk. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 416

DESCRIPTION: Injury evaluation techniques specific to the upper extremities and trunk.

**Course Outcomes**

- Upon completion of this course, the student will understand and be able to explain and/ordemonstrate by performance on an exam:1. Mechanisms of common injuries in various sports.
- Basic principles of evaluation and diagnostic terminology.
- Signs and symptoms of upper extremity injuries.
- Specific steps in injury evaluation.
- Evaluation techniques, including special tests, used to identify and assess degree ofdisability of the upper extremity.
- Proficiency in performing manual muscle testing of the upper extremity.
- Proficiency in performing girth and goniometric measurements of the upperextremity.
- Basic on-the-field/off-the-field injury management.

EXSC 418 : Rehabilitation of Orthopedic Injuries. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 415

DESCRIPTION: Basic principles, techniques, and progression of orthopedic/musculoskeletal rehabilitation.

**Course Outcomes**

- 1. Understand tissue healing and how therapeutic exercise affects tissue healing.

- 2. Understand the concept of functional progression and how it guides individual rehabilitation protocols. Rehabilitation is not a recipe that fits all people.
- 3. Apply and understand therapeutic exercise, range of motion, and manual therapy techniques to enhance the goals within a rehabilitation plan for athletic injury.
- 4. Synthesize the different goals of rehabilitation to be combined for any injury and condition to return the patient to full activity.

EXSC 419 : Medical Issues in Athletic Training. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: ExSc 417 or concurrent enrollment.

DESCRIPTION: Discussion of current medical issues in athletic training with guest lectures by medical specialists.

**Course Outcomes**

- Advanced seminar type class for exposure to a variety of medical conditions, given from MD's point of view.
- Learn a medical doctor's approach to illnesses which athletes commonly experience.
- Integrate the athletic trainer's responsibility as it pertains to a team approach with the physician.

EXSC 423 : Administration of Athletic Training Programs. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 415

DESCRIPTION: Management and administration of athletic training facilities and staff members.

**Course Outcomes**

- Explain the importance of planning, coordinating, and supervising in the administration of an athletic training room/program.
- Explain various budgeting systems and develop budgets for high school and collegiate athletic training programs.
- Design athletic training facilities to meet specific needs.
- Explain the significance of state regulation for the athletic training profession and its relationship to 3rd party reimbursement.
- Explain the impact that insurance and 3rd party reimbursement has on athletic training.
- Be able to develop emergency plans for athletic training settings.
- Explain the elements of negligence and to understand legal issues facing athletic trainers, as well as the role of risk management.
- Explain how to efficiently and effectively organize pre-participation exams.
- Explain key concepts in personnel management, including communication, motivation, evaluations, etc.
- Explain the role of technology and information management in athletic training settings.
- Develop and incorporate individual leadership skills; as well as increase personal awareness, gain self-confidence, and foster cohesive and caring relationships.

EXSC 460 : Orthopaedic Impairments and Therapeutic Exercise. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 220 & EXSC 390

DESCRIPTION: Fundamentals of body mechanics and therapeutic exercise, coupled with kinesiological principles for detection and correction of basic neuromusculoskeletal anomalies.

**Course Outcomes**

- Upon completion of this class students will be able to accomplish the following:Demonstrate an understanding of basic orthopedic terminology dealing with posture, movement and pathology.
- Demonstrate an understanding of traditional, osteokinematic and arthrokinematic movement
- Demonstrate an understanding of therapeutic exercise particularly active-resistive exercise and manual muscle testing and manual passive exercise and stretching.
- Be able to perform a postural evaluation, both grossly and at individual joints
- Demonstrate an understanding of the etiology, clinical significance and treatment of congenital and acquired orthopedic impairments of the upper and lower extremities and trunk.
- Where applicable, be able to write a therapeutic exercise program for the orthopedic impairments discussed in class.
- Demonstrate an understanding of normal and pathologic gait.

EXSC 463 : Exercise Physiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PDBIO 305; or PDBIO 362

RECOMMENDED: Concurrent enrollment in ExSc 464.

DESCRIPTION: The function of the physiological systems and their responses to acute and chronic exercise.

**Course Outcomes**

- Describe the substrates used, amount and rate of ATP resynthesized, metabolic end products, and control of anaerobic and aerobic metabolic pathways.
- Describe the responses to acute bouts of exercise and the mechanisms of the observed response, and the physiological adaptations which occur as a result of physical conditioning.
- Describe the physiological rationale for applying the eight principles of physical conditioning to improve health, fitness, and performance.
- Describe the depolarization of skeletal muscle beginning at the spinal cord and ending with the contraction of the muscle fiber.
- Describe the transportation and diffusion of O2and CO2 through the pulmonary and systemic circuits at rest and during exercise.
- Describe the anatomical, physiological, and functional differences between the three types of huma skeletal muscle fibers.
- Describe the interaction of the nervous, muscle, cardiovascular, pulmonary, and metabolic systems at rest and during exercise.

- Describe the normal anatomy and physiology of the heart, blood, and blood vessels; describe the normal function of the cardiovascular system at rest and during exercise.
- Describe how the human body functions and maintain homeostasis during the increased metabolic demands of exercise.
- Describe the function of sympathetic, parasympathetic, and somatic motor neurons, including differences in structure, neurotransmitters, receptors and efferent organs.

EXSC 464 : Exercise Physiology Lab. (.5:0:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ExSc 463 or concurrent enrollment.

DESCRIPTION: Introduction of laboratory and field methods; applying principles of exercise physiology to assessing physical fitness and physiological responses to exercise.

**Course Outcomes**

- The purpose of this class is to apply knowledge of exercise physiology to the assessment of the fivecomponents of health related physical fitness. The labs are the means to review and apply the physiologyof exercise and to develop and practice fundamental skills related to the assessment of physical fitness.

EXSC 468 : Problems in Exercise Prescription. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 463

DESCRIPTION: Applying scientific principles to problems in conditioning.

**Course Outcomes**

- At the conclusion of the course, the student will be able to write prescriptions of activity forindividuals of selected levels of age and fitness for the following:A. Endurance1. Speed/Explosive endurance2. Anaerobic endurance3. Aerobic endurance B. Strength1. Beginners2. Athletes3. Body builders C. Nutrition D. Weight Control1. Weight loss2. Weight gain E. Flexibility F. Plyometricssion of the course, the student will be able to write prescriptions of activity forindividuals of selected levels of age and fitness for the followingAt the conclusion of the course, the student will be able to write prescriptions of activity forindividuals of selected levels of age and fitness for the following

EXSC 501 : Sports Medicine Pathology and Pharmacology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ExSc 320, PDBio 305; or equivalents.

DESCRIPTION: Sports medicine pathologies and related pharmacology for a variety of sports medicine/allied health care professions.

NOTE: Meets required NATA athletic training educational competencies.

**Course Outcomes**

- After completing this course, the student will:1. Synthesize basic knowledge of human anatomy and physiology to develop knowledge of the causes, pathophysiology, and clinical features of the various conditions affecting the body. Considering you have completed a physiology course you will be required to recall that information
- 6. Understand basic pharmacokinetics and pharmacodynamics principles.
- 8. Describe proper maintenance and documentation of records for the administration of prescription and nonprescription drugs.
- 7. Understand advantages and disadvantages of common routes used to administer medications.
- 2. Analyze relationships between inflammation, repair, regeneration, and healing as they relate to pharmacological intervention.
- 9. Utilize reference sources for pharmacological information.
- 5. Synthesize patient information for prescription and nonprescription agents associated with the treatment and relief of symptoms from illness and injuries.
- 4. Understand clinical use of various prescription and nonprescription agents associated with the treatment and relief of symptoms from illnesses and injuries.
- 3. Evaluate clinico-pathological signs and symptoms for specific medical conditions that assist the sport medicine/allied health care clinician in correlating findings in determining the course of action for illness and disease.
- 11. Identify sources of current banned-drug lists published by various associations.
- 10. Describe basic concepts of organizing and coordinating a drug testing and screening program.

NDFS 310 : Nutrition and Metabolism in Sports and Exercise. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: NDFS 100 & PDBIO 305

DESCRIPTION: Scientific basis for the role of nutrition in human performance. Critical evaluation of popular practices; making optimal food choices for physical activity.

NOTE: This course was formerly named Sports Nutrition.

**Course Outcomes**

- Students will apply their current understanding of nutrition to aspects of physical performance. Describe the factors (exercise intensity, duration, substrate availability and endocrine) that affect energy utilization.
- Search, interpret, and summarize original scientific information. Evaluate nutritional claims for scientific accuracy.
- Apply evidence-based nutrition recommendations for sports and exercise in real or hypthetical situations.

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.

RECOMMENDED: A general biology course.

DESCRIPTION: Function of body organ systems.

NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

PSYCH 111 : Introduction to Psychological Science. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic course in modern scientific psychology.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Objective: Apply psychological principles to personal and social issues and problems.Measurement:Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper.
- Objective: Demonstrate a broad knowledge of the basic theoretical perspectives that guide psychological inquiry.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Pyychology 111 sections.
- Objective: Understand the basic research methods used in psychology, including classical and current experiments.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper, participation as a subject in actual psychological research.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

7. Complete the following (to be taken last semester prior to graduation):
   EXSC 498 : Capstone Experience in Athletic Training. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Senior standing in athletic training education program.

DESCRIPTION: Synthesizing and integrating student classroom and clinical experiences in preparation for BOC examination resulting in certification of allied health professionals.

NOTE: Course should be taken last semester prior to graduation.

**Course Outcomes**

- Explain, describe and complete the BOC exam registration process.
- Design and follow athletic training content exam preparation schedule.
- Understand the possibilities of practice in AT.
- Explain the significance of BOC certification and state regulation for the athletic training profession.
- Define deficiencies in you athletic training education knowledge and skills.
- Develop and implement emergency plans in the practice of athletic training.
- Explain legal issues facing athletic trainers.
- Explain the role of technology and information management in athletic training settings.
- Understand the requirements to maintain BOC certification.
- BOC Exam Preparation= Professional Practice Preparation
- Have completed all NATA Education Council competencies.

8. Complete the following:

EXSC 394 : Athletic Training Clinical Education 1. (2:1:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Athletic training major status.

DESCRIPTION: Classroom and field experience. Orientation to athletic training program and clinical expectations. Modules include emergency care, taping skills, and basic modalities.

**Course Outcomes**

- After completing this course, the student will be able to understand the administrative roles and policies of various health care organizations including:a. CAATEb. NATAc. BOC
- Demonstrate the skills necessary for accurate record keeping including SOAP notes and correct documentation of HOPS
- Understand purchasing policies for supplies
- Correctly devise and implement emergency action plans
- Demonstrate the necessary skills for care of emergency conditions
- Demonstrate care and necessary skills for treating open wounds
- 1. Demonstrate correct use, including indications and contraindications for therapeutic modalities including:a. Hot Packsb. Ultrasoundc. Cryotherapyd. Electrical stimulation
- 1. Demonstrate correct evaluation techniques of lower extremities including:a. Footb. Anklec. Lower Legd. Kneee. Hip

EXSC 395 : Athletic Training Clinical Education 2. (2:1:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 394

DESCRIPTION: Classroom and field experience. Modules include taping skills, assessment, and modalities.

**Course Outcomes**

- Demonstrate rehabilitation skills, including aquatic therapy, joint mobilizations, proprioception, neuromuscular control, and agility exercises.
- Demonstrate competency and clinical proficiency in taping and bracing.
- Demonstrate the skills necessary to properly evaluate and care for upper extremity injuries including shoulder, elbow, forearm, wrist, hand, head and face, and thorax and abdomen.
- Demonstrate the use of the following rehabilitation tools: Alter G machine and Rebounder

EXSC 494 : Athletic Training Clinical Education 3. (2:1:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 395

DESCRIPTION: Classroom and field experience. Modules include injury assessment and management, rehabilitation skills, and knowledge of general medical conditions.

**Course Outcomes**

- After completing this course, the student will be able to:1. Understand and apply administrative policies and procedures.
- Demonstrate general medical assessment skills.
- Understand how to care for and prevent various general medical (respiratory, cardiac,gastric, genitourinary) pathologies.

EXSC 495 : Athletic Training Clinical Education 4. (2:1:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 494

DESCRIPTION: Classroom and field experience. Modules include injury assessment and management, rehabilitation skills, nutrition, and dermatology.

**Course Outcomes**

- After completing this course, the student will:1. Demonstrate understanding of pharmacology, pharmacological processes, and the university'smedication policies and procedures.
- Demonstrate knowledge of basic nutrition guidelines for athletes.

- Demonstrate knowledge of eating disorders and disordered eating and possess the ability tointervene with athletes who suffer from such disorders.
- Demonstrate the skills necessary to properly evaluate, care for, rehabilitate, and prevent upper and lower extremity injuries.
- Demonstrate the skills necessary to properly evaluate, care for, and prevent various generalmedical (common syndromes and diseases, dermatology) pathologies. Full evaluation and treatment from on-the-field to return-to-play.

**Note:** These courses must be completed over a two-calendar-year period. The athletic training clinical education courses listed above require field experience hours as part of the athletic training curriculum.

## Recommended Courses

HLTH 320 : Advanced First Aid and Safety. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: In-depth coverage of first aid procedures for injuries and sudden illness. Leads to first aid and CPR certifications.

**Course Outcomes**

- Demonstrate the skills involving cardiopulmonary rescuitation (CPR), automated external defibrillation (AED), bandaging, and splinting.
- Identify the importance of first aid and emergency care
- Recognize specific emergency problems (i.e., heart attack, fracture, open wound, burn insect sting) through their signs and symptoms.
- Identify the decisions involved during an emergency.
- Describe proper first aid and emergency care procedures for specific emergency problems.

STDEV 170 : Introduction to Health Professions. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of health professions: medical, dental, and other specialties. Primary focus on guest lectures from various practitioners and clinicians.

**Course Outcomes**

- 1. Students will gain a basic understanding of a significant number of health professions.
- 2. Students will increase knowledge of health professions through class presentations with health care professionals.
- 3. Students will learn more about health care provision through service learning in preparation for service-oriented health professions.
- 4. Students will increase awareness of the requirements to enter various health professions and where to find additional information about their preferred health care field.

*Hours include courses that may fulfill university core requirements.

## Show all Exercise Sciences Courses

College of Life Sciences Home

Exercise Sciences Department Home

Majors

- BS in Athletic Training
- BS in Exercise and Wellness
- BS in Exercise Science

Course Information

- Exercise Sciences Courses

Faculty

# BS in Exercise and Wellness (60.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## The Discipline

Exercise and Wellness is a departure from the typical U.S. medical model in that the focus is on helping individuals achieve optimal health and fitness rather than on discovering and treating disease. Recent research findings, along with rising health-care costs, have spurred an interest in keeping people healthy to improve their quality of life and also to avoid unnecessary medical expenses.

Depending on electives completed, there are several excellent career and graduate school options to pursue. Earning a master's degree in exercise science, for example, can give the added knowledge and experience needed to direct a private, commercial, corporate, or clinical health/fitness program. Other graduate school opportunities include a master's in public health (MPH), business administration (MBA), recreational therapy (MS), nutritional science (MS), or a master's in physician assistant studies (MPAS), to name a few.

## Career Opportunities

Exercise and wellness professionals find employment primarily in commercial or community fitness centers but may also work in hospital wellness programs or corporate health-promotion programs. Job responsibilities typically involve teaching clients how to achieve optimal wellness through effective exercise, wholesome nutrition, and successful stress-management strategies.

Exercise and wellness professionals may function at a staff or management level. Staff personnel often conduct one-on-one counseling sessions on a variety of health-related subjects as well as perform fitness testing and exercise prescription. They also may conduct workshops, conferences, or seminars on exercise, nutrition, stress management, weight control, and many other topics.

Program directors typically possess a master's degree with several years of experience working in a health promotion/wellness environment. As a program director, additional responsibilities typically include financial budgeting, marketing, program administration and evaluation, and personnel hiring and training.

Students pursuing a degree in exercise and wellness are usually more successful in their profession if they gain expertise in the following areas: counseling, public speaking, behavior change, business, first aid, gerontology, or aerobic dance teaching. It is also strongly recommended that students obtain a health/fitness certification through a reputable certifying organization.

Survey data indicate that personal trainers earn $51,000 annually in the U.S. Throughout the U.S. salaries range from $37,000 to $63,000. Health promotion program directors' salaries are similar to those of personal trainers, with more earning potential for individuals with graduate degrees and/or experience.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the senior exit interview.
2. Complete the following prerequisites to the exercise and wellness core:

HLTH 320 : Advanced First Aid and Safety. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: In-depth coverage of first aid procedures for injuries and sudden illness. Leads to first aid and CPR certifications.

**Course Outcomes**

- Demonstrate the skills involving cardiopulmonary rescuitation (CPR), automated external defibrillation (AED), bandaging, and splinting.
- Identify the importance of first aid and emergency care
- Recognize specific emergency problems (i.e., heart attack, fracture, open wound, burn insect sting) through their signs and symptoms.
- Identify the decisions involved during an emergency.
- Describe proper first aid and emergency care procedures for specific emergency problems.

NDFS 100 : Essentials of Human Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Food-oriented study of nutritional facts and principles as a basis for dietary choices; consequences of choices; scientifically examining controversial topics.

**Course Outcomes**

- Apply the scientific method to identify and interpret credible nutrition information.
- Identify, interpret, and apply nutrition information.

- Identify functions of nutrients and their major food sources.

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.

RECOMMENDED: A general biology course.

DESCRIPTION: Function of body organ systems.

NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

TMA 150 : Public Speaking. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Principles and methods of public speaking; speaking experiences.

**Course Outcomes**

- Develop analytical listening and observation skills.
- Know how to speak publicly so your audience will really listen and understand.
- Construct and deliver effective extemporaneous public speeches.
- Manage speech anxiety and effective use nonverbal communication to inform, persuade, enlighten, and impact your audience.
- Be able to produce and employ effective visual aids in your presentations.

3. Complete the following required core:

EXSC 302 : Philosophical and Ethical Issues in Exercise Sciences. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Philosophical and ethical issues common to exercise sciences majors. Concept of mind, body, spirit.

**Course Outcomes**

- Learn contemporary tenets of philosophy that will serve as a basis for understanding important ideas in our own cultural tradition as well as that of others.
- Comprehend philosophical worldviews to facilitate respectful relationships with others.
- Pursue truth, think clearly and communicate effectively one's own beliefs and values; deepen one's understanding of the nature of being.
- Comprehend and apply the truths of the gospel of Jesus Christ. Reflect devout love of God and a loving, genuine concern for the welfare of others in the learning environment.
- Acquire/reinforce a profound respect for the divine nature of one's own life, a reverence for one's value, the purpose of one's life and a desire to live a healthy lifestyle.
- Articulate one's valuing of the entire self, bodymindspirit, with particular focus on the meaning and importance of the physical body.
- Strengthen the formulation of own personal and professional philosophy establishing clear standards of integrity. Improve the communication of one's beliefs, written and verbal.
- Analyze contemporary issues from an ethical standpoint. Demonstrate own professional ethical behavior, think critically and take an informed position on an issue.

EXSC 387 : Lifestyle and Chronic Disease Prevention. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Current scientific evidence demonstrating how lifestyle affects disease processes. Healthy lifestyle concepts specifically needed by wellness professionals, health educators, and health promotion practitioners; influence of unhealthy lifestyle as basis for chronic diseases, i.e., cardiovascular disease, cancer, and diabetes.

**Course Outcomes**

- Develop an awareness of what constitutes a healthy lifestyle
- Understand the use and interpretation of statistical techniques used in scientific papers on health and lifestyle
- Become familiar with the scientific literature that supports healthy living
- Gain knowledge needed to help others adopt and maintain a healthy lifestyle

EXSC 410 : Stress Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Teaches students the basic principles, theories, and relaxation techniques to effectively manage personal stress. Students gain a greater understanding of the mind-body relationship, learn to employ a holistic approach to stress, and adopt effective cognitive, coping, and relaxation techniques. Ultimately, students experience a more effective approach to optimal lifelong health.

**Course Outcomes**

- Master the basic understanding of the physiological mechanisms responsible for the fight-or-flight response and subsequent manifestations of various symptoms of target organ dysfunctions. Be able to apply this understanding to stress management and disease prevention.
- Understand and discuss the holistic nature (mind-body-spirit) of stress management and comprehend the mind-body connection of the stress and disease process.
- Be able to recognize potential stressors and develop strategies to prevent (or reduce the magnitude) these stressors from eliciting a stress response.
- Be able to develop strategies to reduce daily stressors.
- Understand the principles behind the various relaxation techniques and be able to apply these techniques to managing stress.

EXSC 463 : Exercise Physiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PDBIO 305; or PDBIO 362

RECOMMENDED: Concurrent enrollment in ExSc 464.

DESCRIPTION: The function of the physiological systems and their responses to acute and chronic exercise.

**Course Outcomes**

- Describe the substrates used, amount and rate of ATP resynthesized, metabolic end products, and control of anaerobic and aerobic metabolic pathways.
- Describe the responses to acute bouts of exercise and the mechanisms of the observed response, and the physiological adaptations which occur as a result of physical conditioning.
- Describe the physiological rationale for applying the eight principles of physical conditioning to improve health, fitness, and performance.
- Describe the depolarization of skeletal muscle beginning at the spinal cord and ending with the contraction of the muscle fiber.
- Describe the transportation and diffusion of O2and CO2 through the pulmonary and systemic circuits at rest and during exercise.
- Describe the anatomical, physiological, and functional differences between the three types of huma skeletal muscle fibers.
- Describe the interaction of the nervous, muscle, cardiovascular, pulmonary, and metabolic systems at rest and during exercise.
- Describe the normal anatomy and physiology of the heart, blood, and blood vessels; describe the normal function of the cardiovascular system at rest and during exercise.
- Describe how the human body functions and maintain homeostasis during the increased metabolic demands of exercise.
- Describe the function of sympathetic, parasympathetic, and somatic motor neurons, including differences in structure, neurotransmitters, receptors and efferent organs.

EXSC 464 : Exercise Physiology Lab. (.5:0:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ExSc 463 or concurrent enrollment.

DESCRIPTION: Introduction of laboratory and field methods; applying principles of exercise physiology to assessing physical fitness and physiological responses to exercise.

**Course Outcomes**

- The purpose of this class is to apply knowledge of exercise physiology to the assessment of the fivecomponents of health related physical fitness. The labs are the means to review and apply the physiologyof exercise and to develop and practice fundamental skills related to the assessment of physical fitness.

EXSC 480 : Obesity and Weight Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ExSc 463 or concurrent enrollment.

DESCRIPTION: Review of the scientific literature surrounding obesity and weight management, primarily the causes and consequences of this growing epidemic.

**Course Outcomes**

- Demonstrate an understanding of the historical framework and prevalence of overweight/obesity in adults and children.
- Understand the etiology and health risks related to overweight/obesity.
- Describe the economic costs and social consequences associated with overweight/obesity.
- Demonstrate an understanding of the principles of energy balance.
- Understand methods of assessing overweight/obesity, body composition, diet, and physical activity.
- Demonstrate an understanding of various methods of treating overweight/obesity including: diet, physical activity, behavioral, pharmacological, and surgical interventions.
- Demonstrate an understanding of pediatric, family and public interventions to prevent or attenuate the rise in obesity.
- Have a personal experience applying weight management strategies.
- These learning objectives will be achieved through class lectures, student projects, scientific readings, and in-class activities. Students will be evaluated through written exams, quizzes and projects.

4. Complete four hours from the following:

EXSC 399R : Exercise and Wellness Internship. (.5-9:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Internship coordinator's consent.

DESCRIPTION: On-the-job experience for exercise and wellness majors.

**Course Outcomes**

- Gain work-related experience through one or more internship experiences
- Apply, in a work-related setting, the skills and abilities attained through required course work in the Exercise and Wellness major

5. Complete 24 hours from the following:

- Complete a minimum of 18 hours from the following:

EXSC 221 : Science of Wellness. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: A comprehensive study of the science of wellness of the whole individual. The science of wellness draws principles from exercise sciences, biological sciences, behavioral and social sciences. The research from psychoneuroimmunology (PNI) supports specifically the holistic wellness paradigm whose focus is that every aspect of each human being, the body, mind and spirit, are involved in all wellness activities and all wellness activities affect the whole individual. Students will discover this new paradigm and experience the blending of the sciences to support the integrated nature of our being.

**Course Outcomes**

There are no course outcomes available

EXSC 320 : Basic Athletic Training. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 220; Some majors require concurrent enrollment in ExSc 321. Check MAP requirements for major.

DESCRIPTION: Recognition, evaluation, and care of athletic injuries. Techniques in taping, preventing, and rehabilitating injuries.

**Course Outcomes**

- Review general responsibilities, roles, and tasks of athletic trainers, physical therapists, and otherallied health professionals involved in sports medicine.
- Learn assessment, first aid, and treatments for common musculoskeletal injuries.
- Examine methods of injury prevention including conditioning principles, environmental hazards,and protective equipment.
- Learn and utilize resources available to sports medicine professionals.
- Apply knowledge to practical situations.

EXSC 321 : Basic Athletic Training Lab. (.5:0:.5)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Concurrent enrollment in ExSc 320.
NOTE: Fee.

**Course Outcomes**

- Demonstrate competency and proficiency in taping the ankle, foot, lower leg, knee, thigh/hip,shoulder, elbow, wrist, thumb, and finger joints.
- Demonstrate competency and proficiency in wrapping the ankle, foot, lower leg, thigh/hip,shoulder, elbow, wrist, thumb, and finger joints.
- Demonstrate competency and profiency in wound care management.
- Demonstrate competency and profiency in injury evaluation.
- Demonstrate competency and profiency in injury treatment management.
- Demonstrate competency and profiency in spineboarding and splinting.

EXSC 349 : Body, Mind, Spirit. (3:3:0)

OFFERED: Independent Study only. Honors also.
DESCRIPTION: Sacredness of the body and its meaningfulness to the whole being. Comparative approach utilizing ideas from the restored gospel and Western and Eastern philosophy (nature of being).

**Course Outcomes**

There are no course outcomes available

: Honors Body, Mind, Spirit.

**Course Outcomes**

EXSC 362 : Kinesiology and Biomechanics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Math 110 or higher.
RECOMMENDED: Phscs 105 or 121; PDBio 220.

**Course Outcomes**

- Demonstrate application of physical laws to human performance.
- Calculate kinematics of human motion.
- Show comprehension of projectile motion equations.
- Determine changes of motion due to forces.
- Demonstrate understanding of how fluids generate force.

EXSC 365 : Scientific Bases of Sport: Kinesiology. (2:2:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Kinesiology and biomechanics for physical education/coaching minor.

**Course Outcomes**

- Students will demonstrate how to apply physical laws to human performance. Included physical laws deal with: Linear motion, projectile motion, forces, impulse and momentum, fluid mechanics, and tissue mechanics.

EXSC 385 : Personal Training Strategies. (3:3:0)

WHEN TAUGHT: Fall; Winter
RECOMMENDED: PDBio 220.
DESCRIPTION: The art and science of personal fitness training for healthy adults, utilizing safe and effective techniques to develop and maintain optimal functional fitness (proper posture, balance, joint mobility, and stability), and optimal physical fitness (cardiorespiratory endurance, flexibility, muscular strength, and power).

**Course Outcomes**

- Explain and apply the essential concepts and principles of human movement science, anatomy, exercise physiology; biomechanics, motor learning; functional fitness assessment; stability training, mobility training, core training, balance training, reactive training, resistance training, cardiorespiratory training; exercise programming; nutrition and weight management; safety and injury prevention in an understandable and accurate way
- Prepare to certify as a Certified Personal Trainer (CPT) through the National Academy of Sports Medicine (NASM)

EXSC 390 : Advanced Musculoskeletal Human Anatomy (includes lab). (4:3:2)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PDBIO 220; Majors Only
RECOMMENDED: ExSc 362 or equivalent.
DESCRIPTION: Advanced examination of structure and function of skeletal, articular, muscular, and peripheral nervous systems with clinical applications; cadaver lab included.

**Course Outcomes**

- Upon completion of this class students will be able to accomplish the following:Be familiar with

the anatomical terms and their meanings for the human skeletal, peripheral nervous, articular, and muscular systems in relation to movement and orthopaedics.
- Identify and discuss the structures, functions and inter-relationships of the human skeletal, peripheral nervous, articular, and muscular systems with respect to movement.

EXSC 455 : Worksite Health Promotion. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 387 & EXSC 463

DESCRIPTION: Managing, designing, marketing, implementing, assessing, and administering health promotion programs in a worksite setting.

**Course Outcomes**

- Be able to demonstrate an understanding of the health promotion concept, historical background of worksite health promotion programs, and the rationale for companies to provide a health promotion program. This objective will be accomplished through class lecture/discussion and students will be evaluated through quizzes and exams.
- Better understand each of the following components in the design and execution of a worksite health promotion program: determining needs and interests of employers and employees, writing vision/mission/goal statements best practices, creating a company culture of wellness, launching a program, incentives/rewards, and company wellness policies. This will be accomplished through lectures and a semester project.
- Increase their understanding of effective health assessments and how to interpret the assessments. This will be accomplished through lectures and evaluated through quizzes and exams.
- Increase their understanding of how to effectively evaluate programs. This will be accomplished through lectures and evaluated through quizzes and exams.
- Be able to demonstrate the essential elements of common worksite health promotion programs, such as, physical activity, nutrition, weight management, medical self-care, stress management, substance abuse/tobacco control, and back care programs. This will be accomplished through lectures and class presentations.
- Gain practical experience and learning from experts in the field. This will be accomplished through the following: 1) each student will critique an existing worksite wellness program and present their findings to the class, 2) approximately 5 class periods will be devoted to studying transcripts of various interviews with experts in the field, and 3) 5 class periods will include visiting lecturers who are currently working in the field.
- Develop a worksite health promotion program through a semester class project.
- Have the opportunity to work in conjunction with a team to develop a health display to be presented to the class.

EXSC 468 : Problems in Exercise Prescription. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 463

DESCRIPTION: Applying scientific principles to problems in conditioning.

**Course Outcomes**

- At the conclusion of the course, the student will be able to write prescriptions of activity forindividuals of selected levels of age and fitness for the following:A. Endurance1. Speed/Explosive endurance2. Anaerobic endurance3. Aerobic endurance B. Strength1. Beginners2. Athletes3. Body builders C. Nutrition D. Weight Control1. Weight loss2. Weight gain E. Flexibility F. Plyometricssion of the course, the student will be able to write prescriptions of activity forindividuals of selected levels of age and fitness for the followingAt the conclusion of the course, the student will be able to write prescriptions of activity forindividuals of selected levels of age and fitness for the following

EXSC 485 : Exercise and Wellness Certification Preparation. (3:3:0)

PREREQUISITE: Senior status.

DESCRIPTION: Review of exercise and wellness certification competencies and curriculum with preparation for professional certification.

**Course Outcomes**

- Explain and apply the essential concepts and principles of pathophysiology; exercise physiology; health appraisal and fitness testing; exercise programming; nutrition and weight management; anatomy and biomechanics; human behavior and psychology; human development and aging; and safety and injury prevention in an understandable and accurate way
- Prepare to certify as a Health and Fitness Specialist (HFS) through the American College of Sports Medicine (ACSM)

HLTH 335 : Health Behavior Change. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: Hlth 330.

DESCRIPTION: Understanding health behavior change theories for individuals and populations. Practical application of related models and theories.

**Course Outcomes**

- Evaluate the ability of selected socio-behavioral theories and models for furthering understanding of important public health problems and issues, with particular reference to health promotion and disease prevention.
- Identify prominenent features and constructs in commonly used theories and models of health behavior change.
- Identify the important role of culture in the context of behavior change.

HLTH 345 : Principles of Epidemiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: Stat 121.

DESCRIPTION: Applying analytical tools to study acute and chronic disease to facilitate investigation and control of epidemics.

**Course Outcomes**

- Investigate disease outbreaks.
- Describe basic concepts, definitions, and history of Epidemiology.
- Describe patterns of disease occurrence.
- Interpret Epidemiologic studies.
- Evaluate treatment effectiveness.
- Measure disease frequency and association.
- Distinguish between statistical association and cause-effect relationships.
- Know basic design strategies in Epidemiology.

HLTH 460 : Substance Abuse and Addictive Behavior. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Physiological, psychological, sociological, and legal implications of drug use and addictive behaviors, emphasizing nature, cause, treatment, and prevention.

**Course Outcomes**

- Explain substance use and abuse from a multidisciplinary perspective.
- List and describe specific social policies that reduce alcohol, tobacco, and other drug use.
- Explain the major social determinants and predictors of substance use in the United States.
- Explain the biological basis of drug addiction.
- Describe the health problems and risk associated with specific drugs.
- Describe the marketing, public relations, and political activities of the tobacco and alcohol industries.
- Provide the descriptive epidemiology of substance abuse in the United States.

NDFS 201 : Society, Nutrition, and Chronic Disease. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NDFS 100

DESCRIPTION: Behavioral, dietary, and environmental factors that influence nutrition and risks for chronic disease.

**Course Outcomes**

- Explain or describe how behavioral, dietary, and environmental factors influence nutrition and chronic disease risks.
- Find scientific research articles and identify their key characteristics. Identify consistencies or inconsistencies in studies of diet and chronic disease risks.
- Apply information about behavioral, dietary, and environmental factors to reduce chronic disease risks.

NDFS 310 : Nutrition and Metabolism in Sports and Exercise. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: NDFS 100 & PDBIO 305

DESCRIPTION: Scientific basis for the role of nutrition in human performance. Critical evaluation of popular practices; making optimal food choices for physical activity.

NOTE: This course was formerly named Sports Nutrition.

**Course Outcomes**

- Students will apply their current understanding of nutrition to aspects of physical performance. Describe the factors (exercise intensity, duration, substrate availability and endocrine) that affect energy utilization.
- Search, interpret, and summarize original scientific information. Evaluate nutritional claims for scientific accuracy.
- Apply evidence-based nutrition recommendations for sports and exercise in real or hypthetical situations.

PDBIO 365 : Pathophysiology. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 305; or PDBIO 362

DESCRIPTION: Variations in physiological mechanisms that account for development of common disturbances in normal control and activities of body's organs and organ systems.

**Course Outcomes**

- Students will exhibit an integrative understanding of the biochemistry, molecular biology, genetics, cell biology, microbiology, environmental biology, and physiology related to the prevention, development, and treatment of common diseases.
- Students will demonstrate through case study analysis a command of problem solving skills related to the diagnosis and treatment of pathophysiological conditions.
- Pupils will manifest a command of the physiology and pathophysiological vocabulary necessary to effectively communicate with other biomedical professionals and the general public.
- Students will be able to articulate the ethical issues related to the treatment and prevention of

pathophysiological conditions.
- Students will manifest an increase in their respect for the human body and adopt a life style consistent with this respect.

- Complete up to 6 hours from the following:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BIO 130 : Biology. (4:3:1)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: General biology course with laboratory for biology majors. Introduction to disciplines in the life sciences including methods for scientific inquiry, biochemical dynamics, cell structure and function, evolutionary theory, bioenergetics, and ecological interactions.

**Course Outcomes**

- Students will demonstrate basic literacy in the language of science and an understanding of the foundational theories of biology (i.e., be able to formulate appropriate hypotheses and predictions to test specific biological phenomena and use appropriate vocabulary to do so) o Atomic Molecular Theoryo Cell Theoryo Theories of Photosynthesis, Fermentation, and Cellular Respirationo Cell Division and Meiotic Theorieso Chromosomal and Mendelian Theories of Inheritanceo Watson and Crick's Theory of DNA Structure and Replicationo Protein Synthesis Theoryo Darwin's Theory of Natural Selectiono Hardy-Weinberg Theoryo Ecosystem Theoryo Population Growth Theoryo Competitive Exclusion and Behavioral Theory
- Students will demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process.
- Students willappreciate the excitement of discovery that has accompanied important scientific developments.
- Students will demonstrate how scientific methodology can be used to analyze real-world science-related problems.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public-policy science issues that affect their community.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.
- Students will be able to reflect rationally upon the interface between science and religion.
- Students will demonstrate sound scientific reasoning ability.

BUS M 201 : Financial Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Acc 200 or equivalent.
DESCRIPTION: Financial statement analysis, financial planning, sources of financing, working capital management, risk and return, and valuation.

**Course Outcomes**

There are no course outcomes available

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**

There are no course outcomes available

BUS M 372 : Basic Entrepreneurship Skills. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Practical aspects of business formation and growth; key skills and principles needed to successfully start up and grow a business.

NOTE: For non-Marriott School of Management students.

**Course Outcomes**

There are no course outcomes available

CHEM 101 : Introductory General Chemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 97 or equivalent.

DESCRIPTION: Atomic and molecular structure, periodic relationships, states of matter, chemical reactions and stoichiometry, acids and bases.

NOTE: Primarily for nonscience majors who require a broad introduction to general chemistry.

**Course Outcomes**

- Students will be able to view the world around them in chemical terms. Students will use the concepts of atoms, molecules, and their properties to understand a variety of phenomena.
- Students will be able to make qualitative and/or quantitative predictions regarding a number of chemical concepts including chemical reactions and stoichiometry, calorimetry, osmosis, gases, acid/base chemistry, chemical equilibria, and radioactivity.

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent.

DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

DANCE 336 : Methods of Teaching Aerobic Dance. (2:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: DANCE 342 & DANCE 343; or EXSC 362 & DANCE 343

RECOMMENDED: NDFS 100.

**Course Outcomes**

- 1. Students will identify scientific fitness principles regarding cardiovascular endurance, strength, flexibility and lean/fat body ratio.
- 2. Students will analyze important characteristics of teaching anatomically sound warm-up and cool down sessions and choreographing and teaching aerobic workouts based on sound physiological principles.
- 3. Students will evaluate and administrate physical fitness assessments.

HLTH 383 : Mind/Body Health. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Theories and research on the effect of emotions and attitudes on health: how negative emotions increase disease susceptibility and positive emotions encourage immune strength, health, and healing. Behavioral medicine and complementary and alternative health practices also presented.

**Course Outcomes**

- Identify and understand the connection between mental processes/beliefs and how they contribute to chronic and infectious disease.(Learning activities: lecture, class discussion, group presentations, videos)
- Identify and evaluate the behavioral, social, and cultural thought processes that contribute to disease.(Learning activities: lecture, class discussion, research study reviews, exams)

HLTH 438 : Social Marketing. (3:3:0)

WHEN TAUGHT: Spring

RECOMMENDED: Hlth 330, 332, 437.

DESCRIPTION: Social marketing, including formative research, audience analysis, segmentation, marketing mix, strategies, pretesting; application to health promotion and public health.

**Course Outcomes**

- Be able to develop a social marketing plan.

HLTH 450 : Women's Health Issues. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Overview of selected health topics affecting women's health status. Primary emphasis on steps to enhance personal health and fulfill divine roles from childhood through adulthood.

**Course Outcomes**

- Identify and understand the determinants of women's health issues.(Learning activities: lecture, class discussion, videos, out of class activites, guest lecturers)
- Identify and report on specific chronic and infectious diseases that affect women.(Learning activities: lecture, class discussion, book review, guest lecture)
- Identify ways to improve women's health using a variety of assessment sources.(Learning activities: lecture, class discussion, review of CDC and other health statistics, interviews, guest lecture)

MMBIO 221 : General Microbiology. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Any biology course.

RECOMMENDED: Any chemistry course.

DESCRIPTION: Microbial world, emphasizing communicable diseases, their causes and control.

NOTE: Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses.

**Course Outcomes**

- Explain and discuss the ways by which microbiologists study microorganisms.
- Discuss the principle infectious diseases that affect mankind, including how they are transmitted, treated, controlled and prevented.
- Differentiate between the types of microorganisms by identifying relevant structure and their function in the biosphere.
- Propose microbial solutions to global problems.
- Describe how the human body defends itself against infectious agents.

NDFS 200 : Nutrient Metabolism. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: NDFS 100; Organic chemistry or concurrent enrollment.

DESCRIPTION: Chemical structures of nutrients, their food sources, requirements, digestion, absorption, transport, metabolism, functions, storage and excretion; metabolic consequences of nutrient deficiencies, interactions, imbalances, and toxicities.

**Course Outcomes**

- Identify chemical structures of amino acids, lipids, carbohydrates, and vitamins.
- List functions, food sources, and consequences of deficiencies and toxicities for each of the essential nutrients.
- Explain the metabolic and physiological basis for the consequences of dietary practices that affect

nutrient levels, and relate the consequences to the roles of essential nutrients in metabolic processes.
- Analyze diets and alter food intake to reach predetermined targets for consumption of specific dietary components or to achieve an overall dietary pattern.
- Find answers to questions and summarize results from original research reported in published peer-reviewed scientific journals.

ORG B 320 : Organizational Effectiveness. (3:Arr:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.
NOTE: Taught online.

**Course Outcomes**

There are no course outcomes available

STDEV 170 : Introduction to Health Professions. (1:1:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Overview of health professions: medical, dental, and other specialties. Primary focus on guest lectures from various practitioners and clinicians.

**Course Outcomes**

- 1. Students will gain a basic understanding of a significant number of health professions.
- 2. Students will increase knowledge of health professions through class presentations with health care professionals.
- 3. Students will learn more about health care provision through service learning in preparation for service-oriented health professions.
- 4. Students will increase awareness of the requirements to enter various health professions and where to find additional information about their preferred health care field.

STDEV 317 : Career Strategies for Employment and Internships. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Preparing for employment and internship opportunities. Practical strategies to facilitate internship and/or career preparation: resumes, cover letters, networking, interviewing, and Internet research.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

## Show all Exercise Sciences Courses

College of Life Sciences Home

Exercise Sciences Department Home

Majors

- BS in Athletic Training
- BS in Exercise and Wellness
- BS in Exercise Science

Course Information

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Faculty

# BS in Exercise Science (59.5 hours*)

Show All Course Descriptions
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## The Discipline

The exercise science program is designed to prepare students for entry into graduate school in one of the disciplines related to exercise science or one of the health care professional schools.

Students majoring in exercise science explore how the body functions during physical activity and exercise. Principles and concepts taught in human anatomy and physiology, exercise physiology, biomechanics, motor learning, chemistry, physics, and nutrition are mastered to help understand how the body responds to acute bouts of exercise and how it adapts to chronic physical activity and exercise. The impact that physical activity and exercise have on one's capacity to do work, physical performance, as well as its impact on health and disease makes study of this discipline rewarding.

## Career Opportunities

The exercise science degree provides excellent preparation for students interested in graduate work in exercise physiology (MS, PhD) or those desiring to pursue training in medicine, physical therapy, cardiac rehabilitation, podiatry, chiropractic, and other health care professions. Graduates with this major may also find opportunities in community, corporate, or hospital wellness centers and health promotion programs.

The major is designed to prepare students to enter graduate programs in several health-related professions; specifically exercise science master's and doctoral programs. Those who complete graduate work in exercise science are most likely to be employed as a professor/researcher in a university setting. In addition to graduate studies in exercise science, students are also prepared to attend medical school, dental school, osteopathy school, physician assistant and nursing programs, and chiropractic school.

Salary varies tremendously with the terminal degree sought, the choice of career specialty, and geographic location of employment or practice. Earnings for those with certain medical and dental specialties are potentially lucrative.

## Program Requirements | View MAP | View Program Outcomes

1. Complete senior exit interview.
2. Complete the following:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.
DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.
NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: CHEM 105; or CHEM 111
DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.
NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105

DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.

NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

NDFS 100 : Essentials of Human Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Food-oriented study of nutritional facts and principles as a basis for dietary choices; consequences of choices; scientifically examining controversial topics.

**Course Outcomes**

- Apply the scientific method to identify and interpret credible nutrition information.
- Identify, interpret, and apply nutrition information.
- Identify functions of nutrients and their major food sources.

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: High school algebra and trigonometry.

RECOMMENDED: Concurrent enrollment in Phscs 107.

DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 105 or equivalent.
RECOMMENDED: Concurrent enrollment in Phscs 108.
DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 105 or concurrent enrollment.
DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 106 or concurrent enrollment
DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

3. Complete one of the following options:

**Either**

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.
RECOMMENDED: A general biology course.
DESCRIPTION: Function of body organ systems.
NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

**Or**

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220
DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.
NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

PDBIO 363 : Advanced Physiology Laboratory. (1:.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBio 362 or concurrent enrollment; or instructor's consent.

DESCRIPTION: Experiments and exercises in advanced physiology emphasizing human physiology. Computer simulations of muscle function, endocrine disease, and human physiology. Emphasizes problem solving and calculations.

**Course Outcomes**

- Students will demonstrate the skills required to properly interpret data from scientific experimentation to discover how physiological systems function.
- Students will manifest an understanding of basic physiological principles by modeling how human cells, organs, and organ systems function.
- Students will describe how interactions between human organ systems work to maintain homeostasis.

4. Complete the following major courses:

EXSC 302 : Philosophical and Ethical Issues in Exercise Sciences. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Philosophical and ethical issues common to exercise sciences majors. Concept of mind, body, spirit.

**Course Outcomes**

- Learn contemporary tenets of philosophy that will serve as a basis for understanding important ideas in our own cultural tradition as well as that of others.
- Comprehend philosophical worldviews to facilitate respectful relationships with others.
- Pursue truth, think clearly and communicate effectively one's own beliefs and values; deepen one's understanding of the nature of being.
- Comprehend and apply the truths of the gospel of Jesus Christ. Reflect devout love of God and a loving, genuine concern for the welfare of others in the learning environment.
- Acquire/reinforce a profound respect for the divine nature of one's own life, a reverence for one's value, the purpose of one's life and a desire to live a healthy lifestyle.
- Articulate one's valuing of the entire self, bodymindspirit, with particular focus on the meaning and importance of the physical body.
- Strengthen the formulation of own personal and professional philosophy establishing clear standards of integrity. Improve the communication of one's beliefs, written and verbal.
- Analyze contemporary issues from an ethical standpoint. Demonstrate own professional ethical behavior, think critically and take an informed position on an issue.

EXSC 320 : Basic Athletic Training. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 220; Some majors require concurrent enrollment in ExSc 321. Check MAP requirements for major.

DESCRIPTION: Recognition, evaluation, and care of athletic injuries. Techniques in taping, preventing, and rehabilitating injuries.

**Course Outcomes**

- Review general responsibilities, roles, and tasks of athletic trainers, physical therapists, and otherallied health professionals involved in sports medicine.
- Learn assessment, first aid, and treatments for common musculoskeletal injuries.
- Examine methods of injury prevention including conditioning principles, environmental hazards,and protective equipment.
- Learn and utilize resources available to sports medicine professionals.
- Apply knowledge to practical situations.

EXSC 362 : Kinesiology and Biomechanics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Math 110 or higher.

RECOMMENDED: Phscs 105 or 121; PDBio 220.

**Course Outcomes**

- Demonstrate application of physical laws to human performance.
- Calculate kinematics of human motion.
- Show comprehension of projectile motion equations.
- Determine changes of motion due to forces.
- Demonstrate understanding of how fluids generate force.

EXSC 387 : Lifestyle and Chronic Disease Prevention. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Current scientific evidence demonstrating how lifestyle affects disease processes. Healthy lifestyle concepts specifically needed by wellness professionals, health educators, and health promotion practitioners; influence of unhealthy lifestyle as basis for chronic diseases, i.e., cardiovascular disease, cancer, and diabetes.

**Course Outcomes**

- Develop an awareness of what constitutes a healthy lifestyle

- Understand the use and interpretation of statistical techniques used in scientific papers on health and lifestyle
- Become familiar with the scientific literature that supports healthy living
- Gain knowledge needed to help others adopt and maintain a healthy lifestyle

EXSC 390 : Advanced Musculoskeletal Human Anatomy (includes lab). (4:3:2)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PDBIO 220; Majors Only
RECOMMENDED: ExSc 362 or equivalent.
DESCRIPTION: Advanced examination of structure and function of skeletal, articular, muscular, and peripheral nervous systems with clinical applications; cadaver lab included.

**Course Outcomes**

- Upon completion of this class students will be able to accomplish the following:Be familiar with the anatomical terms and their meanings for the human skeletal, peripheral nervous, articular, and muscular systems in relation to movement and orthopaedics.
- Identify and discuss the structures, functions and inter-relationships of the human skeletal, peripheral nervous, articular, and muscular systems with respect to movement.

EXSC 460 : Orthopaedic Impairments and Therapeutic Exercise. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PDBIO 220 & EXSC 390
DESCRIPTION: Fundamentals of body mechanics and therapeutic exercise, coupled with kinesiological principles for detection and correction of basic neuromusculoskeletal anomalies.

**Course Outcomes**

- Upon completion of this class students will be able to accomplish the following:Demonstrate an understanding of basic orthopedic terminology dealing with posture, movement and pathology.
- Demonstrate an understanding of traditional, osteokinematic and arthrokinematic movement
- Demonstrate an understanding of therapeutic exercise particularly active-resistive exercise and manual muscle testing and manual passive exercise and stretching.
- Be able to perform a postural evaluation, both grossly and at individual joints
- Demonstrate an understanding of the etiology, clinical significance and treatment of congenital and acquired orthopedic impairments of the upper and lower extremities and trunk.
- Where applicable, be able to write a therapeutic exercise program for the orthopedic impairments discussed in class.
- Demonstrate an understanding of normal and pathologic gait.

EXSC 463 : Exercise Physiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PDBIO 305; or PDBIO 362
RECOMMENDED: Concurrent enrollment in ExSc 464.
DESCRIPTION: The function of the physiological systems and their responses to acute and chronic exercise.

**Course Outcomes**

- Describe the substrates used, amount and rate of ATP resynthesized, metabolic end products, and control of anaerobic and aerobic metabolic pathways.
- Describe the responses to acute bouts of exercise and the mechanisms of the observed response, and the physiological adaptations which occur as a result of physical conditioning.
- Describe the physiological rationale for applying the eight principles of physical conditioning to improve health, fitness, and performance.
- Describe the depolarization of skeletal muscle beginning at the spinal cord and ending with the contraction of the muscle fiber.
- Describe the transportation and diffusion of O2and CO2 through the pulmonary and systemic circuits at rest and during exercise.
- Describe the anatomical, physiological, and functional differences between the three types of huma skeletal muscle fibers.
- Describe the interaction of the nervous, muscle, cardiovascular, pulmonary, and metabolic systems at rest and during exercise.
- Describe the normal anatomy and physiology of the heart, blood, and blood vessels; describe the normal function of the cardiovascular system at rest and during exercise.
- Describe how the human body functions and maintain homeostasis during the increased metabolic demands of exercise.
- Describe the function of sympathetic, parasympathetic, and somatic motor neurons, including differences in structure, neurotransmitters, receptors and efferent organs.

EXSC 464 : Exercise Physiology Lab. (.5:0:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: ExSc 463 or concurrent enrollment.
DESCRIPTION: Introduction of laboratory and field methods; applying principles of exercise physiology to assessing physical fitness and physiological responses to exercise.

**Course Outcomes**

- The purpose of this class is to apply knowledge of exercise physiology to the assessment of the fivecomponents of health related physical fitness. The labs are the means to review and apply the physiologyof exercise and to develop and practice fundamental skills related to the assessment of physical fitness.

5. Complete 8 hours from the following:

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chem 101 or equivalent.
DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: CHEM 105; or CHEM 111
DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.
NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: CHEM 351; or CHEM 351M
DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).
DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.
NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120
DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function,

enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

EXSC 321 : Basic Athletic Training Lab. (.5:0:.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Concurrent enrollment in ExSc 320.

NOTE: Fee.

**Course Outcomes**

- Demonstrate competency and proficiency in taping the ankle, foot, lower leg, knee, thigh/hip,shoulder, elbow, wrist, thumb, and finger joints.
- Demonstrate competency and proficiency in wrapping the ankle, foot, lower leg, thigh/hip,shoulder, elbow, wrist, thumb, and finger joints.
- Demonstrate competency and profiency in wound care management.
- Demonstrate competency and profiency in injury evaluation.
- Demonstrate competency and profiency in injury treatment management.
- Demonstrate competency and profiency in spineboarding and splinting.

EXSC 455 : Worksite Health Promotion. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 387 & EXSC 463

DESCRIPTION: Managing, designing, marketing, implementing, assessing, and administering health promotion programs in a worksite setting.

**Course Outcomes**

- Be able to demonstrate an understanding of the health promotion concept, historical background of worksite health promotion programs, and the rationale for companies to provide a health promotion program. This objective will be accomplished through class lecture/discussion and students will be evaluated through quizzes and exams.
- Better understand each of the following components in the design and execution of a worksite health promotion program: determining needs and interests of employers and employees, writing vision/mission/goal statements best practices, creating a company culture of wellness, launching a program, incentives/rewards, and company wellness policies. This will be accomplished through lectures and a semester project.
- Increase their understanding of effective health assessments and how to interpret the assessments. This will be accomplished through lectures and evaluated through quizzes and exams.
- Increase their understanding of how to effectively evaluate programs. This will be accomplished through lectures and evaluated through quizzes and exams.
- Be able to demonstrate the essential elements of common worksite health promotion programs, such as, physical activity, nutrition, weight management, medical self-care, stress management, substance abuse/tobacco control, and back care programs. This will be accomplished through lectures and class presentations.
- Gain practical experience and learning from experts in the field. This will be accomplished through the following: 1) each student will critique an existing worksite wellness program and present their findings to the class, 2) approximately 5 class periods will be devoted to studying transcripts of various interviews with experts in the field, and 3) 5 class periods will include visiting lecturers who are currently working in the field.
- Develop a worksite health promotion program through a semester class project.
- Have the opportunity to work in conjunction with a team to develop a health display to be presented to the class.

EXSC 468 : Problems in Exercise Prescription. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 463

DESCRIPTION: Applying scientific principles to problems in conditioning.

**Course Outcomes**

- At the conclusion of the course, the student will be able to write prescriptions of activity forindividuals of selected levels of age and fitness for the following:A. Endurance1. Speed/Explosive endurance2. Anaerobic endurance3. Aerobic endurance B. Strength1. Beginners2. Athletes3. Body builders C. Nutrition D. Weight Control1. Weight loss2. Weight gain E. Flexibility F. Plyometricssion of the course, the student will be able to write prescriptions of activity forindividuals of selected levels of age and fitness for the followingAt the conclusion of the course, the student will be able to write prescriptions of activity forindividuals of selected levels of age and fitness for the following

EXSC 470 : Functional Neuroanatomy. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: PDBIO 220 & EXSC 390
DESCRIPTION: Function, assessment, and rehabilitation of sensory and motor systems.

**Course Outcomes**

- 1. Describe the functional unit of the nervous system?2. Describe the pathways of three different messenging neurons.3. Explain glia?4. List the 4 regions of the nervous system.5. List the structures make-up the brain stem?6. Identify and label the circle of willis and associated arterial supply7. Explain the composition of white vs. gray matter.8. Describe and identify spinal cord anatomy and explain the DRG (dorsal root ganglion) and ventral rami?9. Describe and draw the gray and white matter in the spinal cord.10. List and identify the cranial nerves attach to the Pons?11. List and identify all cranial nerves and explain which are sensory, motor or mixed. 12. Describe the function of the cerebellum. (see syllabus for expanded list)
- Upon completion of this class students will be able to accomplish the following:Be familiar with the neuroanatomical terms and their meanings for the central nervous system and peripheral nervous system in relation to systems and function.Be familiar with terminology of specific diseases and dysfunctions in relation to signs/symptoms and classic descriptionsBe familiar with the terminology of electrophysiologic testing of the peripheral nervous system as it relates to normal and abnormal function.
- Students will be able to identify and discuss the structures, pathways and functions of independent somatosensory and motor tracts as they relate to motor function, coordination, movement and sensory integration.

EXSC 497R : Undergraduate Research and Study. (.5-4:0:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Individual research and study in any area of exercise science.

**Course Outcomes**

- To provide the undergraduate student with a mentored learning experience specifically in exercise science related research

HLTH 310 : Chronic Diseases: Prevention and Control. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Pathogenesis, epidemiology of major chronic diseases, health costs to society, at-risk populations, population-based prevention, and related best-practice interventions.

**Course Outcomes**

There are no course outcomes available

HLTH 320 : Advanced First Aid and Safety. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: In-depth coverage of first aid procedures for injuries and sudden illness. Leads to first aid and CPR certifications.

**Course Outcomes**

- Demonstrate the skills involving cardiopulmonary rescuitation (CPR), automated external defibrillation (AED), bandaging, and splinting.
- Identify the importance of first aid and emergency care
- Recognize specific emergency problems (i.e., heart attack, fracture, open wound, burn insect sting) through their signs and symptoms.
- Identify the decisions involved during an emergency.
- Describe proper first aid and emergency care procedures for specific emergency problems.

HLTH 335 : Health Behavior Change. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
RECOMMENDED: HIth 330.
DESCRIPTION: Understanding health behavior change theories for individuals and populations. Practical application of related models and theories.

**Course Outcomes**

- Evaluate the ability of selected socio-behavioral theories and models for furthering understanding of important public health problems and issues, with particular reference to health promotion and disease prevention.
- Identify prominent features and constructs in commonly used theories and models of health behavior change.
- Identify the important role of culture in the context of behavior change.

MATH 112 : Calculus 1. (4:5:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is

the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 119 : Introduction to Calculus. (4:4:1)

OFFERED: Independent Study only.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 and Math 111; or equivalent.
DESCRIPTION: Introduction to plane analytic geometry and calculus.

**Course Outcomes**

- This course is designed to provide beginning undergraduate students a first exposure to Calculus concepts, theorems, and techniques. In general, theorems will not be proved. An understanding of the theorems and their applications to solve calculus problems will be taught. Students will be expected to develop effective problem solving skills based on their understanding of the theory and not just memorize a set of routines to solve problems. For a more detailed course description, visit the Math 119 Wiki page.

MMBIO 221 : General Microbiology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Any biology course.
RECOMMENDED: Any chemistry course.
DESCRIPTION: Microbial world, emphasizing communicable diseases, their causes and control.
NOTE: Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses.

**Course Outcomes**

- Explain and discuss the ways by which microbiologists study microorganisms.
- Discuss the principle infectious diseases that affect mankind, including how they are transmitted, treated, controlled and prevented.
- Differentiate between the types of microorganisms by identifying relevant structure and their function in the biosphere.
- Propose microbial solutions to global problems.
- Describe how the human body defends itself against infectious agents.

MMBIO 222 : General Microbiology Laboratory. (1:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: MMBio 221 or concurrent enrollment.

**Course Outcomes**

- Use the bright field microscope to view and interpret microbiological specimens
- Use proper aseptic techniques int he handling and transfer of microbiological specimens
- Use standard microbiological media to culture and identify common microbiological specimens
- Use standard microbiology laboratory equipment correctly
- Follow an experimental protocol, collect and organize data, present data in an appropriate form, assess the validity of the data, and draw appropriate comclusions based on the results
- Integrate information and skills gained int eh course to make informed judgements about the role of microorganisms in everyday life
- Use accepted safety protocols when handling microbiological specimens and chemicals

MMBIO 241 : Molecular and Cellular Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBio 240 or concurrent enrollment.
DESCRIPTION: Molecular and cellular biology techniques laboratory.

**Course Outcomes**

- Practice ethics and integrity by working with groups and following lab rules.*Relates to Program Learning Outcome: A commitment to professional integrity and ethical behavior consistent with themission of the university.
- Learn the basics of experimental design, how to formulate a hypothesis, what controls to use, how to interpret experimental data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Practice scientific communication through written lab questions, exams and oral presentations.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Learn molecular biology laboratory techniques through practical laboratory exercises. Techniques include, spectrophotometry,isolation of DNA and protein, quantification of DNA and protein, techniques used to purify or detect specific proteins, such aschromatography, western blot and ELISA, DNA fingerprinting, polymerase chain reaction and enzyme assays.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology.

NDFS 200 : Nutrient Metabolism. (3:3:0)

WHEN Fall; Spring

TAUGHT:
PREREQUISITE: NDFS 100; Organic chemistry or concurrent enrollment.
DESCRIPTION: Chemical structures of nutrients, their food sources, requirements, digestion, absorption, transport, metabolism, functions, storage and excretion; metabolic consequences of nutrient deficiencies, interactions, imbalances, and toxicities.

**Course Outcomes**

- Identify chemical structures of amino acids, lipids, carbohydrates, and vitamins.
- List functions, food sources, and consequences of deficiencies and toxicities for each of the essential nutrients.
- Explain the metabolic and physiological basis for the consequences of dietary practices that affect nutrient levels, and relate the consequences to the roles of essential nutrients in metabolic processes.
- Analyze diets and alter food intake to reach predetermined targets for consumption of specific dietary components or to achieve an overall dietary pattern.
- Find answers to questions and summarize results from original research reported in published peer-reviewed scientific journals.

NDFS 201 : Society, Nutrition, and Chronic Disease. (2:2:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: NDFS 100
DESCRIPTION: Behavioral, dietary, and environmental factors that influence nutrition and risks for chronic disease.

**Course Outcomes**

- Explain or describe how behavioral, dietary, and environmental factors influence nutrition and chronic disease risks.
- Find scientific research articles and identify their key characteristics. Identify consistencies or inconsistencies in studies of diet and chronic disease risks.
- Apply information about behavioral, dietary, and environmental factors to reduce chronic disease risks.

NDFS 305 : Nutritional Implications of Disease. (4:4:0)

WHEN TAUGHT: Winter
PREREQUISITE: NDFS 200 & PDBIO 305
DESCRIPTION: Nutritional assessment and medical nutrition therapy across disease states.
NOTE: For nutritional science majors.

**Course Outcomes**

- Know the basic techniques and parameters used in nutritional assessment
- Identify the consequences of malnutrition and the inflammatory response as they relate to disease progression, disease treatment, cost, and quality of life
- Identify the pathophysiology, risk factors, nutritional assessment, and appropriate nutritional intervention of the following diseases: obesity, heart disease, pressure sores, cancer, diabetes, GI disorders, pulmonary diseases, kidney diseases, dialysis, osteoporosis, and nutritional anemias
- Identify the metabolic differences between starvation and metabolic stress including causes, consequences, and nutritional intervention
- Identify the basic principles of nutritional support including supplementation, tube feedings, and intravenous feedings
- Identify the major nutritional concerns in geriatric populations
- Identify the concept of evidence based practice and know how to find and interpret evidence based practice statements on the role of nutrition in the prevention and treatment of various conditions

NDFS 310 : Nutrition and Metabolism in Sports and Exercise. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: NDFS 100 & PDBIO 305
DESCRIPTION: Scientific basis for the role of nutrition in human performance. Critical evaluation of popular practices; making optimal food choices for physical activity.
NOTE: This course was formerly named Sports Nutrition.

**Course Outcomes**

- Students will apply their current understanding of nutrition to aspects of physical performance. Describe the factors (exercise intensity, duration, substrate availability and endocrine) that affect energy utilization.
- Search, interpret, and summarize original scientific information. Evaluate nutritional claims for scientific accuracy.
- Apply evidence-based nutrition recommendations for sports and exercise in real or hypthetical situations.

PDBIO 320 : Dissection Techniques in Human Anatomy. (1:0:3)

WHEN TAUGHT: Contact Department.
PREREQUISITE: PDBIO 220
DESCRIPTION: Techniques of human cadaver dissection.

**Course Outcomes**

- Students will demonstrate they understand the composition of the human body through successfully completing various dissection assignments on human cadavers.
- Students will manifest an increases preparation at both a spiritual and secular level, for professional training in the field of human health.

PDBIO 325 : Tissue Biology (with lab). (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120 & PDBIO 220

DESCRIPTION: Human anatomy and histology; function of cells in tissue; early stages of embryology.

NOTE: Course should be taken during a student's second or third year and before courses in physiology and developmental biology.

**Course Outcomes**

- Students will be able to communicate with health professionals effectively regarding tissue/organ anatomy and physiology in instances of health and disease.
- Students will demonstrate how the relationship between cell organization and cell function correlates with normal and pathological organ behavior.
- Students will be able to describe anatomical and physiological characteristics of epithelial, connective, nervous, and muscular tissue.

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies
- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PDBIO 365 : Pathophysiology. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 305; or PDBIO 362

DESCRIPTION: Variations in physiological mechanisms that account for development of common disturbances in normal control and activities of body's organs and organ systems.

**Course Outcomes**

- Students will exhibit an integrative understanding of the biochemistry, molecular biology, genetics, cell biology, microbiology, environmental biology, and physiology related to the prevention, development, and treatment of common diseases.
- Students will demonstrate through case study analysis a command of problem solving skills related to the diagnosis and treatment of pathophysiological conditions.
- Pupils will manifest a command of the physiology and pathophysiological vocabulary necessary to effectively communicate with other biomedical professionals and the general public.
- Students will be able to articulate the ethical issues related to the treatment and prevention of pathophysiological conditions.
- Students will manifest an increase in their respect for the human body and adopt a life style consistent with this respect.

PDBIO 484 : Human Embryology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBio 360 or equivalent.

RECOMMENDED: PDBio 325.

DESCRIPTION: Developmental milestones of prenatal life: etiology of congenital malformations, emphasizing molecular and cellular changes and their functional consequences.

**Course Outcomes**

- Students will identify the developmental trajectories of the various organ systems and why abnormalities at any step in the lineage of organogenesis may cause birth defects.
- Students will be able to communicate with health professionals effectively regarding embryonic events from conception to birth and the ramifications of each event in instances of health and disease.
- Students will demonstrate how signaling between participating cells leads to important events during the first, second, third, and fourth weeks of development.

PDBIO 561 : Physiology of Drug Mechanisms. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 362

DESCRIPTION: Overview of physiological and pharmacological mechanisms and principles of human therapeutics as applied to clinically significant pathophysiology.

**Course Outcomes**

- Students will manifest an interactive understanding of drug mechanisms at the molecular, cellular, tissue, organ, and/or systemic levels.
- Students will demonstrate that they understand the cellular pathways targeted for pharmacological treatment.
- Pupils will demonstrate a comprehension of how the body interacts with compounds used for pharmacological treatments.
- Students will manifest the knowledge, skills and vocabulary necessary to converse with health care providers concerning their own and family's medical treatments.

PDBIO 565 : Endocrinology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PDBio 362 or instructor's consent.

DESCRIPTION: Mammalian hormones.

**Course Outcomes**

- Students will be able to describe major actions of each hormone on target cells.
- Students will be able to describe pathways for synthesis, post-translational processing, and cellular localization or secretion for peptide hormones and hormone receptors.
- Students will be able to describe pathways for synthesis and inactivation for steroid hormones, thyroid hormones, and catecholamines.
- Students will be able to describe the control of synthesis and secretion for each hormone, including feedback relationships.
- Students will be able to describe major signaling pathways in target cells for each hormone.
- Students will be able to describe methodologies used to test hypotheses in study of problems in endocrinology.
- Students will be able to describe and recognize etiology and clinical symptoms of the major endocrine diseases

PSYCH 111 : Introduction to Psychological Science. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic course in modern scientific psychology.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Objective: Apply psychological principles to personal and social issues and problems.Measurement:Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper.
- Objective: Demonstrate a broad knowledge of the basic theoretical perspectives that guide psychological inquiry.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Pyychology 111 sections.
- Objective: Understand the basic research methods used in psychology, including classical and current experiments.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper, participation as a subject in actual psychological research.

PSYCH 220 : Human Development: Life Span. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Interaction of psychological, biological, and social influences on behavior and psychological development through the life span.

**Course Outcomes**

- Students will understand and remember the basic developments that occur across the lifespan, the basic patterns of thought, emotion, and behavior characteristic of individuals at each stage of the lifespan, and the important individual and contextual influences on human development.Measurement: Multiple choice and short essay questions.
- Students will understand the key concepts and theories that are predominant in the literature on human development.Measurement: Multiple choice and short essay questions.
- Students will be able to more effectively communicate verbally and in writing about human development.Measurement: Research papers.
- Students will be able to analyze and critically evaluate ideas, arguments, and points of view about human development.Measurement: Research papers.
- Students will be able to apply knowledge of human development to addressing real-world issues.Measurement: Short writing assignments and in-class activities.

PSYCH 342 : Abnormal Psychology. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Dynamics of maladjustment; major psychological disorders and therapeutic procedures. Fieldwork required.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and describe the major forms of psychological disorders and the major theories regarding the classification, etiology, and treatment of psychological disorders,and current data relevant to such theories.Measurement: Multiple choice, short answer and essay exams; short writing assignments.
- Students will engage in service learning by serving persons diagnosed with psychological

disorders.Measurement: Participation assessment/field work report
- Students will critically examine key concepts and theories in abnormal psychology.Measurement: Essay exams, short writing assignments, in-class debates
- Students will examine and critique a topic in abnormal psychology using the current research literature.Measurement: APA style paper

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

SOC 111 : Introductory Sociology. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Social group influence; social interaction, processes, organization, and change; family, religion, government, population, culture, race relations.

**Course Outcomes**

There are no course outcomes available

SOC 112 : Current Social Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Individual deviance (violence, insanity, drugs, sex, crime, etc.) and social disorganization (poverty, race and sex discrimination, divorce, overpopulation, etc.). Conditions, causes, solutions.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Current Social Problems.

**Course Outcomes**

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

STDEV 170 : Introduction to Health Professions. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of health professions: medical, dental, and other specialties. Primary focus on guest

lectures from various practitioners and clinicians.

**Course Outcomes**

- 1. Students will gain a basic understanding of a significant number of health professions.
- 2. Students will increase knowledge of health professions through class presentations with health care professionals.
- 3. Students will learn more about health care provision through service learning in preparation for service-oriented health professions.
- 4. Students will increase awareness of the requirements to enter various health professions and where to find additional information about their preferred health care field.

STDEV 399R : Health Professions Internship. (1-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Internships with health care providers.

**Course Outcomes**

- Students will gain valuable experience by shadowing and working with current health professionals.
- Students will improve their ability to converse with health care professionals.
- Students will learn about different healthcare practices.
- Students will develop meaningful professional relationships with their internship providers.

**Note:** Watch prerequisites for the elective courses.

**Notes:** Professional schools and graduate programs may require additional courses not required for this major. Contact the programs to which you may apply to determine specific courses that meet their entrance requirements. Students considering professional or graduate degrees should take at least two semesters of mathematical courses. The following required or elective courses are strongly recommended for students considering professional or graduate degrees in the exercise sciences: MMBio 241; PDBio 360, 362, 363; Chem 351, 352, 353, 481; Math 119; Stat 121. For more information contact the Preprofessional Advisement Center, 3328 WSC, (801) 422-3044. Contact potential schools of choice for a complete list of entrance requirements.

*Hours include courses that may fulfill university core requirements.

## Show all Exercise Sciences Courses

College of Life Sciences Home

Exercise Sciences Department Home

Majors

- BS in Athletic Training
- BS in Exercise and Wellness
- BS in Exercise Science

Course Information

- Exercise Sciences Courses

Faculty

# Exercise Sciences (ExSc)

Show All Course Descriptions
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## Undergraduate Courses

### 200-Level Courses

EXSC 221 : Science of Wellness. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: A comprehensive study of the science of wellness of the whole individual. The science of wellness draws principles from exercise sciences, biological sciences, behavioral and social sciences. The research from psychoneuroimmunology (PNI) supports specifically the holistic wellness paradigm whose focus is that every aspect of each human being, the body, mind and spirit, are involved in all wellness activities and all wellness activities affect the whole individual. Students will discover this new paradigm and experience the blending of the sciences to support the integrated nature of our being.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

EXSC 302 : Philosophical and Ethical Issues in Exercise Sciences. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Philosophical and ethical issues common to exercise sciences majors. Concept of mind, body, spirit.

**Course Outcomes**

- Learn contemporary tenets of philosophy that will serve as a basis for understanding important ideas in our own cultural tradition as well as that of others.
- Comprehend philosophical worldviews to facilitate respectful relationships with others.
- Pursue truth, think clearly and communicate effectively one's own beliefs and values; deepen one's understanding of the nature of being.
- Comprehend and apply the truths of the gospel of Jesus Christ. Reflect devout love of God and a loving, genuine concern for the welfare of others in the learning environment.
- Acquire/reinforce a profound respect for the divine nature of one's own life, a reverence for one's value, the purpose of one's life and a desire to live a healthy lifestyle.
- Articulate one's valuing of the entire self, bodymindspirit, with particular focus on the meaning and importance of the physical body.
- Strengthen the formulation of own personal and professional philosophy establishing clear standards of integrity. Improve the communication of one's beliefs, written and verbal.
- Analyze contemporary issues from an ethical standpoint. Demonstrate own professional ethical behavior, think critically and take an informed position on an issue.

EXSC 320 : Basic Athletic Training. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 220; Some majors require concurrent enrollment in ExSc 321. Check MAP requirements for major.

DESCRIPTION: Recognition, evaluation, and care of athletic injuries. Techniques in taping, preventing, and rehabilitating injuries.

**Course Outcomes**

- Review general responsibilities, roles, and tasks of athletic trainers, physical therapists, and otherallied health professionals involved in sports medicine.
- Learn assessment, first aid, and treatments for common musculoskeletal injuries.
- Examine methods of injury prevention including conditioning principles, environmental hazards,and protective equipment.
- Learn and utilize resources available to sports medicine professionals.
- Apply knowledge to practical situations.

EXSC 321 : Basic Athletic Training Lab. (.5:0:.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Concurrent enrollment in ExSc 320.

NOTE: Fee.

**Course Outcomes**

- Demonstrate competency and proficiency in taping the ankle, foot, lower leg, knee, thigh/hip,shoulder, elbow, wrist, thumb, and finger joints.
- Demonstrate competency and proficiency in wrapping the ankle, foot, lower leg, thigh/hip,shoulder, elbow, wrist, thumb, and finger joints.
- Demonstrate competency and profiency in wound care management.
- Demonstrate competency and profiency in injury evaluation.
- Demonstrate competency and profiency in injury treatment management.
- Demonstrate competency and profiency in spineboarding and splinting.

EXSC 349 : Body, Mind, Spirit. (3:3:0)

OFFERED: Independent Study only. Honors also.

DESCRIPTION: Sacredness of the body and its meaningfulness to the whole being. Comparative approach utilizing ideas from the restored gospel and Western and Eastern philosophy (nature of being).

**Course Outcomes**

There are no course outcomes available

: Honors Body, Mind, Spirit.

**Course Outcomes**

EXSC 362 : Kinesiology and Biomechanics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Math 110 or higher.

RECOMMENDED: Phscs 105 or 121; PDBio 220.

**Course Outcomes**

- Demonstrate application of physical laws to human performance.
- Calculate kinematics of human motion.
- Show comprehension of projectile motion equations.
- Determine changes of motion due to forces.
- Demonstrate understanding of how fluids generate force.

EXSC 365 : Scientific Bases of Sport: Kinesiology. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Kinesiology and biomechanics for physical education/coaching minor.

**Course Outcomes**

- Students will demonstrate how to apply physical laws to human performance. Included physical laws deal with: Linear motion, projectile motion, forces, impulse and momentum, fluid mechanics, and tissue mechanics.

EXSC 366 : Scientific Bases of Sport: Exercise Physiology. (2.5:2:0)

WHEN TAUGHT: Winter

RECOMMENDED: PDBio 305.

DESCRIPTION: Physiology of activity for physical education teaching students.

**Course Outcomes**

There are no course outcomes available

EXSC 385 : Personal Training Strategies. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: PDBio 220.

DESCRIPTION: The art and science of personal fitness training for healthy adults, utilizing safe and effective techniques to develop and maintain optimal functional fitness (proper posture, balance, joint mobility, and stability), and optimal physical fitness (cardiorespiratory endurance, flexibility, muscular strength, and power).

**Course Outcomes**

- Explain and apply the essential concepts and principles of human movement science, anatomy, exercise physiology; biomechanics, motor learning; functional fitness assessment; stability training, mobility training, core training, balance training, reactive training, resistance training, cardiorespiratory training; exercise programming; nutrition and weight management; safety and injury prevention in an understandable and accurate way
- Prepare to certify as a Certified Personal Trainer (CPT) through the National Academy of Sports Medicine (NASM)

EXSC 387 : Lifestyle and Chronic Disease Prevention. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Current scientific evidence demonstrating how lifestyle affects disease processes. Healthy lifestyle concepts specifically needed by wellness professionals, health educators, and health promotion practitioners; influence of unhealthy lifestyle as basis for chronic diseases, i.e., cardiovascular disease, cancer, and diabetes.

**Course Outcomes**

- Develop an awareness of what constitutes a healthy lifestyle
- Understand the use and interpretation of statistical techniques used in scientific papers on health and lifestyle
- Become familiar with the scientific literature that supports healthy living

- Gain knowledge needed to help others adopt and maintain a healthy lifestyle

EXSC 390 : Advanced Musculoskeletal Human Anatomy (includes lab). (4:3:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 220; Majors Only

RECOMMENDED: ExSc 362 or equivalent.

DESCRIPTION: Advanced examination of structure and function of skeletal, articular, muscular, and peripheral nervous systems with clinical applications; cadaver lab included.

**Course Outcomes**

- Upon completion of this class students will be able to accomplish the following:Be familiar with the anatomical terms and their meanings for the human skeletal, peripheral nervous, articular, and muscular systems in relation to movement and orthopaedics.
- Identify and discuss the structures, functions and inter-relationships of the human skeletal, peripheral nervous, articular, and muscular systems with respect to movement.

EXSC 394 : Athletic Training Clinical Education 1. (2:1:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Athletic training major status.

DESCRIPTION: Classroom and field experience. Orientation to athletic training program and clinical expectations. Modules include emergency care, taping skills, and basic modalities.

**Course Outcomes**

- After completing this course, the student will be able to understand the administrative roles and policies of various health care organizations including:a. CAATEb. NATAc. BOC
- Demonstrate the skills necessary for accurate record keeping including SOAP notes and correct documentation of HOPS
- Understand purchasing policies for supplies
- Correctly devise and implement emergency action plans
- Demonstrate the necessary skills for care of emergency conditions
- Demonstrate care and necessary skills for treating open wounds
- 1. Demonstrate correct use, including indications and contraindications for therapeutic modalities including:a. Hot Packsb. Ultrasoundc. Cryotherapyd. Electrical stimulation
- 1. Demonstrate correct evaluation techniques of lower extremities including:a. Footb. Anklec. Lower Legd. Kneee. Hip

EXSC 395 : Athletic Training Clinical Education 2. (2:1:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 394

DESCRIPTION: Classroom and field experience. Modules include taping skills, assessment, and modalities.

**Course Outcomes**

- Demonstrate rehabilitation skills, including aquatic therapy, joint mobilizations, proprioception, neuromuscular control, and agility exercises.
- Demonstrate competency and clinical proficiency in taping and bracing.
- Demonstrate the skills necessary to properly evaluate and care for upper extremity injuries including shoulder, elbow, forearm, wrist, hand, head and face, and thorax and abdomen.
- Demonstrate the use of the following rehabilitation tools: Alter G machine and Rebounder

EXSC 399R : Exercise and Wellness Internship. (.5-9:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Internship coordinator's consent.

DESCRIPTION: On-the-job experience for exercise and wellness majors.

**Course Outcomes**

- Gain work-related experience through one or more internship experiences
- Apply, in a work-related setting, the skills and abilities attained through required course work in the Exercise and Wellness major

### 400-Level Courses

EXSC 410 : Stress Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Teaches students the basic principles, theories, and relaxation techniques to effectively manage personal stress. Students gain a greater understanding of the mind-body relationship, learn to employ a holistic approach to stress, and adopt effective cognitive, coping, and relaxation techniques. Ultimately, students experience a more effective approach to optimal lifelong health.

**Course Outcomes**

- Master the basic understanding of the physiological mechanisms responsible for the fight-or-flight response and subsequent manifestations of various symptoms of target organ dysfunctions. Be able to apply this understanding to stress management and disease prevention.
- Understand and discuss the holistic nature (mind-body-spirit) of stress management and comprehend the mind-body connection of the stress and disease process.
- Be able to recognize potential stressors and develop strategies to prevent (or reduce the magnitude) these stressors from eliciting a stress response.

Be able to develop strategies to reduce daily stressors.
- Understand the principles behind the various relaxation techniques and be able to apply these techniques to managing stress.

EXSC 414 : Advanced Athletic Training Lab. (1:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Athletic training major status.

DESCRIPTION: Advanced athletic training skills, including taping, bracing and splinting, custom-fitted equipment, massage and stretching techniques, and emergency splinting and transport.

**Course Outcomes**

- At the end of this course, the student will demonstrate competency in each of the following CAATE competencies:Select and fit appropriate standard protective equipment on the patient for safe participation in sport and/or physical activity. This includes but is not limited to: Shoulder Pads, Helmet/Headgear, Footwear, Mouthguard, Prophylactic Knee Brace, Prophylactic Ankle Brace, Other Equipment (as appropriate)
- Select, fabricate, and apply appropriate preventive taping and wrapping procedures, splints, braces, and other special protective devices. Procedures and devices should be consistent with sound anatomical and biomechanical principles.
- Obtain, interpret, and make decisions regarding environmental data. This includes, but is not limited to the ability to:RM-P6.2. Formulate and implement a comprehensive, proactive emergency action plan specific to lightening safety
- Apply commonly used special tests and instruments (e.g., otoscope, stethoscope, ophthalmoscope, peak flowmeter, chemical “dipsticks” [or similar devices]) and document the results for the assessment of: Vital signs including respiration (including asthma), pulse and circulation, and blood pressure
- Implement appropriate emergency treatment strategies, including but not limited to:AC-P3c Establish and maintain an airway in a patient wearing shoulder pads, headgear or other protective equipment and/or with a suspected spine injury
- Instruct the patient in proper techniques of commonly prescribed therapeutic exercises.
- Develop risk management plans, including facility design, for safe and efficient health care facilities.
- Develop a risk management plan that addresses issues of liability reduction; security, fire, and facility hazards; electrical and equipment safety; and emergency preparedness.
- Develop policy and write procedures to guide the intended operation of athletic training services within a health care facility.

EXSC 415 : Therapeutic Modalities. (3:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Athletic training major status.

DESCRIPTION: Hydrotherapy, massage, traction, radiant energy, heat, cold, and electrotherapy.

**Course Outcomes**

- The student will demonstratethe ability to properly select the appropriateparameters, prepare, and apply a(n):a.cold whirlpool treatmentb.controlled cold therapy unitc.ice bagd.vapo-coolant spraye.ice immersionf.ice massageg.contrast bathh.cryokinetics
- The student will demonstratethe ability to properly select appropriateparameters, prepare, and apply a(n):a.moist heat packb.paraffin treatmentc.warm whirlpool treatmentd.fluidotherapye.diathermyf.infrared
- The student will demonstratethe ability to properly select appropriateparameters, prepare, and apply a(n):a.sensory-level pain control treatmentb.noxious-level pain control treatmentc.motor-level pain control treatmentd.muscle re-education treatmente.muscle pumping treatmentf.acute edema treatmentg.chronic edema treatmenth.muscle spasm treatmenti.muscle splinting treatmentj.muscle atrophy retardation treatmentk.iontophoresis treatmentl.MENS treatment
- The student will demonstrate proficiency in thesetup and application of the following types ofelectrical stimulation units:a.Monophasic stimulator (e.g., high voltstimulation)b.Biphasic stimulator (e.g., TENS, NMES)c.Direct current (e.g., iontophoresis)d.Alternating current (e.g., interferential,NMES)
- The student will demonstrate theability to properly select appropriateparameters, prepare, and apply a:a.thermal direct/indirect ultrasound treatmentb.non-thermal direct/indirect ultrasoundtreatmentc.combination electric-stimulation/ultrasoundtreatmentd.phonophoresis treatment
- The student will demonstrate theability to properly select appropriateparameters, prepare, and apply:a.mechanical tractionb.manual tractionc.positional traction
- The student willdemonstrate the ability to properly selectappropriate parameters, prepare, and applyintermittent compression.
- The student will demonstrate theability to prepare and apply a massagetreatment.The student will demonstrate the ability toproperly perform massage strokes.a.effleurageb.petrissagec.frictiond.tapotemente.vibration

EXSC 416 : Injury Evaluation: Lower Extremities. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Athletic training major status.

DESCRIPTION: Basic principles of injury evaluation; evaluation techniques specific to lower-extremity injuries.

**Course Outcomes**

- Instruct the patient how to properly perform fitness tests to assess his or her physical status and readiness for physical activity. Interpret the results of these tests according to requirements established by appropriate governing agencies and/or a physician. These tests should assess: Muscular Endurance, Agility, Speed.
- Develop a fitness program appropriate to the patient’s needs and selected activity or activities that meet the requirements established by the appropriate governing agency and/or physician for enhancing: Cardiovascular Endurance, Speed
- Perform inspection/observation of the clinical signs associated with common injuries including deformity, posturing and guarding, edema/swelling, hemarthrosis, and discoloration.Palpate the bones and soft tissues to determine normal or pathological characteristics.Measure the active and passive joint range of motion using commonly accepted techniques, including the use of a goniometer and inclinometer.Grade the resisted joint range of motion/manual muscle testing and break tests.Apply appropriate stress tests for ligamentous or capsular stability, soft tissue and muscle, and fractures.Apply appropriate special tests for injuries to the specific areas of the body as listed above.Assess neurological status, including cranial nerve function, myotomes, dermatomes and reflexes, and circulatory status. Document the results of the assessment including the diagnosis.

- Obtain a medical history of the patient that includes a previous history and a history of the present condition. Perform a visual observation of the clinical signs associated with common injuries and/or illnesses including deformity, edema/swelling, discoloration, and skin abnormalities.Palpate the bones and soft tissues, including the abdomen, to determine normal or pathological characteristics.

EXSC 417 : Injury Evaluation: Upper Extremities and Trunk. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 416

DESCRIPTION: Injury evaluation techniques specific to the upper extremities and trunk.

**Course Outcomes**

- Upon completion of this course, the student will understand and be able to explain and/ordemonstrate by performance on an exam:1. Mechanisms of common injuries in various sports.
- Basic principles of evaluation and diagnostic terminology.
- Signs and symptoms of upper extremity injuries.
- Specific steps in injury evaluation.
- Evaluation techniques, including special tests, used to identify and assess degree ofdisability of the upper extremity.
- Proficiency in performing manual muscle testing of the upper extremity.
- Proficiency in performing girth and goniometric measurements of the upperextremity.
- Basic on-the-field/off-the-field injury management.

EXSC 418 : Rehabilitation of Orthopedic Injuries. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 415

DESCRIPTION: Basic principles, techniques, and progression of orthopedic/musculoskeletal rehabilitation.

**Course Outcomes**

- 1. Understand tissue healing and how therapeutic exercise affects tissue healing.
- 2. Understand the concept of functional progression and how it guides individual rehabilitation protocols. Rehabilitation is not a recipe that fits all people.
- 3. Apply and understand therapeutic exercise, range of motion, and manual therapy techniques to enhance the goals within a rehabilitation plan for athletic injury.
- 4. Synthesize the different goals of rehabilitation to be combined for any injury and condition to return the patient to full activity.

EXSC 419 : Medical Issues in Athletic Training. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: ExSc 417 or concurrent enrollment.

DESCRIPTION: Discussion of current medical issues in athletic training with guest lectures by medical specialists.

**Course Outcomes**

- Advanced seminar type class for exposure to a variety of medical conditions, given from MD's point of view.
- Learn a medical doctor's approach to illnesses which athletes commonly experience.
- Integrate the athletic trainer's responsibility as it pertains to a team approach with the physician.

EXSC 423 : Administration of Athletic Training Programs. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 415

DESCRIPTION: Management and administration of athletic training facilities and staff members.

**Course Outcomes**

- Explain the importance of planning, coordinating, and supervising in the administration of an athletic training room/program.
- Explain various budgeting systems and develop budgets for high school and collegiate athletic training programs.
- Design athletic training facilities to meet specific needs.
- Explain the significance of state regulation for the athletic training profession and its relationship to 3rd party reimbursement.
- Explain the impact that insurance and 3rd party reimbursement has on athletic training.
- Be able to develop emergency plans for athletic training settings.
- Explain the elements of negligence and to understand legal issues facing athletic trainers, as well as the role of risk management.
- Explain how to efficiently and effectively organize pre-participation exams.
- Explain key concepts in personnel management, including communication, motivation, evaluations, etc.
- Explain the role of technology and information management in athletic training settings.
- Develop and incorporate individual leadership skills; as well as increase personal awareness, gain self-confidence, and foster cohesive and caring relationships.

EXSC 455 : Worksite Health Promotion. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 387 & EXSC 463

DESCRIPTION: Managing, designing, marketing, implementing, assessing, and administering health promotion programs in a worksite setting.

**Course Outcomes**

- Be able to demonstrate an understanding of the health promotion concept, historical background of worksite health promotion programs, and the rationale for companies to provide a health promotion program. This

objective will be accomplished through class lecture/discussion and students will be evaluated through quizzes and exams.
- Better understand each of the following components in the design and execution of a worksite health promotion program: determining needs and interests of employers and employees, writing vision/mission/goal statements best practices, creating a company culture of wellness, launching a program, incentives/rewards, and company wellness policies. This will be accomplished through lectures and a semester project.
- Increase their understanding of effective health assessments and how to interpret the assessments. This will be accomplished through lectures and evaluated through quizzes and exams.
- Increase their understanding of how to effectively evaluate programs. This will be accomplished through lectures and evaluated through quizzes and exams.
- Be able to demonstrate the essential elements of common worksite health promotion programs, such as, physical activity, nutrition, weight management, medical self-care, stress management, substance abuse/tobacco control, and back care programs. This will be accomplished through lectures and class presentations.
- Gain practical experience and learning from experts in the field. This will be accomplished through the following: 1) each student will critique an existing worksite wellness program and present their findings to the class, 2) approximately 5 class periods will be devoted to studying transcripts of various interviews with experts in the field, and 3) 5 class periods will include visiting lecturers who are currently working in the field.
- Develop a worksite health promotion program through a semester class project.
- Have the opportunity to work in conjunction with a team to develop a health display to be presented to the class.

EXSC 460 : Orthopaedic Impairments and Therapeutic Exercise. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 220 & EXSC 390

DESCRIPTION: Fundamentals of body mechanics and therapeutic exercise, coupled with kinesiological principles for detection and correction of basic neuromusculoskeletal anomalies.

**Course Outcomes**

- Upon completion of this class students will be able to accomplish the following:Demonstrate an understanding of basic orthopedic terminology dealing with posture, movement and pathology.
- Demonstrate an understanding of traditional, osteokinematic and arthrokinematic movement
- Demonstrate an understanding of therapeutic exercise particularly active-resistive exercise and manual muscle testing and manual passive exercise and stretching.
- Be able to perform a postural evaluation, both grossly and at individual joints
- Demonstrate an understanding of the etiology, clinical significance and treatment of congenital and acquired orthopedic impairments of the upper and lower extremities and trunk.
- Where applicable, be able to write a therapeutic exercise program for the orthopedic impairments discussed in class.
- Demonstrate an understanding of normal and pathologic gait.

EXSC 463 : Exercise Physiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: PDBIO 305; or PDBIO 362

RECOMMENDED: Concurrent enrollment in ExSc 464.

DESCRIPTION: The function of the physiological systems and their responses to acute and chronic exercise.

**Course Outcomes**

- Describe the substrates used, amount and rate of ATP resynthesized, metabolic end products, and control of anaerobic and aerobic metabolic pathways.
- Describe the responses to acute bouts of exercise and the mechanisms of the observed response, and the physiological adaptations which occur as a result of physical conditioning.
- Describe the physiological rationale for applying the eight principles of physical conditioning to improve health, fitness, and performance.
- Describe the depolarization of skeletal muscle beginning at the spinal cord and ending with the contraction of the muscle fiber.
- Describe the transportation and diffusion of O2and CO2 through the pulmonary and systemic circuits at rest and during exercise.
- Describe the anatomical, physiological, and functional differences between the three types of huma skeletal muscle fibers.
- Describe the interaction of the nervous, muscle, cardiovascular, pulmonary, and metabolic systems at rest and during exercise.
- Describe the normal anatomy and physiology of the heart, blood, and blood vessels; describe the normal function of the cardiovascular system at rest and during exercise.
- Describe how the human body functions and maintain homeostasis during the increased metabolic demands of exercise.
- Describe the function of sympathetic, parasympathetic, and somatic motor neurons, including differences in structure, neurotransmitters, receptors and efferent organs.

EXSC 464 : Exercise Physiology Lab. (.5:0:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ExSc 463 or concurrent enrollment.

DESCRIPTION: Introduction of laboratory and field methods; applying principles of exercise physiology to assessing physical fitness and physiological responses to exercise.

**Course Outcomes**

- The purpose of this class is to apply knowledge of exercise physiology to the assessment of the fivecomponents of health related physical fitness. The labs are the means to review and apply the physiologyof exercise and to develop and practice fundamental skills related to the assessment of physical fitness.

EXSC 468 : Problems in Exercise Prescription. (2:2:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: EXSC 463
DESCRIPTION: Applying scientific principles to problems in conditioning.

**Course Outcomes**

- At the conclusion of the course, the student will be able to write prescriptions of activity forindividuals of selected levels of age and fitness for the following:A. Endurance1. Speed/Explosive endurance2. Anaerobic endurance3. Aerobic endurance B. Strength1. Beginners2. Athletes3. Body builders C. Nutrition D. Weight Control1. Weight loss2. Weight gain E. Flexibility F. Plyometricssion of the course, the student will be able to write prescriptions of activity forindividuals of selected levels of age and fitness for the followingAt the conclusion of the course, the student will be able to write prescriptions of activity forindividuals of selected levels of age and fitness for the following

EXSC 470 : Functional Neuroanatomy. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: PDBIO 220 & EXSC 390
DESCRIPTION: Function, assessment, and rehabilitation of sensory and motor systems.

**Course Outcomes**

- 1. Describe the functional unit of the nervous system?2. Describe the pathways of three different messenging neurons.3. Explain glia?4. List the 4 regions of the nervous system.5. List the structures make-up the brain stem?6. Identify and label the circle of willis and associated arterial supply7. Explain the composition of white vs. gray matter.8. Describe and identify spinal cord anatomy and explain the DRG (dorsal root ganglion) and ventral rami?9. Describe and draw the gray and white matter in the spinal cord.10. List and identify the cranial nerves attach to the Pons?11. List and identify all cranial nerves and explain which are sensory, motor or mixed. 12. Describe the function of the cerebellum. (see syllabus for expanded list)
- Upon completion of this class students will be able to accomplish the following:Be familiar with the neuroanatomical terms and their meanings for the central nervous system and peripheral nervous system in relation to systems and function.Be familiar with terminology of specific diseases and dysfunctions in relation to signs/symptoms and classic descriptionsBe familiar with the terminology of electrophysiologic testing of the peripheral nervous system as it relates to normal and abnormal function.
- Students will be able to identify and discuss the structures, pathways and functions of independent somatosensory and motor tracts as they relate to motor function, coordination, movement and sensory integration.

EXSC 480 : Obesity and Weight Management. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ExSc 463 or concurrent enrollment.
DESCRIPTION: Review of the scientific literature surrounding obesity and weight management, primarily the causes and consequences of this growing epidemic.

**Course Outcomes**

- Demonstrate an understanding of the historical framework and prevalence of overweight/obesity in adults and children.
- Understand the etiology and health risks related to overweight/obesity.
- Describe the economic costs and social consequences associated with overweight/obesity.
- Demonstrate an understanding of the principles of energy balance.
- Understand methods of assessing overweight/obesity, body composition, diet, and physical activity.
- Demonstrate an understanding of various methods of treating overweight/obesity including: diet, physical activity, behavioral, pharmacological, and surgical interventions.
- Demonstrate an understanding of pediatric, family and public interventions to prevent or attenuate the rise in obesity.
- Have a personal experience applying weight management strategies.
- These learning objectives will be achieved through class lectures, student projects, scientific readings, and in-class activities. Students will be evaluated through written exams, quizzes and projects.

EXSC 485 : Exercise and Wellness Certification Preparation. (3:3:0)
PREREQUISITE: Senior status.
DESCRIPTION: Review of exercise and wellness certification competencies and curriculum with preparation for professional certification.

**Course Outcomes**

- Explain and apply the essential concepts and principles of pathophysiology; exercise physiology; health appraisal and fitness testing; exercise programming; nutrition and weight management; anatomy and biomechanics; human behavior and psychology; human development and aging; and safety and injury prevention in an understandable and accurate way
- Prepare to certify as a Health and Fitness Specialist (HFS) through the American College of Sports Medicine (ACSM)

EXSC 494 : Athletic Training Clinical Education 3. (2:1:5)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: EXSC 395
DESCRIPTION: Classroom and field experience. Modules include injury assessment and management, rehabilitation skills, and knowledge of general medical conditions.

**Course Outcomes**

- After completing this course, the student will be able to:1. Understand and apply administrative policies and procedures.
- Demonstrate general medical assessment skills.

- Understand how to care for and prevent various general medical (respiratory, cardiac,gastric, genitourinary) pathologies.

EXSC 495 : Athletic Training Clinical Education 4. (2:1:5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: EXSC 494

DESCRIPTION: Classroom and field experience. Modules include injury assessment and management, rehabilitation skills, nutrition, and dermatology.

**Course Outcomes**

- After completing this course, the student will:1. Demonstrate understanding of pharmacology, pharmacological processes, and the university'smedication policies and procedures.
- Demonstrate knowledge of basic nutrition guidelines for athletes.
- Demonstrate knowledge of eating disorders and disordered eating and possess the ability tointervene with athletes who suffer from such disorders.
- Demonstrate the skills necessary to properly evaluate, care for, rehabilitate, and prevent upper and lower extremity injuries.
- Demonstrate the skills necessary to properly evaluate, care for, and prevent various generalmedical (common syndromes and diseases, dermatology) pathologies. Full evaluation and treatment from on-the-field to return-to-play.

EXSC 496R : Academic Internship: Practicum. (.5-8:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ExSc 320 and instructor's consent.

DESCRIPTION: Academic and practical application of skills for athletic trainers.

**Course Outcomes**

There are no course outcomes available

: Athletic Training Internship.

**Course Outcomes**

EXSC 497R : Undergraduate Research and Study. (.5-4:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Individual research and study in any area of exercise science.

**Course Outcomes**

- To provide the undergraduate student with a mentored learning experience specifically in exercise science related research

EXSC 498 : Capstone Experience in Athletic Training. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Senior standing in athletic training education program.

DESCRIPTION: Synthesizing and integrating student classroom and clinical experiences in preparation for BOC examination resulting in certification of allied health professionals.

NOTE: Course should be taken last semester prior to graduation.

**Course Outcomes**

- Explain, describe and complete the BOC exam registration process.
- Design and follow athletic training content exam preparation schedule.
- Understand the possibilities of practice in AT.
- Explain the significance of BOC certification and state regulation for the athletic training profession.
- Define deficiencies in you athletic training education knowledge and skills.
- Develop and implement emergency plans in the practice of athletic training.
- Explain legal issues facing athletic trainers.
- Explain the role of technology and information management in athletic training settings.
- Understand the requirements to maintain BOC certification.
- BOC Exam Preparation= Professional Practice Preparation
- Have completed all NATA Education Council competencies.

## 500-Level Graduate Courses (available to advanced undergraduates)

EXSC 501 : Sports Medicine Pathology and Pharmacology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ExSc 320, PDBio 305; or equivalents.

DESCRIPTION: Sports medicine pathologies and related pharmacology for a variety of sports medicine/allied health care professions.

NOTE: Meets required NATA athletic training educational competencies.

**Course Outcomes**

- After completing this course, the student will:1. Synthesize basic knowledge of human anatomy and physiology to develop knowledge of the causes, pathophysiology, and clinical features of the various conditions affecting the body. Considering you have completed a physiology course you will be required to recall that information
- 6. Understand basic pharmacokinetics and pharmacodynamics principles.

- 8. Describe proper maintenance and documentation of records for the administration of prescription and nonprescription drugs.
- 7. Understand advantages and disadvantages of common routes used to administer medications.
- 2. Analyze relationships between inflammation, repair, regeneration, and healing as they relate to pharmacological intervention.
- 9. Utilize reference sources for pharmacological information.
- 5. Synthesize patient information for prescription and nonprescription agents associated with the treatment and relief of symptoms from illness and injuries.
- 4. Understand clinical use of various prescription and nonprescription agents associated with the treatment and relief of symptoms from illnesses and injuries.
- 3. Evaluate clinico-pathological signs and symptoms for specific medical conditions that assist the sport medicine/allied health care clinician in correlating findings in determining the course of action for illness and disease.
- 11. Identify sources of current banned-drug lists published by various associations.
- 10. Describe basic concepts of organizing and coordinating a drug testing and screening program.

EXSC 560 : Orthopaedic Pathomechanics. (2:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: ExSc 460 or equivalent.

DESCRIPTION: Advanced analysis of neuromusculoskeletal deformities and/or injury. Therapeutic exercise and the use of orthoses.

**Course Outcomes**

- Students will be able to describe the anatomy and movement mechanics of selected joints for class
- Students will be able to demonstrate orthopedic evaluative techniques to evaluate dysfunctional mechanics
- Students will be able to evaluate each each selected joint for pathologic mechanics and movement dysfunction
- Students will be able to differentiate the anatomical structures relating to joint dysfunction through use of specialized manual tests

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Exercise Sciences Department Home**

College of Life Sciences Home

Exercise Sciences Department Home

Majors

- BS in Athletic Training
- BS in Exercise and Wellness
- BS in Exercise Science

Course Information

- Exercise Sciences Courses

Faculty

# Exercise Sciences Faculty

Show All
Hide All

## Professors

Draper, David
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1982
MA, Brigham Young University, 1984
EdD, Northern Illinois University, 1988

Hopkins, Jon Tyson
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Indiana State University, 1997
PhD, Indiana State University, 2000

Hunter, Iain
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1996
MEd, Brigham Young University, 1997
PhD, Oregon State University, 2001

Lockhart, Barbara D.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BS, Michigan State University, 1964
MA, Michigan State University, 1967
EdD, Brigham Young University, 1971

Mack, Gary Wayne
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BS, University of California, Davis, 1977
MA, University of California, Davis, 1981
PhD, John A. Burns School of Medicine, 1984

Myrer, Joseph William
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BPE, University of Calgary, Canada, 1974
MA, University of Windsor, Canada, 1977
PhD, Brigham Young University, 1983

Parcell, Allen C.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Iowa State University, 1995

PhD, Ball State University, 1998

Tucker, Larry A.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
MS, Brigham Young University, 1979
PhD, Southern Illinois University, 1981

## Associate Professors

Bailey, Bruce

**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2001
PhD, University of Kansas, 2005

Feland, Jeffrey Brent

**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MSPT, Texas Woman's University, 1995
PhD, Brigham Young University, 1999

George, James David

**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1984
MA, Brigham Young University, 1986
PhD, Arizona State University, 1995

Hager, Ronald Lee

**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MS, Brigham Young University, 1994
PhD, Arizona State University, 1997

Johnson, Aaron Wayne

**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1995
MSPT, University of Alabama, Birmingham, 1997
PhD, Brigham Young University, 2007

LeCheminant, James

**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2001
PhD, University of Kansas, 2005

Seeley, Matthew Kirk

**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 2000
MS, Utah State University, 2002
PhD, University of Kentucky, 2006

Vehrs, Pat Roy

**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences

**RANK:** Associate Professor
**DEGREES:** BS, Northern Illinois University, 1984
MS, Northern Illinois University, 1986
PhD, Brigham Young University, 1991

## Assistant Professors

Davidson, Lance
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
MS, Brigham Young University, 2002
PhD, Queens University, Canada, 2007

Hyldahl, Robert
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 2003
MS, University of Massachusetts, Amherst, 2008
PhD, University of Massachusetts, Amherst, 2011

Mitchell, Ulrike H.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Assistant Professor
**DEGREES:** BA, University of Heidelberg, Germany, 1984
BS, Krankengymnastikschule Hessisch Lichtenau, Germany, 1987
MS, University of St. Augustine for Health Sciences, 2000
PhD, Brigham Young University, 2005

Ridge, Sarah Traeger
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Assistant Professor
**DEGREES:** BS, Skidmore College, 1998
MS, University of Delaware, 2004
PhD, University of Delaware, 2010

## Associate Teaching Professor

Diede, Mike Todd
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Indiana State University, 1996
PhD, University of Arizona, 2005

## Assistant Teaching Professors

Wells, Aaron
**COLLEGE:** Life Sciences
**DEPARTMENT:** Exercise Sciences
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 1999
MEd, University of Nebraska, 2002
PhD, Brigham Young University, 2010

College of Life Sciences Home

Health Science Department Home

Majors

BS in Public Health:

Emphases:

- Environmental/ Occupational Health Emphasis
- Epidemiology Emphasis
- Health Promotion Emphasis
- Health Science Emphasis

Minors

- School Health Education

Course Information

- Health Science (Hlth) Courses

Faculty

# Health Science

Michael Barnes, Chair
4103 LSB, (801) 422-3313

**Life Sciences Student Services Center**
2060 LSB
(801) 422-3042

## Admission to Degree Program

All degree programs in the Department of Health Science are open enrollment. In addition, special limitations apply for teaching majors.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Public Health**
**Environmental/Occupational Health Emphasis** (Program Outcomes)
**Epidemiology Emphasis** (Program Outcomes)
**Health Promotion Emphasis** (Program Outcomes)
**Health Science Emphasis** (Program Outcomes)
**BS in School Health Education** (Program Outcomes)

**Minor in School Health Education**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MPH in Public Health

For more information see the BYU 2014–2015 Graduate Catalog.

College of Life Sciences Home

Health Science Department Home

Majors

BS in Public Health:

Emphases:

- Environmental/ Occupational Health Emphasis
- Epidemiology Emphasis
- Health Promotion Emphasis
- Health Science Emphasis

Minors

- School Health Education

Course Information

- Health Science (Hlth) Courses

Faculty

# BS in Public Health: Environmental/Occupational Health Emphasis (55 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## The Discipline

Public health professionals work to create conditions that ensure the health and safety of individuals, families, and communities. Public health students are trained to inform, educate, and empower people about health issues; mobilize communities to take ownership for their own health; monitor health status and diagnose and investigate health problems and health hazards; develop policies and laws to protect health and ensure safety; and link people to needed health services. The public health mission is carried out through organized, interdisciplinary efforts that address the physical, mental, and environmental health concerns of communities and populations at risk for disease and injury.

Four of several disciplines within public health are represented as emphases within the major: (1) environmental/occupational health identifies and controls factors in the environment (air, water, food, toxins, etc.) or conditions at the workplace which affect health; (2) epidemiology investigates and discovers what causes disease and disability and how diseases are spread or distributed across populations; (3) health promotion facilitates behavior change among individuals and improves population health through policy, advocacy, education, and communication; and (4) health science trains students interested in working in public health after earning an advanced degree in a medical, dental, or other allied health area.

## Career Opportunities

There has never been a better time to pursue a career in public health. It is an exciting and growing field of study and a diverse and dynamic profession. It is filled with rewards associated with the pursuit of serving others. The development and delivery of population-based prevention programs will be the key to major advances in health improvement in the 21st century. Public health will continue to be called upon to monitor and assess health problems, prevent and control diseases and injuries, and protect the health of communities and worksites from various environmental and occupational risks associated with man-made and natural disasters and emergencies.

Public health graduates are qualified to work in governmental health agencies on the local, state, federal, and international levels. Private-sector employment can be found in a variety of businesses, community health agencies, managed care organizations, hospitals, clinics, research institutes, voluntary health agencies, and non-governmental organizations. Opportunities for employment in public health are readily available, however recruiters will not typically come to campus to hire graduates. This means graduates must be organized and proactive in their career planning. Students can increase the likelihood of obtaining a position by balancing classroom activities with voluntary or paid service to public health agencies. Obtaining certifications related to specific tracks within the major and careful development of a professional portfolio enhance employment opportunities.

While there are many specialties or disciplines in public health, most career opportunities are found within the fields represented by the emphases in the major. Entry-level salaries with a bachelor's degree in public health will range from approximately $40,000–$70,000 but will vary significantly depending upon the specific discipline, type of organization, and geographic location.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following courses:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

HLTH 100 : Introduction to Public Health. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Introduction to public health professions including exploration of current issues, job opportunities, the essential public health services, and an overview of the public health major.

**Course Outcomes**

- 1. Identify key events in the history of public health that have shaped the current state of the profession
- 2. Describe core public health values
- 3. Identify the ten essential public health services and describe which aspects of the profession hold the most relevance for employment and personal fulfillment
- 4. Delineate how health is defined and measured as well as recognize the impact of social, environmental, and behavioral determinants of health
- 5. Describe the importance of global health and recognize how actions in the US impact the rest of the world and vice versa
- 6. Identify the critical roles and contributions of epidemiology, environmental/occupational health, health promotion, medicine, and allied health within the public health profession
- 7. Determine their interest in the public health degree and identify the types of professional and educational opportunities available to them within public health

HLTH 310 : Chronic Diseases: Prevention and Control. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Pathogenesis, epidemiology of major chronic diseases, health costs to society, at-risk populations, population-based prevention, and related best-practice interventions.

**Course Outcomes**

There are no course outcomes available

HLTH 311 : Infectious Diseases: Prevention and Control. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Human infectious disease risk factors; bacterial, viral, and parasitic agents; pathology, diagnosis, treatment, prevention, and control; communicable, vector-borne, zoonotic, and bioterror diseases of public health.

**Course Outcomes**

There are no course outcomes available

HLTH 322 : Environmental Health. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: HIth 100.

DESCRIPTION: Environmental factors as determinants of human health: ecosystem and population dynamics; biological, chemical, and physical hazards; risk assessment; economic, political, cultural, and genetic factors.

**Course Outcomes**

- Provide a global perspective of environmental issues impacting human health
- Describe the various biological, chemical and physical hazards of the ambient, indoor, and work environment that can adversely affect human health
- Discuss those determinents and factors that affect human health and the health of the environment
- Describe how environmental management practices may contribute to or help control emerging diseases
- Provide an assessment of those national and international health agencies, programs, and other resources that play critical roles in improving human health relative to environmental factors
- Discuss elements of policy making as they influence environmental health issues

HLTH 330 : Principles and Practices of Health Promotion. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

RECOMMENDED: HIth 100.

DESCRIPTION: Introduction to the health promotion profession, emphasizing current issues, professional preparation and employment, as well as the philosophy and foundations of professional practice in various settings.

**Course Outcomes**

- Identify professional opportunities available to health education/health promotion specialists in community, school, worksite, and health care settings.
- Identify the roles and responsibilities for health education/health promotion specialists and opportunities for certifications and advanced study.
- Identify organizations, resources, and professional journals associated with health promotion.
- Provide an overview of theories, models, and initiatives used to guide decision-making in the planning and implementation of health promotion programs and health behavior change.
- Demonstrate awareness and sensitivity of the diverse and unique needs of various age group populations and cultural groups for health promotion.
- Identify techniques for enhancing communication in interactions with clients in health promotion settings.
- Propose health promotion solutions to address health problems among various populations.

HLTH 345 : Principles of Epidemiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: Stat 121.

DESCRIPTION: Applying analytical tools to study acute and chronic disease to facilitate investigation and control of epidemics.

**Course Outcomes**

- Investigate disease outbreaks.
- Describe basic concepts, definitions, and history of Epidemiology.
- Describe patterns of disease occurrence.
- Interpret Epidemiologic studies.
- Evaluate treatment effectiveness.
- Measure disease frequency and association.
- Distinguish between statistical association and cause-effect relationships.
- Know basic design strategies in Epidemiology.

HLTH 420 : Injury and Violence Prevention. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: HLTH 100

DESCRIPTION: Concepts and interventions related to both unintentional injuries and violence.

**Course Outcomes**

- Describe the impact of injures on health and on society in terms of mortality, morbidity, disability, and cost.
- Define the terms used in the injury prevention field.
- Describe the models used to analyze injuries and determine interventions.
- Select valid sources of injury prevention information.
- Select and recommend proven and effective injury prevention interventions.

HLTH 422 : Disaster Response and Emergency Preparedness. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: HIth 311, 420.

DESCRIPTION: Key elements of public health preparedness and response to the variety of natural, technological, and man-made disasters occurring routinely on a global basis.

NOTE: Taught only as an evening course.

**Course Outcomes**

There are no course outcomes available

HLTH 424 : Occupational Health and Safety. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HLTH 100 & HLTH 322

DESCRIPTION: In-depth focus on workplace health and safety through a multidisciplinary approach to the anticipation, recognition, evaluation, and prevention and control of workplace-related illnesses and injuries.

**Course Outcomes**

- Demonstrate competency in using the OSHA standards by identifying specific violations of current

standards.
- Describe the purpose and scope of the Occupational Health and Safety Act as well as other relevant safety and health legislation and consensus standards.
- Discuss and demonstrate the elements involved in completing an accident investigation.
- Explain how the functions of management are utilized to assure safe conditions and practices through the development of specific programs as well as an overall safety and health program.
- Identify, evaluate, and develop loss control strategies to address the hazards associated with operating common manufacturing and construction equipment and processes.

HLTH 426 : Fundamentals of Toxicology. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Concurrent with Hlth 424.
RECOMMENDED: Chem 106, 107.
NOTE: Examines basic concepts of toxicology as they apply to environmental toxicology. Discusses toxicokinetics of foreign chemical agents on biological systems. Focuses on understanding and prevention of mortality and morbidity resulting from environmental exposure to toxic substances.

**Course Outcomes**

There are no course outcomes available

MATH 110 : College Algebra. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 97 or equivalent (see Independent Study).
DESCRIPTION: Functions, polynomials, theory of equations, exponential and logarithmic functions, matrices, systems of linear equations, permutations, combinations, binomial theorem.

**Course Outcomes**

- Graph functions using horizontal and vertical shiftsGraph functions using compressions and stretchesGraph functions using reflections about the x-axis or y-axisForm composite functions and find the domainDetermine the inverse of a function and graph an inverse function from the graph of a function
- This course prepares students to take courses in calculus, statistics, mathematics for elementary education majors, and other areas where algebra skills are required. Fluent skills in algebra are necessary for success in any area that uses mathematical analysis. The mastery of college algebra requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. College Algebra develops the concepts of graphing functions, polynomial and rational functions, exponential and logarithmic functions, conic sections, solving systems of equations, the binomial theorem, permutations, combinations, and probability. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information, visit the Math 110 Wiki page.
- Quadratic functionsPolynomial functionsRational functionsPolynomial and rational inequalitiesThe real zeros of a polynomial functionComplex zeros and the Fundamental Theorem of Algebra
- Exponential functionsLogarithmic functionsProperties of LogarithmsLogarithmic and exponential equationsCompound interestExponential growth and decay
- Graph parabolas, ellipses, and hyperbolasFind the equation of parabolas, ellipses, and hyperbolasDiscuss the equation of conic sections to find vertices, foci, asymptotes, and the directrixWork with conic sections that are not centered at the origin
- Solve systems of linear equations using substitution and eliminationSolve systems of non-linear equations using substitution and eliminationDecompose rational functions using partial fractions
- Find terms in a sequence using a formula and a recursive definitionFind a formula for terms in an arithmetic sequence and be able to add the terms of a finite arithmetic sequenceFind a formula for the terms in a geometric sequence and be able to find the sum of finite and infinite geometric seriesProve statements using mathematical induction
- Work with operations on sets such as union, intersection and complement and count the number of elements in a setCompute permutations and combinationsEvaluate binomial coefficients and expand binomials using the Binomial TheoremCompute probabilities of equally likely outcomes

MMBIO 221 : General Microbiology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Any biology course.
RECOMMENDED: Any chemistry course.
DESCRIPTION: Microbial world, emphasizing communicable diseases, their causes and control.
NOTE: Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses.

**Course Outcomes**

- Explain and discuss the ways by which microbiologists study microorganisms.
- Discuss the principle infectious diseases that affect mankind, including how they are transmitted, treated, controlled and prevented.
- Differentiate between the types of microorganisms by identifying relevant structure and their function in the biosphere.
- Propose microbial solutions to global problems.
- Describe how the human body defends itself against infectious agents.

MMBIO 222 : General Microbiology Laboratory. (1:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: MMBio 221 or concurrent enrollment.

**Course Outcomes**

- Use the bright field microscope to view and interpret microbiological specimens
- Use proper aseptic techniques int he handling and transfer of microbiological specimens
- Use standard microbiological media to culture and identify common microbiological specimens
- Use standard microbiology laboratory equipment correctly
- Follow an experimental protocol, collect and organize data, present data in an appropriate form, assess the validity of the data, and draw appropriate comclusions based on the results
- Integrate information and skills gained int eh course to make informed judgements about the role of microorganisms in everyday life
- Use accepted safety protocols when handling microbiological specimens and chemicals

2. Complete 12 hours from the following:

CHEM 223 : Quantitative and Qualitative Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 107; or CHEM 113

DESCRIPTION: Principles of chemical equilibrium, quantitative chemical measurements, and qualitative detection of selected chemical species.

NOTE: Primarily for majors in molecular biology and the life sciences.

**Course Outcomes**

- Course Objectives: The course is designed to develop research skills. The labwork will have a somewhat bioanalytical focus, e.g. the chemical analysis of biological molecules or biologically related ions and the use of biomolecules in assays. We will work to develop good laboratory practice, both conceptually and practically, and consider how to do good science. The combined lecture/lab approach will be used to help you understand quantitative approaches to analysis, sources of error, and the utility but also limitations of laboratory measurements. You will be asked to apply a portion of this knowledge to your own laboratory determinations. We will also discuss more advanced analytical methods involving chemical separations and instrumental analyses. This course fills one of the requirements for a minor in chemistry.

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent.

DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

GEOG 101 : Global Environment: Understanding Physical Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Physical environment, distribution and interrelationships of climates, landforms, ecosystems and their human significance.

**Course Outcomes**

There are no course outcomes available

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

GEOG 303 : Biogeography. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 101.

DESCRIPTION: Broad-scale distribution of plants and animals. Theoretical and practical applications to conservation and effects of global environmental change.

**Course Outcomes**

- Demonstrate an understanding of basic concepts and processes in biogeography
- Recognize and be able to explain patterns of plant and animal life at many different scales
- Explain how humans have affected the distribution and diversity of plants and animals, and apply concepts to decisions regarding human use of the environment

- Demonstrate a knowledge of prominent professional biogeographers and ecologists and their current research themes
- Plan for future changes in species distributions and diversity as a result of environmental and human-induced pressures

HLTH 491R : Mentored Research. (.5-3:Arr.:0)

DESCRIPTION: Collaborate with professors on mentoring grants or other public health-related research and initiatives.

**Course Outcomes**

- Experience at least one subset of research skills while conducting supervised public health research with a faculty member.

(Up to 3 hours)

HLTH 496R : Academic Internship. (.5-9:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: HLTH 439

DESCRIPTION: Senior capstone experience.

**Course Outcomes**

- Obtain experience, as proctored by an approved internship supervisor, to apply professional competencies in public health as assessed through an internship report and internship supervisor rating

MMBIO 261 : Infection and Immunity. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Principles of infectious organisms (principally bacteria and viruses), the diseases they cause, and the role of host immune responses in health and disease.

**Course Outcomes**

There are no course outcomes available

MMBIO 417 : Medical Parasitology. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 261 & MMBIO 240

DESCRIPTION: Pathogenesis, diagnosis, and epidemiology of human parasitic diseases. Laboratory included.

**Course Outcomes**

- Gain familiarity with the medically important parasites. This includes understanding parasite host range as well as pathology and mechanisms of pathogenesis.*Relates to Program Learning Outcome: Exhibit mastery of medical microbiology
- Be able to design experiments, with appropriate controls, to test various hypotheses in parasitology.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Read and critically interpret current scientific literature in the field of parasitology.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Students should gain an understanding of their role and responsibility in alleviating suffering caused by parasitic diseases.*Relates to Program Learning Outcome: Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological principles.

MMBIO 465 : Virology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBio 261 or equivalent.

DESCRIPTION: Basic principles of virology, emphasizing selected molecular aspects of virus life cycles and disease processes.

**Course Outcomes**

- Be able to answer basic questions about Virology: Why are viruses organized as they are? How do viruses replicate? How do viruses cause disease? What are the interactions between viruses and the host immune system? How to prevent/treat/cure viral infections? How can viruses be used as tools to study biological processes and for gene transfer? How can an understanding of viruses help you in your future career? *Relates to Program Learning Outcome: “Exhibit mastery of four of the principal areas of the discipline”, one of which is Virology.
- Understand experimental tools used to study viruses (these are broadly applicable to molecular biology, cell biology, and microbiology) and be able to develop experiments and interpret data.*Relates to Program Learning Outcomes: “Devise experiments with appropriate hypotheses and controls” and “Interpret experiments from primary scientific literature”
- Write about a current, pressing issue in the field of Virology.*Relates to Program Learning Outcome: “Communicate scientific information”
- Understand how research of viruses “by study and also by faith” can lead to alleviation of human disease and suffering.*Relates to Program Learning Outcome: “Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological processes”

NDFS 361 : Food Microbiology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBIO 221 & MMBIO 222

DESCRIPTION: Pathogenic and spoilage microorganisms in foods and their control. Beneficial microorganisms in food systems. Influence of the food system on growth and survival of microorganisms.

**Course Outcomes**

- Understand the growth requirements of common food borne pathogens and…Be able to attribute the characteristics of a food borne illness with unknown etiology to the most likely organism. Differentiate which organisms would be likely to grow in a specific food product
- Understand intrinsic and environmental aspects of foods and how they can be modified to affect the growth and metabolism of food borne microorganisms to include spoilage, pathogenic, and beneficial organisms.
- Carry out a series of laboratory experiments aimed at isolating and identifying common food borne microbial pathogens
- Classify spoilage microorganisms according to the food or foods they are most likely to affect based on the intrinsic and environmental characteristics of the food and compare to various storage methods to determine which method would be most appropriate for the given food product
- Design and carry out a laboratory experiment to evaluate the microbial safety of a common food product

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.

RECOMMENDED: A general biology course.

DESCRIPTION: Function of body organ systems.

NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

Prerequisite: Chem 101 or equivalent and PDBio 220 or 210

PDBIO 365 : Pathophysiology. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 305; or PDBIO 362

DESCRIPTION: Variations in physiological mechanisms that account for development of common disturbances in normal control and activities of body's organs and organ systems.

**Course Outcomes**

- Students will exhibit an integrative understanding of the biochemistry, molecular biology, genetics, cell biology, microbiology, environmental biology, and physiology related to the prevention, development, and treatment of common diseases.
- Students will demonstrate through case study analysis a command of problem solving skills related to the diagnosis and treatment of pathophysiological conditions.
- Pupils will manifest a command of the physiology and pathophysiological vocabulary necessary to effectively communicate with other biomedical professionals and the general public.
- Students will be able to articulate the ethical issues related to the treatment and prevention of pathophysiological conditions.
- Students will manifest an increase in their respect for the human body and adopt a life style consistent with this respect.

Prerequisite: PDBio 305

PWS 150 : Environmental Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Conservation and management of natural resources concurrent with increasing socioeconomic and human population demands; factors such as soil, water, and air pollution, resources management, bioremediation, nutrient cycles, and global climate changes

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Gain a deep appreciation for the Lord's admonition to Adam and Eve regarding the Earth to dress it and keep it
- Engage others and participate in discussions about major environmental problems, movements, and solutions (e.g., desertification, invasive species, water pollution, green revolution, and renewable energy).
- Understand how “science” is conducted.
- Demonstrate a fundamental knowledge (i.e., scientific literacy) of the environment and current environmental problems facing us locally, regionally, and globally.
- Devise experiments with testable hypotheses based the scientific method—process of making observations and logically integrating those observations into a model of how the world works.
- Foster and promote environmental stewardship within your realm of influence and your community.

**Note:** If Hlth 496R is chosen, the student must first complete Hlth 100, 310, 311, 322, 330, 345, 420, 422, and 424.

Recommended GE Courses:

ENGL 315 : Writing in the Social Sciences. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Writing characteristic of disciplines that inquire into human behavior and institutions; correspondence, proposals, library paper, empirical research, and reviews.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to specific rhetorical situations.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Successfully complete the library tour, tutorial, and tests (if not completed as part of the first-year writing requirement). Successfully complete a library mini-course taught for their major area and demonstrate the ability to use the library effectively.
- Demonstrate the ability to create, number, and label tables and figures.
- Effectively evaluate and comment on the writing of others to facilitate revision.

Or

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

## Show all Health Science (Hlth) Courses

College of Life Sciences Home

Health Science Department Home

Majors

BS in Public Health:

Emphases:

- Environmental/ Occupational Health Emphasis
- Epidemiology Emphasis
- Health Promotion Emphasis
- Health Science Emphasis

Minors

- School Health Education

Course Information

- Health Science (Hlth) Courses

Faculty

# BS in Public Health: Epidemiology Emphasis (56 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## The Discipline

Public health professionals work to create conditions that ensure the health and safety of individuals, families, and communities. Public health students are trained to inform, educate, and empower people about health issues; mobilize communities to take ownership for their own health; monitor health status and diagnose and investigate health problems and health hazards; develop policies and laws to protect health and ensure safety; and link people to needed health services. The public health mission is carried out through organized, interdisciplinary efforts that address the physical, mental, and environmental health concerns of communities and populations at risk for disease and injury.

Four of several disciplines within public health are represented as emphases within the major: (1) environmental/occupational health identifies and controls factors in the environment (air, water, food, toxins, etc.) or conditions at the workplace which affect health; (2) epidemiology investigates and discovers what causes disease and disability and how diseases are spread or distributed across populations; (3) health promotion facilitates behavior change among individuals and improves population health through policy, advocacy, education, and communication; and (4) health science trains students interested in working in public health after earning an advanced degree in a medical, dental, or other allied health area.

## Career Opportunities

There has never been a better time to pursue a career in public health. It is an exciting and growing field of study and a diverse and dynamic profession. It is filled with rewards associated with the pursuit of serving others. The development and delivery of population-based prevention programs will be the key to major advances in health improvement in the 21st century. Public health will continue to be called upon to monitor and assess health problems, prevent and control diseases and injuries, and protect the health of communities and worksites from various environmental and occupational risks associated with man-made and natural disasters and emergencies.

Public health graduates are qualified to work in governmental health agencies on the local, state, federal, and international levels. Private-sector employment can be found in a variety of businesses, community health agencies, managed care organizations, hospitals, clinics, research institutes, voluntary health agencies, and non-governmental organizations. Opportunities for employment in public health are readily available, but recruiters will not typically come to campus to hire graduates. This means graduates must be organized and proactive in their career planning. Students can increase the likelihood of obtaining a position by balancing classroom activities with voluntary or paid service to public health agencies. Obtaining certifications related to specific tracks within the major and careful development of a professional portfolio enhance employment opportunities.

While there are many specialties or disciplines in public health, most career opportunities are found within the fields represented by the emphases in the major. Entry-level salaries with a bachelor's degree in public health will range from approximately $35,000–$60,000 but will vary significantly depending upon the specific discipline, type of organization, and geographic location. Most entry-level positions recommend master's degrees.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following courses:

HLTH 100 : Introduction to Public Health. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Introduction to public health professions including exploration of current issues, job opportunities, the essential public health services, and an overview of the public health major.

**Course Outcomes**

- 1. Identify key events in the history of public health that have shaped the current state of the profession
- 2. Describe core public health values
- 3. Identify the ten essential public health services and describe which aspects of the profession hold the most relevance for employment and personal fulfillment
- 4. Delineate how health is defined and measured as well as recognize the impact of social, environmental, and behavioral determinants of health
- 5. Describe the importance of global health and recognize how actions in the US impact the rest of the world and vice versa
- 6. Identify the critical roles and contributions of epidemiology, environmental/occupational health, health promotion, medicine, and allied health within the public health profession
- 7. Determine their interest in the public health degree and identify the types of professional and educational opportunities available to them within public health

HLTH 310 : Chronic Diseases: Prevention and Control. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Pathogenesis, epidemiology of major chronic diseases, health costs to society, at-risk populations, population-based prevention, and related best-practice interventions.

**Course Outcomes**

There are no course outcomes available

HLTH 311 : Infectious Diseases: Prevention and Control. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Human infectious disease risk factors; bacterial, viral, and parasitic agents; pathology, diagnosis, treatment, prevention, and control; communicable, vector-borne, zoonotic, and bioterror diseases of public health.

**Course Outcomes**

There are no course outcomes available

HLTH 322 : Environmental Health. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: HIth 100.

DESCRIPTION: Environmental factors as determinants of human health: ecosystem and population dynamics; biological, chemical, and physical hazards; risk assessment; economic, political, cultural, and genetic factors.

**Course Outcomes**

- Provide a global perspective of environmental issues impacting human health
- Describe the various biological, chemical and physical hazards of the ambient, indoor, and work environment that can adversely affect human health
- Discuss those determinents and factors that affect human health and the health of the environment
- Describe how environmental management practices may contribute to or help control emerging diseases
- Provide an assessment of those national and international health agencies, programs, and other resources that play critical roles in improving human health relative to environmental factors
- Discuss elements of policy making as they influence environmental health issues

HLTH 330 : Principles and Practices of Health Promotion. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

RECOMMENDED: HIth 100.

DESCRIPTION: Introduction to the health promotion profession, emphasizing current issues, professional preparation and employment, as well as the philosophy and foundations of professional practice in various settings.

**Course Outcomes**

- Identify professional opportunities available to health education/health promotion specialists in community, school, worksite, and health care settings.
- Identify the roles and responsibilities for health education/health promotion specialists and opportunities for certifications and advanced study.
- Identify organizations, resources, and professional journals associated with health promotion.
- Provide an overview of theories, models, and initiatives used to guide decision-making in the planning and implementation of health promotion programs and health behavior change.
- Demonstrate awareness and sensitivity of the diverse and unique needs of various age group populations and cultural groups for health promotion.
- Identify techniques for enhancing communication in interactions with clients in health promotion settings.
- Propose health promotion solutions to address health problems among various populations.

HLTH 345 : Principles of Epidemiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: Stat 121.

DESCRIPTION: Applying analytical tools to study acute and chronic disease to facilitate investigation and control of epidemics.

**Course Outcomes**

- Investigate disease outbreaks.
- Describe basic concepts, definitions, and history of Epidemiology.
- Describe patterns of disease occurrence.
- Interpret Epidemiologic studies.
- Evaluate treatment effectiveness.
- Measure disease frequency and association.
- Distinguish between statistical association and cause-effect relationships.
- Know basic design strategies in Epidemiology.

HLTH 434 : Evaluation Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: HLTH 100 & HLTH 330

RECOMMENDED: HIth 332, 432.

DESCRIPTION: Design and carry out an evaluation plan that will measure the impact of public health programs at changing behaviors, knowledge, attitudes, and health status. Quantitative and qualitative methods will be discussed.

NOTE: This course should be completed after taking HIth 432--Methods in Health Promotion, and prior to taking Health 439--Program Planning.

**Course Outcomes**

There are no course outcomes available

HLTH 440 : Computer Applications in Epidemiology. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: HLTH 345
RECOMMENDED: Stat 121.
DESCRIPTION: Introduction to the basics of SAS and EXCEL focusing on the set of commands useful for data-reporting, data-management, formatting and graphics, and data-analysis. Topics include tables and regression models for epidemiologists (cumulative-incidence, case-control, and incidence rate data).

**Course Outcomes**

- Identify the principles of data management.
- Describe how/when to use tables, charts and graphs for data presentation.
- Create tables, graphs and charts in Excel for presenting public health data.
- Use SAS to manipulate datasets provided by sources such as the Centers for Disease Control and Prevention.
- Use basic SAS procedures to explore, describe and analyze data, including proc contents, proc freq, proc means, proc univariate and proc print.
- Clean and recode data to prepare it for analysis using a variety of data cleaning techniques. Document all cleaning and recoding using comments in the SAS program and external documentation (code books, data dictionaries etc.).
- Create clear and documented output using labels, titles, and formats.
- Conduct basic analyses using SAS including Proc Ttest, Proc ANOVA, Proc Corr, Proc GLM and Proc Logistic.

HLTH 441 : Clinical Trials. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: HLTH 345
RECOMMENDED: Stat 121.
DESCRIPTION: Introduction to methods used in the design, interim monitoring, and analysis of clinical trials, including the impact of patient exclusions and other causes of incomplete data. Concepts and principles emphasized. Main focus on randomized Phase III (comparative) trials.

**Course Outcomes**

- Develop the capacity to evaluate the design, analysis, and interpretation of human studies.
- Practice the skills needed to identify research opportunities and design studies that pursue those opportunities.
- Develop the capacity for oral and written evaluation of research, as well as oral and written presentation of individual study proposals.

HLTH 443 : Field Epidemiology. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: HLTH 345
RECOMMENDED: Stat 121.
DESCRIPTION: Applying epidemiologic methods, including outbreak investigation; surveillance systems and methods; and infectious disease epidemiology to unexpected health problems when a rapid on-site investigation is necessary for timely intervention.

**Course Outcomes**

- Be familiar with the steps of a field investigation.
- Be familiar with surveys and sampling, analyzing and interpreting data, describing and communicating the findings, dealing with the public and the media.
- Define cluster and cluster investigation methods for assessing reported clusters and discuss the process for investigating clusters. Identify the primary challenges in reported clusters.

HLTH 447 : Introduction to Biostatistics. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: HLTH 345
RECOMMENDED: HIth 440 and Stat 121.
DESCRIPTION: Introduction to statistical concepts and analytical methods as applied to data encountered in biotechnology and biomedical sciences. Emphasis on the basic concepts of experimental design, quantitative analysis of data, and statistical inferences.

**Course Outcomes**

There are no course outcomes available

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

2. Complete the following course:

MATH 110 : College Algebra. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 97 or equivalent (see Independent Study).

DESCRIPTION: Functions, polynomials, theory of equations, exponential and logarithmic functions, matrices, systems of linear equations, permutations, combinations, binomial theorem.

**Course Outcomes**

- Graph functions using horizontal and vertical shiftsGraph functions using compressions and stretchesGraph functions using reflections about the x-axis or y-axisForm composite functions and find the domainDetermine the inverse of a function and graph an inverse function from the graph of a function
- This course prepares students to take courses in calculus, statistics, mathematics for elementary education majors, and other areas where algebra skills are required. Fluent skills in algebra are necessary for success in any area that uses mathematical analysis. The mastery of college algebra requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. College Algebra develops the concepts of graphing functions, polynomial and rational functions, exponential and logarithmic functions, conic sections, solving systems of equations, the binomial theorem, permutations, combinations, and probability. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information, visit the Math 110 Wiki page.
- Quadratic functionsPolynomial functionsRational functionsPolynomial and rational inequalitiesThe real zeros of a polynomial functionComplex zeros and the Fundamental Theorem of Algebra
- Exponential functionsLogarithmic functionsProperties of LogarithmsLogarithmic and exponential equationsCompound interestExponential growth and decay
- Graph parabolas, ellipses, and hyperbolasFind the equation of parabolas, ellipses, and hyperbolasDiscuss the equation of conic sections to find vertices, foci, asymptotes, and the directrixWork with conic sections that are not centered at the origin
- Solve systems of linear equations using substitution and eliminationSolve systems of non-linear equations using substitution and eliminationDecompose rational functions using partial fractions
- Find terms in a sequence using a formula and a recursive definitionFind a formula for terms in an arithmetic sequence and be able to add the terms of a finite arithmetic sequenceFind a formula for the terms in a geometric sequence and be able to find the sum of finite and infinite geometric seriesProve statements using mathematical induction
- Work with operations on sets such as union, intersection and complement and count the number of elements in a setCompute permutations and combinationsEvaluate binomial coefficients and expand binomials using the Binomial TheoremCompute probabilities of equally likely outcomes

**OR** equivalent ACT score

3. Complete 19-22 hours from the following:

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

HLTH 420 : Injury and Violence Prevention. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: HLTH 100

DESCRIPTION: Concepts and interventions related to both unintentional injuries and violence.

**Course Outcomes**

- Describe the impact of injures on health and on society in terms of mortality, morbidity, disability, and cost.
- Define the terms used in the injury prevention field.
- Describe the models used to analyze injuries and determine interventions.
- Select valid sources of injury prevention information.
- Select and recommend proven and effective injury prevention interventions.

HLTH 424 : Occupational Health and Safety. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HLTH 100 & HLTH 322

DESCRIPTION: In-depth focus on workplace health and safety through a multidisciplinary approach to the anticipation, recognition, evaluation, and prevention and control of workplace-related illnesses and injuries.

**Course Outcomes**

- Demonstrate competency in using the OSHA standards by identifying specific violations of current standards.
- Describe the purpose and scope of the Occupational Health and Safety Act as well as other relevant safety and health legislation and consensus standards.
- Discuss and demonstrate the elements involved in completing an accident investigation.
- Explain how the functions of management are utilized to assure safe conditions and practices through the development of specific programs as well as an overall safety and health program.
- Identify, evaluate, and develop loss control strategies to address the hazards associated with operating common manufacturing and construction equipment and processes.

HLTH 439 : Program Planning. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: HLTH 100 & HLTH 330; Concurrent with Hlth 434.

RECOMMENDED: Hlth 432.

DESCRIPTION: Introduction to needs assessment, program development, implementation, and evaluation in health promotion and public health.

**Course Outcomes**

- 1. Conduct a needs assessment by collecting and analyzing data to determine the health needs of a community
- 2. Use needs assessment data and analysis to identify a priority population for interventions.
- 3. Distinguish between goals and objectives and develop process, impact and outcome objectives.
- 4. Select, implement and manage evidence-based interventions.
- 5. Establish appropriate budgets and program timelines.
- 6. Distinguish between process and outcome evaluation and apply appropriate strategies.
- 7. Understand and interpret the DHHS'sHealthy People 2020 and the CDC's Framework for Program Evaluation in Public Health.

HLTH 442 : Special Topics in Epidemiology. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Hlth 345, Stat 121.

DESCRIPTION: Topics include environmental epidemiology, statistical methods in epidemiology, social epidemiology, genetic epidemiology, categorical data analysis, applied longitudinal analysis, survival analysis, and life table methods.

**Course Outcomes**

- Explain the Basic Elements of Research, Exposure and Outcome Assessment
- Show how Monitoring is accomplished in Environmental Health
- Describe Epidemiologic Study Designs and explain Statistical Modeling and Causal Inference
- Explain challenges associated with investigating Disease Clusters
- Describe Mapping, Geographic Information Systems and Time Series
- Give examples of current health issues in Indoor and Ambient Air Quality
- Give examples of current health issues in Soil and Food Contaminants
- Give examples of current health issues in Water and Radiation
- Describe how Climate Change can affect Health

HLTH 450 : Women's Health Issues. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Overview of selected health topics affecting women's health status. Primary emphasis on steps to enhance personal health and fulfill divine roles from childhood through adulthood.

**Course Outcomes**

- Identify and understand the determinants of women's health issues.(Learning activities: lecture, class discussion, videos, out of class activites, guest lecturers)
- Identify and report on specific chronic and infectious diseases that affect women.(Learning activities: lecture, class discussion, book review, guest lecture)
- Identify ways to improve women's health using a variety of assessment sources.(Learning activities: lecture, class discussion, review of CDC and other health statistics, interviews, guest lecture)

HLTH 460 : Substance Abuse and Addictive Behavior. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Physiological, psychological, sociological, and legal implications of drug use and addictive behaviors, emphasizing nature, cause, treatment, and prevention.

**Course Outcomes**

- Explain substance use and abuse from a multidisciplinary perspective.
- List and describe specific social policies that reduce alcohol, tobacco, and other drug use.
- Explain the major social determinants and predictors of substance use in the United States.

- Explain the biological basis of drug addiction.
- Describe the health problems and risk associated with specific drugs.
- Describe the marketing, public relations, and political activities of the tobacco and alcohol industries.
- Provide the descriptive epidemiology of substance abuse in the United States.

HLTH 466 : Health and the Aging Process. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Public health strategies to promote health and functional independence in the context of the inevitable consequence of aging.

**Course Outcomes**

- Understand the physiological aspects of the normal aging process.
- Understand aging as a pathological process and the factors in both the external and internal milieu, this may contribute to premature aging.
- Relate knowledge about the organic and infectious diseases, common disorders, and disabilities prevalent among the elderly to disease prevention and health promotion among the aged.
- Become exposed to professional literature pertaining to the biological, medical, and health aspects of aging including the use of clinical preventive services as noted by gerontology researchers.
- Understand the physiological aspects of aging and the experimental approaches used in studying the aging process.
- Identify and distinguish the federal, state, and community health programs and services for the aged, including medical care, hospitalization, extended care, rehabilitation, and health maintenance.
- Promote healthy lifestyle behaviors that help prevent premature aging, promote the health of the elderly, and contribute to the extension of the prime of life.
- Understand decision-making related to end-of-life planning.

HLTH 480 : International Health. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Identifying disease patterns in "developing" countries, exploring the social and cultural context of health, and reviewing behavior change strategies for improving well-being.

**Course Outcomes**

- Idenitfy behaviors that improve maternal and child health and how they may be specific for particular groups.
- Discuss the determinants of global diseases and why inequalities and inequities exist.
- Explain how culture, our own and others, facilitates or hinders practicing optimal health behaviors.
- Describe the leading causes of morbidity (sickness) and mortablity among women and children in the developing world.
- Discuss how undernutrition and overnutrition contribute to morbidity and mortality related to infectious and chronic disease.
- Using principles of epidemiology, identify the leading causes of morbidity (sickness) and mortablity among women and children in the developing world and compare the burden of disease across different regions of the world.
- Describe how monitoring, evaluation, and applied research improve health programs.
- Discuss successful, evidence-based strategies for changing behaviors and improving health.

HLTH 491R : Mentored Research. (.5-3:Arr.:0)

DESCRIPTION: Collaborate with professors on mentoring grants or other public health-related research and initiatives.

**Course Outcomes**

- Experience at least one subset of research skills while conducting supervised public health research with a faculty member.

(Up to 3 hours)

HLTH 496R : Academic Internship. (.5-9:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: HLTH 439

DESCRIPTION: Senior capstone experience.

**Course Outcomes**

- Obtain experience, as proctored by an approved internship supervisor, to apply professional competencies in public health as assessed through an internship report and internship supervisor rating

(Up to 3 hours)

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is

fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 116 : Essentials of Calculus. (1:2:0)

WHEN TAUGHT: Spring; Summer
PREREQUISITE: Math 110.
DESCRIPTION: Review of algebra, graph of line, slope. Limits and derivatives (standard functions, compositions of such functions), derivative for polynomials, exponentials, logarithms. Product, quotient and chain rule. Optimization (extrema), application to business problems. Newton's method.

**Course Outcomes**

- Students receive a brief overview of differential calculus. Topics covered include limits, derivatives, and applications of differentiation to optimization of functions.For more detailed information visit the Math 116 Wiki page.

NDFS 201 : Society, Nutrition, and Chronic Disease. (2:2:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: NDFS 100
DESCRIPTION: Behavioral, dietary, and environmental factors that influence nutrition and risks for chronic disease.

**Course Outcomes**

- Explain or describe how behavioral, dietary, and environmental factors influence nutrition and chronic disease risks.
- Find scientific research articles and identify their key characteristics. Identify consistencies or inconsistencies in studies of diet and chronic disease risks.
- Apply information about behavioral, dietary, and environmental factors to reduce chronic disease risks.

NDFS 380 : International Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: NDFS 100
DESCRIPTION: Causes and consequences of nutrient deficiencies common in developing countries. Appropriate interventions to prevent or treat malnutrition.

**Course Outcomes**

- Relate critical nutrient requirements deficiencies to nutritional diseases and poor cognitive devolopment
- Understand the breadth of undernutrition, poverty and hunger that plague the developing world.
- Understand the scientific literature that relates to nutional problems in devloping societies
- Relate the nutritional status of undernourished children to their diets and suggest plausible solutions

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

PDBIO 205 : Human Biology. (3:3:0)

OFFERED: Independent Study online course.
DESCRIPTION: Body systems and influence of heredity.
NOTE: For nonbiology majors. Currently offered online only.

**Course Outcomes**

- Demonstrate understanding of the anatomic and physiologic terminology necessary forwritten and oral communication about the body, its functions, and its interaction with allother species on this planet.
- Students will demonstrate understanding of human biology at the chemical, microscopic,anatomical, physiological, and ecological levels.
- Demonstrate the ability to connect understanding of the body and its function with thefunction and survival of the world we live in.

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.
RECOMMENDED: A general biology course.
DESCRIPTION: Function of body organ systems.
NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220
DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.
NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

PDBIO 365 : Pathophysiology. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PDBIO 305; or PDBIO 362
DESCRIPTION: Variations in physiological mechanisms that account for development of common disturbances in normal control and activities of body's organs and organ systems.

**Course Outcomes**

- Students will exhibit an integrative understanding of the biochemistry, molecular biology, genetics, cell biology, microbiology, environmental biology, and physiology related to the prevention, development, and treatment of common diseases.
- Students will demonstrate through case study analysis a command of problem solving skills related to the diagnosis and treatment of pathophysiological conditions.
- Pupils will manifest a command of the physiology and pathophysiological vocabulary necessary to effectively communicate with other biomedical professionals and the general public.
- Students will be able to articulate the ethical issues related to the treatment and prevention of pathophysiological conditions.
- Students will manifest an increase in their respect for the human body and adopt a life style consistent with this respect.

SOC 300 : Methods of Research in Sociology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Soc 111 or 112 or 113.
DESCRIPTION: Tools of social research; survey, experimentation, content analysis, secondary analysis, qualitative research, evaluation research, data processing and analysis, and report writing.

**Course Outcomes**

There are no course outcomes available

STAT 124 : SAS Base Programming Skills. (1.5:1.5:1.5)

WHEN TAUGHT: Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Base SAS programming skills, introductory statistical analysis and graphics, simulation of introductory statistical concepts.

**Course Outcomes**

There are no course outcomes available

STAT 230 : Analysis of Variance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

RECOMMENDED: Concurrent enrollment in MATH 112.

DESCRIPTION: Scientific method, statistical thinking, sources of variation, completely randomized design, ANOVA, power and sample size considerations, multiple testing, randomized complete blocks, factorial designs, interactions. Introduction to statistical software.

**Course Outcomes**

- Define the experimental unit, response variable, factor(s), and level(s) of a basic experiment
- Understand the role of randomization and replication in inferring causation
- Perform a completely randomized design and construct the ANOVA table in SAS and R
- Compute the minimum number of replicates in a completely randomized design to achieve a given level of power
- Compute pairwise tests of differences in means in SAS and R to understand a significant overall F-test
- Perform a randomized complete block design and construct the ANOVA table in SAS and R
- Perform a factorial design and construct the ANOVA table in SAS and R
- Explain a statistically significant interaction
- Describe the differences between a split plot and a two-way ANOVA

STAT 234 : Methods of Survey Sampling. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Sampling frames; questionnaire design; simple random, systematic, stratified, and cluster sampling methods; comparing domain means; contingency table analysis.

**Course Outcomes**

- Identify and sample using simple random sampling and various forms of stratified sampling, cluster sampling, and systematic sampling
- Accurately identify and perform variance calculations for basic designs
- Participate in a real project involving sampling methodologies and appropriate point estimate and variance calculations
- Create graphical representations of results
- Demonstrate effective written and oral communication skills as they present their findings

STAT 330 : Introduction to Regression. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 230 & MATH 112

RECOMMENDED: Stat 123 and Stat 124; MATH 113 or concurrent enrollment.

DESCRIPTION: Regression, transformations, residuals, indicator variables, variable selection, logistic regression, time series, observational studies, statistical software.

**Course Outcomes**

- Explain the difference between ANOVA and regression, and their computational methods
- Explain the difference in inference between a designed experiment and observational study
- Fit a regression model in SAS and R
- Apply appropriate transformations to the response variable to improve agreement with regression assumptions
- Use residuals and influence diagnostics to assess model fit, agreement with regression assumptions, and identify outliers and influential observations
- Create sets of indicator variables for categorical explanatory variables
- Apply step-wise selection to identify a subset regression model that selects the most significant explanatory variables from a large data set
- Fit a logistic regression model in SAS and R
- Fit an ARIMA(p,d,q) model and generate forecasts with prediction intervals in SAS and R

**Note 1:** If student uses an ACT score to fulfill the Math 110 requirement, 22 elective hours are needed.

**Note 2:** Only 6 hours of elective credits from Health 420, 424, 439, 442, 450, 460, 466, and 480 can be applied toward the degree.

**Note 3:** Prerequisites for PDBio 305:

CHEM 101 : Introductory General Chemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 97 or equivalent.

DESCRIPTION: Atomic and molecular structure, periodic relationships, states of matter, chemical reactions and stoichiometry, acids and bases.

NOTE: Primarily for nonscience majors who require a broad introduction to general chemistry.

**Course Outcomes**

- Students will be able to view the world around them in chemical terms. Students will use the concepts of atoms, molecules, and their properties to understand a variety of phenomena.
- Students will be able to make qualitative and/or quantitative predictions regarding a number of chemical concepts including chemical reactions and stoichiometry, calorimetry, osmosis, gases, acid/base chemistry, chemical equilibria, and radioactivity.

or equivalent

PDBIO 210 : Human Anatomy (with virtual lab). (3:3:0)

OFFERED: Independent Study only.

DESCRIPTION: Structure and function of the human body. Virtual lab experience included.

**Course Outcomes**

- Students will be able to list the name, location, and function of each of the body's organs and organ systems.
- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.

Or

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

**Note 4:** Prerequisites for PDBio 362:

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105

DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.

NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 105 or equivalent.

RECOMMENDED: Concurrent enrollment in Phscs 108.

DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

Or

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

**Note 5:** Prerequisites for PDBio 365:

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.
RECOMMENDED: A general biology course.
DESCRIPTION: Function of body organ systems.
NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

Or:

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220
DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.
NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

Recommended GE Courses:

ENGL 315 : Writing in the Social Sciences. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Writing characteristic of disciplines that inquire into human behavior and institutions; correspondence, proposals, library paper, empirical research, and reviews.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to specific rhetorical situations.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Successfully complete the library tour, tutorial, and tests (if not completed as part of the first-year writing requirement). Successfully complete a library mini-course taught for their major area and demonstrate the ability to use the library effectively.
- Demonstrate the ability to create, number, and label tables and figures.
- Effectively evaluate and comment on the writing of others to facilitate revision.

Or

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

Recommended Elective Courses:

- Math 112, 113 for students who want a firm foundation in calculus and/or plan to pursue graduate education.
- Students considering graduate work in epidemiology are encouraged to consider the statistics electives.

*Hours include courses that may fulfill university core requirements.

## Show all Health Science (Hlth) Courses

College of Life Sciences Home

Health Science Department Home

Majors

BS in Public Health:
Emphases:
- Environmental/ Occupational Health Emphasis
- Epidemiology Emphasis
- Health Promotion Emphasis
- Health Science Emphasis

Minors

- School Health Education

Course Information

- Health Science (Hlth) Courses

Faculty

# BS in Public Health: Health Promotion Emphasis (55 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## The Discipline

Public health professionals work to create conditions that ensure the health and safety of individuals, families, and communities. Public health students are trained to inform, educate, and empower people about health issues; mobilize communities to take ownership for their own health; monitor health status and diagnose and investigate health problems and health hazards; develop policies and laws to protect health and ensure safety; and link people to needed health services. The public health mission is carried out through organized, interdisciplinary efforts that address the physical, mental, and environmental health concerns of communities and populations at risk for disease and injury.

Four of several disciplines within public health are represented as emphases within the major: (1) environmental/occupational health identifies and controls factors in the environment (air, water, food, toxins, etc.) or conditions at the workplace which affect health; (2) epidemiology investigates and discovers what causes disease and disability and how diseases are spread or distributed across populations; (3) health promotion facilitates behavior change among individuals and improves population health through policy, advocacy, education, and communication; and (4) health science trains students interested in working in public health after earning an advanced degree in a medical, dental, or other allied health area.

## Career Opportunities

There has never been a better time to pursue a career in public health. It is an exciting and growing field of study and a diverse and dynamic profession. It is filled with rewards associated with the pursuit of serving others. The development and delivery of population-based prevention programs will be the key to major advances in health improvement in the 21st century. Public health will continue to be called upon to monitor and assess health problems, prevent and control diseases and injuries, and protect the health of communities and worksites from various environmental and occupational risks associated with man-made and natural disasters and emergencies.

Public health graduates are qualified to work in governmental health agencies on the local, state, federal, and international levels. Private-sector employment can be found in a variety of businesses, community health agencies, managed care organizations, hospitals, clinics, research institutes, voluntary health agencies, and non-governmental organizations. Opportunities for employment in public health are readily available, but recruiters will not typically come to campus to hire graduates. This means graduates must be organized and proactive in their career planning. Students can increase the likelihood of obtaining a position by balancing classroom activities with voluntary or paid service to public health agencies. Obtaining certifications related to specific tracks within the major and careful development of a professional portfolio enhance employment opportunities.

While there are many specialties or disciplines in public health, most career opportunities are found within the fields represented by the emphases in the major. Entry-level salaries with a bachelor's degree in public health will range from approximately $35,000–$60,000 but will vary significantly depending upon the specific discipline, type of organization, and geographic location.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following departmental courses:

HLTH 100 : Introduction to Public Health. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Introduction to public health professions including exploration of current issues, job opportunities, the essential public health services, and an overview of the public health major.

**Course Outcomes**

- 1. Identify key events in the history of public health that have shaped the current state of the profession
- 2. Describe core public health values
- 3. Identify the ten essential public health services and describe which aspects of the profession hold the most relevance for employment and personal fulfillment
- 4. Delineate how health is defined and measured as well as recognize the impact of social, environmental, and behavioral determinants of health
- 5. Describe the importance of global health and recognize how actions in the US impact the rest of the world and vice versa
- 6. Identify the critical roles and contributions of epidemiology, environmental/occupational health, health promotion, medicine, and allied health within the public health profession
- 7. Determine their interest in the public health degree and identify the types of professional and educational opportunities available to them within public health

HLTH 310 : Chronic Diseases: Prevention and Control. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Pathogenesis, epidemiology of major chronic diseases, health costs to society, at-risk populations, population-based prevention, and related best-practice interventions.

**Course Outcomes**

There are no course outcomes available

HLTH 311 : Infectious Diseases: Prevention and Control. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Human infectious disease risk factors; bacterial, viral, and parasitic agents; pathology, diagnosis, treatment, prevention, and control; communicable, vector-borne, zoonotic, and bioterror diseases of public health.

**Course Outcomes**

There are no course outcomes available

HLTH 322 : Environmental Health. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: HIth 100.

DESCRIPTION: Environmental factors as determinants of human health: ecosystem and population dynamics; biological, chemical, and physical hazards; risk assessment; economic, political, cultural, and genetic factors.

**Course Outcomes**

- Provide a global perspective of environmental issues impacting human health
- Describe the various biological, chemical and physical hazards of the ambient, indoor, and work environment that can adversely affect human health
- Discuss those determinents and factors that affect human health and the health of the environment
- Describe how environmental management practices may contribute to or help control emerging diseases
- Provide an assessment of those national and international health agencies, programs, and other resources that play critical roles in improving human health relative to environmental factors
- Discuss elements of policy making as they influence environmental health issues

HLTH 330 : Principles and Practices of Health Promotion. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

RECOMMENDED: HIth 100.

DESCRIPTION: Introduction to the health promotion profession, emphasizing current issues, professional preparation and employment, as well as the philosophy and foundations of professional practice in various settings.

**Course Outcomes**

- Identify professional opportunities available to health education/health promotion specialists in community, school, worksite, and health care settings.
- Identify the roles and responsibilities for health education/health promotion specialists and opportunities for certifications and advanced study.
- Identify organizations, resources, and professional journals associated with health promotion.
- Provide an overview of theories, models, and initiatives used to guide decision-making in the planning and implementation of health promotion programs and health behavior change.
- Demonstrate awareness and sensitivity of the diverse and unique needs of various age group populations and cultural groups for health promotion.
- Identify techniques for enhancing communication in interactions with clients in health promotion settings.
- Propose health promotion solutions to address health problems among various populations.

HLTH 335 : Health Behavior Change. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: HIth 330.

DESCRIPTION: Understanding health behavior change theories for individuals and populations. Practical application of related models and theories.

**Course Outcomes**

- Evaluate the ability of selected socio-behavioral theories and models for furthering understanding of important public health problems and issues, with particular reference to health promotion and disease prevention.
- Identify prominent features and constructs in commonly used theories and models of health behavior change.
- Identify the important role of culture in the context of behavior change.

HLTH 345 : Principles of Epidemiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: Stat 121.

DESCRIPTION: Applying analytical tools to study acute and chronic disease to facilitate investigation and control of epidemics.

**Course Outcomes**

- Investigate disease outbreaks.
- Describe basic concepts, definitions, and history of Epidemiology.
- Describe patterns of disease occurrence.
- Interpret Epidemiologic studies.

- Evaluate treatment effectiveness.
- Measure disease frequency and association.
- Distinguish between statistical association and cause-effect relationships.
- Know basic design strategies in Epidemiology.

HLTH 432 : Methods in Health Promotion. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: HLTH 100 & HLTH 330
RECOMMENDED: Hlth 332.
DESCRIPTION: Health promotion methods, interventions, and strategies that influence behaviors and advance public health practices within communities.

**Course Outcomes**

- 1. Identify the six major categories of methods for public health interventions. Additionally, distinguish between interventions, methods and strategies.
- 2. Explain, justify and apply the principles that guide the selection of and implementation of public health methods and strategies to include key factors such as unique community needs, best practice, evidence and effectiveness, political expediency, and cost.
- 3. Create awareness/education messages, including media products, to influence stakeholders, policy makers and their constituents on issues of public health importance.
- 4. Design plans to engage community members and key stakeholders to become involved in appropriate mobilization, communication, and/or policy strategies.
- 5. Identify appropriate advocacy strategies to influence decision makers, or prompt policy change, at organizational and community levels.
- 6. Enhance personal advocacy, communication, oral presentation, leadership and team-building skills appropriate for health promotion practice.

HLTH 434 : Evaluation Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: HLTH 100 & HLTH 330
RECOMMENDED: Hlth 332, 432.
DESCRIPTION: Design and carry out an evaluation plan that will measure the impact of public health programs at changing behaviors, knowledge, attitudes, and health status. Quantitative and qualitative methods will be discussed.
NOTE: This course should be completed after taking Hlth 432--Methods in Health Promotion, and prior to taking Health 439--Program Planning.

**Course Outcomes**

There are no course outcomes available

HLTH 439 : Program Planning. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: HLTH 100 & HLTH 330; Concurrent with Hlth 434.
RECOMMENDED: Hlth 432.
DESCRIPTION: Introduction to needs assessment, program development, implementation, and evaluation in health promotion and public health.

**Course Outcomes**

- 1. Conduct a needs assessment by collecting and analyzing data to determine the health needs of a community
- 2. Use needs assessment data and analysis to identify a priority population for interventions.
- 3. Distinguish between goals and objectives and develop process, impact and outcome objectives.
- 4. Select, implement and manage evidence-based interventions.
- 5. Establish appropriate budgets and program timelines.
- 6. Distinguish between process and outcome evaluation and apply appropriate strategies.
- 7. Understand and interpret the DHHS'sHealthy People 2020 and the CDC's Framework for Program Evaluation in Public Health.

2. Complete one course from the following:

PDBIO 210 : Human Anatomy (with virtual lab). (3:3:0)

OFFERED: Independent Study only.
DESCRIPTION: Structure and function of the human body. Virtual lab experience included.

**Course Outcomes**

- Students will be able to list the name, location, and function of each of the body's organs and organ systems.
- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.

Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

3. Complete the following courses:

MMBIO 221 : General Microbiology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Any biology course.
RECOMMENDED: Any chemistry course.
DESCRIPTION: Microbial world, emphasizing communicable diseases, their causes and control.
NOTE: Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses.

**Course Outcomes**

- Explain and discuss the ways by which microbiologists study microorganisms.
- Discuss the principle infectious diseases that affect mankind, including how they are transmitted, treated, controlled and prevented.
- Differentiate between the types of microorganisms by identifying relevant structure and their function in the biosphere.
- Propose microbial solutions to global problems.
- Describe how the human body defends itself against infectious agents.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

**Note**: Recommended for Stat 121: Math 110 or equivalent.

4. Complete 6 hours from the following:

HLTH 496R : Academic Internship. (.5-9:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: HLTH 439
DESCRIPTION: Senior capstone experience.

**Course Outcomes**

- Obtain experience, as proctored by an approved internship supervisor, to apply professional competencies in public health as assessed through an internship report and internship supervisor rating

**Note:** Prior to taking Hlth 496R, the student must complete Hlth 100, 310, 311, 322, 330, 345, 432, 434, and 439.

5. Complete 12 hours from the following (a minimum of six hours must be taken from departmental courses):

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

CHEM 101 : Introductory General Chemistry. (3:3:0)

WHEN Fall; Winter; Spring; Summer

TAUGHT:
PREREQUISITE: Math 97 or equivalent.
DESCRIPTION: Atomic and molecular structure, periodic relationships, states of matter, chemical reactions and stoichiometry, acids and bases.
NOTE: Primarily for nonscience majors who require a broad introduction to general chemistry.

**Course Outcomes**

- Students will be able to view the world around them in chemical terms. Students will use the concepts of atoms, molecules, and their properties to understand a variety of phenomena.
- Students will be able to make qualitative and/or quantitative predictions regarding a number of chemical concepts including chemical reactions and stoichiometry, calorimetry, osmosis, gases, acid/base chemistry, chemical equilibria, and radioactivity.

COMMS 235 : Introduction to Public Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Philosophy and practice of public relations in business, government, education, and other institutions. Study of publics, media, methods, press relations, and publicity.

**Course Outcomes**

There are no course outcomes available

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

HLTH 403R : Health Problems Workshop. (.5-5:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Summer

**Course Outcomes**

- Reflect a focused analysis of readings and conduct applied projects for a special readings topic important to public health.

HLTH 420 : Injury and Violence Prevention. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: HLTH 100
DESCRIPTION: Concepts and interventions related to both unintentional injuries and violence.

**Course Outcomes**

- Describe the impact of injures on health and on society in terms of mortality, morbidity, disability, and cost.
- Define the terms used in the injury prevention field.
- Describe the models used to analyze injuries and determine interventions.
- Select valid sources of injury prevention information.
- Select and recommend proven and effective injury prevention interventions.

HLTH 422 : Disaster Response and Emergency Preparedness. (3:3:0)

WHEN TAUGHT: Fall; Winter
RECOMMENDED: Hlth 311, 420.
DESCRIPTION: Key elements of public health preparedness and response to the variety of natural, technological, and man-made disasters occurring routinely on a global basis.
NOTE: Taught only as an evening course.

**Course Outcomes**

There are no course outcomes available

HLTH 443 : Field Epidemiology. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: HLTH 345
RECOMMENDED: Stat 121.
DESCRIPTION: Applying epidemiologic methods, including outbreak investigation; surveillance systems and methods; and infectious disease epidemiology to unexpected health problems when a rapid on-site investigation is necessary for timely intervention.

**Course Outcomes**

- Be familiar with the steps of a field investigation.
- Be familiar with surveys and sampling, analyzing and interpreting data, describing and communicating

the findings, dealing with the public and the media.
- Define cluster and cluster investigation methods for assessing reported clusters and discuss the process for investigating clusters. Identify the primary challenges in reported clusters.

HLTH 450 : Women's Health Issues. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Overview of selected health topics affecting women's health status. Primary emphasis on steps to enhance personal health and fulfill divine roles from childhood through adulthood.

**Course Outcomes**

- Identify and understand the determinants of women's health issues.(Learning activities: lecture, class discussion, videos, out of class activites, guest lecturers)
- Identify and report on specific chronic and infectious diseases that affect women.(Learning activities: lecture, class discussion, book review, guest lecture)
- Identify ways to improve women's health using a variety of assessment sources.(Learning activities: lecture, class discussion, review of CDC and other health statistics, interviews, guest lecture)

HLTH 460 : Substance Abuse and Addictive Behavior. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Physiological, psychological, sociological, and legal implications of drug use and addictive behaviors, emphasizing nature, cause, treatment, and prevention.

**Course Outcomes**

- Explain substance use and abuse from a multidisciplinary perspective.
- List and describe specific social policies that reduce alcohol, tobacco, and other drug use.
- Explain the major social determinants and predictors of substance use in the United States.
- Explain the biological basis of drug addiction.
- Describe the health problems and risk associated with specific drugs.
- Describe the marketing, public relations, and political activities of the tobacco and alcohol industries.
- Provide the descriptive epidemiology of substance abuse in the United States.

HLTH 466 : Health and the Aging Process. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Public health strategies to promote health and functional independence in the context of the inevitable consequence of aging.

**Course Outcomes**

- Understand the physiological aspects of the normal aging process.
- Understand aging as a pathological process and the factors in both the external and internal milieu, this may contribute to premature aging.
- Relate knowledge about the organic and infectious diseases, common disorders, and disabilities prevalent among the elderly to disease prevention and health promotion among the aged.
- Become exposed to professional literature pertaining to the biological, medical, and health aspects of aging including the use of clinical preventive services as noted by gerontology researchers.
- Understand the physiological aspects of aging and the experimental approaches used in studying the aging process.
- Identify and distinguish the federal, state, and community health programs and services for the aged, including medical care, hospitalization, extended care, rehabilitation, and health maintenance.
- Promote healthy lifestyle behaviors that help prevent premature aging, promote the health of the elderly, and contribute to the extension of the prime of life.
- Understand decision-making related to end-of-life planning.

HLTH 480 : International Health. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Identifying disease patterns in "developing" countries, exploring the social and cultural context of health, and reviewing behavior change strategies for improving well-being.

**Course Outcomes**

- Idenitfy behaviors that improve maternal and child health and how they may be specific for particular groups.
- Discuss the determinants of global diseases and why inequalities and inequities exist.
- Explain how culture, our own and others, facilitates or hinders practicing optimal health behaviors.
- Describe the leading causes of morbidity (sickness) and mortablity among women and children in the developing world.
- Discuss how undernutrition and overnutrition contribute to morbidity and mortality related to infectious and chronic disease.
- Using principles of epidemiology, identify the leading causes of morbidity (sickness) and mortablity among women and children in the developing world and compare the burden of disease across different regions of the world.
- Describe how monitoring, evaluation, and applied research improve health programs.
- Discuss successful, evidence-based strategies for changing behaviors and improving health.

HLTH 491R : Mentored Research. (.5-3:Arr.:0)

DESCRIPTION: Collaborate with professors on mentoring grants or other public health-related research and initiatives.

**Course Outcomes**

- Experience at least one subset of research skills while conducting supervised public health research with a faculty member.

(Up to three hours)

NDFS 100 : Essentials of Human Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Food-oriented study of nutritional facts and principles as a basis for dietary choices; consequences of choices; scientifically examining controversial topics.

**Course Outcomes**

- Apply the scientific method to identify and interpret credible nutrition information.
- Identify, interpret, and apply nutrition information.
- Identify functions of nutrients and their major food sources.

NDFS 201 : Society, Nutrition, and Chronic Disease. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NDFS 100

DESCRIPTION: Behavioral, dietary, and environmental factors that influence nutrition and risks for chronic disease.

**Course Outcomes**

- Explain or describe how behavioral, dietary, and environmental factors influence nutrition and chronic disease risks.
- Find scientific research articles and identify their key characteristics. Identify consistencies or inconsistencies in studies of diet and chronic disease risks.
- Apply information about behavioral, dietary, and environmental factors to reduce chronic disease risks.

(Prerequisite: NDFS 100)

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.

RECOMMENDED: A general biology course.

DESCRIPTION: Function of body organ systems.

NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

(Prerequisite: Chem 101 or equivalent and PDBio 220 or 210; Recommended: any biology course.)

## Recommended GE Courses:

ENGL 315 : Writing in the Social Sciences. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Writing characteristic of disciplines that inquire into human behavior and institutions; correspondence, proposals, library paper, empirical research, and reviews.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to specific rhetorical situations.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Successfully complete the library tour, tutorial, and tests (if not completed as part of the first-year writing requirement). Successfully complete a library mini-course taught for their major area and demonstrate the

ability to use the library effectively.
- Demonstrate the ability to create, number, and label tables and figures.
- Effectively evaluate and comment on the writing of others to facilitate revision.

Or

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

## Show all Health Science (Hlth) Courses

College of Life Sciences Home

Health Science Department Home

Majors

BS in Public Health:

Emphases:

- Environmental/ Occupational Health Emphasis
- Epidemiology Emphasis
- Health Promotion Emphasis
- Health Science Emphasis

Minors

- School Health Education

Course Information

- Health Science (Hlth) Courses

Faculty

# BS in Public Health: Health Science Emphasis (60-65 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## The Discipline

Public health professionals work to create conditions that ensure the health and safety of individuals, families, and communities. Public health students are trained to inform, educate, and empower people about health issues; mobilize communities to take ownership for their own health; monitor health status and diagnose and investigate health problems and health hazards; develop policies and laws to protect health and ensure safety; and link people to needed health services. The public health mission is carried out through organized, interdisciplinary efforts that address the physical, mental, and environmental health concerns of communities and populations at risk for disease and injury.

Four of several disciplines within public health are represented as emphases within the major: (1) environmental/occupational health identifies and controls factors in the environment (air, water, food, toxins, etc.) or conditions at the workplace which affect health; (2) epidemiology investigates and discovers what causes disease and disability and how diseases are spread or distributed across populations; (3) health promotion facilitates behavior change among individuals and improves population health through policy, advocacy, education, and communication; and (4) health science trains students interested in working in public health after earning an advanced degree in a medical, dental, or other allied health area.

## Career Opportunities

There has never been a better time to pursue a career in public health. It is an exciting and growing field of study and a diverse and dynamic profession. It is filled with rewards associated with the pursuit of serving others. The development and delivery of population-based prevention programs will be the key to major advances in health improvement in the 21st century. Public health will continue to be called upon to monitor and assess health problems, prevent and control diseases and injuries, and protect the health of communities and worksites from various environmental and occupational risks associated with man-made and natural disasters and emergencies.

Public health graduates are qualified to work in governmental health agencies on the local, state, federal, and international levels. Private-sector employment can be found in a variety of businesses, community health agencies, managed care organizations, hospitals, clinics, research institutes, voluntary health agencies, and non-governmental organizations. Opportunities for employment in public health are readily available, but recruiters will not typically come to campus to hire graduates. This means graduates must be organized and proactive in their career planning. Students can increase the likelihood of obtaining a position by balancing classroom activities with voluntary or paid service to public health agencies. Obtaining certifications related to specific tracks within the major and careful development of a professional portfolio enhance employment opportunities.

While there are many specialties or disciplines in public health, most career opportunities are found within the fields represented by the emphases in the major. Entry-level salaries with a bachelor's degree in public health will range from approximately $35,000–$60,000 but will vary significantly depending upon the specific discipline, type of organization, and geographic location.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following courses:

HLTH 100 : Introduction to Public Health. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Introduction to public health professions including exploration of current issues, job opportunities, the essential public health services, and an overview of the public health major.

**Course Outcomes**

- 1. Identify key events in the history of public health that have shaped the current state of the profession
- 2. Describe core public health values
- 3. Identify the ten essential public health services and describe which aspects of the profession hold the most relevance for employment and personal fulfillment
- 4. Delineate how health is defined and measured as well as recognize the impact of social, environmental, and behavioral determinants of health
- 5. Describe the importance of global health and recognize how actions in the US impact the rest of the world and vice versa
- 6. Identify the critical roles and contributions of epidemiology, environmental/occupational health, health promotion, medicine, and allied health within the public health profession
- 7. Determine their interest in the public health degree and identify the types of professional and educational opportunities available to them within public health

HLTH 310 : Chronic Diseases: Prevention and Control. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Pathogenesis, epidemiology of major chronic diseases, health costs to society, at-risk populations, population-based prevention, and related best-practice interventions.

**Course Outcomes**

There are no course outcomes available

HLTH 311 : Infectious Diseases: Prevention and Control. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Human infectious disease risk factors; bacterial, viral, and parasitic agents; pathology, diagnosis, treatment, prevention, and control; communicable, vector-borne, zoonotic, and bioterror diseases of public health.

**Course Outcomes**

There are no course outcomes available

HLTH 322 : Environmental Health. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: Hlth 100.

DESCRIPTION: Environmental factors as determinants of human health: ecosystem and population dynamics; biological, chemical, and physical hazards; risk assessment; economic, political, cultural, and genetic factors.

**Course Outcomes**

- Provide a global perspective of environmental issues impacting human health
- Describe the various biological, chemical and physical hazards of the ambient, indoor, and work environment that can adversely affect human health
- Discuss those determinents and factors that affect human health and the health of the environment
- Describe how environmental management practices may contribute to or help control emerging diseases
- Provide an assessment of those national and international health agencies, programs, and other resources that play critical roles in improving human health relative to environmental factors
- Discuss elements of policy making as they influence environmental health issues

HLTH 330 : Principles and Practices of Health Promotion. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

RECOMMENDED: Hlth 100.

DESCRIPTION: Introduction to the health promotion profession, emphasizing current issues, professional preparation and employment, as well as the philosophy and foundations of professional practice in various settings.

**Course Outcomes**

- Identify professional opportunities available to health education/health promotion specialists in community, school, worksite, and health care settings.
- Identify the roles and responsibilities for health education/health promotion specialists and opportunities for certifications and advanced study.
- Identify organizations, resources, and professional journals associated with health promotion.
- Provide an overview of theories, models, and initiatives used to guide decision-making in the planning and implementation of health promotion programs and health behavior change.
- Demonstrate awareness and sensitivity of the diverse and unique needs of various age group populations and cultural groups for health promotion.
- Identify techniques for enhancing communication in interactions with clients in health promotion settings.
- Propose health promotion solutions to address health problems among various populations.

HLTH 335 : Health Behavior Change. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: Hlth 330.

DESCRIPTION: Understanding health behavior change theories for individuals and populations. Practical application of related models and theories.

**Course Outcomes**

- Evaluate the ability of selected socio-behavioral theories and models for furthering understanding of important public health problems and issues, with particular reference to health promotion and disease prevention.
- Identify prominent features and constructs in commonly used theories and models of health behavior change.
- Identify the important role of culture in the context of behavior change.

HLTH 345 : Principles of Epidemiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: Stat 121.

DESCRIPTION: Applying analytical tools to study acute and chronic disease to facilitate investigation and control of epidemics.

**Course Outcomes**

- Investigate disease outbreaks.
- Describe basic concepts, definitions, and history of Epidemiology.
- Describe patterns of disease occurrence.
- Interpret Epidemiologic studies.

- Evaluate treatment effectiveness.
- Measure disease frequency and association.
- Distinguish between statistical association and cause-effect relationships.
- Know basic design strategies in Epidemiology.

HLTH 434 : Evaluation Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: HLTH 100 & HLTH 330
RECOMMENDED: Hlth 332, 432.
DESCRIPTION: Design and carry out an evaluation plan that will measure the impact of public health programs at changing behaviors, knowledge, attitudes, and health status. Quantitative and qualitative methods will be discussed.
NOTE: This course should be completed after taking Hlth 432--Methods in Health Promotion, and prior to taking Health 439--Program Planning.

**Course Outcomes**

There are no course outcomes available

HLTH 439 : Program Planning. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: HLTH 100 & HLTH 330; Concurrent with Hlth 434.
RECOMMENDED: Hlth 432.
DESCRIPTION: Introduction to needs assessment, program development, implementation, and evaluation in health promotion and public health.

**Course Outcomes**

- 1. Conduct a needs assessment by collecting and analyzing data to determine the health needs of a community
- 2. Use needs assessment data and analysis to identify a priority population for interventions.
- 3. Distinguish between goals and objectives and develop process, impact and outcome objectives.
- 4. Select, implement and manage evidence-based interventions.
- 5. Establish appropriate budgets and program timelines.
- 6. Distinguish between process and outcome evaluation and apply appropriate strategies.
- 7. Understand and interpret the DHHS'sHealthy People 2020 and the CDC's Framework for Program Evaluation in Public Health.

HLTH 447 : Introduction to Biostatistics. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: HLTH 345
RECOMMENDED: Hlth 440 and Stat 121.
DESCRIPTION: Introduction to statistical concepts and analytical methods as applied to data encountered in biotechnology and biomedical sciences. Emphasis on the basic concepts of experimental design, quantitative analysis of data, and statistical inferences.

**Course Outcomes**

There are no course outcomes available

2. Complete three hours (42 hours per credit) of the following:

HLTH 496R : Academic Internship. (.5-9:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: HLTH 439
DESCRIPTION: Senior capstone experience.

**Course Outcomes**

- Obtain experience, as proctored by an approved internship supervisor, to apply professional competencies in public health as assessed through an internship report and internship supervisor rating

Note: Prior to taking Hlth 496R, the student must complete Hlth 100, 310, 330, 434, and 439.

**Note:** Internships may have a combination of mentored public health practice experience, research, and/or humanitarian service elements.

3. Complete one of the following chemistry options:

**Either**

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.
DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.
NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.

- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

**Or**

CHEM 111 : Principles of Chemistry. (4:3:3)

OFFERED: Honors also.

WHEN TAUGHT: Fall

PREREQUISITE: Math 110 or equivalent.

RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.

DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.

NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

: Honors Principles of Chemistry.

**Course Outcomes**

CHEM 112 : Principles of Chemistry. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 111 or Chem 105 or equivalent.

DESCRIPTION: Continuation of Chem 111.

NOTE: Tutorial included.

**Course Outcomes**

- Students will be able to use thermodynamic principles and their application to physical and chemical equilibria to calculate entropic and enthalpic contributions to physical changes and reactions and predict equilibria given entropic and enthalpic changes.
- Students will be able to apply acid-base theory, including interactions of strong and weak acids and bases, to determination of pH values of solutions, calculating buffering capacity and performance of acid-base titrations. They will be able to use structural features of molecules to

estimate acid and base strength.
- Students will demonstrate an understanding of electrochemistry in designing simple electrodes and will use reduction/oxidation potentials to characterize electrodes.
- Students will be able to apply transition state theory to reaction kinetics. Students will be able to model mathematically rates of multiple reaction types.
- Students will be able to apply the periodic nature of the elements to classify elements and identify the compositions of inorganic salts.

CHEM 113 : Introductory General Chemistry Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Chem 112 or Chem 106 or concurrent enrollment (preferred).

DESCRIPTION: Principles and techniques of chemical measurements. Concepts introduced in general chemistry lecture courses reinforced.

**Course Outcomes**

- Perform precise quantitative measurements using volumetric glassware, analytical balances, and electrochemical and spectrophotometric instrumentation.
- Apply concepts of quantum mechanics, kinetics, equilibrium and thermodynamics taught in Chem 111 and Chem 112 to laboratory measurements.
- Apply a basic understanding of descriptive chemistry introduced in Chem 112 to the separation and classification of inorganic cations and anions.
- Record laboratory procedures and results neatly and concisely in a laboratory notebook
- Report experimental results in a manner that gives proper attention to sources of experimental error.

4. Complete the following chemistry courses:

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.

NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying

products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

(Must take 2 credit hours if pre-professional.)

5. Complete the following biology courses:

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105
DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.
NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

MMBIO 241 : Molecular and Cellular Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBio 240 or concurrent enrollment.
DESCRIPTION: Molecular and cellular biology techniques laboratory.

**Course Outcomes**

- Practice ethics and integrity by working with groups and following lab rules.*Relates to Program Learning Outcome: A commitment to professional integrity and ethical behavior consistent with themission of the university.
- Learn the basics of experimental design, how to formulate a hypothesis, what controls to use, how to interpret experimental data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Practice scientific communication through written lab questions, exams and oral presentations.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Learn molecular biology laboratory techniques through practical laboratory exercises. Techniques include, spectrophotometry,isolation of DNA and protein, quantification of DNA and protein, techniques used to purify or detect specific proteins, such aschromatography, western blot and ELISA, DNA fingerprinting, polymerase chain reaction and enzyme assays.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology.

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

6. Complete one of the following biology options:

**EITHER**

PDBIO 210 : Human Anatomy (with virtual lab). (3:3:0)

OFFERED: Independent Study only.
DESCRIPTION: Structure and function of the human body. Virtual lab experience included.

**Course Outcomes**

- Students will be able to list the name, location, and function of each of the body's organs and organ systems.
- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.

**Or**

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.

- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

**and**

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.
RECOMMENDED: A general biology course.
DESCRIPTION: Function of body organ systems.
NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

**OR**

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220
DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.
NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

PDBIO 363 : Advanced Physiology Laboratory. (1:.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PDBio 362 or concurrent enrollment; or instructor's consent.
DESCRIPTION: Experiments and exercises in advanced physiology emphasizing human physiology. Computer simulations of muscle function, endocrine disease, and human physiology. Emphasizes problem solving and calculations.

**Course Outcomes**

- Students will demonstrate the skills required to properly interpret data from scientific experimentation to discover how physiological systems function.
- Students will manifest an understanding of basic physiological principles by modeling how human cells, organs, and organ systems function.
- Students will describe how interactions between human organ systems work to maintain homeostasis.

7. Complete one of the following physics options:

**Either**

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: High school algebra and trigonometry.
RECOMMENDED: Concurrent enrollment in Phscs 107.
DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 105 or concurrent enrollment.
DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

**Or**

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 105 or concurrent enrollment.

DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

Recommended GE Courses:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

Recommended Courses:

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

PDBIO 325 : Tissue Biology (with lab). (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120 & PDBIO 220

DESCRIPTION: Human anatomy and histology; function of cells in tissue; early stages of embryology.

NOTE: Course should be taken during a student's second or third year and before courses in physiology and developmental biology.

**Course Outcomes**

- Students will be able to communicate with health professionals effectively regarding tissue/organ anatomy and physiology in instances of health and disease.
- Students will demonstrate how the relationship between cell organization and cell function correlates with normal and pathological organ behavior.
- Students will be able to describe anatomical and physiological characteristics of epithelial, connective, nervous, and muscular tissue.

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies
- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PDBIO 365 : Pathophysiology. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 305; or PDBIO 362

DESCRIPTION: Variations in physiological mechanisms that account for development of common disturbances in normal control and activities of body's organs and organ systems.

**Course Outcomes**

- Students will exhibit an integrative understanding of the biochemistry, molecular biology, genetics, cell biology, microbiology, environmental biology, and physiology related to the prevention, development, and treatment of common diseases.
- Students will demonstrate through case study analysis a command of problem solving skills related to the diagnosis and treatment of pathophysiological conditions.

- Pupils will manifest a command of the physiology and pathophysiological vocabulary necessary to effectively communicate with other biomedical professionals and the general public.
- Students will be able to articulate the ethical issues related to the treatment and prevention of pathophysiological conditions.
- Students will manifest an increase in their respect for the human body and adopt a life style consistent with this respect.

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 105 or equivalent.

RECOMMENDED: Concurrent enrollment in Phscs 108.

DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 106 or concurrent enrollment

DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

MCAT Prep Course (if taking MCAT)

*Hours include courses that may fulfill university core requirements.

## Show all Health Science (Hlth) Courses

College of Life Sciences Home

Health Science Department Home

Majors

BS in Public Health:

Emphases:

- Environmental/ Occupational Health Emphasis
- Epidemiology Emphasis
- Health Promotion Emphasis
- Health Science Emphasis

Minors

- School Health Education

Course Information

- Health Science (Hlth) Courses

Faculty

# Minor in School Health Education (21 hours)

Show All Course Descriptions
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*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements | View MAP

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following:

HLTH 310 : Chronic Diseases: Prevention and Control. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Pathogenesis, epidemiology of major chronic diseases, health costs to society, at-risk populations, population-based prevention, and related best-practice interventions.

**Course Outcomes**

There are no course outcomes available

HLTH 381 : School Health Education Methods and Curriculum A. (3:2.5:0)

WHEN TAUGHT: Fall

PREREQUISITE: HLTH 276R

DESCRIPTION: Part A of methods and curriculum preparation; effective implementation of instruction related to substance abuse prevention, safety and injury prevention, and reproductive health for secondary students; unit and lesson planning, assessment of learner performance; practice teaching.

**Course Outcomes**

- Identify and apply teaching resources, national and state standards, and state frameworks for teaching health education.
- Identify and apply strategies for creating classroom environments conducive to optimal learning and emotional well-being.
- Identify health risks, concerns, and challenges confronting school-age youth and develop teaching materials for helping strategies.
- Identify and experiment with a variety of instructional strategies and teaching methods to enhance health teaching including those that emphasize active learning and skill development.
- Evaluate possible teaching methods and select the best method(s) to use when teaching specific health content areas.
- Apply a systematic instructional design process to lesson planning that utilizes Teacher Work Sample steps and provides sufficient detail and clarity for other educators to teach the lesson plan as designed and intended.

HLTH 382 : School Health Education Methods and Curriculum B. (3:2.5:0)

WHEN TAUGHT: Winter

PREREQUISITE: HLTH 276R

DESCRIPTION: Part B of methods and curriculum preparation; effective implementation of instruction related to mental and emotional health, nutrition and fitness, and disease prevention for secondary students; unit and lesson planning, assessment of learner performance; practice teaching.

**Course Outcomes**

- Create a semester outline, unit maps, and lesson plans for a secondary school health education course based upon National School Health Education Standards and the Utah State Office of Education Core Curriculum.
- Know and demonstrate effective characteristics of health education.
- Demonstrate professionalism in conduct, character, collaboration, and attitude.
- Qualify for student teaching field experience by completing a practicum and Teacher Work Sample, passing the Praxis exam, and successfully completing a student teaching application.

HLTH 436 : Sexuality Education in the Curriculum. (3:3:0)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Preparing prospective teachers to teach sexuality education related to health curricula. Maturation, family health issues, parenthood, interpersonal skills, and related pedagogy issues.

**Course Outcomes**

- By the end of this course, each student will address and resolve concerns related to sexuality education and the promotion of sexual health in a caring, professional, and competent manner.
- By the end of this course, each student will demonstrate a mastery of the content knowledge necessary to teach sexuality education in professional settings.
- By the end of this course, each student will be familiar with the rules and regulations for sexuality education in Utah's public schools.
- By the end of this course, each student will demonstrate an understanding of sexuality education research related to a specific area of their intended professional service.
- By the end of this course, each student will demonstrate an understanding of sexuality education information related to a specific area of thier intended professional service.

HLTH 460 : Substance Abuse and Addictive Behavior. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Physiological, psychological, sociological, and legal implications of drug use and addictive behaviors, emphasizing nature, cause, treatment, and prevention.

**Course Outcomes**

- Explain substance use and abuse from a multidisciplinary perspective.
- List and describe specific social policies that reduce alcohol, tobacco, and other drug use.
- Explain the major social determinants and predictors of substance use in the United States.
- Explain the biological basis of drug addiction.
- Describe the health problems and risk associated with specific drugs.
- Describe the marketing, public relations, and political activities of the tobacco and alcohol industries.
- Provide the descriptive epidemiology of substance abuse in the United States.

NDFS 100 : Essentials of Human Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Food-oriented study of nutritional facts and principles as a basis for dietary choices; consequences of choices; scientifically examining controversial topics.

**Course Outcomes**

- Apply the scientific method to identify and interpret credible nutrition information.
- Identify, interpret, and apply nutrition information.
- Identify functions of nutrients and their major food sources.

3. Complete three hours from the following:

HLTH 320 : Advanced First Aid and Safety. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: In-depth coverage of first aid procedures for injuries and sudden illness. Leads to first aid and CPR certifications.

**Course Outcomes**

- Demonstrate the skills involving cardiopulmonary rescuitation (CPR), automated external defibrillation (AED), bandaging, and splinting.
- Identify the importance of first aid and emergency care
- Recognize specific emergency problems (i.e., heart attack, fracture, open wound, burn insect sting) through their signs and symptoms.
- Identify the decisions involved during an emergency.
- Describe proper first aid and emergency care procedures for specific emergency problems.

HLTH 335 : Health Behavior Change. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: HIth 330.

DESCRIPTION: Understanding health behavior change theories for individuals and populations. Practical application of related models and theories.

**Course Outcomes**

- Evaluate the ability of selected socio-behavioral theories and models for furthering understanding of important public health problems and issues, with particular reference to health promotion and disease prevention.
- Identify prominent features and constructs in commonly used theories and models of health behavior change.
- Identify the important role of culture in the context of behavior change.

HLTH 420 : Injury and Violence Prevention. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: HLTH 100

DESCRIPTION: Concepts and interventions related to both unintentional injuries and violence.

**Course Outcomes**

- Describe the impact of injures on health and on society in terms of mortality, morbidity, disability, and cost.
- Define the terms used in the injury prevention field.
- Describe the models used to analyze injuries and determine interventions.
- Select valid sources of injury prevention information.
- Select and recommend proven and effective injury prevention interventions.

## Show all Health Science (Hlth) Courses

College of Life Sciences Home

Health Science Department Home

Majors

BS in Public Health:

Emphases:

- Environmental/ Occupational Health Emphasis
- Epidemiology Emphasis
- Health Promotion Emphasis
- Health Science Emphasis

Minors

- School Health Education

Course Information

- Health Science (Hlth) Courses

Faculty

# Health Science (Hlth)

Show All Course Descriptions
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## Undergraduate Courses

### 100-Level Courses

HLTH 100 : Introduction to Public Health. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Introduction to public health professions including exploration of current issues, job opportunities, the essential public health services, and an overview of the public health major.

**Course Outcomes**

- 1. Identify key events in the history of public health that have shaped the current state of the profession
- 2. Describe core public health values
- 3. Identify the ten essential public health services and describe which aspects of the profession hold the most relevance for employment and personal fulfillment
- 4. Delineate how health is defined and measured as well as recognize the impact of social, environmental, and behavioral determinants of health
- 5. Describe the importance of global health and recognize how actions in the US impact the rest of the world and vice versa
- 6. Identify the critical roles and contributions of epidemiology, environmental/occupational health, health promotion, medicine, and allied health within the public health profession
- 7. Determine their interest in the public health degree and identify the types of professional and educational opportunities available to them within public health

### 200-Level Courses

HLTH 201 : Contemporary Issues for Student Athletes. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Eligibility issues for intercollegiate student athletes. Skills relating to academic performance and career selection.

**Course Outcomes**

- Orient new freshman student-athletes to BYU and the resources available for them in the Student Athlete Academic Center.
- Learn basics life skills that will enhance the BYU experience of each student-athlete and prepare them for life after college.
- Learn the basic principles and skills of sport psychology that will enhance performance.
- Gain a better understanding of sports nutrition and its impact on performance.
- Experience the positive benefits of serving in the community.

HLTH 276R : Exploration of Teaching. (3:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: FBI fingerprint and background clearance; major area preadmission requirements.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

- Complete the BYU educator preparation admission requirements (Transition 1) including: mandatory orientation, LiveText registration, Student Field Experience Demographics (FED), Technology Skills Assessment (TSA), Professional & Interpersonal Behavior Scale (PIBS), Dispositional Scale: Self-Assessment, and Graduation Plan.
- Identify the moral dimensions of education and the requirements for the Teacher Work Sample (TWS). Write a Contextual Factors for a school observed.
- Demonstrate familiarity with the Utah State health education core curriculum framework, the National Health Education Standards, the CDC's six categories of risk behavior and principles of effective instruction in the 21st Century.
- Identify, observe, and reflect upon the characteristics, behaviors, skills, routines, and practices of effective health
- Evaluate personal and professional dispositions, strengths and weaknesses relevant to teaching health education at the secondary level.

**300-Level Courses**

HLTH 310 : Chronic Diseases: Prevention and Control. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Pathogenesis, epidemiology of major chronic diseases, health costs to society, at-risk populations, population-based prevention, and related best-practice interventions.

**Course Outcomes**

There are no course outcomes available

HLTH 311 : Infectious Diseases: Prevention and Control. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Human infectious disease risk factors; bacterial, viral, and parasitic agents; pathology, diagnosis, treatment, prevention, and control; communicable, vector-borne, zoonotic, and bioterror diseases of public health.

**Course Outcomes**

There are no course outcomes available

HLTH 320 : Advanced First Aid and Safety. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: In-depth coverage of first aid procedures for injuries and sudden illness. Leads to first aid and CPR certifications.

**Course Outcomes**

- Demonstrate the skills involving cardiopulmonary rescuitation (CPR), automated external defibrillation (AED), bandaging, and splinting.
- Identify the importance of first aid and emergency care
- Recognize specific emergency problems (i.e., heart attack, fracture, open wound, burn insect sting) through their signs and symptoms.
- Identify the decisions involved during an emergency.
- Describe proper first aid and emergency care procedures for specific emergency problems.

HLTH 322 : Environmental Health. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: Hlth 100.

DESCRIPTION: Environmental factors as determinants of human health: ecosystem and population dynamics; biological, chemical, and physical hazards; risk assessment; economic, political, cultural, and genetic factors.

**Course Outcomes**

- Provide a global perspective of environmental issues impacting human health
- Describe the various biological, chemical and physical hazards of the ambient, indoor, and work environment that can adversely affect human health
- Discuss those determinents and factors that affect human health and the health of the environment
- Describe how environmental management practices may contribute to or help control emerging diseases
- Provide an assessment of those national and international health agencies, programs, and other resources that play critical roles in improving human health relative to environmental factors
- Discuss elements of policy making as they influence environmental health issues

HLTH 330 : Principles and Practices of Health Promotion. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

RECOMMENDED: Hlth 100.

DESCRIPTION: Introduction to the health promotion profession, emphasizing current issues, professional preparation and employment, as well as the philosophy and foundations of professional practice in various settings.

**Course Outcomes**

- Identify professional opportunities available to health education/health promotion specialists in community, school, worksite, and health care settings.
- Identify the roles and responsibilities for health education/health promotion specialists and opportunities for certifications and advanced study.
- Identify organizations, resources, and professional journals associated with health promotion.
- Provide an overview of theories, models, and initiatives used to guide decision-making in the planning and implementation of health promotion programs and health behavior change.
- Demonstrate awareness and sensitivity of the diverse and unique needs of various age group populations and cultural groups for health promotion.
- Identify techniques for enhancing communication in interactions with clients in health promotion settings.
- Propose health promotion solutions to address health problems among various populations.

HLTH 332 : Technology in Health Promotion. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Application of computer software and electronic communication technologies in health promotion.

**Course Outcomes**

There are no course outcomes available

HLTH 335 : Health Behavior Change. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: HIth 330.

DESCRIPTION: Understanding health behavior change theories for individuals and populations. Practical application of related models and theories.

**Course Outcomes**

- Evaluate the ability of selected socio-behavioral theories and models for furthering understanding of important public health problems and issues, with particular reference to health promotion and disease prevention.
- Identify prominineni features and constructs in commonly used theories and models of health behavior change.
- Identify the important role of culture in the context of behavior change.

HLTH 345 : Principles of Epidemiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: Stat 121.

DESCRIPTION: Applying analytical tools to study acute and chronic disease to facilitate investigation and control of epidemics.

**Course Outcomes**

- Investigate disease outbreaks.
- Describe basic concepts, definitions, and history of Epidemiology.
- Describe patterns of disease occurrence.
- Interpret Epidemiologic studies.
- Evaluate treatment effectiveness.
- Measure disease frequency and association.
- Distinguish between statistical association and cause-effect relationships.
- Know basic design strategies in Epidemiology.

HLTH 361 : School Health for Elementary Teachers. (2:2:0)

DESCRIPTION: Preparing for the role as a health educator, emphasizing skill-based teaching methods and acquisition of teaching resources.

**Course Outcomes**

- 1. Students will demonstrate a sound understanding of health education content included in the Utah State Core Curriculum.
- 1. Students will integrate the Utah State Core Curriculum for elementary health instruction into their 9-month teaching calendar.
- 1. Students will demonstrate a variety of methods for teaching the Utah State Core Curriculum for elementary health instruction.
- 1. Students will apply key health education practices and principles.

HLTH 381 : School Health Education Methods and Curriculum A. (3:2.5:0)

WHEN TAUGHT: Fall

PREREQUISITE: HLTH 276R

DESCRIPTION: Part A of methods and curriculum preparation; effective implementation of instruction related to substance abuse prevention, safety and injury prevention, and reproductive health for secondary students; unit and lesson planning, assessment of learner performance; practice teaching.

**Course Outcomes**

- Identify and apply teaching resources, national and state standards, and state frameworks for teaching health education.
- Identify and apply strategies for creating classroom environments conducive to optimal learning and emotional well-being.
- Identify health risks, concerns, and challenges confronting school-age youth and develop teaching materials for helping strategies.
- Identify and experiment with a variety of instructional strategies and teaching methods to enhance health teaching including those that emphasize active learning and skill development.
- Evaluate possible teaching methods and select the best method(s) to use when teaching specific health content areas.
- Apply a systematic instructional design process to lesson planning that utilizes Teacher Work Sample steps and provides sufficient detail and clarity for other educators to teach the lesson plan as designed and intended.

HLTH 382 : School Health Education Methods and Curriculum B. (3:2.5:0)

WHEN TAUGHT: Winter

PREREQUISITE: HLTH 276R

DESCRIPTION: Part B of methods and curriculum preparation; effective implementation of instruction related to mental and emotional health, nutrition and fitness, and disease prevention for secondary students; unit and lesson planning, assessment of learner performance; practice teaching.

**Course Outcomes**

- Create a semester outline, unit maps, and lesson plans for a secondary school health education course based upon National School Health Education Standards and the Utah State Office of Education Core Curriculum.
- Know and demonstrate effective characteristics of health education.
- Demonstrate professionalism in conduct, character, collaboration, and attitude.
- Qualify for student teaching field experience by completing a practicum and Teacher Work Sample, passing the Praxis exam, and successfully completing a student teaching application.

HLTH 383 : Mind/Body Health. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Theories and research on the effect of emotions and attitudes on health: how negative emotions increase disease susceptibility and positive emotions encourage immune strength, health, and healing. Behavioral medicine and complementary and alternative health practices also presented.

**Course Outcomes**

- Identify and understand the connection between mental processes/beliefs and how they contribute to chronic and infectious disease.(Learning activities: lecture, class discussion, group presentations, videos)
- Identify and evaluate the behavioral, social, and cultural thought processes that contribute to disease.(Learning activities: lecture, class discussion, research study reviews, exams)

### 400-Level Courses

HLTH 402R : Driver and Safety Education Workshop. (.5-7:0:2)

OFFERED: Independent Study also.

DESCRIPTION: Current safety education problems.

**Course Outcomes**

There are no course outcomes available

HLTH 403R : Health Problems Workshop. (.5-5:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Summer

**Course Outcomes**

- Reflect a focused analysis of readings and conduct applied projects for a special readings topic important to public health.

HLTH 420 : Injury and Violence Prevention. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: HLTH 100

DESCRIPTION: Concepts and interventions related to both unintentional injuries and violence.

**Course Outcomes**

- Describe the impact of injures on health and on society in terms of mortality, morbidity, disability, and cost.
- Define the terms used in the injury prevention field.
- Describe the models used to analyze injuries and determine interventions.
- Select valid sources of injury prevention information.
- Select and recommend proven and effective injury prevention interventions.

HLTH 422 : Disaster Response and Emergency Preparedness. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Hlth 311, 420.

DESCRIPTION: Key elements of public health preparedness and response to the variety of natural, technological, and man-made disasters occurring routinely on a global basis.

NOTE: Taught only as an evening course.

**Course Outcomes**

There are no course outcomes available

HLTH 424 : Occupational Health and Safety. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: HLTH 100 & HLTH 322

DESCRIPTION: In-depth focus on workplace health and safety through a multidisciplinary approach to the anticipation, recognition, evaluation, and prevention and control of workplace-related illnesses and injuries.

**Course Outcomes**

- Demonstrate competency in using the OSHA standards by identifying specific violations of current standards.
- Describe the purpose and scope of the Occupational Health and Safety Act as well as other relevant safety and health legislation and consensus standards.
- Discuss and demonstrate the elements involved in completing an accident investigation.
- Explain how the functions of management are utilized to assure safe conditions and practices through the development of specific programs as well as an overall safety and health program.
- Identify, evaluate, and develop loss control strategies to address the hazards associated with operating common manufacturing and construction equipment and processes.

HLTH 426 : Fundamentals of Toxicology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent with Hlth 424.

RECOMMENDED: Chem 106, 107.

NOTE: Examines basic concepts of toxicology as they apply to environmental toxicology. Discusses toxicokinetics of foreign chemical agents on biological systems. Focuses on understanding and prevention of mortality and morbidity resulting from environmental exposure to toxic substances.

**Course Outcomes**

There are no course outcomes available

HLTH 432 : Methods in Health Promotion. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: HLTH 100 & HLTH 330

RECOMMENDED: HIth 332.

DESCRIPTION: Health promotion methods, interventions, and strategies that influence behaviors and advance public health practices within communities.

**Course Outcomes**

- 1. Identify the six major categories of methods for public health interventions. Additionally, distinguish between interventions, methods and strategies.
- 2. Explain, justify and apply the principles that guide the selection of and implementation of public health methods and strategies to include key factors such as unique community needs, best practice, evidence and effectiveness, political expediency, and cost.
- 3. Create awareness/education messages, including media products, to influence stakeholders, policy makers and their constituents on issues of public health importance.
- 4. Design plans to engage community members and key stakeholders to become involved in appropriate mobilization, communication, and/or policy strategies.
- 5. Identify appropriate advocacy strategies to influence decision makers, or prompt policy change, at organizational and community levels.
- 6. Enhance personal advocacy, communication, oral presentation, leadership and team-building skills appropriate for health promotion practice.

HLTH 434 : Evaluation Methods. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: HLTH 100 & HLTH 330

RECOMMENDED: HIth 332, 432.

DESCRIPTION: Design and carry out an evaluation plan that will measure the impact of public health programs at changing behaviors, knowledge, attitudes, and health status. Quantitative and qualitative methods will be discussed.

NOTE: This course should be completed after taking HIth 432--Methods in Health Promotion, and prior to taking Health 439--Program Planning.

**Course Outcomes**

There are no course outcomes available

HLTH 436 : Sexuality Education in the Curriculum. (3:3:0)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Preparing prospective teachers to teach sexuality education related to health curricula. Maturation, family health issues, parenthood, interpersonal skills, and related pedagogy issues.

**Course Outcomes**

- By the end of this course, each student will address and resolve concerns related to sexuality education and the promotion of sexual health in a caring, professional, and competent manner.
- By the end of this course, each student will demonstrate a mastery of the content knowledge necessary to teach sexuality education in professional settings.
- By the end of this course, each student will be familiar with the rules and regulations for sexuality education in Utah's public schools.
- By the end of this course, each student will demonstrate an understanding of sexuality education research related to a specific area of their intended professional service.
- By the end of this course, each student will demonstrate an understanding of sexuality education information related to a specific area of thier intended professional service.

HLTH 438 : Social Marketing. (3:3:0)

WHEN TAUGHT: Spring

RECOMMENDED: HIth 330, 332, 437.

DESCRIPTION: Social marketing, including formative research, audience analysis, segmentation, marketing mix, strategies, pretesting; application to health promotion and public health.

**Course Outcomes**

- Be able to develop a social marketing plan.

HLTH 439 : Program Planning. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: HLTH 100 & HLTH 330; Concurrent with HIth 434.

RECOMMENDED: HIth 432.

DESCRIPTION: Introduction to needs assessment, program development, implementation, and evaluation in health promotion and public health.

**Course Outcomes**

- 1. Conduct a needs assessment by collecting and analyzing data to determine the health needs of a community
- 2. Use needs assessment data and analysis to identify a priority population for interventions.
- 3. Distinguish between goals and objectives and develop process, impact and outcome objectives.
- 4. Select, implement and manage evidence-based interventions.
- 5. Establish appropriate budgets and program timelines.
- 6. Distinguish between process and outcome evaluation and apply appropriate strategies.
- 7. Understand and interpret the DHHS'sHealthy People 2020 and the CDC's Framework for Program Evaluation in Public Health.

HLTH 440 : Computer Applications in Epidemiology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HLTH 345

RECOMMENDED: Stat 121.

DESCRIPTION: Introduction to the basics of SAS and EXCEL focusing on the set of commands useful for data-reporting, data-management, formatting and graphics, and data-analysis. Topics include tables and regression models for epidemiologists (cumulative-incidence, case-control, and incidence rate data).

**Course Outcomes**

- Identify the principles of data management.
- Describe how/when to use tables, charts and graphs for data presentation.
- Create tables, graphs and charts in Excel for presenting public health data.
- Use SAS to manipulate datasets provided by sources such as the Centers for Disease Control and Prevention.
- Use basic SAS procedures to explore, describe and analyze data, including proc contents, proc freq, proc means, proc univariate and proc print.
- Clean and recode data to prepare it for analysis using a variety of data cleaning techniques. Document all cleaning and recoding using comments in the SAS program and external documentation (code books, data dictionaries etc.).
- Create clear and documented output using labels, titles, and formats.
- Conduct basic analyses using SAS including Proc Ttest, Proc ANOVA, Proc Corr, Proc GLM and Proc Logistic.

HLTH 441 : Clinical Trials. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: HLTH 345

RECOMMENDED: Stat 121.

DESCRIPTION: Introduction to methods used in the design, interim monitoring, and analysis of clinical trials, including the impact of patient exclusions and other causes of incomplete data. Concepts and principles emphasized. Main focus on randomized Phase III (comparative) trials.

**Course Outcomes**

- Develop the capacity to evaluate the design, analysis, and interpretation of human studies.
- Practice the skills needed to identify research opportunities and design studies that pursue those opportunities.
- Develop the capacity for oral and written evaluation of research, as well as oral and written presentation of individual study proposals.

HLTH 442 : Special Topics in Epidemiology. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Hlth 345, Stat 121.

DESCRIPTION: Topics include environmental epidemiology, statistical methods in epidemiology, social epidemiology, genetic epidemiology, categorical data analysis, applied longitudinal analysis, survival analysis, and life table methods.

**Course Outcomes**

- Explain the Basic Elements of Research, Exposure and Outcome Assessment
- Show how Monitoring is accomplished in Environmental Health
- Describe Epidemiologic Study Designs and explain Statistical Modeling and Causal Inference
- Explain challenges associated with investigating Disease Clusters
- Describe Mapping, Geographic Information Systems and Time Series
- Give examples of current health issues in Indoor and Ambient Air Quality
- Give examples of current health issues in Soil and Food Contaminants
- Give examples of current health issues in Water and Radiation
- Describe how Climate Change can affect Health

HLTH 443 : Field Epidemiology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: HLTH 345

RECOMMENDED: Stat 121.

DESCRIPTION: Applying epidemiologic methods, including outbreak investigation; surveillance systems and methods; and infectious disease epidemiology to unexpected health problems when a rapid on-site investigation is necessary for timely intervention.

**Course Outcomes**

- Be familiar with the steps of a field investigation.
- Be familiar with surveys and sampling, analyzing and interpreting data, describing and communicating the findings, dealing with the public and the media.
- Define cluster and cluster investigation methods for assessing reported clusters and discuss the process for investigating clusters. Identify the primary challenges in reported clusters.

HLTH 446 : Driver Simulators and Driving Ranges. (2:2:1)

DESCRIPTION: Simulator and multiple-car driving range methodology, emphasizing operation and maintenance.

**Course Outcomes**

There are no course outcomes available

HLTH 447 : Introduction to Biostatistics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: HLTH 345

RECOMMENDED: Hlth 440 and Stat 121.

DESCRIPTION: Introduction to statistical concepts and analytical methods as applied to data encountered in biotechnology and

biomedical sciences. Emphasis on the basic concepts of experimental design, quantitative analysis of data, and statistical inferences.

**Course Outcomes**

There are no course outcomes available

HLTH 450 : Women's Health Issues. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Overview of selected health topics affecting women's health status. Primary emphasis on steps to enhance personal health and fulfill divine roles from childhood through adulthood.

**Course Outcomes**

- Identify and understand the determinants of women's health issues.(Learning activities: lecture, class discussion, videos, out of class activites, guest lecturers)
- Identify and report on specific chronic and infectious diseases that affect women.(Learning activities: lecture, class discussion, book review, guest lecture)
- Identify ways to improve women's health using a variety of assessment sources.(Learning activities: lecture, class discussion, review of CDC and other health statistics, interviews, guest lecture)

HLTH 460 : Substance Abuse and Addictive Behavior. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Physiological, psychological, sociological, and legal implications of drug use and addictive behaviors, emphasizing nature, cause, treatment, and prevention.

**Course Outcomes**

- Explain substance use and abuse from a multidisciplinary perspective.
- List and describe specific social policies that reduce alcohol, tobacco, and other drug use.
- Explain the major social determinants and predictors of substance use in the United States.
- Explain the biological basis of drug addiction.
- Describe the health problems and risk associated with specific drugs.
- Describe the marketing, public relations, and political activities of the tobacco and alcohol industries.
- Provide the descriptive epidemiology of substance abuse in the United States.

HLTH 466 : Health and the Aging Process. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Public health strategies to promote health and functional independence in the context of the inevitable consequence of aging.

**Course Outcomes**

- Understand the physiological aspects of the normal aging process.
- Understand aging as a pathological process and the factors in both the external and internal milieu, this may contribute to premature aging.
- Relate knowledge about the organic and infectious diseases, common disorders, and disabilities prevalent among the elderly to disease prevention and health promotion among the aged.
- Become exposed to professional literature pertaining to the biological, medical, and health aspects of aging including the use of clinical preventive services as noted by gerontology researchers.
- Understand the physiological aspects of aging and the experimental approaches used in studying the aging process.
- Identify and distinguish the federal, state, and community health programs and services for the aged, including medical care, hospitalization, extended care, rehabilitation, and health maintenance.
- Promote healthy lifestyle behaviors that help prevent premature aging, promote the health of the elderly, and contribute to the extension of the prime of life.
- Understand decision-making related to end-of-life planning.

HLTH 476 : Secondary Student Teaching. (12:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of course work or department approval; requires a major GPA of 2.85; at least a C- in HIth 421.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Successful completion of TWS sections 1-7.
- Successful completion of a year long internship or 14 week student teaching placement.
- University Supervisor and Mentor Teacher CPAS scores of 3 or higher on each of the the 10 CPAS principles.
- Completion of the Praxis exam.
- Completion of the PIBS university supervisor assessment.Completion of the PIBS self-assessment.

HLTH 480 : International Health. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Identifying disease patterns in "developing" countries, exploring the social and cultural context of health, and reviewing behavior change strategies for improving well-being.

**Course Outcomes**

- Idenitfy behaviors that improve maternal and child health and how they may be specific for particular groups.

- Discuss the determinants of global diseases and why inequalities and inequities exist.
- Explain how culture, our own and others, facilitates or hinders practicing optimal health behaviors.
- Describe the leading causes of morbidity (sickness) and mortablity among women and children in the developing world.
- Discuss how undernutrition and overnutrition contribute to morbidity and mortality related to infectious and chronic disease.
- Using principles of epidemiology, identify the leading causes of morbidity (sickness) and mortablity among women and children in the developing world and compare the burden of disease across different regions of the world.
- Describe how monitoring, evaluation, and applied research improve health programs.
- Discuss successful, evidence-based strategies for changing behaviors and improving health.

HLTH 491R : Mentored Research. (.5-3:Arr.:0)

DESCRIPTION: Collaborate with professors on mentoring grants or other public health-related research and initiatives.

**Course Outcomes**

- Experience at least one subset of research skills while conducting supervised public health research with a faculty member.

HLTH 496R : Academic Internship. (.5-9:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: HLTH 439

DESCRIPTION: Senior capstone experience.

**Course Outcomes**

- Obtain experience, as proctored by an approved internship supervisor, to apply professional competencies in public health as assessed through an internship report and internship supervisor rating

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Health Science Department Home**

College of Life Sciences Home

Health Science Department Home

Majors

BS in Public Health:

Emphases:

- Environmental/ Occupational Health Emphasis
- Epidemiology Emphasis
- Health Promotion Emphasis
- Health Science Emphasis

Minors

- School Health Education

Course Information

- Health Science (Hlth) Courses

Faculty

# Health Science Faculty

Show All
Hide All

## Professors

Barnes, Michael D.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Professor
**DEGREES:** AS, Ricks College, 1986
BS, Brigham Young University, 1989
MS, Brigham Young University, 1990
PhD, Southern Illinois University, Carbondale, 1993

Cole, Eugene Charles

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Professor
**DEGREES:** BA, Adelphi University, 1968
MSPH, University of North Carolina, 1979
DRPH, University of North Carolina, 1983

Lindsay, Gordon B.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
MS, University of Utah, 1980
PhD, Ohio State University, 1984

Merrill, Ray Martell

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1986
MS, Brigham Young University, 1989
PhD, Arizona State University, 1994
MPH, Harvard University, 1995

Neiger, Brad Lee

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1983
MS, Brigham Young University, 1984
PhD, University of Utah, 1991

Page, Randy M.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1979
MHE, Brigham Young University, 1980
PhD, Southern Illinois University, 1982

Thackeray, Rosemary

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Professor

**DEGREES:** BS, Utah State University, 1991
MPH, University of Utah, 1996
PhD, University of Utah, 2000

## Associate Professors

Hanson, Carl Lee
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Brigham Young University, 1991
PhD, Southern Illinois University, Carbondale, 1994

Johnston, James D.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Associate Professor
**DEGREES:** BS, Weber State University, 1998
MSPH, University of Utah, 2000
PhD, University of Utah, 2010

Novilla, Maria Lelinneth Lagman Beloy
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Associate Professor
**DEGREES:** BS, University of the Philippines, 1986
MD, University of the City of Manila, College of Medicine, 1991
MPH, University of Utah, 1999

## Assistant Professors

Crookston, Benjamin T.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MPH, Brigham Young University, 2006
PhD, University of Utah, 2009

Hall, Cougar P.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1998
MS, University of Utah, 2003
PhD, University of Utah, 2009

Magnusson, Brianna
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University
MPH, Virginia Commonwealth University
PhD, Virginia Commonwealth University

Sloan, Chantel D.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University-Hawaii, 2004
PhD, Dartmouth College, 2009

Thacker, Evan L.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003

SM, Harvard, 2005
PhD, University of Washington, 2011

Thygerson, Steven M.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1998
MSPH, University of Utah, 2001
PhD, Colorado State University 2006

West, Joshua H.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Assistant Professor
**DEGREES:** BA, Utah State University, 2005
MPH, San Diego State University, 2005
PhD, University of California, San Diego/San Diego State University, 2008

## Emeriti

Heiner, Steven W.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Emeritus
**DEGREES:** BS, University of Utah, 1955
MS, University of Utah, 1962
EdD, University of Utah, 1969

Thygerson, Alton Luie

**COLLEGE:** Life Sciences
**DEPARTMENT:** Health Science
**RANK:** Emeritus
**DEGREES:** BS, Brigham Young University, 1962
MHEd, Brigham Young University, 1965
EdD, Brigham Young University, 1969

College of Life Sciences Home

Life Sciences Student Services Home

Program

- Life Sciences Preparation (Premajor Program)

Course Information

- Life Sciences (LfSci) Courses

# Life Sciences Student Services

Shauna C. Anderson Young, Assistant Dean
2060 LSB, (801) 422-3042

## Admission to Life Sciences Preparation (Premajor Program)

The program has open enrollment.

## The Discipline

This is a premajor program for students interested in biology or life sciences and haven't decided on a specific major. It will allow students to investigate the science classes and then move to a major in the college without losing time to graduation.

## Learning Outcomes

- Articulate and define personal, educational, and career goals.
- Describe critical thinking and be able to use it in pertinent decision-making processes.
- Realistically evaluate personal academic records.
- Design a curriculum plan that will meet career goals in the most time efficient manner.
- Describe character attributes that reflect high moral and ethical standards.
- Define and implement service in a broad context.
- Characterize the attributes of a responsible citizen.
- Access campus resources.
- Obtain a working knowledge of the university catalog and class schedule.
- Become proficient at MyMAP.
- Meet regularly with an academic advisor and come prepared to advising sessions.
- Save copies of all important academic paperwork.

College of Life Sciences Home

Life Sciences Student Services Home

Program

- Life Sciences Preparation (Premajor Program)

Course Information

- Life Sciences (LfSci) Courses

# Life Sciences Preparation (Premajor Program) (27.5–28.5 hours*)

Show All Course Descriptions
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## Program Requirements | View MAP

1. Complete the following survey course:

LFSCI 101 : Life Sciences Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Services offered by the Life Sciences Student Services Center; choosing an appropriate major in the college.

**Course Outcomes**

- 1. Describe the services offered by the Life Sciences Student Services and when those services might be applied to your circumstances.2. Describe your understanding of what advising is and how you might benefit from the regular use of it.3. Design a curriculum plan to meet your career goals in the eight or nine semesters you have to graduate from BYU. Be able to articulate why this is important to you, the university, and other students.4. Demonstrate the ability to utilize MYMAP by organizing your major and general education courses for next semester.5. Articulate your personal and educational goals as you understand them this semester.6. Define proper classroom etiquette, and identify behaviors in your paragraph that show respect for faculty and presenters.7. Become acquainted with either an academic advisor or a faculty member this semester by visiting them at least three times.8. Deconstruct or evaluate high school learning strategies.9. Evaluate at least two majors in the College of Life Sciences that interest you by describing the discipline, the learning outcomes, courses required, and possible careers or post-graduate opportunities. If you have learned that none of our majors fit you, explain why.10. Describe the various university resources and what services they have for students.11. Describe BYU's unique campus culture.

2. Complete the following:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.

- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105

DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.

NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

MMBIO 241 : Molecular and Cellular Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBio 240 or concurrent enrollment.

DESCRIPTION: Molecular and cellular biology techniques laboratory.

**Course Outcomes**

- Practice ethics and integrity by working with groups and following lab rules.*Relates to Program Learning Outcome: A commitment to professional integrity and ethical behavior consistent with themission of the university.
- Learn the basics of experimental design, how to formulate a hypothesis, what controls to use, how to interpret experimental data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Practice scientific communication through written lab questions, exams and oral presentations.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Learn molecular biology laboratory techniques through practical laboratory exercises. Techniques include, spectrophotometry,isolation of DNA and protein, quantification of DNA and protein, techniques used to purify or detect specific proteins, such aschromatography, western blot and ELISA, DNA fingerprinting, polymerase chain reaction and enzyme assays.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology.

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: High school algebra and trigonometry.

RECOMMENDED: Concurrent enrollment in Phscs 107.

DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 105 or equivalent.

RECOMMENDED: Concurrent enrollment in Phscs 108.

DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 105 or concurrent enrollment.
DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 106 or concurrent enrollment
DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481
DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

3. Complete one of the following:

BIO 130 : Biology. (4:3:1)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: General biology course with laboratory for biology majors. Introduction to disciplines in the life sciences including methods for scientific inquiry, biochemical dynamics, cell structure and function, evolutionary theory, bioenergetics, and ecological interactions.

**Course Outcomes**

- Students will demonstrate basic literacy in the language of science and an understanding of the foundational theories of biology (i.e., be able to formulate appropriate hypotheses and predictions to test specific biological phenomena and use appropriate vocabulary to do so) o Atomic Molecular Theoryo Cell Theoryo Theories of Photosynthesis, Fermentation, and Cellular Respirationo Cell Division and Meiotic Theorieso Chromosomal and Mendelian Theories of Inheritanceo Watson and Crick's Theory of DNA Structure and Replicationo Protein Synthesis Theoryo Darwin's Theory of Natural Selectiono Hardy-Weinberg Theoryo Ecosystem Theoryo Population Growth Theoryo Competitive Exclusion and Behavioral Theory
- Students will demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process.
- Students willappreciate the excitement of discovery that has accompanied important scientific developments.
- Students will demonstrate how scientific methodology can be used to analyze real-world science-related problems.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public-policy science issues that affect their community.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.
- Students will be able to reflect rationally upon the interface between science and religion.
- Students will demonstrate sound scientific reasoning ability.

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

4. Complete one course from the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

College of Life Sciences Home

Life Sciences Student Services Home

Program

- Life Sciences Preparation (Premajor Program)

Course Information

- Life Sciences (LfSci) Courses

# Life Science (LfSci)

Show All Course Descriptions
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## Undergraduate Courses

### 100-Level Courses

LFSCI 101 : Life Sciences Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Services offered by the Life Sciences Student Services Center; choosing an appropriate major in the college.

**Course Outcomes**

- 1. Describe the services offered by the Life Sciences Student Services and when those services might be applied to your circumstances.2. Describe your understanding of what advising is and how you might benefit from the regular use of it.3. Design a curriculum plan to meet your career goals in the eight or nine semesters you have to graduate from BYU. Be able to articulate why this is important to you, the university, and other students.4. Demonstrate the ability to utilize MYMAP by organizing your major and general education courses for next semester.5. Articulate your personal and educational goals as you understand them this semester.6. Define proper classroom etiquette, and identify behaviors in your paragraph that show respect for faculty and presenters.7. Become acquainted with either an academic advisor or a faculty member this semester by visiting them at least three times.8. Deconstruct or evaluate high school learning strategies.9. Evaluate at least two majors in the College of Life Sciences that interest you by describing the discipline, the learning outcomes, courses required, and possible careers or post-graduate opportunities. If you have learned that none of our majors fit you, explain why.10. Describe the various university resources and what services they have for students.11. Describe BYU's unique campus culture.

LFSCI 190R : College of Life Sciences Student Council. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Application for student council position.

DESCRIPTION: Active involvement on the student council for the College of Life Sciences. Issues facing students in the college explored and solutions suggested.

**Course Outcomes**

- 1. Actively develop new leadership skills2. Represent the students of the College of life Sciences3. Set a personal goal in the area of leadership development

LFSCI 199R : Nonresearch Academic Internship. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Approval by Life Sciences Student Services.

DESCRIPTION: Academic internship for work experience or job shadowing. Does NOT involve mentored research.

**Course Outcomes**

- 1. Gain work experience and/or insight to possible careers by observing qualified providers.2. Exhibit proficient writing skills by producing a summary paper at the conclusion of the internship.3. Function as a collaborative team member while participating in the internship experience.

### 300-Level Courses

LFSCI 399R : Academic Internship. (.5-6:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Mentor's consent.

DESCRIPTION: Approved experiential learning.

**Course Outcomes**

- 1. Demonstrate critical or analytical thinking skills by analyzing and interpreting experimental data.2. Exhibit proficient writing skills by producing a portfolio, research paper, scientific journal article, and/or a scientific poster. 3. Critically read scientific literature and evaluate the ability of an argument or evidence to support a conclusion.4. Function as a collaborative team member by participating in student mentored learning groups or research groups.

**400-Level Courses**

LFSCI 489R : Senior Library Thesis. (1-6:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Prospectus approval by Life Sciences Student Services.

DESCRIPTION: Mentored library study that extensively explores relevant questions determined by an approved faculty mentor.

**Course Outcomes**

- 1. Develop a research problem and have the prospectus evaluated by Life Science Student Services.2. Prepare a thesis following University protocol.

LFSCI 490R : Special Problems. (1-6:0.0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Life Sciences Student Services consent.

**Course Outcomes**

- 1. The student is expected to have this experience preapproved by Life Science Student Services.2. Develop a research or problem-solving component which is mutually agreed upon by Life Science Student Services and the student.3. Develop a portfolio during the experience. This portfolio should discuss topics including but not limited to: an abstract of the project, a description of methods and materials (include tables, graphs, pictures or other visuals as appropriate), results, summary, and significance of the laboratory experience. The portfolio must be a minimum of 5-6 pages in report form.

LFSCI 494R : Mentored Research. (1-6:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Mentor's consent.

**Course Outcomes**

- 1. Demonstrate critical or analytical thinking skills by analyzing and interpreting experimental data.2. Exhibit proficient writing skills by producing a portfolio, research paper, scientific journal article, and/or scientific poster.3. Critically read scientific literature and evaluate the ability of an argument or evidence to support a conclusion.4. Function as a collaborative team member by participating in student mentored learning groups or research groups.

LFSCI 499R : Senior Honors Thesis. (1-6:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Mentor's consent.

DESCRIPTION: Topic to be cleared with Honors Program Office and Life Sciences Student Services.

**Course Outcomes**

- 1. Develop a research problem and have the prospectus evaluated by the Honors Program and Life Science Student Services.2. Prepare a thesis following the Honors Program protocol.

**Back to Life Sciences Student Services Home**

College of Life Sciences Home

Microbiology and Molecular Biology Department Home

Majors

- BS in Medical Laboratory Science
- BS in Microbiology
- BS in Molecular Biology

Minors

- Minor in Microbiology
- Minor in Molecular Biology

Course Information

- Microbiology and Molecular Biology (MMBio) Courses

Faculty

# Microbiology and Molecular Biology

Richard A. Robison, Chair
4007B LSB, (801) 422-2416
Internet: http://mmbio.byu.edu/

Department Advisement
Marcia Richards
4010 LSB, (801) 422-4293

Life Sciences Student Services
2060 LSB, (801) 422-3042

## Admission to Degree Program

All degree programs in the Department of Microbiology and Molecular Biology are open enrollment. However, special limitations apply for medical laboratory science.

## The Discipline

The Microbiology and Molecular Biology Department offers degrees in microbiology, molecular biology, and medical laboratory science. A wide range of courses may be incorporated into a program of study, including: ecology, genetics, immunology, microbial physiology, molecular biology, molecular evolution, parasitology, and pathogenesis.

## Career Opportunities

Graduates are employed in a wide variety of positions in industry, hospitals, government agencies, and universities. Majors from this department are an excellent preprofessional course of study for those interested in medicine, dentistry, law, or business.

The following courses are recommended for those students interested in graduate and professional programs:

Chem 351, 352, 353, 481.
Math 112 and 113.
Phscs 105, 106, 107, 108.
Stat 221.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Medical Laboratory Science** (Program Outcomes)
**BS in Microbiology** (Program Outcomes)
**BS in Molecular Biology** (Program Outcomes)

**Minor in Microbiology**
**Minor in Molecular Biology**

Students should see their department advisor for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Microbiology
MS in Molecular Biology
PhD in Microbiology
PhD in Molecular Biology

For more information see the BYU 2014–2015 Graduate Catalog.

College of Life Sciences Home

Microbiology and Molecular Biology Department Home

Majors

- BS in Medical Laboratory Science
- BS in Microbiology
- BS in Molecular Biology

Minors

- Minor in Microbiology
- Minor in Molecular Biology

Course Information

- Microbiology and Molecular Biology (MMBio) Courses

Faculty

# BS in Medical Laboratory Science (63 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirements for admission to this major.*

Students who want to practice clinical laboratory science/medical technology in diagnostic laboratories or pursue related options choose this degree. The program in medical laboratory science is accredited by the National Accrediting Agency for Medical Laboratory Sciences (5600 N River Rd, Suite 720, Rosemont, IL 60018, [773] 714-8880).

## Program Requirements | View MAP | View Program Outcomes

1. Students must complete the following courses before applying to the program:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105

DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.

NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

MMBIO 261 : Infection and Immunity. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Principles of infectious organisms (principally bacteria and viruses), the diseases they cause, and the role of host immune responses in health and disease.

**Course Outcomes**

There are no course outcomes available

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

2. Application deadlines are March 1 for fall semester admittance and October 1 for winter semester admittance.

## Program Requirements

1. Complete the following life sciences core requirements:

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105

DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.

NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

MMBIO 241 : Molecular and Cellular Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBio 240 or concurrent enrollment.

DESCRIPTION: Molecular and cellular biology techniques laboratory.

**Course Outcomes**

- Practice ethics and integrity by working with groups and following lab rules.*Relates to Program Learning Outcome: A commitment to professional integrity and ethical behavior consistent with themission of the university.
- Learn the basics of experimental design, how to formulate a hypothesis, what controls to use, how to interpret experimental data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Practice scientific communication through written lab questions, exams and oral presentations.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Learn molecular biology laboratory techniques through practical laboratory exercises. Techniques include, spectrophotometry,isolation of DNA and protein, quantification of DNA and protein, techniques used to purify or detect specific proteins, such aschromatography, western blot and ELISA, DNA fingerprinting, polymerase chain reaction and enzyme assays.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology.

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.
RECOMMENDED: A general biology course.
DESCRIPTION: Function of body organ systems.
NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481
DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies
- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481
DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

2. Complete the following chemistry courses:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.
DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.
NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity

patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent.

DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

3. Complete the following department courses:

MMBIO 102 : Introduction to Clinical Laboratory Techniques. (1:0:3)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Hospital laboratory techniques.

**Course Outcomes**

- Describe and carry out basic clnical laboratory techniques
- List and evaluate careers in clinical laboratory sciences

MMBIO 261 : Infection and Immunity. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Principles of infectious organisms (principally bacteria and viruses), the diseases they cause, and the role of host immune responses in health and disease.

**Course Outcomes**

There are no course outcomes available

MMBIO 392 : Hematology. (2.5:2.5:1)

PREREQUISITE: Medical laboratory science program acceptance.

DESCRIPTION: Normal and abnormal hematology.

**Course Outcomes**

- Perform the full range of clinical laboratory tests in areas such as hematology and play a role in the development and evaluation of test systems and interpretive algorithms*Relates to Program Learning

Outcome: #1
- Have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed, or performed*Relates to Program Learning Outcome: #2
- Possess basic knowledge, skills, and relevant experiences for the following:Communications to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient educationFinancial, operations, marketing, and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory servicesInformation management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information *Relates to Program Learning Outcome: #3, 4, 5

MMBIO 393 : Immunohematology and Coagulation Theory. (2.5:2.5:1)

PREREQUISITE: Medical laboratory science program acceptance.

DESCRIPTION: Theory and practice of bloodbanking and coagulation theory.

**Course Outcomes**

- Perform the full range of clinical laboratory tests in areas such as coagulation and immunohematology and play a role in the development and evaluation of test systems and interpretive algorithms*Relates to Program Learning Outcome: #1
- Have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed, or performed*Relates to Program Learning Outcome: #2
- Possess basic knowledge, skills, and relevant experiences for the following:Communications to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient educationFinancial, operations, marketing, and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory servicesInformation management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information*Relates to Program Learning Outcome: #3, 4, 5

MMBIO 394 : Practical Hematology. (2:0:7)

PREREQUISITE: MMBio 392 or concurrent enrollment.

DESCRIPTION: Laboratory to accompany MMBio 392; medical laboratory techniques in hematology.

**Course Outcomes**

- Discuss the techniques of drawing, proper collection, and storage of blood samples for hematology procedures. *Relates to Program Learning Outcome: #1
- Practice safe techniques according to those presented in class and in the textbook throughout your career in student and clinical laboratory experiences. *Relates to Program Learning Outcome: #2
- Demonstrate your ability to properly use the various types of spectrophotometers in the laboratory.*Relates to Program Learning Outcome: #2
- Prepare the reagents required in the procedures throughout the semester where possible.*Relates to Program Learning Outcome: #2
- Select proper reagents, perform procedures, interpret results, and evaluate the significance of the results for all determinations listed on the course outline*Relates to Program Learning Outcome: #2

MMBIO 395 : Practical Immunohematology and Coagulation Theory. (2:0:7)

PREREQUISITE: MMBio 393 or concurrent enrollment.

DESCRIPTION: Laboratory to accompany MMBio 393; medical laboratory techniques in immunohematology and coagulation theory.

**Course Outcomes**

- Perform the full range of clinical laboratory tests in areas such as coagulation and blood banking and play a role in the development and evaluation of test systems and interpretive algorithms*Relates to Program Learning Outcome: #1
- Have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed, or performed*Relates to Program Learning Outcome: #2
- Possess basic knowledge, skills, and relevant experiences for the following:Communications to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient educationFinancial, operations, marketing, and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory servicesInformation management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information*Relates to Program Learning Outcome: #3, 4, 5

MMBIO 407 : Clinical Microbiology. (4:2:6)

WHEN TAUGHT: Winter

PREREQUISITE: MMBIO 261; Admission to the Medical Laboratory Science program.

DESCRIPTION: Approaches to laboratory diagnosis of infectious diseases.

**Course Outcomes**

- Gain familiarity with the medically important bacteria and fungi by performing the full range of clinical laboratory tests in Microbiology (Prepare, examine and interpret gram stained smears of microorganisms, streak appropriate media for isolation of microorganisms, interpret stains, growth patterns, and biochemical reactions to aid in the identification of microbial organisms) and play a role in the development and evaluation of test systems and interpretive algorithms
- Have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance. Demonstrate improvement wherever laboratory testing is researched, developed, or performed. Be able to design experiments, with appropriate controls, to test various hypotheses in clinical Microbiology.
- Possess basic knowledge, skills, and relevant experiences for the following:Communications to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient educationFinancial, operations, marketing, and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory servicesInformation

management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information
- Possess basic knowledge, skills, and relevant experiences for the following:Communications to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient educationFinancial, operations, marketing, and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory servicesInformation management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information
- Possess basic knowledge, skills, and relevant experiences for the following:Communications to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient educationFinancial, operations, marketing, and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory servicesInformation management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information

MMBIO 417 : Medical Parasitology. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 261 & MMBIO 240

DESCRIPTION: Pathogenesis, diagnosis, and epidemiology of human parasitic diseases. Laboratory included.

**Course Outcomes**

- Gain familiarity with the medically important parasites. This includes understanding parasite host range as well as pathology and mechanisms of pathogenesis.*Relates to Program Learning Outcome: Exhibit mastery of medical microbiology
- Be able to design experiments, with appropriate controls, to test various hypotheses in parasitology.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Read and critically interpret current scientific literature in the field of parasitology.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Students should gain an understanding of their role and responsibility in alleviating suffering caused by parasitic diseases.*Relates to Program Learning Outcome: Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological principles.

MMBIO 422 : Pathophysiology and Laboratory Diagnosis in Clinical Chemistry. (2.5:2:1)

PREREQUISITE: Medical laboratory science program acceptance.

DESCRIPTION: Laboratory diagnosis of disorders involving the major systems of the human body.

**Course Outcomes**

- Perform analytical tests of body fluids, cells, and other substances
- Confirm abnormal results, verify quality control procedures, execute quality control procedures, and develop solutions to problems concerning the generation of laboratory data
- Make decisions conscerning the results of quality control and quality assurance measures, and institute proper pocedures to maintain accuracy and precision.

MMBIO 423 : Pathophysiology and Lab Diagnosis in Clinical Chemistry and Molecular Diagnostics. (2.5:2:1)

PREREQUISITE: Medical laboratory science program acceptance.

DESCRIPTION: Laboratory diagnosis of disorders involving the major systems of the human body and molecular diagnostic applications.

**Course Outcomes**

- Perform the full range of clinical laboratory tests in areas such as clinical chemistry, urinalysis and molecular dioagnostics and play a role in the development and evaluation of test systems and interpretive algorithms
- Have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed, or performed.
- Possess basic knowledge, skills, and relevant experiences for the followingCommunications to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient educationFinancial, operations, marketing, and human dresource management of the clinical laboratory to enable cost-effective, hight-quality, value-added laboratorys ervicesInformation management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated informaation

MMBIO 424 : Diagnostic Techniques in Clinical Chemistry. (2:0:7)

PREREQUISITE: Medical laboratory science program acceptance.

DESCRIPTION: Medical laboratory techniques in clinical chemistry.

**Course Outcomes**

- Perform the full range of clinical laboratory tests in clinical chemistryDiscuss the techniques of drawing, proper collection, and storage of blood samples for clinical chemistry proceduresPractice safe techniques according to those presented in class and in the textbook throughout your career in student and clinical laboratory experiences.Demonstrate your ability to properly use the various types of spectrophotometers in the laboratoryPrepare the reagents required in the procedures throughout the semester where possiblePerform proper procedures, discuss the purpose of reagents, interpret results, evaluate quality assurance factors and solve problems or discrepancies for the assays and tasks performed.
- Have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulation, education, and quality assurance performance improvement whenever laboratory testing is researched, developed, or performed.

MMBIO 425 : Diagnostic Techniques in Clinical Chemistry and Molecular Biology. (2:0:7)

PREREQUISITE: Medical laboratory science program acceptance.
DESCRIPTION: Medical laboratory techniques in clinical chemistry and diagnostic molecular genetics.

**Course Outcomes**

- Perform the full range of clinical laboratory tests in clinical chemistryDiscuss the techniques of drawing, proper collection, and storatge of blood samples for clinical chemistry proceduresPractice safe techniques according to those presented in class and in the textbook throughout your career in studen and clinical laboratory experiences.Demonstrate your ability to properly use the various types of spectrophotometers in the laboratoryPrepare the reagents required in the procedures throughout the semester where possiblePerform proper procedures, discuss the purpose of reagents, interpret results, evaluate quality assurance factors and solve problems or discrepancies for the assays and tasks performed.
- Have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulation, education, and quality assurance performance improvement whenever laboratory testing is researched, developed, or performed.

MMBIO 491 : Concept Applications in Laboratory Medicine. (1:1:0)
WHEN TAUGHT: Fall
PREREQUISITE: Acceptance into medical laboratory science program.
DESCRIPTION: Case presentations of various medical disorders.

**Course Outcomes**

- This course is designed to allow the student to interpret, evaluate, and correlate laboratory data and clinical symptoms pertaining to specific disease states. Each week several students will present case study presentations covering current lecture content. For example, week two covers carbohydrate metabolism and related disease processes so the assigned students will present patient data focusing on a specific disease such as diabetes mellitus, including symptoms, laboratory findings and treatment.
- To receive a passing grade for this course, it is expected that the student will attend all weekly sessions ON TIME with no more than one excused absence permitted and present at least one case study during the semester. Class will be held on each Friday of the semester at 9 a.m.

4. Complete an internship experience. During one semester and one term, complete at least 2 hours from the following:
   MMBIO 496R : Clinical Experience. (1-9:0:0)
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   PREREQUISITE: MMBIO 392 & MMBIO 422
   DESCRIPTION: Performing the full range of clinical laboratory tests in an affiliated clinical facility. A six-month internship experience.

   **Course Outcomes**

   - Have a clinical eperience outside of the University. Be familiar with procedures, protocols, and working environment in a working clinical laboratory.

5. Complete an exit interview.
6. Pass the BYU comprehensive exam offered during the clinical experience.

## Recommended Courses

ENGL 316 : Technical Communication. (3:3:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

STAT 121 : Principles of Statistics. (3:3:1)
OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

## Show all Microbiology and Molecular Biology (MMBIO) Courses

**College of Life Sciences Home**

**Microbiology and Molecular Biology Department Home**

**Majors**

- BS in Medical Laboratory Science
- BS in Microbiology
- BS in Molecular Biology

**Minors**

- Minor in Microbiology
- Minor in Molecular Biology

**Course Information**

- Microbiology and Molecular Biology (MMBio) Courses

**Faculty**

# BS in Microbiology (63–67 hours*)

Show All Course Descriptions
Hide All Course Descriptions

This is the preferred degree for microbiology majors who desire an advanced degree (master's or doctorate) in microbiology.

## Program Requirements | View MAP | View Program Outcomes

1. Complete one of the following courses:

BIO 130 : Biology. (4:3:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: General biology course with laboratory for biology majors. Introduction to disciplines in the life sciences including methods for scientific inquiry, biochemical dynamics, cell structure and function, evolutionary theory, bioenergetics, and ecological interactions.

**Course Outcomes**

- Students will demonstrate basic literacy in the language of science and an understanding of the foundational theories of biology (i.e., be able to formulate appropriate hypotheses and predictions to test specific biological phenomena and use appropriate vocabulary to do so) o Atomic Molecular Theoryo Cell Theoryo Theories of Photosynthesis, Fermentation, and Cellular Respirationo Cell Division and Meiotic Theorieso Chromosomal and Mendelian Theories of Inheritanceo Watson and Crick's Theory of DNA Structure and Replicationo Protein Synthesis Theoryo Darwin's Theory of Natural Selectiono Hardy-Weinberg Theoryo Ecosystem Theoryo Population Growth Theoryo Competitive Exclusion and Behavioral Theory
- Students will demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process.
- Students willappreciate the excitement of discovery that has accompanied important scientific developments.
- Students will demonstrate how scientific methodology can be used to analyze real-world science-related problems.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public-policy science issues that affect their community.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.
- Students will be able to reflect rationally upon the interface between science and religion.
- Students will demonstrate sound scientific reasoning ability.

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

2. Complete the following biology core courses:

MMBIO 151 : Introduction to Microbiology. (4:3:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Chem 105 or concurrent enrollment.

DESCRIPTION: Principles of prokaryotic biology emphasizing cell structure, function, and metabolism. Introduction to bacterial genetics, microbial diversity, and microbial ecology.

**Course Outcomes**

- Understand what microbes are, what they are composed of, how they are built, and their phylogenetic relationships to the living world. Be able to distinguish between eukaryotes, prokaryotes, and viruses.*Relates to Program Learning Outcome: "Exhibit mastery of four of the following six principal areas of the discipline" five of which are microbial physiology, microbial genetics, microbial ecology, medical microbiology, and virology
- Become familiar with the tools of microbiology through both lecture and labs and demonstrate basic aseptic technique. Develop proficiency in working with bacteria including streaking for isolation and performing growth experiments.*Relates to Program Learning Outcome: "Exhibit mastery of four of the following six principal areas of the discipline" three of which are microbial physiology, microbial genetics, microbial ecology
- Formulate questions, testable hypotheses and implement appropriate experimental protocol. Collect and analyze data and be able to draw appropriate conclusions.*Relates to Program Learning Outcome: "Devise experiments with appropriate hypotheses and controls."
- Integrate knowledge to make informed judgments on tests, lab reports, lab presentations and lab write-

ups*Relates to Program Learning Outcome: "Communicate scientific information using both oral and written methods"
- Obtain a deeper appreciation for the complexity, diversity and purposes of life.*Relates to Program Learning Outcome: "Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological principles"

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105

DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.

NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

MMBIO 241 : Molecular and Cellular Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBio 240 or concurrent enrollment.

DESCRIPTION: Molecular and cellular biology techniques laboratory.

**Course Outcomes**

- Practice ethics and integrity by working with groups and following lab rules.*Relates to Program Learning Outcome: A commitment to professional integrity and ethical behavior consistent with themission of the university.
- Learn the basics of experimental design, how to formulate a hypothesis, what controls to use, how to interpret experimental data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Practice scientific communication through written lab questions, exams and oral presentations.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Learn molecular biology laboratory techniques through practical laboratory exercises. Techniques include, spectrophotometry,isolation of DNA and protein, quantification of DNA and protein, techniques used to purify or detect specific proteins, such aschromatography, western blot and ELISA, DNA fingerprinting, polymerase chain reaction and enzyme assays.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology.

MMBIO 261 : Infection and Immunity. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Principles of infectious organisms (principally bacteria and viruses), the diseases they cause, and the role of host immune responses in health and disease.

**Course Outcomes**

There are no course outcomes available

3. Complete four courses from the following (at least two of which must have a lab component):

MMBIO 360 : Microbial Genetics. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBIO 240

DESCRIPTION: How DNA governs complex bacterial functions. Classical and modern approaches to gene discovery, including genetic screens, gene mapping, targeted genetic manipulations, and analyzing gene activity.

**Course Outcomes**

There are no course outcomes available

MMBIO 363 : Microbial Ecology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 130; or MMBIO 151; or PDBIO 120

DESCRIPTION: Natural history of a microbe; its distribution and abundance. Critical influence of scale and perspective in determining underlying mechanisms.

**Course Outcomes**

There are no course outcomes available

MMBIO 364 : Bacterial Pathogenesis. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: MMBIO 261

DESCRIPTION: Fundamental principles of bacterial pathogenesis, emphasizing the molecular interactions of medically important bacteria and their hosts.

**Course Outcomes**

There are no course outcomes available

MMBIO 461 : Advanced Bacterial Physiology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481 & MMBIO 151

DESCRIPTION: Principles of prokaryotic physiology, including cell structure and function, gene regulation, and biochemical processes; focusing on the unique aspects of prokaryotic biology.

**Course Outcomes**

- Students will demonstrate an advanced understanding of selected topics in microbial physiology (cell structure, growth, biosynthesis, transport, etc.) through their participation in classroom discussions, writing assignments and oral presentations.
- Students will demonstrate the ability to read, comprehend and communicate current research in microbial physiology by making Powerpoint presentations to the class.
- Students will write a scientific review article on a topic of their choice related to microbial physiology.

MMBIO 463 : Immunology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & MMBIO 261

DESCRIPTION: Advanced concepts of immunological processes.

**Course Outcomes**

- Understanding advanced concepts of Immunology by studying and reflecting on the subject.*Relates to Program Learning Outcome: Exhibit mastery of four of the principle areas of the discipline
- Understands experimental designs used in immunology research and determine the soundness of the immunological data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Read and understand current publications in Immunology and be able to discuss and critically evaluate experiments and data*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Engage in discussions about concepts in immunology and research. Present a PowerPoint on a particular immunological topic. Engage in a question and answer session on the content. Write an easy on a chosen subject relating to recent immunological advances.*Relates to Program Learning Outcome: Communicate scientific information using both oral and written methods.
- Develop a deep appreciation for our Heavenly Father and his love for each of us by engaging in studying how he designed the immune system to protect his children from disease.*Relates to Program Learning Outcome: Reflect/ discuss/ explore how faith in the Lord, and Christ like living are affected by an understanding of the fundamental biological processes.

MMBIO 465 : Virology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBio 261 or equivalent.

DESCRIPTION: Basic principles of virology, emphasizing selected molecular aspects of virus life cycles and disease processes.

**Course Outcomes**

- Be able to answer basic questions about Virology: Why are viruses organized as they are? How do viruses replicate? How do viruses cause disease? What are the interactions between viruses and the host immune system? How to prevent/treat/cure viral infections? How can viruses be used as tools to study biological processes and for gene transfer? How can an understanding of viruses help you in your future career? *Relates to Program Learning Outcome: "Exhibit mastery of four of the principal areas of the discipline", one of which is Virology.
- Understand experimental tools used to study viruses (these are broadly applicable to molecular biology, cell biology, and microbiology) and be able to develop experiments and interpret data.*Relates to Program Learning Outcomes: "Devise experiments with appropriate hypotheses and controls" and "Interpret experiments from primary scientific literature"
- Write about a current, pressing issue in the field of Virology.*Relates to Program Learning Outcome: "Communicate scientific information"
- Understand how research of viruses "by study and also by faith" can lead to alleviation of human disease and suffering.*Relates to Program Learning Outcome: "Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological processes"

**Note:** For MMBio 360, 363, and 364, lab registration is automatic and included in the course with the lecture. MMBio 463 and 465 can be taken with or without the MMBio 467 or 466 labs, respectively.

4. Complete the following chemistry courses:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: CHEM 105; or CHEM 111
DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.
NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.
DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.
NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: CHEM 105; or CHEM 111
DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.
NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: CHEM 351; or CHEM 351M
DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).
DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.
NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and

after providing unambiguous interpretation of the necessary spectra.

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

5. Complete the following:

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: High school algebra and trigonometry.

RECOMMENDED: Concurrent enrollment in Phscs 107.

DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 105 or equivalent.

RECOMMENDED: Concurrent enrollment in Phscs 108.

DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

6. Complete one of the following courses:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

*MATH 119 : Introduction to Calculus. (4:4:1)

OFFERED: Independent Study only.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 and Math 111; or equivalent.

DESCRIPTION: Introduction to plane analytic geometry and calculus.

**Course Outcomes**

- This course is designed to provide beginning undergraduate students a first exposure to Calculus concepts, theorems, and techniques. In general, theorems will not be proved. An understanding of the theorems and their applications to solve calculus problems will be taught. Students will be expected to develop effective problem solving skills based on their understanding of the theory and not just memorize a set of routines to solve problems. For a more detailed course description, visit the Math 119 Wiki page.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

*Offered through BYU Independent Study.

7. Complete at least 10 hours from the following:

BIO 350 : Ecology. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PDBIO 120; or BIO 130
DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth.

**Course Outcomes**

- Understand the major physical processes that form and characterize the biosphere, including global scale energy flow, the carbon cycle, climate, and soil formation.
- Understand the processes that drive major levels of organization of the biotic world, including energetics in the ecosystem, population dynamics, and species interactions.
- Understand the importance of writing as a way of synthesizing and solidifying critical thought.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Understand the importance of ecology to issues regarding human well-being
- See the connectivity and relevance of ecology to other fields of study

BIO 420 : Evolutionary Biology. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240 & PWS 340
RECOMMENDED: Concurrent enrollment in Bio 421.
DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**

- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

BIO 421 : Evolutionary Biology Laboratory. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240
DESCRIPTION: Hands-on applications and analytical tools of evolutionary biology; emphasizing inference methodology and evidence complementing the theoretical constructs introduced in Bio 520, including comparative anatomy, phylogenetic inference, population genetics, species concepts, and human evolution.
NOTE: Concurrent enrollment with Bio 420 is strongly recommended.

**Course Outcomes**

- Students will gain a better understanding of the basic principles of evolution within a population including selection, drift, and founder effects by using computer simulations.
- Students will have a deeper understanding of the LDS position on evolution.
- Students will learn the details of phylogenetic reconstruction, tree searching, DNA sequence alignment, and other bioinformatics tools for deciphering patterns of evolution.
- Students will learn the details of species concepts and the criteria used for identifying and diagnosing species.
- Students will gain hands-on experience with hominid fossils and gain an understanding of the evidence that elucidates the biological history of humans.

BIO 463 : Genetics of Human Disease. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: PWS 340
DESCRIPTION: Examining the application of genetics to understanding and treatment of human disease. Functional consequences of mutations; use of model organisms; linkage and association analysis of complex traits; pharmacogenetics; ethical considerations.

**Course Outcomes**

- Understand and explain the different types of genetic variants, how they can be typed and how they can be used to understand the genetic architecture of human disease.
- Understand linkage disequilibrium in the human genome and the role it plays in the search for genetic risk factors for human disease
- Understand and use basic statistics and software for analyzing the correlation between genetic markers and risk for disease.
- Understand and explain how model organisms contribute to our understanding of the genetics of human disease.
- Demonstrate the ability to obtain, aggregate and present information about the current knowledge of the genetics of a human disease.

CHEM 482 : Mechanisms of Molecular Biology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Second-semester biochemistry. Nucleic acid biochemistry and molecular biology: nucleotide metabolism, chromosome and chromatin structure, DNA structure and replication, RNA transcription and gene expression, protein synthesis and regulation, eukaryotic gene systems, signal transduction.

**Course Outcomes**

- Draw the structure of DNA, determine the topology of a plasmid, explain the chemical sequence of events that occur during DNA replication and draw structural changes that occur due to mutation.
- Determine how to perform and interpret an electrophoresis separation of DNA fragments, southern blot, restriction map, polymerase chain reaction, and a DNA sequencing reaction with necessary controls.
- Design a DNA cloning strategy, explain controls necessary, and write procedural plan.
- Draw and explain the mechanism of RNA transcription and how RNA is processed, spliced, and regulated. Understand the basic mechanisms of transcriptional regulation using the example of transcription of genes necessary for cholesterol synthesis.
- Determine when and how to use techniques that involve RNA: Northern blots, quantitative PCR, microarrays, S1 nuclease and primer extension mapping of the transcriptional start with appropriate controls.
- Determine the sequence of amino acids in a protein from a series of nucleotides.
- Draw and explain the process of protein translation and how it is regulated.
- Determine where a protein is localized in a tissue or cell: interpret a western blot, protein fusion assays.
- Determine with what a protein interacts: Interpret gel shift assays, Chromatin Immunoprecipitation, DNA footprinting, and yeast two hybrid reporter assays.
- Maintain faith through challenges and ethical boundaries in reporting and interpreting data.

MMBIO 194A : Freshman Research Initiative 1. (2:0:6)

WHEN TAUGHT: Fall

PREREQUISITE: By application only.

DESCRIPTION: Phage isolation and characterization.

NOTE: For freshmen or sophomore students only. Requires two semester commitment.

**Course Outcomes**

- Use proper aseptic techniques for the transfer and handling of microorganisms and instruments.
- Use appropriate microbiological media and test systems.
- Use standard microbiology laboratory equipment correctly.
- Follow an experimental protocol, collect and organize data in a systematic fashion, present data in anappropriate form, assess the validity of the data, and draw appropriate conclusions based on the results.

MMBIO 194B : Freshman Research Initiative 2. (2:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: MMBIO 194A

DESCRIPTION: Phage genome annotation. Focus on experimental design and data analysis.

NOTE: For freshmen or sophomore students only. Requires two semester commitment.

**Course Outcomes**

- Prepare DNA for sequencing
- Archive phage samples and DNA samples (submit archived phage to HHMI)
- Learn how to use bioinformatics software for the following:DNA sequence alignment (Consed)Primer design (Primer3)Assessing ORFs for gene calls (GBrowse, Glimmer and GeneMark)Homology assessment (BLAST and Phamerator)Annotation (Apollo)Comparative analysis (positional and functional)
- Analyze, annotate and prepare to submit genome to GenBank (submit if possible)
- Prepare an abstract for a presentation of research data
- Prepare and deliver a research presentation (oral and poster)
- Gain experience in research writing and reading of scientific papers

MMBIO 362R : Careers in Biomedical Sciences. (1:ARR:ARR)

WHEN TAUGHT: Fall

DESCRIPTION: Lectures and field trips surveying career choices.

**Course Outcomes**

- Students should be able to make informed decisions about career paths in Microbiology

MMBIO 390R : Readings in Molecular Biology. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240

RECOMMENDED: PDBio 360.

DESCRIPTION: Selected readings in molecular biology.

**Course Outcomes**

- Become familiar with the current literature and techniques in molecular biology

- Gain experience in critically evaluating the current literature in molecular biology.
- Gain confidence in scientific presentations and discussions.

MMBIO 399R : Academic Internship. (1-9:0:40)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Mentor's consent.

DESCRIPTION: Approved experiential learning.

**Course Outcomes**

- Students will be able to design and perform experiements using the latest techniques.
- Students will analyze experimental results and draw conclusions.
- Students will communicate with supervisors and collegues in an outside the university environment. They will present their scientific research.

MMBIO 417 : Medical Parasitology. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 261 & MMBIO 240

DESCRIPTION: Pathogenesis, diagnosis, and epidemiology of human parasitic diseases. Laboratory included.

**Course Outcomes**

- Gain familiarity with the medically important parasites. This includes understanding parasite host range as well as pathology and mechanisms of pathogenesis.*Relates to Program Learning Outcome: Exhibit mastery of medical microbiology
- Be able to design experiments, with appropriate controls, to test various hypotheses in parasitology.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Read and critically interpret current scientific literature in the field of parasitology.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Students should gain an understanding of their role and responsibility in alleviating suffering caused by parasitic diseases.*Relates to Program Learning Outcome: Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological principles.

MMBIO 430 : Advanced Cell Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 360; Bioscience major status.

DESCRIPTION: Molecular genetics, cell biology, and developmental biology.

**Course Outcomes**

- Read primary literature to further their own understanding of the topic*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic research, or the health professions.
- Explain the processes of cell biology*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic research, or the health professions.
- Apply knowledge of these molecular processes to broader topics*Relates to Program Learning Outcome: Proficiency in formulating and carrying out independent and collaborative research projects.
- Analyze research data, design experiments and present data in a clear manner*Relates to Program Learning Outcome: Communication skills in presenting their research findings through effective oral and written presentations.

MMBIO 441 : Advanced Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & CHEM 352

DESCRIPTION: Molecular biology of gene structure and expression in prokaryotic and eukaryotic organisms.

**Course Outcomes**

- Learn molecular biology principles through study, lecture, and class discussion. An emphasis will be on understanding the experiments used to learn these principles.â ¨ *Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology preparing students for further education and/or employment.
- Apply the principles learned to design experiments and properly interpret experimental data.â ¨ *Relates to Program Learning Outcome: Proficiency in formulating research projects
- Present current research from the scientific literature.*Relates to Program Learning Outcomes: Communicate scientific information using oral methods; interpret, analyze and critique experiments from the primary scientific literature. Presenting research findings through effective oral and written presentations.
- Demonstrate integrity and ethical behavior during all class work.â ¨ *Relates to Program Learning Outcome: Commitment to professional integrity and ethical behavior consistent with the mission of the University.

MMBIO 442 : Advanced Molecular Biology Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 241; MMBio 441 or concurrent enrollment.

DESCRIPTION: Laboratory to accompany MMBio 441.

**Course Outcomes**

- Learn molecular biology laboratory techniques through hands-on experience. Techniques will include DNA and RNA isolation, PCR, microRNA isolation, northern blotting, RFLP analysis, site-directed mutagenisis, protein extraction and EMSA.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology
- Apply the techniques to design experiments with appropriate hypotheses and controls and properly interpret experimental data*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls
- Practice scientific communication and record-keeping through the completion of a laboratory notebook and answering written and oral questions and presentations.*Relates to Program Learning Outcome: Demonstrate Communication skills in presenting research findings through effective oral and written presentations.

- Design and carry out independent experiments*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls

MMBIO 466 : Virology Laboratory. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: MMBio 261; or MMBio 465 or concurrent enrollment.

DESCRIPTION: Laboratory exercises illustrating in vitro behavior of selected viruses. Developing laboratory skills for virus studies.

**Course Outcomes**

- Be able to gain hands-on experience in the ability to characterize various aspects of viral infections based upon cultured eukaryotic cells.
- Be able to titrate virus stocks.
- Be able to determine if a human has been previously exposed to a specific virus by perform serological tests.

MMBIO 467 : Immunology Lab. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBio 261; or 463 or concurrent enrollment.

DESCRIPTION: Laboratory exercises in advanced concepts of immunological processes.

**Course Outcomes**

- Maintain a research lab book with experimental protocol, data, and discussion of results.
- Understand advanced laboratory concepts of Immunology by completing protocols and experiments
- Understand experimental design used in immunology research and determine the soundness of immunological data according to the design and controls used in the experiment.
- Obtain and interpret experimental data.
- Expand the student's understanding of immunology research and acknowledge the miracle of immunological processes. Develop good social skills through participation in laboratory experiments with other students.

MMBIO 470R : Synthetic Biology. (1-2:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: MMBIO 240; Application and interview.

DESCRIPTION: Students are introduced to concepts of synthetic biology and then conceptualize, design, build, and characterize a genetically engineered machine. The class culminates in presentations at the IBE Western regional and IGEM regional conferences in October.

**Course Outcomes**

There are no course outcomes available

MMBIO 494R : Mentored Research. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Mentor's consent.

DESCRIPTION: Mentored research.

**Course Outcomes**

- Perform current techniques and carry out experiments in a professional manner. Gather data and evaluate results.
- Properly notate work and results in a scientific notebook. Participate in the preparation of scientific papers and presentations.
- Develop, design and troubleshoot experimental procedures.
- Form relationships with a research mentor and other students in the lab. Begin networking and professional activities.
- Read, and use primary literature to design experiements and advance a project. Present and evaluate articles from the primary literature

MMBIO 510 : History of Microbiology and Molecular Biology. (2:2:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Any one 400-level MMBio course.

DESCRIPTION: Exploring the lives and historical settings of major contributors to the development of the sciences of microbiology and molecular biology emphasizing the importance of their ground-breaking discoveries in both basic and applied science.

**Course Outcomes**

- The objective of this course is to examine the lives and accomplishments of a few of our science ancestors creating a clearer perspective of our place in the constellation of our science.

MMBIO 513 : Philosophy of Biology. (2:2:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: MMBio 360 or 363 or 461 or equivalent.

DESCRIPTION: Epistemological, metaphysical, and ethical issues in the biological sciences. Philosophical questions concerning the theory of evolution, debate between evolution and creationism, fitness, adaptationism, the units of selection, systematics, sociobiology, and evolutionary ethics.

**Course Outcomes**

- Students will read and analyze historically relevant scientific primary literature
- Students will explain philisophical concepts underyling biology
- Students will use philisophical principles to discuss and evaluate ethical issues in biology

MMBIO 515 : RNA-Mediated Gene Regulation. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: MMBio 441 or equivalent.

DESCRIPTION: Current advances in studies on RNA processing, including RNA splicing and editing, riboswitches, ribozymes, and the role of small RNAs in RNA interference and regulation of gene expression.

**Course Outcomes**

- Understand the current approaches and advances in RNA-mediated gene regulation research.
- Read and comprehend reports in the current scientific literature regarding RNA-mediated gene regulation.
- Develop skills in making effective scientific presentations using high standards of clarity, relevance, and logic.

MMBIO 518 : Select Pathogens. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: MMBio 221 or equivalent.

DESCRIPTION: Current literature in special pathogens.

**Course Outcomes**

- Understand the procedures, practices, and facilities required for biosafety levels 1-4.
- Understand the basic parameters of bioterrorism and the current threats
- Understand the current CDC classification of select agents.
- Understand the basic biological characteristics of each select agent, their virulence mechanisms, and their interaction with various hosts.
- Understand how select agents have been used and could be used as bioweapons.
- _____
  (Individual – Please write your own in the space above)

MMBIO 523 : Current Trends in Pathogenesis. (1:1:0)

DESCRIPTION: Trends from current literature on pathogenesis of infectious diseases.

**Course Outcomes**

There are no course outcomes available

MMBIO 528R : Current Topics in Pathogenesis. (1:1:0)

WHEN TAUGHT: Fall Even Yrs.; Winter

PREREQUISITE: MMBio 151, 221, 261 or equivalent.

RECOMMENDED: MMBio 364.

DESCRIPTION: Readings from current literature on pathogenesis; student presentations and discussion.

**Course Outcomes**

No outcomes are available at this time.

MMBIO 557 : Genes and Cancer. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: MMBio 441 or equivalent.

DESCRIPTION: Molecular basis of human cancers, emphasizing oncogenes, tumor suppressor genes, chromosomal instability, hereditary cancers, chemical and physical carcinogens, and viral carcinogenesis.

**Course Outcomes**

There are no course outcomes available

MMBIO 565 : Molecular Virology. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: MMBio 465 or equivalent.

DESCRIPTION: Molecular mechanisms of virus architecture, attachment and entry pathways, replication strategies, oncogenesis, evolution, and mechanisms of pathogenesis.

**Course Outcomes**

- Describe why viruses are organized and classified as they are.
- Describe viral replication on a molecular level for multiple virus types
- Explain how viruses cause disease, and the interactions between viruses and the host immune system.
- Describe how can viruses can be used as tools to study biological processes and for gene transfer. Use molecular tools to study viruses

NDFS 361 : Food Microbiology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBIO 221 & MMBIO 222

DESCRIPTION: Pathogenic and spoilage microorganisms in foods and their control. Beneficial microorganisms in food systems. Influence of the food system on growth and survival of microorganisms.

**Course Outcomes**

- Understand the growth requirements of common food borne pathogens and…Be able to attribute the characteristics of a food borne illness with unknown etiology to the most likely organism. Differentiate which organisms would be likely to grow in a specific food product
- Understand intrinsic and environmental aspects of foods and how they can be modified to affect the growth and metabolism of food borne microorganisms to include spoilage, pathogenic, and beneficial organisms.
- Carry out a series of laboratory experiments aimed at isolating and identifying common food borne

microbial pathogens
- Classify spoilage microorganisms according to the food or foods they are most likely to affect based on the intrinsic and environmental characteristics of the food and compare to various storage methods to determine which method would be most appropriate for the given food product
- Design and carry out a laboratory experiment to evaluate the microbial safety of a common food product

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

PDBIO 325 : Tissue Biology (with lab). (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120 & PDBIO 220

DESCRIPTION: Human anatomy and histology; function of cells in tissue; early stages of embryology.

NOTE: Course should be taken during a student's second or third year and before courses in physiology and developmental biology.

**Course Outcomes**

- Students will be able to communicate with health professionals effectively regarding tissue/organ anatomy and physiology in instances of health and disease.
- Students will demonstrate how the relationship between cell organization and cell function correlates with normal and pathological organ behavior.
- Students will be able to describe anatomical and physiological characteristics of epithelial, connective, nervous, and muscular tissue.

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies
- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220

DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.

NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

PDBIO 363 : Advanced Physiology Laboratory. (1:.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBio 362 or concurrent enrollment; or instructor's consent.

DESCRIPTION: Experiments and exercises in advanced physiology emphasizing human physiology. Computer simulations of muscle function, endocrine disease, and human physiology. Emphasizes problem solving and calculations.

**Course Outcomes**

- Students will demonstrate the skills required to properly interpret data from scientific experimentation to discover how physiological systems function.
- Students will manifest an understanding of basic physiological principles by modeling how human cells, organs, and organ systems function.
- Students will describe how interactions between human organ systems work to maintain homeostasis.

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

PWS 365 : Environmental Microbiology. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Chem 101 or 105; PDBio 120; PWS 150.

DESCRIPTION: Environmental microbiology in aquatic and terrestrial systems. Detecting, enumerating, and identifying microorganisms. Bioremediation of organic and metal pollutants. Microbial-mediated transformations in nutrient cycling. Spread of pathogens.

**Course Outcomes**

- Demonstrate a fundamental knowledge of the environmental microbiology surrounding soil, water, and air conservation, quality, and pollution
- Understand the basic chemistry, biochemistry, and physics associated with the bioremediation, nutrient cycling, and pathogenesis
- Foster and promote environmental stewardship within yourself and your community
- Write and orally communicate more effectively and concisely

PWS 514 : Soil Microbiology. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Chem 105 and 106; or equivalents.

DESCRIPTION: Ecology and role of soil microorganisms in biogeochemical cycles, decomposition of organic matter and waste materials, and bioremediation of contaminated soils and water.

**Course Outcomes**

- Ecology and role of soil microorganisms in nutrient cycling, decomposition of organic matter and waste materials, and degradation of agricultural chemicals in soils

**Note:** Only 6 total credits of MMBio 194A, 194B, 399R, 470R, and 494R will count toward major hours with a 4 credit hour maximum for each individual course. (More credit hours may be taken but they will not count towards major requirements.)

or courses not chosen under item 3 above:

MMBIO 360 : Microbial Genetics. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBIO 240

DESCRIPTION: How DNA governs complex bacterial functions. Classical and modern approaches to gene discovery, including genetic screens, gene mapping, targeted genetic manipulations, and analyzing gene activity.

**Course Outcomes**

There are no course outcomes available

MMBIO 363 : Microbial Ecology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 130; or MMBIO 151; or PDBIO 120

DESCRIPTION: Natural history of a microbe; its distribution and abundance. Critical influence of scale and perspective in determining underlying mechanisms.

**Course Outcomes**

There are no course outcomes available

MMBIO 364 : Bacterial Pathogenesis. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: MMBIO 261

DESCRIPTION: Fundamental principles of bacterial pathogenesis, emphasizing the molecular interactions of medically important bacteria and their hosts.

**Course Outcomes**

There are no course outcomes available

MMBIO 461 : Advanced Bacterial Physiology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481 & MMBIO 151
DESCRIPTION: Principles of prokaryotic physiology, including cell structure and function, gene regulation, and biochemical processes; focusing on the unique aspects of prokaryotic biology.

**Course Outcomes**

- Students will demonstrate an advanced understanding of selected topics in microbial physiology (cell structure, growth, biosynthesis, transport, etc.) through their participation in classroom discussions, writing assignments and oral presentations.
- Students will demonstrate the ability to read, comprehend and communicate current research in microbial physiology by making Powerpoint presentations to the class.
- Students will write a scientific review article on a topic of their choice related to microbial physiology.

MMBIO 463 : Immunology. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 240 & MMBIO 261
DESCRIPTION: Advanced concepts of immunological processes.

**Course Outcomes**

- Understanding advanced concepts of Immunology by studying and reflecting on the subject.*Relates to Program Learning Outcome: Exhibit mastery of four of the principle areas of the discipline
- Understands experimental designs used in immunology research and determine the soundness of the immunological data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Read and understand current publications in Immunology and be able to discuss and critically evaluate experiments and data*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Engage in discussions about concepts in immunology and research. Present a PowerPoint on a particular immunological topic. Engage in a question and answer session on the content. Write an easy on a chosen subject relating to recent immunological advances.*Relates to Program Learning Outcome: Communicate scientific information using both oral and written methods.
- Develop a deep appreciation for our Heavenly Father and his love for each of us by engaging in studying how he designed the immune system to protect his children from disease.*Relates to Program Learning Outcome: Reflect/ discuss/ explore how faith in the Lord, and Christ like living are affected by an understanding of the fundamental biological processes.

MMBIO 465 : Virology. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBio 261 or equivalent.
DESCRIPTION: Basic principles of virology, emphasizing selected molecular aspects of virus life cycles and disease processes.

**Course Outcomes**

- Be able to answer basic questions about Virology: Why are viruses organized as they are? How do viruses replicate? How do viruses cause disease? What are the interactions between viruses and the host immune system? How to prevent/treat/cure viral infections? How can viruses be used as tools to study biological processes and for gene transfer? How can an understanding of viruses help you in your future career? *Relates to Program Learning Outcome: "Exhibit mastery of four of the principal areas of the discipline", one of which is Virology.
- Understand experimental tools used to study viruses (these are broadly applicable to molecular biology, cell biology, and microbiology) and be able to develop experiments and interpret data.*Relates to Program Learning Outcomes: "Devise experiments with appropriate hypotheses and controls" and "Interpret experiments from primary scientific literature"
- Write about a current, pressing issue in the field of Virology.*Relates to Program Learning Outcome: "Communicate scientific information"
- Understand how research of viruses "by study and also by faith" can lead to alleviation of human disease and suffering.*Relates to Program Learning Outcome: "Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological processes"

8. Pass the Biology Major Field Exam.
9. Complete an exit interview.

## Recommended Courses

ENGL 316 : Technical Communication. (3:3:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.

- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 105 or concurrent enrollment.
DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 106 or concurrent enrollment
DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

**Note:** Students desiring a minor in chemistry must take Chem 223 and 2 hours of Chem 353.

*Hours include courses that may fulfill university core requirements.

## Show all Microbiology and Molecular Biology (MMBIO) Courses

**College of Life Sciences Home**

**Microbiology and Molecular Biology Department Home**

**Majors**

- BS in Medical Laboratory Science
- BS in Microbiology
- BS in Molecular Biology

**Minors**

- Minor in Microbiology
- Minor in Molecular Biology

**Course Information**

- Microbiology and Molecular Biology (MMBio) Courses

**Faculty**

# BS in Molecular Biology (65–68 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete one of the following courses:

BIO 130 : Biology. (4:3:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: General biology course with laboratory for biology majors. Introduction to disciplines in the life sciences including methods for scientific inquiry, biochemical dynamics, cell structure and function, evolutionary theory, bioenergetics, and ecological interactions.

**Course Outcomes**

- Students will demonstrate basic literacy in the language of science and an understanding of the foundational theories of biology (i.e., be able to formulate appropriate hypotheses and predictions to test specific biological phenomena and use appropriate vocabulary to do so) o Atomic Molecular Theoryo Cell Theoryo Theories of Photosynthesis, Fermentation, and Cellular Respirationo Cell Division and Meiotic Theorieso Chromosomal and Mendelian Theories of Inheritanceo Watson and Crick's Theory of DNA Structure and Replicationo Protein Synthesis Theoryo Darwin's Theory of Natural Selectiono Hardy-Weinberg Theoryo Ecosystem Theoryo Population Growth Theoryo Competitive Exclusion and Behavioral Theory
- Students will demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process.
- Students willappreciate the excitement of discovery that has accompanied important scientific developments.
- Students will demonstrate how scientific methodology can be used to analyze real-world science-related problems.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public-policy science issues that affect their community.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.
- Students will be able to reflect rationally upon the interface between science and religion.
- Students will demonstrate sound scientific reasoning ability.

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

2. Complete the following biology core courses:

BIO 420 : Evolutionary Biology. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PWS 340

RECOMMENDED: Concurrent enrollment in Bio 421.

DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**

- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105

DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.

NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

MMBIO 241 : Molecular and Cellular Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBio 240 or concurrent enrollment.

DESCRIPTION: Molecular and cellular biology techniques laboratory.

**Course Outcomes**

- Practice ethics and integrity by working with groups and following lab rules.*Relates to Program Learning Outcome: A commitment to professional integrity and ethical behavior consistent with themission of the university.
- Learn the basics of experimental design, how to formulate a hypothesis, what controls to use, how to interpret experimental data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Practice scientific communication through written lab questions, exams and oral presentations.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Learn molecular biology laboratory techniques through practical laboratory exercises. Techniques include, spectrophotometry,isolation of DNA and protein, quantification of DNA and protein, techniques used to purify or detect specific proteins, such aschromatography, western blot and ELISA, DNA fingerprinting, polymerase chain reaction and enzyme assays.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology.

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies
- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

3. Complete the following molecular biology core courses:

MMBIO 390R : Readings in Molecular Biology. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240

RECOMMENDED: PDBio 360.

DESCRIPTION: Selected readings in molecular biology.

**Course Outcomes**

- Become familiar with the current literature and techniques in molecular biology
- Gain experience in critically evaluating the current literature in molecular biology.
- Gain confidence in scientific presentations and discussions.

MMBIO 441 : Advanced Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & CHEM 352
DESCRIPTION: Molecular biology of gene structure and expression in prokaryotic and eukaryotic organisms.

**Course Outcomes**

- Learn molecular biology principles through study, lecture, and class discussion. An emphasis will be on understanding the experiments used to learn these principles.â ¨ *Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology preparing students for further education and/or employment.
- Apply the principles learned to design experiments and properly interpret experimental data.â ¨ *Relates to Program Learning Outcome: Proficiency in formulating research projects
- Present current research from the scientific literature.*Relates to Program Learning Outcomes: Communicate scientific information using oral methods; interpret, analyze and critique experiments from the primary scientific literature. Presenting research findings through effective oral and written presentations.
- Demonstrate integrity and ethical behavior during all class work.â ¨ *Relates to Program Learning Outcome: Commitment to professional integrity and ethical behavior consistent with the mission of the University.

MMBIO 442 : Advanced Molecular Biology Laboratory. (2:0:6)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 241; MMBio 441 or concurrent enrollment.
DESCRIPTION: Laboratory to accompany MMBio 441.

**Course Outcomes**

- Learn molecular biology laboratory techniques through hands-on experience. Techniques will include DNA and RNA isolation, PCR, microRNA isolation, northern blotting, RFLP analysis, site-directed mutagenisis, protein extraction and EMSA.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology
- Apply the techniques to design experiments with appropriate hypotheses and controls and properly interpret experimental data*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls
- Practice scientific communication and record-keeping through the completion of a laboratory notebook and answering written and oral questions and presentations.*Relates to Program Learning Outcome: Demonstrate Communication skills in presenting research findings through effective oral and written presentations.
- Design and carry out independent experiments*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls

MMBIO 468 : (MMBio-Bio-PWS) Genomics. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 240 & PWS 340
DESCRIPTION: Current analysis of genes and genomes; computational and statistical approaches for analyzing genomic data, including genome sequencing and annotation, gene expression and the transcriptome, proteomics and functional genomics, and genetic variation and SNPs.

**Course Outcomes**

- Students can describe the technology and process used to sequence genomes (de novo and re-sequencing)
- Students can complete a series of exercises with data representing genomic experiments (analyze and interpret)
- Students can outline techniques and concepts for assessing genomic parameters such as methylation, gene expression, DNA-binding motifs, metagenomics, and comparative genomics.

MMBIO 490R : Molecular Biology Seminar. (1:1:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 441; Senior status.
DESCRIPTION: Critical examination of current literature and research in molecular biology.

**Course Outcomes**

- Describe the current research in the field of molecular biology
- Network and talk to prominent researchers in the field
- Analyze current research and experimental design.

4. Complete the following chemistry courses:
CHEM 105 : General College Chemistry. (4:5:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.
DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.
NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.

NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and

after providing unambiguous interpretation of the necessary spectra.

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

5. Complete the following:

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: High school algebra and trigonometry.

RECOMMENDED: Concurrent enrollment in Phscs 107.

DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 105 or equivalent.

RECOMMENDED: Concurrent enrollment in Phscs 108.

DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

6. Complete one course from the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

*MATH 119 : Introduction to Calculus. (4:4:1)

OFFERED: Independent Study only.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 and Math 111; or equivalent.

DESCRIPTION: Introduction to plane analytic geometry and calculus.

**Course Outcomes**

- This course is designed to provide beginning undergraduate students a first exposure to Calculus concepts, theorems, and techniques. In general, theorems will not be proved. An understanding of the theorems and their applications to solve calculus problems will be taught. Students will be expected to develop effective problem solving skills based on their understanding of the theory and not just memorize a set of routines to solve problems. For a more detailed course description, visit the Math 119 Wiki page.

*Offered through BYU Independent Study.

7. Complete three credits total during two semesters of mentored research:

MMBIO 194A : Freshman Research Initiative 1. (2:0:6)

WHEN TAUGHT: Fall
PREREQUISITE: By application only.
DESCRIPTION: Phage isolation and characterization.
NOTE: For freshmen or sophomore students only. Requires two semester commitment.

**Course Outcomes**

- Use proper aseptic techniques for the transfer and handling of microorganisms and instruments.
- Use appropriate microbiological media and test systems.
- Use standard microbiology laboratory equipment correctly.
- Follow an experimental protocol, collect and organize data in a systematic fashion, present data in anappropriate form, assess the validity of the data, and draw appropriate conclusions based on the results.

MMBIO 194B : Freshman Research Initiative 2. (2:0:6)

WHEN TAUGHT: Winter
PREREQUISITE: MMBIO 194A
DESCRIPTION: Phage genome annotation. Focus on experimental design and data analysis.
NOTE: For freshmen or sophomore students only. Requires two semester commitment.

**Course Outcomes**

- Prepare DNA for sequencing
- Archive phage samples and DNA samples (submit archived phage to HHMI)
- Learn how to use bioinformatics software for the following:DNA sequence alignment (Consed)Primer design (Primer3)Assessing ORFs for gene calls (GBrowse, Glimmer and GeneMark)Homology assessment (BLAST and Phamerator)Annotation (Apollo)Comparative analysis (positional and functional)
- Analyze, annotate and prepare to submit genome to GenBank (submit if possible)
- Prepare an abstract for a presentation of research data
- Prepare and deliver a research presentation (oral and poster)
- Gain experience in research writing and reading of scientific papers

MMBIO 494R : Mentored Research. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Mentor's consent.
DESCRIPTION: Mentored research.

**Course Outcomes**

- Perform current techniques and carry out experiments in a professional manner. Gather data and evaluate results.
- Properly notate work and results in a scientific notebook. Participate in the preparation of scientific papers and presentations.
- Develop, design and troubleshoot experimental procedures.
- Form relationships with a research mentor and other students in the lab. Begin networking and professional activities.
- Read, and use primary literature to design experiements and advance a project. Present and evaluate articles from the primary literature

8. Complete at least 10 hours (one of which must include a lab) from the following:

BIO 463 : Genetics of Human Disease. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: PWS 340
DESCRIPTION: Examining the application of genetics to understanding and treatment of human disease. Functional consequences of mutations; use of model organisms; linkage and association analysis of complex traits; pharmacogenetics; ethical considerations.

**Course Outcomes**

- Understand and explain the different types of genetic variants, how they can be typed and how they can be used to understand the genetic architecture of human disease.
- Understand linkage disequilibrium in the human genome and the role it plays in the search for genetic risk factors for human disease
- Understand and use basic statistics and software for analyzing the correlation between genetic markers and risk for disease.
- Understand and explain how model organisms contribute to our understanding of the genetics of human disease.
- Demonstrate the ability to obtain, aggregate and present information about the current knowledge of the genetics of a human disease.

†BIO 465 : Bioinformatics and Proteomics. (3:2:1)

WHEN TAUGHT: Winter
PREREQUISITE: BIO 365
DESCRIPTION: 3-D protein structural comparisons, hidden Markov models for database comparisons, homology detection, multiple sequence analyses, and protein family comparisons. Exercises in computer programming in genomics.

**Course Outcomes**

- Students will learn and demonstrate mastery of advanced analytical bioinformatics techniques, including genome assembly, genome annotation, and protein analyses.
- Demonstrate ability to use and evaluate literature databases and primary literature directed to the bioinformatics community in terms of newly developed software, analytical algorithms, application to empirical data, etc.
- Apply and develop computational skills in secondary (i.e., helices, etc.) and tertiary (i.e., folding, etc.) prediction, and 3-dimensional (i.e., x-ray crystal structures, etc.) modeling of protein structures.
- Apply evolutionary concepts to modeling DNA/proteins to evaluate and/or predict function, utilizing 3D structures, physical and chemical amino acid properties, etc.

- Apply existing and develop new tools for genome assembly and annotation from next-generation DNA sequencing projects

CHEM 463 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 462 & PHSCS 220

RECOMMENDED: Math 302.

DESCRIPTION: Thermodynamics and equilibria, states of matter, kinetic-molecular theory, kinetics, statistical mechanics.

**Course Outcomes**

- Demonstrate connections between molecular interactions and equations of state
- Describe physical and chemical phenomena in terms of molecular and bulk models and understand the limitations of these models
- Describe the kinetics of chemical reactions in terms of molecular mechanisms and empirical rate laws
- Apply the laws of thermodynamics to physical and chemical processes, including phase transitions, mixtures, chemical equilibrium, and electrochemical processes
- Analyze and interpret experimental data to draw conclusions about physical and chemical processes

CHEM 468 : Biophysical Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481 & MATH 113 & PHSCS 220; or CHEM 481M & MATH 113 & PHSCS 220

DESCRIPTION: Applications of physical chemistry to biological systems. Spectroscopic applications, computational methods, structural biochemistry, thermodynamics, equilibria, statistical mechanics, transport properties, kinetics, quantum mechanics.

NOTE: For biochemistry (BS) majors and those interested in the health professions or biochemistry. (For prerequisites, Phscs 220 may be taken concurrently.)

**Course Outcomes**

- Describe conceptually the fundamental concepts in the four principal areas of physical chemistry: classical thermodynamics, statistical thermodynamics kinetics and quantum mechanics
- Define mathematically the concepts outlined in 1) and manipulate the fundamental and derived equations associated with these concepts
- Use the above skills to calculate or predict the equilibrium conditions or direction of spontaneous biochemical processes that are involved in metabolism or energy transfer events given appropriate thermodynamic data and initial system conditions
- Employ mathematical and graphical techniques on enzyme kinetic data to extract key parameters and to identify inhibition mechanisms
- Solve simple Schroedinger equation problems (e.g., particle in a box), identify boundary conditions, and explain the significance of boundary conditions on the observance of quantized effects
- Relate the simple Hamiltonians from above to biological molecules and systems and generalize from the simple results to make predictions regarding behavior in the biological systems
- Identify the nature of electronic energy levels in key photoactive biological molecules and use spectroscopic data to probe these levels
- Apply fundamental concepts of electronic structure and reaction kinetics to the steps in photosynthesis and vision
- Provide examples in which physical chemistry perspectives have enabled a deeper more complete understanding of the structure and function of biological molecules and complex biological systems

CHEM 482 : Mechanisms of Molecular Biology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Second-semester biochemistry. Nucleic acid biochemistry and molecular biology: nucleotide metabolism, chromosome and chromatin structure, DNA structure and replication, RNA transcription and gene expression, protein synthesis and regulation, eukaryotic gene systems, signal transduction.

**Course Outcomes**

- Draw the structure of DNA, determine the topology of a plasmid, explain the chemical sequence of events that occur during DNA replication and draw structural changes that occur due to mutation.
- Determine how to perform and interpret an electrophoresis separation of DNA fragments, southern blot, restriction map, polymerase chain reaction, and a DNA sequencing reaction with necessary controls.
- Design a DNA cloning strategy, explain controls necessary, and write procedural plan.
- Draw and explain the mechanism of RNA transcription and how RNA is processed, spliced, and regulated. Understand the basic mechanisms of transcriptional regulation using the example of transcription of genes necessary for cholesterol synthesis.
- Determine when and how to use techniques that involve RNA: Northern blots, quantitative PCR, microarrays, S1 nuclease and primer extension mapping of the transcriptional start with appropriate controls.
- Determine the sequence of amino acids in a protein from a series of nucleotides.
- Draw and explain the process of protein translation and how it is regulated.
- Determine where a protein is localized in a tissue or cell: interpret a western blot, protein fusion assays.
- Determine with what a protein interacts: Interpret gel shift assays, Chromatin Immunoprecipitation, DNA footprinting, and yeast two hybrid reporter assays.
- Maintain faith through challenges and ethical boundaries in reporting and interpreting data.

CHEM 581 : Advanced Biochemical Methodology 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 482

DESCRIPTION: Analytical and structural determination methods used in biochemical research, including mass spectrometry-based proteomics, immunotechniques, atomic force and electron microscopy, NMR and X-ray diffraction.

NOTE: One of two required courses for biochemistry graduate students. May be taken before or after Chem 583.

**Course Outcomes**

- Understand the theory, instrumentation and applications of proteomic, immunological and structural

methods currently used to address important biochemical questions.
- Interpret and critique data from these techniques.
- Design appropriate experiments and apply these techniques to their own research problems.
- Recognize important technological advances in proteomic, immunological and structural methods.
- Present findings from the primary literature describing the application of these methods to significant biochemical questions in a professional manner.

†CHEM 584 : Biochemistry Laboratory/Proteins. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Introduction to current biochemical research procedures including spectrophotometry, chromatography, electrophoresis, and immunological techniques. Protein over-expression; isolation and characterization methods. Enzyme kinetics and protein-ligand interactions. Introduction to bioinformatics.

NOTE: May be taken before or after Chem 586.

**Course Outcomes**

- Apply spectroscopic techniques to analyze proteins, both their enzymatic and binding reactions
- Use gel electrophoresis and immunoblotting techniques to determine the presence and purity of proteins in biological samples
- Identify protein binding partners using co-immunoprecipitation methods
- Purify proteins using state-of-the-art separations methods
- Characterize an enzyme using steady state kinetics methods
- Use enzymes as analytical and diagnostic tools
- Properly record and interpret data
- Present data they have collected in an oral presentation and in a written scientific paper
- Understand ethical means of reporting results and giving proper credit to the work of others
- Measure ligand binding to proteins; determine dissociation constants and the degree of cooperativity.

†CHEM 586 : Biochemistry Laboratory/Nucleic Acids. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Laboratory course covering major techniques involved in isolation, amplification, and cloning of recombinant DNA as well as isolation, synthesis, translation, and identification of RNA.

NOTE: May be taken before or after Chem 584.

**Course Outcomes**

- Understand, design and execute experiments using basic DNA manipulation procedures that include isolation, purification and modification of DNA
- Explain and perform PCR amplification and use this technique to detect the presence of DNA “targets”, DNA cloning (subcloning) and DNA sequencing
- Understand and explain how to isolate, quantitate and manipulate RNA
- Design and perform experiments to reverse transcribe RNA into complementary DNA (cDNA) and assess gene expression by semi- and quantitative PCR
- Isolate total RNA and be able to purify mRNA from this material
- Introduce and express foreign DNA and/or RNA in mammalian cells using the techniques of electroporation, lipid-based transfection, calcium phosphate based transfection and retroviral transduction
- “Knockdown” an expressed gene in mammalian cells using RNA silencing
- Prepare laboratory notebooks that include the objective, results and methods of each laboratory experiment. Additionally, students will provide conclusions to each experiment, including when appropriate, potential explanations to unexpected results

†MMBIO 151 : Introduction to Microbiology. (4:3:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Chem 105 or concurrent enrollment.

DESCRIPTION: Principles of prokaryotic biology emphasizing cell structure, function, and metabolism. Introduction to bacterial genetics, microbial diversity, and microbial ecology.

**Course Outcomes**

- Understand what microbes are, what they are composed of, how they are built, and their phylogenetic relationships to the living world. Be able to distinguish between eukaryotes, prokaryotes, and viruses.*Relates to Program Learning Outcome: "Exhibit mastery of four of the following six principal areas of the discipline" five of which are microbial physiology, microbial genetics, microbial ecology, medical microbiology, and virology
- Become familiar with the tools of microbiology through both lecture and labs and demonstrate basic aseptic technique. Develop proficiency in working with bacteria including streaking for isolation and performing growth experiments.*Relates to Program Learning Outcome: "Exhibit mastery of four of the following six principal areas of the discipline" three of which are microbial physiology, microbial genetics, microbial ecology
- Formulate questions, testable hypotheses and implement appropriate experimental protocol. Collect and analyze data and be able to draw appropriate conclusions.*Relates to Program Learning Outcome: “Devise experiments with appropriate hypotheses and controls.”
- Integrate knowledge to make informed judgments on tests, lab reports, lab presentations and lab write-ups*Relates to Program Learning Outcome: "Communicate scientific information using both oral and written methods"
- Obtain a deeper appreciation for the complexity, diversity and purposes of life.*Relates to Program Learning Outcome: "Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological principles"

MMBIO 194A : Freshman Research Initiative 1. (2:0:6)

WHEN TAUGHT: Fall

PREREQUISITE: By application only.

DESCRIPTION: Phage isolation and characterization.

NOTE: For freshmen or sophomore students only. Requires two semester commitment.

**Course Outcomes**

- Use proper aseptic techniques for the transfer and handling of microorganisms and instruments.
- Use appropriate microbiological media and test systems.
- Use standard microbiology laboratory equipment correctly.
- Follow an experimental protocol, collect and organize data in a systematic fashion, present data in anappropriate form, assess the validity of the data, and draw appropriate conclusions based on the results.

MMBIO 194B : Freshman Research Initiative 2. (2:0:6)

WHEN TAUGHT: Winter
PREREQUISITE: MMBIO 194A
DESCRIPTION: Phage genome annotation. Focus on experimental design and data analysis.
NOTE: For freshmen or sophomore students only. Requires two semester commitment.

**Course Outcomes**

- Prepare DNA for sequencing
- Archive phage samples and DNA samples (submit archived phage to HHMI)
- Learn how to use bioinformatics software for the following:DNA sequence alignment (Consed)Primer design (Primer3)Assessing ORFs for gene calls (GBrowse, Glimmer and GeneMark)Homology assessment (BLAST and Phamerator)Annotation (Apollo)Comparative analysis (positional and functional)
- Analyze, annotate and prepare to submit genome to GenBank (submit if possible)
- Prepare an abstract for a presentation of research data
- Prepare and deliver a research presentation (oral and poster)
- Gain experience in research writing and reading of scientific papers

MMBIO 261 : Infection and Immunity. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Principles of infectious organisms (principally bacteria and viruses), the diseases they cause, and the role of host immune responses in health and disease.

**Course Outcomes**

There are no course outcomes available

†MMBIO 360 : Microbial Genetics. (4:3:3)

WHEN TAUGHT: Fall
PREREQUISITE: MMBIO 240
DESCRIPTION: How DNA governs complex bacterial functions. Classical and modern approaches to gene discovery, including genetic screens, gene mapping, targeted genetic manipulations, and analyzing gene activity.

**Course Outcomes**

There are no course outcomes available

MMBIO 362R : Careers in Biomedical Sciences. (1:ARR:ARR)

WHEN TAUGHT: Fall
DESCRIPTION: Lectures and field trips surveying career choices.

**Course Outcomes**

- Students should be able to make informed decisions about career paths in Microbiology

†MMBIO 364 : Bacterial Pathogenesis. (4:3:3)

WHEN TAUGHT: Winter
PREREQUISITE: MMBIO 261
DESCRIPTION: Fundamental principles of bacterial pathogenesis, emphasizing the molecular interactions of medically important bacteria and their hosts.

**Course Outcomes**

There are no course outcomes available

MMBIO 399R : Academic Internship. (1-9:0:40)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Mentor's consent.
DESCRIPTION: Approved experiential learning.

**Course Outcomes**

- Students will be able to design and perform experiements using the latest techniques.
- Students will analyze experimental results and draw conclusions.
- Students will communicate with supervisors and collegues in an outside the university environment. They will present their scientific research.

MMBIO 430 : Advanced Cell Biology. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: PDBIO 360; Bioscience major status.
DESCRIPTION: Molecular genetics, cell biology, and developmental biology.

**Course Outcomes**

- Read primary literature to further their own understanding of the topic*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic

research, or the health professions.
- Explain the processes of cell biology*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic research, or the health professions.
- Apply knowledge of these molecular processes to broader topics*Relates to Program Learning Outcome: Proficiency in formulating and carrying out independent and collaborative research projects.
- Analyze research data, design experiments and present data in a clear manner*Relates to Program Learning Outcome: Communication skills in presenting their research findings through effective oral and written presentations.

MMBIO 463 : Immunology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & MMBIO 261

DESCRIPTION: Advanced concepts of immunological processes.

**Course Outcomes**

- Understanding advanced concepts of Immunology by studying and reflecting on the subject.*Relates to Program Learning Outcome: Exhibit mastery of four of the principle areas of the discipline
- Understands experimental designs used in immunology research and determine the soundness of the immunological data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Read and understand current publications in Immunology and be able to discuss and critically evaluate experiments and data*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Engage in discussions about concepts in immunology and research. Present a PowerPoint on a particular immunological topic. Engage in a question and answer session on the content. Write an easy on a chosen subject relating to recent immunological advances.*Relates to Program Learning Outcome: Communicate scientific information using both oral and written methods.
- Develop a deep appreciation for our Heavenly Father and his love for each of us by engaging in studying how he designed the immune system to protect his children from disease.*Relates to Program Learning Outcome: Reflect/ discuss/ explore how faith in the Lord, and Christ like living are affected by an understanding of the fundamental biological processes.

MMBIO 465 : Virology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBio 261 or equivalent.

DESCRIPTION: Basic principles of virology, emphasizing selected molecular aspects of virus life cycles and disease processes.

**Course Outcomes**

- Be able to answer basic questions about Virology: Why are viruses organized as they are? How do viruses replicate? How do viruses cause disease? What are the interactions between viruses and the host immune system? How to prevent/treat/cure viral infections? How can viruses be used as tools to study biological processes and for gene transfer? How can an understanding of viruses help you in your future career? *Relates to Program Learning Outcome: "Exhibit mastery of four of the principal areas of the discipline", one of which is Virology.
- Understand experimental tools used to study viruses (these are broadly applicable to molecular biology, cell biology, and microbiology) and be able to develop experiments and interpret data.*Relates to Program Learning Outcomes: "Devise experiments with appropriate hypotheses and controls" and "Interpret experiments from primary scientific literature"
- Write about a current, pressing issue in the field of Virology.*Relates to Program Learning Outcome: "Communicate scientific information"
- Understand how research of viruses "by study and also by faith" can lead to alleviation of human disease and suffering.*Relates to Program Learning Outcome: "Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological processes"

†MMBIO 466 : Virology Laboratory. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: MMBio 261; or MMBio 465 or concurrent enrollment.

DESCRIPTION: Laboratory exercises illustrating in vitro behavior of selected viruses. Developing laboratory skills for virus studies.

**Course Outcomes**

- Be able to gain hands-on experience in the ability to characterize various aspects of viral infections based upon cultured eukaryotic cells.
- Be able to titrate virus stocks.
- Be able to determine if a human has been previously exposed to a specific virus by perform serological tests.

†MMBIO 467 : Immunology Lab. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBio 261; or 463 or concurrent enrollment.

DESCRIPTION: Laboratory exercises in advanced concepts of immunological processes.

**Course Outcomes**

- Maintain a research lab book with experimental protocol, data, and discussion of results.
- Understand advanced laboratory concepts of Immunology by completing protocols and experiments
- Understand experimental design used in immunology research and determine the soundness of immunological data according to the design and controls used in the experiment.
- Obtain and interpret experimental data.
- Expand the student's understanding of immunology research and acknowledge the miracle of immunological processes. Develop good social skills through participation in laboratory experiments with other students.

MMBIO 470R : Synthetic Biology. (1-2:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: MMBIO 240; Application and interview.
DESCRIPTION: Students are introduced to concepts of synthetic biology and then conceptualize, design, build, and characterize a genetically engineered machine. The class culminates in presentations at the IBE Western regional and IGEM regional conferences in October.

**Course Outcomes**

There are no course outcomes available

MMBIO 494R : Mentored Research. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Mentor's consent.
DESCRIPTION: Mentored research.

**Course Outcomes**

- Perform current techniques and carry out experiments in a professional manner. Gather data and evaluate results.
- Properly notate work and results in a scientific notebook. Participate in the preparation of scientific papers and presentations.
- Develop, design and troubleshoot experimental procedures.
- Form relationships with a research mentor and other students in the lab. Begin networking and professional activities.
- Read, and use primary literature to design experiements and advance a project. Present and evaluate articles from the primary literature

MMBIO 510 : History of Microbiology and Molecular Biology. (2:2:0)

WHEN TAUGHT: Winter Even Yrs.
PREREQUISITE: Any one 400-level MMBio course.
DESCRIPTION: Exploring the lives and historical settings of major contributors to the development of the sciences of microbiology and molecular biology emphasizing the importance of their ground-breaking discoveries in both basic and applied science.

**Course Outcomes**

- The objective of this course is to examine the lives and accomplishments of a few of our science ancestors creating a clearer perspective of our place in the constellation of our science.

MMBIO 513 : Philosophy of Biology. (2:2:0)

WHEN TAUGHT: Fall Even Yrs.
PREREQUISITE: MMBio 360 or 363 or 461 or equivalent.
DESCRIPTION: Epistemological, metaphysical, and ethical issues in the biological sciences. Philosophical questions concerning the theory of evolution, debate between evolution and creationism, fitness, adaptationism, the units of selection, systematics, sociobiology, and evolutionary ethics.

**Course Outcomes**

- Students will read and analyze historically relevant scientific primary literature
- Students will explain philisophical concepts underyling biology
- Students will use philisophical principles to discuss and evaluate ethical issues in biology

MMBIO 515 : RNA-Mediated Gene Regulation. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: MMBio 441 or equivalent.
DESCRIPTION: Current advances in studies on RNA processing, including RNA splicing and editing, riboswitches, ribozymes, and the role of small RNAs in RNA interference and regulation of gene expression.

**Course Outcomes**

- Understand the current approaches and advances in RNA-mediated gene regulation research.
- Read and comprehend reports in the current scientific literature regarding RNA-mediated gene regulation.
- Develop skills in making effective scientific presentations using high standards of clarity, relevance, and logic.

MMBIO 518 : Select Pathogens. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: MMBio 221 or equivalent.
DESCRIPTION: Current literature in special pathogens.

**Course Outcomes**

- Understand the procedures, practices, and facilities required for biosafety levels 1-4.
- Understand the basic parameters of bioterrorism and the current threats
- Understand the current CDC classification of select agents.
- Understand the basic biological characteristics of each select agent, their virulence mechanisms, and their interaction with various hosts.
- Understand how select agents have been used and could be used as bioweapons.
- _____
  (Individual – Please write your own in the space above)

MMBIO 528R : Current Topics in Pathogenesis. (1:1:0)

WHEN TAUGHT: Fall Even Yrs.; Winter
PREREQUISITE: MMBio 151, 221, 261 or equivalent.
RECOMMENDED: MMBio 364.
DESCRIPTION: Readings from current literature on pathogenesis; student presentations and discussion.

**Course Outcomes**

No outcomes are available at this time.

MMBIO 557 : Genes and Cancer. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: MMBio 441 or equivalent.

DESCRIPTION: Molecular basis of human cancers, emphasizing oncogenes, tumor suppressor genes, chromosomal instability, hereditary cancers, chemical and physical carcinogens, and viral carcinogenesis.

**Course Outcomes**

There are no course outcomes available

MMBIO 565 : Molecular Virology. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: MMBio 465 or equivalent.

DESCRIPTION: Molecular mechanisms of virus architecture, attachment and entry pathways, replication strategies, oncogenesis, evolution, and mechanisms of pathogenesis.

**Course Outcomes**

- Describe why viruses are organized and classified as they are.
- Describe viral replication on a molecular level for multiple virus types
- Explain how viruses cause disease, and the interactions between viruses and the host immune system.
- Describe how can viruses can be used as tools to study biological processes and for gene transfer. Use molecular tools to study viruses

†PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

†PDBIO 325 : Tissue Biology (with lab). (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120 & PDBIO 220

DESCRIPTION: Human anatomy and histology; function of cells in tissue; early stages of embryology.

NOTE: Course should be taken during a student's second or third year and before courses in physiology and developmental biology.

**Course Outcomes**

- Students will be able to communicate with health professionals effectively regarding tissue/organ anatomy and physiology in instances of health and disease.
- Students will demonstrate how the relationship between cell organization and cell function correlates with normal and pathological organ behavior.
- Students will be able to describe anatomical and physiological characteristics of epithelial, connective, nervous, and muscular tissue.

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220

DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.

NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

PDBIO 363 : Advanced Physiology Laboratory. (1:.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBio 362 or concurrent enrollment; or instructor's consent.

DESCRIPTION: Experiments and exercises in advanced physiology emphasizing human physiology. Computer simulations of muscle function, endocrine disease, and human physiology. Emphasizes problem solving and calculations.

**Course Outcomes**

- Students will demonstrate the skills required to properly interpret data from scientific experimentation to discover how physiological systems function.
- Students will manifest an understanding of basic physiological principles by modeling how human cells, organs, and organ systems function.

Students will describe how interactions between human organ systems work to maintain homeostasis.

†PDBIO 482 : Developmental Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & PDBIO 360

RECOMMENDED: PDBio 325.

DESCRIPTION: Invertebrate and vertebrate developmental biology. Embryonic gastrulation, neurulation, pattering, etc. Modern approaches and research strategies. Emphasizes gene function, cell signaling, signal transduction during embryogenesis.

**Course Outcomes**

- Students will be able to generally describe the early development (from fertilization to axis formation) of one invertebrate and one vertebrate model organism.
- Students will be able to generally describe the concepts of cellular competence, induction, specification, commitment and differentiation in embryonic development.
- Students will be able to give two examples of organogenesis, including genes and signal transduction pathways that lead to organ system formation.
- Students will be able to explain embryonic patterning, using examples that include genes known to act in patterning events.
- Students will be able to explain at least two concepts in developmental biology that overlap with other sciences, such as stem cell research, cancer research, evolutionary sciences, or neuroscience.
- Students will be able to discern and summarize the current state of knowledge on a given topic, construct pioneering research questions on that topic, and propose experiments aimed at answering those questions.

†PDBIO 582 : Developmental Genetics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PDBio 482 or equivalent.

DESCRIPTION: Gene function and regulation during cell specification and differentiation, pattern formation, and organogenesis in developing embryo.

**Course Outcomes**

- Students will demonstrate understanding of, and the ability to think critically about, primary developmental biology research articles.
- Students will demonstrate confidence in contributing to scientific discussions.
- Students will demonstrate the ability to think scientifically by formulating a research proposal.

**Note 1:** Only 6 total credit hours of MMBio 194A, 194B, 399R, 470R, and 494R will count toward major hours with a 4 credit hour maximum for each individual course. (More credit hours may be taken but they will not count towards major requirements.)
**Note 2:** † indicates a course with a lab included.

9. Pass the Biology Major Field Exam.
10. Complete an exit interview.

## Recommended Courses

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 105 or concurrent enrollment.

DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 106 or concurrent enrollment

DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

## Show all Microbiology and Molecular Biology (MMBIO) Courses

College of Life Sciences Home

Microbiology and Molecular Biology Department Home

Majors

- BS in Medical Laboratory Science
- BS in Microbiology
- BS in Molecular Biology

Minors

- Minor in Microbiology
- Minor in Molecular Biology

Course Information

- Microbiology and Molecular Biology (MMBio) Courses

Faculty

# Minor in Microbiology
# (13–15 hours, plus prerequisites in coupled major)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Complete the following:

MMBIO 151 : Introduction to Microbiology. (4:3:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Chem 105 or concurrent enrollment.

DESCRIPTION: Principles of prokaryotic biology emphasizing cell structure, function, and metabolism. Introduction to bacterial genetics, microbial diversity, and microbial ecology.

**Course Outcomes**

- Understand what microbes are, what they are composed of, how they are built, and their phylogenetic relationships to the living world. Be able to distinguish between eukaryotes, prokaryotes, and viruses.*Relates to Program Learning Outcome: "Exhibit mastery of four of the following six principal areas of the discipline" five of which are microbial physiology, microbial genetics, microbial ecology, medical microbiology, and virology
- Become familiar with the tools of microbiology through both lecture and labs and demonstrate basic aseptic technique. Develop proficiency in working with bacteria including streaking for isolation and performing growth experiments.*Relates to Program Learning Outcome: "Exhibit mastery of four of the following six principal areas of the discipline" three of which are microbial physiology, microbial genetics, microbial ecology
- Formulate questions, testable hypotheses and implement appropriate experimental protocol. Collect and analyze data and be able to draw appropriate conclusions.*Relates to Program Learning Outcome: “Devise experiments with appropriate hypotheses and controls.”
- Integrate knowledge to make informed judgments on tests, lab reports, lab presentations and lab write-ups*Relates to Program Learning Outcome: "Communicate scientific information using both oral and written methods"
- Obtain a deeper appreciation for the complexity, diversity and purposes of life.*Relates to Program Learning Outcome: "Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological principles"

MMBIO 261 : Infection and Immunity. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Principles of infectious organisms (principally bacteria and viruses), the diseases they cause, and the role of host immune responses in health and disease.

**Course Outcomes**

There are no course outcomes available

2. Complete two courses from the following (at least one must have a lab component):

MMBIO 360 : Microbial Genetics. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBIO 240

DESCRIPTION: How DNA governs complex bacterial functions. Classical and modern approaches to gene discovery, including genetic screens, gene mapping, targeted genetic manipulations, and analyzing gene activity.

**Course Outcomes**

There are no course outcomes available

MMBIO 363 : Microbial Ecology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 130; or MMBIO 151; or PDBIO 120

DESCRIPTION: Natural history of a microbe; its distribution and abundance. Critical influence of scale and perspective in determining underlying mechanisms.

**Course Outcomes**

There are no course outcomes available

MMBIO 364 : Bacterial Pathogenesis. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: MMBIO 261

DESCRIPTION: Fundamental principles of bacterial pathogenesis, emphasizing the molecular interactions of medically important bacteria and their hosts.

**Course Outcomes**

There are no course outcomes available

MMBIO 461 : Advanced Bacterial Physiology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481 & MMBIO 151

DESCRIPTION: Principles of prokaryotic physiology, including cell structure and function, gene regulation, and biochemical processes; focusing on the unique aspects of prokaryotic biology.

**Course Outcomes**

- Students will demonstrate an advanced understanding of selected topics in microbial physiology (cell structure, growth, biosynthesis, transport, etc.) through their participation in classroom discussions, writing assignments and oral presentations.
- Students will demonstrate the ability to read, comprehend and communicate current research in microbial physiology by making Powerpoint presentations to the class.
- Students will write a scientific review article on a topic of their choice related to microbial physiology.

MMBIO 463 : Immunology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & MMBIO 261

DESCRIPTION: Advanced concepts of immunological processes.

**Course Outcomes**

- Understanding advanced concepts of Immunology by studying and reflecting on the subject.*Relates to Program Learning Outcome: Exhibit mastery of four of the principle areas of the discipline
- Understands experimental designs used in immunology research and determine the soundness of the immunological data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Read and understand current publications in Immunology and be able to discuss and critically evaluate experiments and data*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Engage in discussions about concepts in immunology and research. Present a PowerPoint on a particular immunological topic. Engage in a question and answer session on the content. Write an easy on a chosen subject relating to recent immunological advances.*Relates to Program Learning Outcome: Communicate scientific information using both oral and written methods.
- Develop a deep appreciation for our Heavenly Father and his love for each of us by engaging in studying how he designed the immune system to protect his children from disease.*Relates to Program Learning Outcome: Reflect/ discuss/ explore how faith in the Lord, and Christ like living are affected by an understanding of the fundamental biological processes.

MMBIO 465 : Virology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBio 261 or equivalent.

DESCRIPTION: Basic principles of virology, emphasizing selected molecular aspects of virus life cycles and disease processes.

**Course Outcomes**

- Be able to answer basic questions about Virology: Why are viruses organized as they are? How do viruses replicate? How do viruses cause disease? What are the interactions between viruses and the host immune system? How to prevent/treat/cure viral infections? How can viruses be used as tools to study biological processes and for gene transfer? How can an understanding of viruses help you in your future career? *Relates to Program Learning Outcome: “Exhibit mastery of four of the principal areas of the discipline”, one of which is Virology.
- Understand experimental tools used to study viruses (these are broadly applicable to molecular biology, cell biology, and microbiology) and be able to develop experiments and interpret data.*Relates to Program Learning Outcomes: “Devise experiments with appropriate hypotheses and controls” and “Interpret experiments from primary scientific literature”
- Write about a current, pressing issue in the field of Virology.*Relates to Program Learning Outcome: “Communicate scientific information”
- Understand how research of viruses “by study and also by faith” can lead to alleviation of human disease and suffering.*Relates to Program Learning Outcome: “Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological processes”

## Show all Microbiology and Molecular Biology (MMBIO) Courses

**College of Life Sciences Home**

**Microbiology and Molecular Biology Department Home**

**Majors**

- BS in Medical Laboratory Science
- BS in Microbiology
- BS in Molecular Biology

**Minors**

- Minor in Microbiology
- Minor in Molecular Biology

**Course Information**

- Microbiology and Molecular Biology (MMBio) Courses

**Faculty**

# Minor in Molecular Biology
# (14 hours, plus prerequisites in coupled major)

Show All Course Descriptions
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## Program Requirements | View MAP

1. Complete the following:

MMBIO 441 : Advanced Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 240 & CHEM 352
DESCRIPTION: Molecular biology of gene structure and expression in prokaryotic and eukaryotic organisms.

**Course Outcomes**

- Learn molecular biology principles through study, lecture, and class discussion. An emphasis will be on understanding the experiments used to learn these principles.â ¨ *Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology preparing students for further education and/or employment.
- Apply the principles learned to design experiments and properly interpret experimental data.â ¨ *Relates to Program Learning Outcome: Proficiency in formulating research projects
- Present current research from the scientific literature.*Relates to Program Learning Outcomes: Communicate scientific information using oral methods; interpret, analyze and critique experiments from the primary scientific literature. Presenting research findings through effective oral and written presentations.
- Demonstrate integrity and ethical behavior during all class work.â ¨ *Relates to Program Learning Outcome: Commitment to professional integrity and ethical behavior consistent with the mission of the University.

MMBIO 442 : Advanced Molecular Biology Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 241; MMBio 441 or concurrent enrollment.
DESCRIPTION: Laboratory to accompany MMBio 441.

**Course Outcomes**

- Learn molecular biology laboratory techniques through hands-on experience. Techniques will include DNA and RNA isolation, PCR, microRNA isolation, northern blotting, RFLP analysis, site-directed mutagenisis, protein extraction and EMSA.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology
- Apply the techniques to design experiments with appropriate hypotheses and controls and properly interpret experimental data*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls
- Practice scientific communication and record-keeping through the completion of a laboratory notebook and answering written and oral questions and presentations.*Relates to Program Learning Outcome: Demonstrate Communication skills in presenting research findings through effective oral and written presentations.
- Design and carry out independent experiments*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls

MMBIO 468 : (MMBio-Bio-PWS) Genomics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 240 & PWS 340
DESCRIPTION: Current analysis of genes and genomes; computational and statistical approaches for analyzing genomic data, including genome sequencing and annotation, gene expression and the transcriptome, proteomics and functional genomics, and genetic variation and SNPs.

**Course Outcomes**

- Students can describe the technology and process used to sequence genomes (de novo and re-sequencing)
- Students can complete a series of exercises with data representing genomic experiments (analyze and interpret)
- Students can outline techniques and concepts for assessing genomic parameters such as methylation, gene expression, DNA-binding motifs, metagenomics, and comparative genomics.

2. Complete at least 6 hours from the following:

BIO 463 : Genetics of Human Disease. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: PWS 340
DESCRIPTION: Examining the application of genetics to understanding and treatment of human disease. Functional consequences of mutations; use of model organisms; linkage and association analysis of complex traits; pharmacogenetics; ethical considerations.

**Course Outcomes**

- Understand and explain the different types of genetic variants, how they can be typed and how they can be used to understand the genetic architecture of human disease.
- Understand linkage disequilibrium in the human genome and the role it plays in the search for genetic risk factors for human disease
- Understand and use basic statistics and software for analyzing the correlation between genetic markers and risk for disease.
- Understand and explain how model organisms contribute to our understanding of the genetics of human disease.
- Demonstrate the ability to obtain, aggregate and present information about the current knowledge of the genetics of a human disease.

BIO 465 : Bioinformatics and Proteomics. (3:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: BIO 365

DESCRIPTION: 3-D protein structural comparisons, hidden Markov models for database comparisons, homology detection, multiple sequence analyses, and protein family comparisons. Exercises in computer programming in genomics.

**Course Outcomes**

- Students will learn and demonstrate mastery of advanced analytical bioinformatics techniques, including genome assembly, genome annotation, and protein analyses.
- Demonstrate ability to use and evaluate literature databases and primary literature directed to the bioinformatics community in terms of newly developed software, analytical algorithms, application to empirical data, etc.
- Apply and develop computational skills in secondary (i.e., helices, etc.) and tertiary (i.e., folding, etc.) prediction, and 3-dimensional (i.e., x-ray crystal structures, etc.) modeling of protein structures.
- Apply evolutionary concepts to modeling DNA/proteins to evaluate and/or predict function, utilizing 3D structures, physical and chemical amino acid properties, etc.
- Apply existing and develop new tools for genome assembly and annotation from next-generation DNA sequencing projects

CHEM 463 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 462 & PHSCS 220

RECOMMENDED: Math 302.

DESCRIPTION: Thermodynamics and equilibria, states of matter, kinetic-molecular theory, kinetics, statistical mechanics.

**Course Outcomes**

- Demonstrate connections between molecular interactions and equations of state
- Describe physical and chemical phenomena in terms of molecular and bulk models and understand the limitations of these models
- Describe the kinetics of chemical reactions in terms of molecular mechanisms and empirical rate laws
- Apply the laws of thermodynamics to physical and chemical processes, including phase transitions, mixtures, chemical equilibrium, and electrochemical processes
- Analyze and interpret experimental data to draw conclusions about physical and chemical processes

CHEM 468 : Biophysical Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481 & MATH 113 & PHSCS 220; or CHEM 481M & MATH 113 & PHSCS 220

DESCRIPTION: Applications of physical chemistry to biological systems. Spectroscopic applications, computational methods, structural biochemistry, thermodynamics, equilibria, statistical mechanics, transport properties, kinetics, quantum mechanics.

NOTE: For biochemistry (BS) majors and those interested in the health professions or biochemistry. (For prerequisites, Phscs 220 may be taken concurrently.)

**Course Outcomes**

- Describe conceptually the fundamental concepts in the four principal areas of physical chemistry: classical thermodynamics, statistical thermodynamics kinetics and quantum mechanics
- Define mathematically the concepts outlined in 1) and manipulate the fundamental and derived equations associated with these concepts
- Use the above skills to calculate or predict the equilibrium conditions or direction of spontaneous biochemical processes that are involved in metabolism or energy transfer events given appropriate thermodynamic data and initial system conditions
- Employ mathematical and graphical techniques on enzyme kinetic data to extract key parameters and to identify inhibition mechanisms
- Solve simple Schroedinger equation problems (e.g., particle in a box), identify boundary conditions, and explain the significance of boundary conditions on the observance of quantized effects
- Relate the simple Hamiltonians from above to biological molecules and systems and generalize from the simple results to make predictions regarding behavior in the biological systems
- Identify the nature of electronic energy levels in key photoactive biological molecules and use spectroscopic data to probe these levels
- Apply fundamental concepts of electronic structure and reaction kinetics to the steps in photosynthesis and vision
- Provide examples in which physical chemistry perspectives have enabled a deeper more complete understanding of the structure and function of biological molecules and complex biological systems

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

CHEM 482 : Mechanisms of Molecular Biology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Second-semester biochemistry. Nucleic acid biochemistry and molecular biology: nucleotide metabolism, chromosome and chromatin structure, DNA structure and replication, RNA transcription and gene expression, protein synthesis and regulation, eukaryotic gene systems, signal transduction.

**Course Outcomes**

- Draw the structure of DNA, determine the topology of a plasmid, explain the chemical sequence of events that occur during DNA replication and draw structural changes that occur due to mutation.
- Determine how to perform and interpret an electrophoresis separation of DNA fragments, southern blot, restriction map, polymerase chain reaction, and a DNA sequencing reaction with necessary controls.
- Design a DNA cloning strategy, explain controls necessary, and write procedural plan.
- Draw and explain the mechanism of RNA transcription and how RNA is processed, spliced, and regulated. Understand the basic mechanisms of transcriptional regulation using the example of transcription of genes necessary for cholesterol synthesis.
- Determine when and how to use techniques that involve RNA: Northern blots, quantitative PCR, microarrays, S1 nuclease and primer extension mapping of the transcriptional start with appropriate controls.
- Determine the sequence of amino acids in a protein from a series of nucleotides.
- Draw and explain the process of protein translation and how it is regulated.
- Determine where a protein is localized in a tissue or cell: interpret a western blot, protein fusion assays.
- Determine with what a protein interacts: Interpret gel shift assays, Chromatin Immunoprecipitation, DNA footprinting, and yeast two hybrid reporter assays.
- Maintain faith through challenges and ethical boundaries in reporting and interpreting data.

CHEM 581 : Advanced Biochemical Methodology 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 482

DESCRIPTION: Analytical and structural determination methods used in biochemical research, including mass spectrometry-based proteomics, immunotechniques, atomic force and electron microscopy, NMR and X-ray diffraction.

NOTE: One of two required courses for biochemistry graduate students. May be taken before or after Chem 583.

**Course Outcomes**

- Understand the theory, instrumentation and applications of proteomic, immunological and structural methods currently used to address important biochemical questions.
- Interpret and critique data from these techniques.
- Design appropriate experiments and apply these techniques to their own research problems.
- Recognize important technological advances in proteomic, immunological and structural methods.
- Present findings from the primary literature describing the application of these methods to significant biochemical questions in a professional manner.

CHEM 584 : Biochemistry Laboratory/Proteins. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Introduction to current biochemical research procedures including spectrophotometry, chromatography, electrophoresis, and immunological techniques. Protein over-expression; isolation and characterization methods. Enzyme kinetics and protein-ligand interactions. Introduction to bioinformatics.

NOTE: May be taken before or after Chem 586.

**Course Outcomes**

- Apply spectroscopic techniques to analyze proteins, both their enzymatic and binding reactions
- Use gel electrophoresis and immunoblotting techniques to determine the presence and purity of proteins in biological samples
- Identify protein binding partners using co-immunoprecipitation methods
- Purify proteins using state-of-the-art separations methods
- Characterize an enzyme using steady state kinetics methods
- Use enzymes as analytical and diagnostic tools
- Properly record and interpret data
- Present data they have collected in an oral presentation and in a written scientific paper
- Understand ethical means of reporting results and giving proper credit to the work of others
- Measure ligand binding to proteins; determine dissociation constants and the degree of cooperativity.

CHEM 586 : Biochemistry Laboratory/Nucleic Acids. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Laboratory course covering major techniques involved in isolation, amplification, and cloning of recombinant DNA as well as isolation, synthesis, translation, and identification of RNA.

NOTE: May be taken before or after Chem 584.

**Course Outcomes**

- Understand, design and execute experiments using basic DNA manipulation procedures that include isolation, purification and modification of DNA
- Explain and perform PCR amplification and use this technique to detect the presence of DNA “targets”, DNA cloning (subcloning) and DNA sequencing
- Understand and explain how to isolate, quantitate and manipulate RNA
- Design and perform experiments to reverse transcribe RNA into complementary DNA (cDNA) and assess gene expression by semi- and quantitative PCR
- Isolate total RNA and be able to purify mRNA from this material
- Introduce and express foreign DNA and/or RNA in mammalian cells using the techniques of electroporation, lipid-based transfection, calcium phosphate based transfection and retroviral transduction
- “Knockdown” an expressed gene in mammalian cells using RNA silencing
- Prepare laboratory notebooks that include the objective, results and methods of each laboratory experiment. Additionally, students will provide conclusions to each experiment, including when appropriate, potential explanations to unexpected results

MMBIO 151 : Introduction to Microbiology. (4:3:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Chem 105 or concurrent enrollment.

DESCRIPTION: Principles of prokaryotic biology emphasizing cell structure, function, and metabolism. Introduction to bacterial genetics, microbial diversity, and microbial ecology.

**Course Outcomes**

- Understand what microbes are, what they are composed of, how they are built, and their phylogenetic relationships to the living world. Be able to distinguish between eukaryotes, prokaryotes, and viruses.*Relates to Program Learning Outcome: "Exhibit mastery of four of the following six principal areas of the discipline" five of which are microbial physiology, microbial genetics, microbial ecology, medical microbiology, and virology
- Become familiar with the tools of microbiology through both lecture and labs and demonstrate basic aseptic technique. Develop proficiency in working with bacteria including streaking for isolation and performing growth experiments.*Relates to Program Learning Outcome: "Exhibit mastery of four of the following six principal areas of the discipline" three of which are microbial physiology, microbial genetics, microbial ecology
- Formulate questions, testable hypotheses and implement appropriate experimental protocol. Collect and analyze data and be able to draw appropriate conclusions.*Relates to Program Learning Outcome: “Devise experiments with appropriate hypotheses and controls.”
- Integrate knowledge to make informed judgments on tests, lab reports, lab presentations and lab write-ups*Relates to Program Learning Outcome: "Communicate scientific information using both oral and written methods"
- Obtain a deeper appreciation for the complexity, diversity and purposes of life.*Relates to Program Learning Outcome: "Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological principles"

MMBIO 261 : Infection and Immunity. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Principles of infectious organisms (principally bacteria and viruses), the diseases they cause, and the role of host immune responses in health and disease.

**Course Outcomes**

There are no course outcomes available

MMBIO 360 : Microbial Genetics. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBIO 240

DESCRIPTION: How DNA governs complex bacterial functions. Classical and modern approaches to gene discovery, including genetic screens, gene mapping, targeted genetic manipulations, and analyzing gene activity.

**Course Outcomes**

There are no course outcomes available

MMBIO 364 : Bacterial Pathogenesis. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: MMBIO 261

DESCRIPTION: Fundamental principles of bacterial pathogenesis, emphasizing the molecular interactions of medically important bacteria and their hosts.

**Course Outcomes**

There are no course outcomes available

MMBIO 430 : Advanced Cell Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 360; Bioscience major status.

DESCRIPTION: Molecular genetics, cell biology, and developmental biology.

**Course Outcomes**

- Read primary literature to further their own understanding of the topic*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic research, or the health professions.

- Explain the processes of cell biology*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic research, or the health professions.
- Apply knowledge of these molecular processes to broader topics*Relates to Program Learning Outcome: Proficiency in formulating and carrying out independent and collaborative research projects.
- Analyze research data, design experiments and present data in a clear manner*Relates to Program Learning Outcome: Communication skills in presenting their research findings through effective oral and written presentations.

MMBIO 463 : Immunology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & MMBIO 261

DESCRIPTION: Advanced concepts of immunological processes.

**Course Outcomes**

- Understanding advanced concepts of Immunology by studying and reflecting on the subject.*Relates to Program Learning Outcome: Exhibit mastery of four of the principle areas of the discipline
- Understands experimental designs used in immunology research and determine the soundness of the immunological data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Read and understand current publications in Immunology and be able to discuss and critically evaluate experiments and data*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Engage in discussions about concepts in immunology and research. Present a PowerPoint on a particular immunological topic. Engage in a question and answer session on the content. Write an easy on a chosen subject relating to recent immunological advances.*Relates to Program Learning Outcome: Communicate scientific information using both oral and written methods.
- Develop a deep appreciation for our Heavenly Father and his love for each of us by engaging in studying how he designed the immune system to protect his children from disease.*Relates to Program Learning Outcome: Reflect/ discuss/ explore how faith in the Lord, and Christ like living are affected by an understanding of the fundamental biological processes.

MMBIO 465 : Virology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBio 261 or equivalent.

DESCRIPTION: Basic principles of virology, emphasizing selected molecular aspects of virus life cycles and disease processes.

**Course Outcomes**

- Be able to answer basic questions about Virology: Why are viruses organized as they are? How do viruses replicate? How do viruses cause disease? What are the interactions between viruses and the host immune system? How to prevent/treat/cure viral infections? How can viruses be used as tools to study biological processes and for gene transfer? How can an understanding of viruses help you in your future career? *Relates to Program Learning Outcome: “Exhibit mastery of four of the principal areas of the discipline”, one of which is Virology.
- Understand experimental tools used to study viruses (these are broadly applicable to molecular biology, cell biology, and microbiology) and be able to develop experiments and interpret data.*Relates to Program Learning Outcomes: “Devise experiments with appropriate hypotheses and controls” and “Interpret experiments from primary scientific literature”
- Write about a current, pressing issue in the field of Virology.*Relates to Program Learning Outcome: “Communicate scientific information”
- Understand how research of viruses “by study and also by faith” can lead to alleviation of human disease and suffering.*Relates to Program Learning Outcome: “Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological processes”

MMBIO 466 : Virology Laboratory. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: MMBio 261; or MMBio 465 or concurrent enrollment.

DESCRIPTION: Laboratory exercises illustrating in vitro behavior of selected viruses. Developing laboratory skills for virus studies.

**Course Outcomes**

- Be able to gain hands-on experience in the ability to characterize various aspects of viral infections based upon cultured eukaryotic cells.
- Be able to titrate virus stocks.
- Be able to determine if a human has been previously exposed to a specific virus by perform serological tests.

MMBIO 467 : Immunology Lab. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBio 261; or 463 or concurrent enrollment.

DESCRIPTION: Laboratory exercises in advanced concepts of immunological processes.

**Course Outcomes**

- Maintain a research lab book with experimental protocol, data, and discussion of results.
- Understand advanced laboratory concepts of Immunology by completing protocols and experiments
- Understand experimental design used in immunology research and determine the soundness of immunological data according to the design and controls used in the experiment.
- Obtain and interpret experimental data.
- Expand the student's understanding of immunology research and acknowledge the miracle of immunological processes. Develop good social skills through participation in laboratory experiments with other students.

MMBIO 494R : Mentored Research. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Mentor's consent.

DESCRIPTION: Mentored research.

**Course Outcomes**

- Perform current techniques and carry out experiments in a professional manner. Gather data and evaluate results.
- Properly notate work and results in a scientific notebook. Participate in the preparation of scientific papers and presentations.
- Develop, design and troubleshoot experimental procedures.
- Form relationships with a research mentor and other students in the lab. Begin networking and professional activities.
- Read, and use primary literature to design experiements and advance a project. Present and evaluate articles from the primary literature

(*strongly* recommended)

MMBIO 510 : History of Microbiology and Molecular Biology. (2:2:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Any one 400-level MMBio course.

DESCRIPTION: Exploring the lives and historical settings of major contributors to the development of the sciences of microbiology and molecular biology emphasizing the importance of their ground-breaking discoveries in both basic and applied science.

**Course Outcomes**

- The objective of this course is to examine the lives and accomplishments of a few of our science ancestors creating a clearer perspective of our place in the constellation of our science.

MMBIO 513 : Philosophy of Biology. (2:2:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: MMBio 360 or 363 or 461 or equivalent.

DESCRIPTION: Epistemological, metaphysical, and ethical issues in the biological sciences. Philosophical questions concerning the theory of evolution, debate between evolution and creationism, fitness, adaptationism, the units of selection, systematics, sociobiology, and evolutionary ethics.

**Course Outcomes**

- Students will read and analyze historically relevant scientific primary literature
- Students will explain philisophical concepts underyling biology
- Students will use philisophical principles to discuss and evaluate ethical issues in biology

MMBIO 515 : RNA-Mediated Gene Regulation. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: MMBio 441 or equivalent.

DESCRIPTION: Current advances in studies on RNA processing, including RNA splicing and editing, riboswitches, ribozymes, and the role of small RNAs in RNA interference and regulation of gene expression.

**Course Outcomes**

- Understand the current approaches and advances in RNA-mediated gene regulation research.
- Read and comprehend reports in the current scientific literature regarding RNA-mediated gene regulation.
- Develop skills in making effective scientific presentations using high standards of clarity, relevance, and logic.

MMBIO 518 : Select Pathogens. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: MMBio 221 or equivalent.

DESCRIPTION: Current literature in special pathogens.

**Course Outcomes**

- Understand the procedures, practices, and facilities required for biosafety levels 1-4.
- Understand the basic parameters of bioterrorism and the current threats
- Understand the current CDC classification of select agents.
- Understand the basic biological characteristics of each select agent, their virulence mechanisms, and their interaction with various hosts.
- Understand how select agents have been used and could be used as bioweapons.
- _____
  (Individual – Please write your own in the space above)

PDBIO 482 : Developmental Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & PDBIO 360

RECOMMENDED: PDBio 325.

DESCRIPTION: Invertebrate and vertebrate developmental biology. Embryonic gastrulation, neurulation, pattering, etc. Modern approaches and research strategies. Emphasizes gene function, cell signaling, signal transduction during embryogenesis.

**Course Outcomes**

- Students will be able to generally describe the early development (from fertilization to axis formation) of one invertebrate and one vertebrate model organism.
- Students will be able to generally describe the concepts of cellular competence, induction, specification, commitment and differentiation in embryonic development.
- Students will be able to give two examples of organogenesis, including genes and signal transduction pathways that lead to organ system formation.
- Students will be able to explain embryonic patterning, using examples that include genes known to act in patterning events.
- Students will be able to explain at least two concepts in developmental biology that overlap with other sciences, such as stem cell research, cancer research, evolutionary sciences, or neuroscience.
- Students will be able to discern and summarize the current state of knowledge on a given topic,

construct pioneering research questions on that topic, and propose experiments aimed at answering those questions.

PDBIO 582 : Developmental Genetics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PDBio 482 or equivalent.

DESCRIPTION: Gene function and regulation during cell specification and differentiation, pattern formation, and organogenesis in developing embryo.

**Course Outcomes**

- Students will demonstrate understanding of, and the ability to think critically about, primary developmental biology research articles.
- Students will demonstrate confidence in contributing to scientific discussions.
- Students will demonstrate the ability to think scientifically by formulating a research proposal.

**Note:** Be aware of prerequisites for the above courses (usually filled in a coupled major).

## Show all Microbiology and Molecular Biology (MMBIO) Courses

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**Microbiology and Molecular Biology Department Home**

**Majors**

- BS in Medical Laboratory Science
- BS in Microbiology
- BS in Molecular Biology

**Minors**

- Minor in Microbiology
- Minor in Molecular Biology

**Course Information**

- Microbiology and Molecular Biology (MMBio) Courses

**Faculty**

# Microbiology and Molecular Biology (MMBio)

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## Undergraduate Courses

### 100-Level Courses

MMBIO 102 : Introduction to Clinical Laboratory Techniques. (1:0:3)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Hospital laboratory techniques.

**Course Outcomes**

- Describe and carry out basic clnical laboratory techniques
- List and evaluate careers in clinical laboratory sciences

MMBIO 151 : Introduction to Microbiology. (4:3:3)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Chem 105 or concurrent enrollment.
DESCRIPTION: Principles of prokaryotic biology emphasizing cell structure, function, and metabolism. Introduction to bacterial genetics, microbial diversity, and microbial ecology.

**Course Outcomes**

- Understand what microbes are, what they are composed of, how they are built, and their phylogenetic relationships to the living world. Be able to distinguish between eukaryotes, prokaryotes, and viruses.*Relates to Program Learning Outcome: "Exhibit mastery of four of the following six principal areas of the discipline" five of which are microbial physiology, microbial genetics, microbial ecology, medical microbiology, and virology
- Become familiar with the tools of microbiology through both lecture and labs and demonstrate basic aseptic technique. Develop proficiency in working with bacteria including streaking for isolation and performing growth experiments.*Relates to Program Learning Outcome: "Exhibit mastery of four of the following six principal areas of the discipline" three of which are microbial physiology, microbial genetics, microbial ecology
- Formulate questions, testable hypotheses and implement appropriate experimental protocol. Collect and analyze data and be able to draw appropriate conclusions.*Relates to Program Learning Outcome: “Devise experiments with appropriate hypotheses and controls.”
- Integrate knowledge to make informed judgments on tests, lab reports, lab presentations and lab write-ups*Relates to Program Learning Outcome: "Communicate scientific information using both oral and written methods"
- Obtain a deeper appreciation for the complexity, diversity and purposes of life.*Relates to Program Learning Outcome: "Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological principles"

MMBIO 194A : Freshman Research Initiative 1. (2:0:6)

WHEN TAUGHT: Fall
PREREQUISITE: By application only.
DESCRIPTION: Phage isolation and characterization.
NOTE: For freshmen or sophomore students only. Requires two semester commitment.

**Course Outcomes**

- Use proper aseptic techniques for the transfer and handling of microorganisms and instruments.
- Use appropriate microbiological media and test systems.
- Use standard microbiology laboratory equipment correctly.
- Follow an experimental protocol, collect and organize data in a systematic fashion, present data in anappropriate form, assess the validity of the data, and draw appropriate conclusions based on the results.

MMBIO 194B : Freshman Research Initiative 2. (2:0:6)

WHEN TAUGHT: Winter
PREREQUISITE: MMBIO 194A
DESCRIPTION: Phage genome annotation. Focus on experimental design and data analysis.
NOTE: For freshmen or sophomore students only. Requires two semester commitment.

**Course Outcomes**

- Prepare DNA for sequencing
- Archive phage samples and DNA samples (submit archived phage to HHMI)
- Learn how to use bioinformatics software for the following:DNA sequence alignment (Consed)Primer design (Primer3)Assessing ORFs for gene calls (GBrowse, Glimmer and GeneMark)Homology assessment (BLAST and Phamerator)Annotation (Apollo)Comparative analysis (positional and functional)

- Analyze, annotate and prepare to submit genome to GenBank (submit if possible)
- Prepare an abstract for a presentation of research data
- Prepare and deliver a research presentation (oral and poster)
- Gain experience in research writing and reading of scientific papers

**200-Level Courses**

MMBIO 221 : General Microbiology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Any biology course.
RECOMMENDED: Any chemistry course.
DESCRIPTION: Microbial world, emphasizing communicable diseases, their causes and control.
NOTE: Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses.

**Course Outcomes**

- Explain and discuss the ways by which microbiologists study microorganisms.
- Discuss the principle infectious diseases that affect mankind, including how they are transmitted, treated, controlled and prevented.
- Differentiate between the types of microorganisms by identifying relevant structure and their function in the biosphere.
- Propose microbial solutions to global problems.
- Describe how the human body defends itself against infectious agents.

MMBIO 222 : General Microbiology Laboratory. (1:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: MMBio 221 or concurrent enrollment.

**Course Outcomes**

- Use the bright field microscope to view and interpret microbiological specimens
- Use proper aseptic techniques int he handling and transfer of microbiological specimens
- Use standard microbiological media to culture and identify common microbiological specimens
- Use standard microbiology laboratory equipment correctly
- Follow an experimental protocol, collect and organize data, present data in an appropriate form, assess the validity of the data, and draw appropriate comclusions based on the results
- Integrate information and skills gained int eh course to make informed judgements about the role of microorganisms in everyday life
- Use accepted safety protocols when handling microbiological specimens and chemicals

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105
DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.
NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

MMBIO 241 : Molecular and Cellular Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBio 240 or concurrent enrollment.
DESCRIPTION: Molecular and cellular biology techniques laboratory.

**Course Outcomes**

- Practice ethics and integrity by working with groups and following lab rules.*Relates to Program Learning Outcome: A commitment to professional integrity and ethical behavior consistent with themission of the university.
- Learn the basics of experimental design, how to formulate a hypothesis, what controls to use, how to interpret experimental data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Practice scientific communication through written lab questions, exams and oral presentations.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Learn molecular biology laboratory techniques through practical laboratory exercises. Techniques include, spectrophotometry,isolation of DNA and protein, quantification of DNA and protein, techniques used to purify or detect specific proteins, such aschromatography, western blot and ELISA, DNA fingerprinting, polymerase chain reaction and enzyme assays.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology.

MMBIO 261 : Infection and Immunity. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Principles of infectious organisms (principally bacteria and viruses), the diseases they cause, and the role of host

immune responses in health and disease.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

MMBIO 360 : Microbial Genetics. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBIO 240

DESCRIPTION: How DNA governs complex bacterial functions. Classical and modern approaches to gene discovery, including genetic screens, gene mapping, targeted genetic manipulations, and analyzing gene activity.

**Course Outcomes**

There are no course outcomes available

MMBIO 362R : Careers in Biomedical Sciences. (1:ARR:ARR)

WHEN TAUGHT: Fall

DESCRIPTION: Lectures and field trips surveying career choices.

**Course Outcomes**

- Students should be able to make informed decisions about career paths in Microbiology

MMBIO 363 : Microbial Ecology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 130; or MMBIO 151; or PDBIO 120

DESCRIPTION: Natural history of a microbe; its distribution and abundance. Critical influence of scale and perspective in determining underlying mechanisms.

**Course Outcomes**

There are no course outcomes available

MMBIO 364 : Bacterial Pathogenesis. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: MMBIO 261

DESCRIPTION: Fundamental principles of bacterial pathogenesis, emphasizing the molecular interactions of medically important bacteria and their hosts.

**Course Outcomes**

There are no course outcomes available

MMBIO 390R : Readings in Molecular Biology. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240

RECOMMENDED: PDBio 360.

DESCRIPTION: Selected readings in molecular biology.

**Course Outcomes**

- Become familiar with the current literature and techniques in molecular biology
- Gain experience in critically evaluating the current literature in molecular biology.
- Gain confidence in scientific presentations and discussions.

MMBIO 392 : Hematology. (2.5:2.5:1)

PREREQUISITE: Medical laboratory science program acceptance.

DESCRIPTION: Normal and abnormal hematology.

**Course Outcomes**

- Perform the full range of clinical laboratory tests in areas such as hematology and play a role in the development and evaluation of test systems and interpretive algorithms*Relates to Program Learning Outcome: #1
- Have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed, or performed*Relates to Program Learning Outcome: #2
- Possess basic knowledge, skills, and relevant experiences for the following:Communications to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient educationFinancial, operations, marketing, and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory servicesInformation management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information *Relates to Program Learning Outcome: #3, 4, 5

MMBIO 393 : Immunohematology and Coagulation Theory. (2.5:2.5:1)

PREREQUISITE: Medical laboratory science program acceptance.

DESCRIPTION: Theory and practice of bloodbanking and coagulation theory.

**Course Outcomes**

- Perform the full range of clinical laboratory tests in areas such as coagulation and immunohematology and play a role in the development and evaluation of test systems and interpretive algorithms*Relates to Program Learning Outcome: #1
- Have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed, or performed*Relates to Program Learning Outcome: #2
- Possess basic knowledge, skills, and relevant experiences for the following:Communications to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient educationFinancial, operations, marketing, and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory servicesInformation management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information*Relates to Program Learning Outcome: #3, 4, 5

MMBIO 394 : Practical Hematology. (2:0:7)

PREREQUISITE: MMBio 392 or concurrent enrollment.

DESCRIPTION: Laboratory to accompany MMBio 392; medical laboratory techniques in hematology.

**Course Outcomes**

- Discuss the techniques of drawing, proper collection, and storage of blood samples for hematology procedures. *Relates to Program Learning Outcome: #1
- Practice safe techniques according to those presented in class and in the textbook throughout your career in student and clinical laboratory experiences. *Relates to Program Learning Outcome: #2
- Demonstrate your ability to properly use the various types of spectrophotometers in the laboratory.*Relates to Program Learning Outcome: #2
- Prepare the reagents required in the procedures throughout the semester where possible.*Relates to Program Learning Outcome: #2
- Select proper reagents, perform procedures, interpret results, and evaluate the significance of the results for all determinations listed on the course outline*Relates to Program Learning Outcome: #2

MMBIO 395 : Practical Immunohematology and Coagulation Theory. (2:0:7)

PREREQUISITE: MMBio 393 or concurrent enrollment.

DESCRIPTION: Laboratory to accompany MMBio 393; medical laboratory techniques in immunohematology and coagulation theory.

**Course Outcomes**

- Perform the full range of clinical laboratory tests in areas such as coagulation and blood banking and play a role in the development and evaluation of test systems and interpretive algorithms*Relates to Program Learning Outcome: #1
- Have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed, or performed*Relates to Program Learning Outcome: #2
- Possess basic knowledge, skills, and relevant experiences for the following:Communications to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient educationFinancial, operations, marketing, and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory servicesInformation management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information*Relates to Program Learning Outcome: #3, 4, 5

MMBIO 399R : Academic Internship. (1-9:0:40)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Mentor's consent.

DESCRIPTION: Approved experiential learning.

**Course Outcomes**

- Students will be able to design and perform experiements using the latest techniques.
- Students will analyze experimental results and draw conclusions.
- Students will communicate with supervisors and collegues in an outside the university environment. They will present their scientific research.

**400-Level Courses**

MMBIO 407 : Clinical Microbiology. (4:2:6)

WHEN TAUGHT: Winter

PREREQUISITE: MMBIO 261; Admission to the Medical Laboratory Science program.

DESCRIPTION: Approaches to laboratory diagnosis of infectious diseases.

**Course Outcomes**

- Gain familiarity with the medically important bacteria and fungi by performing the full range of clinical laboratory tests in Microbiology (Prepare, examine and interpret gram stained smears of microorganisms, streak appropriate media for isolation of microorganisms, interpret stains, growth patterns, and biochemical reactions to aid in the identification of microbial organisms) and play a role in the development and evaluation of test systems and interpretive algorithms
- Have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance. Demonstrate improvement wherever laboratory testing is researched, developed, or performed. Be able to design experiments, with appropriate controls, to test various hypotheses in clinical Microbiology.
- Possess basic knowledge, skills, and relevant experiences for the following:Communications to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient educationFinancial, operations, marketing, and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory servicesInformation management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information
- Possess basic knowledge, skills, and relevant experiences for the following:Communications to enable

consultative interactions with members of the healthcare team, external relations, customer service, and patient educationFinancial, operations, marketing, and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory servicesInformation management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information
- Possess basic knowledge, skills, and relevant experiences for the following:Communications to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient educationFinancial, operations, marketing, and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory servicesInformation management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information

MMBIO 417 : Medical Parasitology. (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 261 & MMBIO 240

DESCRIPTION: Pathogenesis, diagnosis, and epidemiology of human parasitic diseases. Laboratory included.

**Course Outcomes**

- Gain familiarity with the medically important parasites. This includes understanding parasite host range as well as pathology and mechanisms of pathogenesis.*Relates to Program Learning Outcome: Exhibit mastery of medical microbiology
- Be able to design experiments, with appropriate controls, to test various hypotheses in parasitology.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Read and critically interpret current scientific literature in the field of parasitology.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Students should gain an understanding of their role and responsibility in alleviating suffering caused by parasitic diseases.*Relates to Program Learning Outcome: Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological principles.

MMBIO 422 : Pathophysiology and Laboratory Diagnosis in Clinical Chemistry. (2.5:2:1)

PREREQUISITE: Medical laboratory science program acceptance.

DESCRIPTION: Laboratory diagnosis of disorders involving the major systems of the human body.

**Course Outcomes**

- Perform analytical tests of body fluids, cells, and other substances
- Confirm abnormal results, verify quality control procedures, execute quality control procedures, and develop solutions to problems concerning the generation of laboratory data
- Make decisions conscerning the results of quality control and quality assurance measures, and institute proper pocedures to maintain accuracy and precision.

MMBIO 423 : Pathophysiology and Lab Diagnosis in Clinical Chemistry and Molecular Diagnostics. (2.5:2:1)

PREREQUISITE: Medical laboratory science program acceptance.

DESCRIPTION: Laboratory diagnosis of disorders involving the major systems of the human body and molecular diagnostic applications.

**Course Outcomes**

- Perform the full range of clinical laboratory tests in areas such as clinical chemistry, urinalysis and molecular dioagnostics and play a role in the development and evaluation of test systems and interpretive algorithms
- Have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed, or performed.
- Possess basic knowledge, skills, and relevant experiences for the followingCommunications to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient educationFinancial, operations, marketing, and human dresource management of the clinical laboratory to enable cost-effective, hight-quality, value-added laboratorys ervicesInformation management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated informaation

MMBIO 424 : Diagnostic Techniques in Clinical Chemistry. (2:0:7)

PREREQUISITE: Medical laboratory science program acceptance.

DESCRIPTION: Medical laboratory techniques in clinical chemistry.

**Course Outcomes**

- Perform the full range of clinical laboratory tests in clinical chemistryDiscuss the techniques of drawing, proper collection, and storage of blood samples for clinical chemistry proceduresPractice safe techniques according to those presented in class and in the textbook throughout your career in student and clinical laboratory experiences.Demonstrate your ability to properly use the various types of spectrophotometers in the laboratoryPrepare the reagents required in the procedures throughout the semester where possiblePerform proper procedures, discuss the purpose of reagents, interpret results, evaluate quality assurance factors and solve problems or discrepancies for the assays and tasks performed.
- Have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulation, education, and quality assurance performance improvement whenever laboratory testing is researched, developed, or performed.

MMBIO 425 : Diagnostic Techniques in Clinical Chemistry and Molecular Biology. (2:0:7)

PREREQUISITE: Medical laboratory science program acceptance.

DESCRIPTION: Medical laboratory techniques in clinical chemistry and diagnostic molecular genetics.

**Course Outcomes**

- Perform the full range of clinical laboratory tests in clinical chemistryDiscuss the techniques of drawing, proper collection, and storatge of blood samples for clinical chemistry proceduresPractice safe techniques according to those presented in class and in the textbook throughout your career in studen and clinical laboratory experiences.Demonstrate your ability to properly use the various types of spectrophotometers in the laboratoryPrepare the reagents required in the procedures throughout the semester where possiblePerform proper procedures, discuss the purpose of reagents, interpret results, evaluate quality assurance factors and solve problems or discrepancies for the assays and tasks performed.

- Have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulation, education, and quality assurance performance improvement whenever laboratory testing is researched, developed, or performed.

MMBIO 430 : Advanced Cell Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 360; Bioscience major status.

DESCRIPTION: Molecular genetics, cell biology, and developmental biology.

**Course Outcomes**

- Read primary literature to further their own understanding of the topic*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic research, or the health professions.
- Explain the processes of cell biology*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic research, or the health professions.
- Apply knowledge of these molecular processes to broader topics*Relates to Program Learning Outcome: Proficiency in formulating and carrying out independent and collaborative research projects.
- Analyze research data, design experiments and present data in a clear manner*Relates to Program Learning Outcome: Communication skills in presenting their research findings through effective oral and written presentations.

MMBIO 441 : Advanced Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & CHEM 352

DESCRIPTION: Molecular biology of gene structure and expression in prokaryotic and eukaryotic organisms.

**Course Outcomes**

- Learn molecular biology principles through study, lecture, and class discussion. An emphasis will be on understanding the experiments used to learn these principles.â ¨ *Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology preparing students for further education and/or employment.
- Apply the principles learned to design experiments and properly interpret experimental data.â ¨ *Relates to Program Learning Outcome: Proficiency in formulating research projects
- Present current research from the scientific literature.*Relates to Program Learning Outcomes: Communicate scientific information using oral methods; interpret, analyze and critique experiments from the primary scientific literature. Presenting research findings through effective oral and written presentations.
- Demonstrate integrity and ethical behavior during all class work.â ¨ *Relates to Program Learning Outcome: Commitment to professional integrity and ethical behavior consistent with the mission of the University.

MMBIO 442 : Advanced Molecular Biology Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 241; MMBio 441 or concurrent enrollment.

DESCRIPTION: Laboratory to accompany MMBio 441.

**Course Outcomes**

- Learn molecular biology laboratory techniques through hands-on experience. Techniques will include DNA and RNA isolation, PCR, microRNA isolation, northern blotting, RFLP analysis, site-directed mutagenisis, protein extraction and EMSA.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology
- Apply the techniques to design experiments with appropriate hypotheses and controls and properly interpret experimental data*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls
- Practice scientific communication and record-keeping through the completion of a laboratory notebook and answering written and oral questions and presentations.*Relates to Program Learning Outcome: Demonstrate Communication skills in presenting research findings through effective oral and written presentations.
- Design and carry out independent experiments*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls

MMBIO 461 : Advanced Bacterial Physiology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481 & MMBIO 151

DESCRIPTION: Principles of prokaryotic physiology, including cell structure and function, gene regulation, and biochemical processes; focusing on the unique aspects of prokaryotic biology.

**Course Outcomes**

- Students will demonstrate an advanced understanding of selected topics in microbial physiology (cell structure, growth, biosynthesis, transport, etc.) through their participation in classroom discussions, writing assignments and oral presentations.
- Students will demonstrate the ability to read, comprehend and communicate current research in microbial physiology by making Powerpoint presentations to the class.
- Students will write a scientific review article on a topic of their choice related to microbial physiology.

MMBIO 463 : Immunology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & MMBIO 261

DESCRIPTION: Advanced concepts of immunological processes.

**Course Outcomes**

- Understanding advanced concepts of Immunology by studying and reflecting on the subject.*Relates to Program Learning Outcome: Exhibit mastery of four of the principle areas of the discipline
- Understands experimental designs used in immunology research and determine the soundness of the immunological data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Read and understand current publications in Immunology and be able to discuss and critically evaluate experiments and data*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Engage in discussions about concepts in immunology and research. Present a PowerPoint on a particular immunological topic. Engage in a question and answer session on the content. Write an easy on a chosen subject relating to recent immunological advances.*Relates to Program Learning Outcome: Communicate scientific information using both oral and written methods.
- Develop a deep appreciation for our Heavenly Father and his love for each of us by engaging in studying how he designed the immune system to protect his children from disease.*Relates to Program Learning Outcome: Reflect/ discuss/ explore how faith in the Lord, and Christ like living are affected by an understanding of the fundamental biological processes.

MMBIO 465 : Virology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBio 261 or equivalent.

DESCRIPTION: Basic principles of virology, emphasizing selected molecular aspects of virus life cycles and disease processes.

**Course Outcomes**

- Be able to answer basic questions about Virology: Why are viruses organized as they are? How do viruses replicate? How do viruses cause disease? What are the interactions between viruses and the host immune system? How to prevent/treat/cure viral infections? How can viruses be used as tools to study biological processes and for gene transfer? How can an understanding of viruses help you in your future career? *Relates to Program Learning Outcome: "Exhibit mastery of four of the principal areas of the discipline", one of which is Virology.
- Understand experimental tools used to study viruses (these are broadly applicable to molecular biology, cell biology, and microbiology) and be able to develop experiments and interpret data.*Relates to Program Learning Outcomes: "Devise experiments with appropriate hypotheses and controls" and "Interpret experiments from primary scientific literature"
- Write about a current, pressing issue in the field of Virology.*Relates to Program Learning Outcome: "Communicate scientific information"
- Understand how research of viruses "by study and also by faith" can lead to alleviation of human disease and suffering.*Relates to Program Learning Outcome: "Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological processes"

MMBIO 466 : Virology Laboratory. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: MMBio 261; or MMBio 465 or concurrent enrollment.

DESCRIPTION: Laboratory exercises illustrating in vitro behavior of selected viruses. Developing laboratory skills for virus studies.

**Course Outcomes**

- Be able to gain hands-on experience in the ability to characterize various aspects of viral infections based upon cultured eukaryotic cells.
- Be able to titrate virus stocks.
- Be able to determine if a human has been previously exposed to a specific virus by perform serological tests.

MMBIO 467 : Immunology Lab. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBio 261; or 463 or concurrent enrollment.

DESCRIPTION: Laboratory exercises in advanced concepts of immunological processes.

**Course Outcomes**

- Maintain a research lab book with experimental protocol, data, and discussion of results.
- Understand advanced laboratory concepts of Immunology by completing protocols and experiments
- Understand experimental design used in immunology research and determine the soundness of immunological data according to the design and controls used in the experiment.
- Obtain and interpret experimental data.
- Expand the student's understanding of immunology research and acknowledge the miracle of immunological processes. Develop good social skills through participation in laboratory experiments with other students.

MMBIO 468 : (MMBio-Bio-PWS) Genomics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & PWS 340

DESCRIPTION: Current analysis of genes and genomes; computational and statistical approaches for analyzing genomic data, including genome sequencing and annotation, gene expression and the transcriptome, proteomics and functional genomics, and genetic variation and SNPs.

**Course Outcomes**

- Students can describe the technology and process used to sequence genomes (de novo and re-sequencing)
- Students can complete a series of exercises with data representing genomic experiments (analyze and interpret)
- Students can outline techniques and concepts for assessing genomic parameters such as methylation, gene expression, DNA-binding motifs, metagenomics, and comparative genomics.

MMBIO 470R : Synthetic Biology. (1-2:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: MMBIO 240; Application and interview.

DESCRIPTION: Students are introduced to concepts of synthetic biology and then conceptualize, design, build, and characterize a genetically engineered machine. The class culminates in presentations at the IBE Western regional and IGEM regional conferences in October.

**Course Outcomes**

There are no course outcomes available

MMBIO 490R : Molecular Biology Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 441; Senior status.

DESCRIPTION: Critical examination of current literature and research in molecular biology.

**Course Outcomes**

- Describe the current research in the field of molecular biology
- Network and talk to prominent researchers in the field
- Analyze current research and experimental design.

MMBIO 491 : Concept Applications in Laboratory Medicine. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: Acceptance into medical laboratory science program.

DESCRIPTION: Case presentations of various medical disorders.

**Course Outcomes**

- This course is designed to allow the student to interpret, evaluate, and correlate laboratory data and clinical symptoms pertaining to specific disease states. Each week several students will present case study presentations covering current lecture content. For example, week two covers carbohydrate metabolism and related disease processes so the assigned students will present patient data focusing on a specific disease such as diabetes mellitus, including symptoms, laboratory findings and treatment.
- To receive a passing grade for this course, it is expected that the student will attend all weekly sessions ON TIME with no more than one excused absence permitted and present at least one case study during the semester. Class will be held on each Friday of the semester at 9 a.m.

MMBIO 494R : Mentored Research. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Mentor's consent.

DESCRIPTION: Mentored research.

**Course Outcomes**

- Perform current techniques and carry out experiments in a professional manner. Gather data and evaluate results.
- Properly notate work and results in a scientific notebook. Participate in the preparation of scientific papers and presentations.
- Develop, design and troubleshoot experimental procedures.
- Form relationships with a research mentor and other students in the lab. Begin networking and professional activities.
- Read, and use primary literature to design experiements and advance a project. Present and evaluate articles from the primary literature

MMBIO 496R : Clinical Experience. (1-9:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: MMBIO 392 & MMBIO 422

DESCRIPTION: Performing the full range of clinical laboratory tests in an affiliated clinical facility. A six-month internship experience.

**Course Outcomes**

- Have a clinical eperience outside of the University. Be familiar with procedures, protocols, and working environment in a working clinical laboratory.

MMBIO 499R : Senior Honors Thesis. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Topic to be cleared with Honors Program and Department of Microbiology and Molecular Biology.

**Course Outcomes**

- Students will design and carry out experiments to research the topic of their honors thesis
- Students will prepare a well-written thesis that communicates their research findings.

## 500-Level Graduate Courses (available to advanced undergraduates)

MMBIO 510 : History of Microbiology and Molecular Biology. (2:2:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Any one 400-level MMBio course.

DESCRIPTION: Exploring the lives and historical settings of major contributors to the development of the sciences of microbiology and molecular biology emphasizing the importance of their ground-breaking discoveries in both basic and applied science.

**Course Outcomes**

- The objective of this course is to examine the lives and accomplishments of a few of our science ancestors

creating a clearer perspective of our place in the constellation of our science.

MMBIO 513 : Philosophy of Biology. (2:2:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: MMBio 360 or 363 or 461 or equivalent.

DESCRIPTION: Epistemological, metaphysical, and ethical issues in the biological sciences. Philosophical questions concerning the theory of evolution, debate between evolution and creationism, fitness, adaptationism, the units of selection, systematics, sociobiology, and evolutionary ethics.

**Course Outcomes**

- Students will read and analyze historically relevant scientific primary literature
- Students will explain philisophical concepts underyling biology
- Students will use philisophical principles to discuss and evaluate ethical issues in biology

MMBIO 515 : RNA-Mediated Gene Regulation. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: MMBio 441 or equivalent.

DESCRIPTION: Current advances in studies on RNA processing, including RNA splicing and editing, riboswitches, ribozymes, and the role of small RNAs in RNA interference and regulation of gene expression.

**Course Outcomes**

- Understand the current approaches and advances in RNA-mediated gene regulation research.
- Read and comprehend reports in the current scientific literature regarding RNA-mediated gene regulation.
- Develop skills in making effective scientific presentations using high standards of clarity, relevance, and logic.

MMBIO 518 : Select Pathogens. (2:2:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: MMBio 221 or equivalent.

DESCRIPTION: Current literature in special pathogens.

**Course Outcomes**

- Understand the procedures, practices, and facilities required for biosafety levels 1-4.
- Understand the basic parameters of bioterrorism and the current threats
- Understand the current CDC classification of select agents.
- Understand the basic biological characteristics of each select agent, their virulence mechanisms, and their interaction with various hosts.
- Understand how select agents have been used and could be used as bioweapons.
- _____
  (Individual – Please write your own in the space above)

MMBIO 523 : Current Trends in Pathogenesis. (1:1:0)

DESCRIPTION: Trends from current literature on pathogenesis of infectious diseases.

**Course Outcomes**

There are no course outcomes available

MMBIO 528R : Current Topics in Pathogenesis. (1:1:0)

WHEN TAUGHT: Fall Even Yrs.; Winter

PREREQUISITE: MMBio 151, 221, 261 or equivalent.

RECOMMENDED: MMBio 364.

DESCRIPTION: Readings from current literature on pathogenesis; student presentations and discussion.

**Course Outcomes**

No outcomes are available at this time.

MMBIO 551R : Current Topics in Microbiology and Molecular Biology. (1-3:Arr.:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Readings from current literature on a specific topic; student presentations and discussion.

**Course Outcomes**

- Students will be able to read, interpret, understand and evaluate current primary literature
- Students will describe in depth current topics in molecular or microbiology
- Students will present finding from the primary literature in a scientific manner, and evaluate the presentations of others.

MMBIO 557 : Genes and Cancer. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: MMBio 441 or equivalent.

DESCRIPTION: Molecular basis of human cancers, emphasizing oncogenes, tumor suppressor genes, chromosomal instability, hereditary cancers, chemical and physical carcinogens, and viral carcinogenesis.

**Course Outcomes**

There are no course outcomes available

MMBIO 565 : Molecular Virology. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: MMBio 465 or equivalent.

DESCRIPTION: Molecular mechanisms of virus architecture, attachment and entry pathways, replication strategies, oncogenesis, evolution, and mechanisms of pathogenesis.

**Course Outcomes**

- Describe why viruses are organized and classified as they are.
- Describe viral replication on a molecular level for multiple virus types
- Explain how viruses cause disease, and the interactions between viruses and the host immune system.
- Describe how can viruses can be used as tools to study biological processes and for gene transfer. Use molecular tools to study viruses

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Microbiology and Molecular Biology Department Home**

College of Life Sciences Home

Microbiology and Molecular Biology Department Home

Majors

- BS in Medical Laboratory Science
- BS in Microbiology
- BS in Molecular Biology

Minors

- Minor in Microbiology
- Minor in Molecular Biology

Course Information

- Microbiology and Molecular Biology (MMBio) Courses

Faculty

# Microbiology and Molecular Biology Faculty

Show All
Hide All

## Professors

Breakwell, Donald P.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, Purdue University, 1988
PhD, Purdue University, 1992

Harker, Alan Reed

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1976
PhD, University of Utah, 1982

Johnson, F. Brent

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1966
MS, Brigham Young University, 1967
PhD, Brigham Young University, 1970

Nielsen, Brent Lynn

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
PhD, Oregon State University, 1985

O'Neill, Kim L.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Professor
**DEGREES:** BSc, University Of Ulster, Northern Ireland, 1980
DPhil, University of Ulster, Northern Ireland, 1986

Robison, Richard A.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
MS, Brigham Young University, 1980
PhD, Brigham Young University, 1988

Young, Shauna Christine Anderson

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Professor
**DEGREES:** AS, Ricks College, 1965
BS, Brigham Young University, 1967
MS, University of Utah, 1973
PhD, University of Washington, 1984

## Associate Professors

Bridgewater, Laura Clarke

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1989
PhD, George Washington University, 1995

Burnett, Sandra H.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Associate Professor
**DEGREES:** BA, Utah State University, 1992
MS, Utah State University, 1993
PhD, University of Kentucky, 2000

Erickson, David L.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Associate Professor
**DEGREES:** BS, University of Lethridge, 1999
PhD, University of Calgary, 2003

Griffitts, Joel Shelby

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Associate Professor
**DEGREES:** BS, Stanford University, 1999
PhD, University of California, San Diego, 2004

McCleary, William

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1982
PhD, University of California, Berkley, 1990

Wilson, Eric

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1990
MS, Utah State University, 1994
PhD, Montana State University, 2000

Zundel, William

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1985
MS, University of Houston, 2001

## Assistant Professors

Berges, Bradford K.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
PhD, University of Pennsylvania, 2005

Davis, Mary Feller

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2008
MS, Vanderbilt University, 2013

PhD, Vanderbilt University, 2013

Evans, Richard Paul

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Assistant Professor
**DEGREES:** PhD, Medical College of Virginia, 1983
BS, Brigham Young University, 1995

Grose, Julianne H.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 1994
PhD, University of Utah, 2003

Johnson, Steven M.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1994
PhD, Yale University, 2004

Poole, Brian D.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Microbiology and Molecular Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
PhD, Pennsylvania State University, 2004

**College of Life Sciences Home**

**Neuroscience Center Home**

**Majors**

- BS in Neuroscience

**Course Information**

- Neuroscience (Neuro) Courses

# Neuroscience Center

Neuroscience Center Office
S192 ESC, (801) 422-1218

College of Family, Home, and Social Sciences Advisement Center
1041 JFSB, (801) 422-3541

College of Life Sciences Academic Advisement Office
2060 LSB WIDB, (801) 422-3042

The neuroscience undergraduate program is an interdisciplinary program that allows students to seek advisement at the College of Life Sciences Academic Advisement Office or the College of Family, Home, and Social Sciences Advisement Center.

## Admission to Degree Program

The degree program in the Neuroscience Center is a open enrollment program.

## The Discipline

Neuroscience is the field of study covering the development and function of the central nervous system and its connection to influencing/regulating behavior. The study of neuroscience examines topics such as neuroanatomy, neuropsychopharmacology, neurophysiology, molecular neurobiology, and neuroendocrinology. The interdisciplinary nature of neuroscience requires the tools provided by experience and training in calculus, general biology, genetics, physiology, molecular biology, chemistry (general, organic, and biochemistry), physics, psychology (hormones and behavior, memory, cognition, sensation, and perception), and research design and analysis.

The objectives for the Neuroscience Center and major are to (1) establish and promote an interdisciplinary education in neuroscience, (2) produce scientifically literate individuals having the ability to design, conduct, and analyze research activities, and (3) have students think critically in an integrative fashion based upon research-rich and inquiry-based academic curricula.

## Career Opportunities

Neuroscience prepares students to pursue advanced degrees in graduate school or to enter into the pharmaceutical and biotechnology workforce. Neuroscience is an excellent preprofessional field of study for those interested in health professions, law, or business.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Neuroscience** (Program Outcomes)

Students should see their college advisement center for help or information concerning the undergraduate programs.

College of Life Sciences Home

Neuroscience Center Home

Majors

- BS in Neuroscience

Course Information

- Neuroscience (Neuro) Courses

# BS in Neuroscience (64–68 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following major core courses:

NEURO 205 : Neurobiology. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: PDBIO 120; or instructor's consent.
DESCRIPTION: The nervous system; cellular communication, neural basis of behavior, and hormonal influences.

**Course Outcomes**
There are no course outcomes available

NEURO 360 : Neuroanatomy. (2:2:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: NEURO 205; Neuroscience major status.
DESCRIPTION: Functonal anatomy of the human brain and spinal cord, including surface and cross-sectional gross anatomy, microscopic anatomy, and sensory, motor, and integrative systems' circuitry.

**Course Outcomes**
There are no course outcomes available

NEURO 380 : Behavioral Neuroscience. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: NEURO 205; Neuroscience major status.
DESCRIPTION: Critical examination of anatomical, physiological, and chemical bases of behavioral expression.

**Course Outcomes**
There are no course outcomes available

NEURO 480 : Advanced Neuroscience. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: NEURO 205; or PDBIO 362; PDBio 360; Neuroscience or PDBio major status.
DESCRIPTION: Principles of neural science. Structure-function relationships and integration of the nervous system.

**Course Outcomes**
There are no course outcomes available

NEURO 481 : Neuroscience Laboratory. (1:0:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: NEURO 205; Neuro 480 or concurrent enrollment; Neuroscience major status.
DESCRIPTION: Exposure to classical/modern experiments in neuroscience.

**Course Outcomes**
There are no course outcomes available

2. Complete the following life sciences courses:

MMBIO 240 : Molecular Biology. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105
DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the

classical experiments that have informed our current models of biology at the molecular level.

NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies
- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220

DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.

NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

3. Complete the following chemistry courses:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: CHEM 351; or CHEM 351M
DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120
DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.
NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

4. Complete one of the following physics course options:

**Either**

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: High school algebra and trigonometry.
RECOMMENDED: Concurrent enrollment in Phscs 107.
DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 105 or equivalent.
RECOMMENDED: Concurrent enrollment in Phscs 108.
DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 105 or concurrent enrollment.
DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 106 or concurrent enrollment
DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

**Or**

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 121 or equivalent. Calculus.

DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

5. Complete the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

**Note:** Students may substitute Math 113 for Math 112.

6. Complete three courses from three different departments from the following electives:

BIO 370 : Bioethics. (2:1:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Introductory biology course.

DESCRIPTION: In-depth lecture and small group discussion of varied bioethical issues. LDS Church positions emphasized when appropriate.

**Course Outcomes**

- Students will understand the ethical and philosophical underpinnings of bioethics and to develop ethical intuitions on bioethical issues.
- Students will learn the terminology, vocabulary, and objectives of bioethics.
- Students will understand the tools and approaches needed to make a bioethical decision and to communicate that decision in rationally informed ways.
- Students will understand the bioethical primary literature, to understand how to read case studies, and familiarity with the major issues being discussed in bioethics today.

CHEM 482 : Mechanisms of Molecular Biology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Second-semester biochemistry. Nucleic acid biochemistry and molecular biology: nucleotide metabolism, chromosome and chromatin structure, DNA structure and replication, RNA transcription and gene expression, protein synthesis and regulation, eukaryotic gene systems, signal transduction.

**Course Outcomes**

- Draw the structure of DNA, determine the topology of a plasmid, explain the chemical sequence of events that occur during DNA replication and draw structural changes that occur due to mutation.
- Determine how to perform and interpret an electrophoresis separation of DNA fragments, southern blot, restriction map, polymerase chain reaction, and a DNA sequencing reaction with necessary controls.
- Design a DNA cloning strategy, explain controls necessary, and write procedural plan.
- Draw and explain the mechanism of RNA transcription and how RNA is processed, spliced, and regulated. Understand the basic mechanisms of transcriptional regulation using the example of transcription of genes necessary for cholesterol synthesis.
- Determine when and how to use techniques that involve RNA: Northern blots, quantitative PCR, microarrays, S1 nuclease and primer extension mapping of the transcriptional start with appropriate controls.
- Determine the sequence of amino acids in a protein from a series of nucleotides.
- Draw and explain the process of protein translation and how it is regulated.
- Determine where a protein is localized in a tissue or cell: interpret a western blot, protein fusion assays.
- Determine with what a protein interacts: Interpret gel shift assays, Chromatin Immunoprecipitation, DNA footprinting, and yeast two hybrid reporter assays.
- Maintain faith through challenges and ethical boundaries in reporting and interpreting data.

COMD 334 : Hearing Science and Acoustics. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Hearing anatomy, physiology, and science.

**Course Outcomes**

- Demonstrate an understanding of the decibel and be able to convert among various reference systems.

- Demonstrate an understanding of basic acoustic concepts.
- Explain details of the anatomy and physiology of the auditory pathway.

**NEURO 449R : Undergraduate Research Experience. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Undergraduate research experience in neuroscience.

**Course Outcomes**

There are no course outcomes available

PDBIO 363 : Advanced Physiology Laboratory. (1:.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBio 362 or concurrent enrollment; or instructor's consent.

DESCRIPTION: Experiments and exercises in advanced physiology emphasizing human physiology. Computer simulations of muscle function, endocrine disease, and human physiology. Emphasizes problem solving and calculations.

**Course Outcomes**

- Students will demonstrate the skills required to properly interpret data from scientific experimentation to discover how physiological systems function.
- Students will manifest an understanding of basic physiological principles by modeling how human cells, organs, and organ systems function.
- Students will describe how interactions between human organ systems work to maintain homeostasis.

PDBIO 561 : Physiology of Drug Mechanisms. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 362

DESCRIPTION: Overview of physiological and pharmacological mechanisms and principles of human therapeutics as applied to clinically significant pathophysiology.

**Course Outcomes**

- Students will manifest an interactive understanding of drug mechanisms at the molecular, cellular, tissue, organ, and/or systemic levels.
- Students will demonstrate that they understand the cellular pathways targeted for pharmacological treatment.
- Pupils will demonstrate a comprehension of how the body interacts with compounds used for pharmacological treatments.
- Students will manifest the knowledge, skills and vocabulary necessary to converse with health care providers concerning their own and family's medical treatments.

**PDBIO 565 : Endocrinology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PDBio 362 or instructor's consent.

DESCRIPTION: Mammalian hormones.

**Course Outcomes**

- Students will be able to describe major actions of each hormone on target cells.
- Students will be able to describe pathways for synthesis, post-translational processing, and cellular localization or secretion for peptide hormones and hormone receptors.
- Students will be able to describe pathways for synthesis and inactivation for steroid hormones, thyroid hormones, and catecholamines.
- Students will be able to describe the control of synthesis and secretion for each hormone, including feedback relationships.
- Students will be able to describe major signaling pathways in target cells for each hormone.
- Students will be able to describe methodologies used to test hypotheses in study of problems in endocrinology.
- Students will be able to describe and recognize etiology and clinical symptoms of the major endocrine diseases

**PDBIO 568 : Cellular Electrophysiology and Biophysics. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 362 & PHSCS 140; or PDBIO 362 & PHSCS 220

DESCRIPTION: Using electrophysiology and biophysics as an approach to study of physiology. Extensive look at ion channels and cell signaling.

**Course Outcomes**

- Students will demonstrate biophysical knowledge gained in specific areas including membrane properties, voltage and ligand-gated receptors, neurotransmission and mathematical modeling.
- Students will apply the biophysical knowledge gained in a laboratory setting.
- Students will demonstrate critical thinking and evaluation skills gained in the course by preparing a competent and clearly written research proposal.
- Students will demonstrate knowledge of a particular research topic and presentation skills in a clear and informative oral presentation.

***PSYCH 370 : Sensation and Perception. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or NEURO 205; or instructor's consent.
DESCRIPTION: Sensory basis of perception and principles of perceptual organization.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will gain an understanding of how our brains interact with our external environment and give rise to our perceptions.Measurement: Students will demonstrate this understanding on quizzes and on exams.
- Students will develop an understanding of how we know what we know about sensation and perception, i.e., research methods in cognitive neuroscience and the scientific method.Measurement: Students will demonstrate this understanding through in-class discussion, on quizzes/exams, and through coming to class ready to learn. Being ready to learn includes completing the assigned readings and assessments, participating in lecture and discussion, and completing outside assignments (e.g., labs).
- Students will be able to apply the principles discussed in class to the world around them.Measurement: Students will demonstrate this through lab assignments.
- Students will be able to critically reflect on the content of psychology as well as on disciplinary values in light of their knowledge of and commitment to the restored gospel of Jesus Christ and to sustain personal values that are true to the gospel while maintaining their serious study of psychology and neuroscience.Measurement:Multiple choice exams, quizzes.

PSYCH 375 : Cognition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or NEURO 205; or instructor's consent.
DESCRIPTION: Perceptual organization; information processing; cognitive development; relationships between sensory analysis, perception, memory, learning, language, and problem solving.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will recognize and understand the cognitive processes of perception, memory, language, reasoning, and problem solving.Measurement: This will be assessed on multiple choice and essay quizzes and exams.
- Students will assess and develop ways to apply the principles of cognitive psychology.Measurement: This will be assessed with a design proposal that implements the principles of cognitive psychology.

PSYCH 382 : Stress Psychobiology. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: PSYCH 307 & PSYCH 309 & PSYCH 310; or NEURO 205; or instructor's consent. (Neuro 205 will substitute for Psych 310.)
DESCRIPTION: Behavioral neurobiology of stress.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will describe how stress affects physiology and physical health outcomes.Measurement:Multiple choice exams, quizzes.
- Students will integrate their knowledge of stress and health by analyzing a health condition in the context of stress.Measurement:APA style paper.
- Students will experiment with stress management techniques and assess their effectiveness using a stress management journal.Measurement:Journal entries, critique of experience.

PSYCH 388 : Drugs, Reward and Addiction. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: PSYCH 111; or NEURO 205
DESCRIPTION: Examines the biopsychosocial nature of drug and behavioral addiction. This course presents the most current research in the field and bridges psychology and neuroscience.

**Course Outcomes**

There are no course outcomes available

**PSYCH 584 : Cognition, Affect, and Brain Function. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PSYCH 381; or NEURO 380; or equivalent; or instructor's consent.
DESCRIPTION: Basic principles of cognition and affect as they relate to normal brain function and following neural disease or injury.
NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will extend their understanding of specific brain systems and the cognitive and emotional functions correlated with those systems.Measurement: Participation in class conversation about the required reading; in-class presentations on brain function or disorders; final examination.
- Students will compare and contrast scientific approaches to the study of brain, cognition, and emotion; and describe specific structural and functional research methods.Measurement:Participation in class conversation about the required reading; in-class presentations and writing assignments.
- Students will describe how brain injury can produce cognitive or emotional disorders or both and how the study of brain injury illustrates issues in the evaluation of research findings.Measurement:Author journal article critiques, final exam, and in-class presentations.

**Note:** Students should carefully consult with the Neuroscience Center and faculty regarding which electives they should take to best support their postgraduate plans.

**These courses require the instructor's signature before enrolling.

***This course is strongly recommended.

## Recommended Courses

In addition to the above courses, students may find the following courses helpful (see Preprofessional Advisement Center, 3326 WSC):

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.

NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

STDEV 170 : Introduction to Health Professions. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of health professions: medical, dental, and other specialties. Primary focus on guest lectures from various practitioners and clinicians.

**Course Outcomes**

- 1. Students will gain a basic understanding of a significant number of health professions.
- 2. Students will increase knowledge of health professions through class presentations with health care professionals.
- 3. Students will learn more about health care provision through service learning in preparation for service-oriented health professions.
- 4. Students will increase awareness of the requirements to enter various health professions and where to find additional information about their preferred health care field.

STDEV 271 : Preview of Dentistry. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Preview of dentistry with lectures by dentists; overview of required courses; application process; recommended extracurricular opportunities.

**Course Outcomes**

- Increase understanding of the dental profession.
- Understand the application process for dental school and analyze their individual preparation for this process.

STDEV 272 : Preview of Medicine. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Preview of medical practice with lectures by doctors; overview of required courses; application process; recommended extracurricular opportunities.

**Course Outcomes**

- Understand the application process for medical school and analyze their individual preparation for this process.
- Increase understanding of the medical profession.

STDEV 273 : Preview of Optometry. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Preview of optometry with lectures by optometrists; overview of required courses; application process; recommended extracurricular opportunities.

**Course Outcomes**

- Students will increase understanding of the optometry profession.
- Students will understand the application process for optometry school and analyze their individual preparation for this process.

STDEV 375 : Dental School Preparation Laboratory Experience. (2:0:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Dental laboratory practices; tooth terminology, morphology, and anatomy. Procedures including oral pathology, diagnosis, and X-rays.

**Course Outcomes**

- Students will gain a basic understanding of dental sciences in preparation for their first semesters of dental school.
- Students will learn basic dental terminology and current issues in dentistry to better prepare them for the dental school interviewing process.
- Students will develop manual dexterity for skills that are required to perform dentistry.

STDEV 399R : Health Professions Internship. (1-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Internships with health care providers.

**Course Outcomes**

- Students will gain valuable experience by shadowing and working with current health professionals.
- Students will improve their ability to converse with health care professionals.
- Students will learn about different healthcare practices.
- Students will develop meaningful professional relationships with their internship providers.

STDEV 470 : Medical and Dental School Application. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Preparation for medical and dental school applications; entire application process, including school identification and submission.

**Course Outcomes**

- Increase understanding of the medical/dental school application process. They will understand the various components of the application process and how to access resources to facilitate their professional school application.
- Assess their individual preparation for the professional school application process.
- Improve writing skills, particularly in respect to the personal statement.
- Improve interviewing skills.

*Hours include courses that may fulfill university core requirements.

## Show all Neuroscience (Neuro) Courses

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Neuroscience Center Home

Majors

- BS in Neuroscience

Course Information

- Neuroscience (Neuro) Courses

# Neuroscience (Neuro)

Show All Course Descriptions
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## Undergraduate Courses

### 200-Level Courses

NEURO 205 : Neurobiology. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: PDBIO 120; or instructor's consent.
DESCRIPTION: The nervous system; cellular communication, neural basis of behavior, and hormonal influences.

**Course Outcomes**
There are no course outcomes available

### 300-Level Courses

NEURO 316 : Neuroscience Advanced Writing. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: NEURO 205; Engl 150 or equivalent; Neuroscience major status.
DESCRIPTION: Processes of research writing and oral presentation for neuroscience students.
NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**
No outcomes are available at this time.

NEURO 360 : Neuroanatomy. (2:2:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: NEURO 205; Neuroscience major status.
DESCRIPTION: Functonal anatomy of the human brain and spinal cord, including surface and cross-sectional gross anatomy, microscopic anatomy, and sensory, motor, and integrative systems' circuitry.

**Course Outcomes**
There are no course outcomes available

NEURO 380 : Behavioral Neuroscience. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: NEURO 205; Neuroscience major status.
DESCRIPTION: Critical examination of anatomical, physiological, and chemical bases of behavioral expression.

**Course Outcomes**
There are no course outcomes available

### 400-Level Courses

NEURO 449R : Undergraduate Research Experience. (.5-3:0:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Undergraduate research experience in neuroscience.

**Course Outcomes**
There are no course outcomes available

NEURO 480 : Advanced Neuroscience. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: NEURO 205; or PDBIO 362; PDBio 360; Neuroscience or PDBio major status.

DESCRIPTION: Principles of neural science. Structure-function relationships and integration of the nervous system.

**Course Outcomes**

There are no course outcomes available

NEURO 481 : Neuroscience Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NEURO 205; Neuro 480 or concurrent enrollment; Neuroscience major status.

DESCRIPTION: Exposure to classical/modern experiments in neuroscience.

**Course Outcomes**

There are no course outcomes available

NEURO 496R : Neuroscience Academic Internship. (.5-12:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Major status.

DESCRIPTION: Off-campus internship experience in neuroscience.

**Course Outcomes**

There are no course outcomes available

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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Nutrition, Dietetics, and Food Science Department Home

Majors

- BS in Dietetics
- BS in Food Science
- BS in Nutritional Science

Minors

- Nutrition

Course Information

- Nutrition, Dietetics, and Food Science (NDFS) Courses

Faculty

# Nutrition, Dietetics, and Food Science

Michael L. Dunn, Chair
S-221 ESC, (801) 422-3912

Life Sciences Student Services
2060 LSB, (801) 422-3042

## Admission to Degree Program

Some degree programs in the Department of Nutrition, Dietetics, and Food Science carry special enrollment limitations. Please see the department for specific details.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Dietetics** (Program Outcomes)
**BS in Food Science** (Program Outcomes)
**BS in Nutritional Science** (Program Outcomes)

**Minor in Nutrition**

Students should see Life Sciences Student Services for help or information concerning the undergraduate programs.

**Note:** For the molecular biology program, see Microbiology and Molecular Biology.

## Graduate Programs and Degrees

MS in Food Science
MS in Nutritional Science

For more information see the BYU 2014–2015 Graduate Catalog.

College of Life Sciences Home

Nutrition, Dietetics, and Food Science Department Home

Majors

- BS in Dietetics
- BS in Food Science
- BS in Nutritional Science

Minors

- Nutrition

Course Information

- Nutrition, Dietetics, and Food Science (NDFS) Courses

Faculty

# BS in Dietetics (80 hours*)

Show All Course Descriptions
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*This is a limited-enrollment program requiring departmental admissions approval. Please see below for information regarding requirements for admission to this major.*

Following prerequisite courses, the Didactic Program in Dietetics (DPD) consists primarily of dietetics course work at the junior and senior level. Brigham Young University's Didactic Program in Dietetics is accredited by the Accreditation Council for Education in Nutrition and Dietetics of the Academy of Nutrition and Dietetics, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, (312) 899-0040 ext. 5400. http://www.eatright.org/ACEND. Following graduation, students must gain acceptance into and complete a dietetic internship (DI) to qualify for the national examination required for Registered Dietitian (RD) status.

## Program Acceptance Requirements

1. Students must apply by February 15 for admission into the professional sequence in the fall. Formal acceptance is required to continue with the professional sequence.
2. Enrollment is limited to 40 students.
3. Four of the following eight courses must be completed at the time of application: Acc 200, Chem 285, MMBio 221, NDFS 100, 200, 290; PDBio 220, 305.
4. Major GPA and performance in nutrition, dietetics, and food science courses will be considered. Successful applicants typically have a major and cumulative GPA greater than 3.0 and nutrition, dietetics, and food science course grades greater than B–.
5. Applicants need at least 300 hours of dietetics-related work and/or volunteer experience.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following courses (to be completed before professional sequence):

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

**CHEM 101 : Introductory General Chemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 97 or equivalent.
DESCRIPTION: Atomic and molecular structure, periodic relationships, states of matter, chemical reactions and stoichiometry, acids and bases.
NOTE: Primarily for nonscience majors who require a broad introduction to general chemistry.

**Course Outcomes**

- Students will be able to view the world around them in chemical terms. Students will use the concepts of atoms, molecules, and their properties to understand a variety of phenomena.
- Students will be able to make qualitative and/or quantitative predictions regarding a number of chemical concepts including chemical reactions and stoichiometry, calorimetry, osmosis, gases, acid/base

chemistry, chemical equilibria, and radioactivity.

***CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent.

DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

MMBIO 221 : General Microbiology. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Any biology course.

RECOMMENDED: Any chemistry course.

DESCRIPTION: Microbial world, emphasizing communicable diseases, their causes and control.

NOTE: Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses.

**Course Outcomes**

- Explain and discuss the ways by which microbiologists study microorganisms.
- Discuss the principle infectious diseases that affect mankind, including how they are transmitted, treated, controlled and prevented.
- Differentiate between the types of microorganisms by identifying relevant structure and their function in the biosphere.
- Propose microbial solutions to global problems.
- Describe how the human body defends itself against infectious agents.

****MMBIO 222 : General Microbiology Laboratory. (1:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: MMBio 221 or concurrent enrollment.

**Course Outcomes**

- Use the bright field microscope to view and interpret microbiological specimens
- Use proper aseptic techniques int he handling and transfer of microbiological specimens
- Use standard microbiological media to culture and identify common microbiological specimens
- Use standard microbiology laboratory equipment correctly
- Follow an experimental protocol, collect and organize data, present data in an appropriate form, assess the validity of the data, and draw appropriate comclusions based on the results
- Integrate information and skills gained int eh course to make informed judgements about the role of microorganisms in everyday life
- Use accepted safety protocols when handling microbiological specimens and chemicals

NDFS 100 : Essentials of Human Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Food-oriented study of nutritional facts and principles as a basis for dietary choices; consequences of choices; scientifically examining controversial topics.

**Course Outcomes**

- Apply the scientific method to identify and interpret credible nutrition information.
- Identify, interpret, and apply nutrition information.
- Identify functions of nutrients and their major food sources.

NDFS 200 : Nutrient Metabolism. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: NDFS 100; Organic chemistry or concurrent enrollment.

DESCRIPTION: Chemical structures of nutrients, their food sources, requirements, digestion, absorption, transport, metabolism, functions, storage and excretion; metabolic consequences of nutrient deficiencies, interactions, imbalances, and toxicities.

**Course Outcomes**

- Identify chemical structures of amino acids, lipids, carbohydrates, and vitamins.
- List functions, food sources, and consequences of deficiencies and toxicities for each of the essential nutrients.
- Explain the metabolic and physiological basis for the consequences of dietary practices that affect nutrient levels, and relate the consequences to the roles of essential nutrients in metabolic processes.
- Analyze diets and alter food intake to reach predetermined targets for consumption of specific dietary components or to achieve an overall dietary pattern.
- Find answers to questions and summarize results from original research reported in published peer-

reviewed scientific journals.

NDFS 250 : Essentials of Food Science. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 101; or CHEM 105; or SFL 110; concurrent enrollment in NDFS 251

DESCRIPTION: Overview of food science, including chemical, physical and microbiological principles related to food processing, storage, and utilization. Current issues in food science.

NOTE: This class should be taken concurrently with NDFS 251.

**Course Outcomes**

- Explain the basic concepts and principles of Food Science
- Recognize (distinguish) current topics in the news and in lay literature as being related to Food Science and Technology
- Evaluate the scientific validity of various consumer concerns regarding food production, distribution, preservation, storage and utilization
- Obtain further information on Food Science topics through library research of the scientific literature
- Explain how Food Science knowledge applies to your major field of study, and make the connection between what you're learning and what you plan to do after graduation
- Solve Food Science related problems.
- Determine if you more fully enjoy eating, understanding what happens to food between farm gate and dinner plate

NDFS 251 : Essentials of Food Science Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 101; or CHEM 105; or SFL 110; Concurrent enrollment in NDFS 250.

DESCRIPTION: Laboratory experience in the chemistry of changes occurring during food processing, storage, and utilization.

NOTE: This class should be taken concurrently with NDFS 250.

**Course Outcomes**

- Understand the basic chemistry involved in ripening, processing, and storing food*Relates to Program Learning Outcome: Demonstrate an understanding of the chemical changes occurring during food processing and storage, including reactions involving carbohydrates, protein and fats
- Develop the ability to work in teams to carry out laboratory experiments
- Understand key elements of food required for proper preservation and safety*Relates to Program Learning Outcome: Demonstrate an understanding of the role of microorganisms in food processing, food preservation, and food safety with respect to pathogens, spoilage, and fermentative microorganisms, and apply the basic elements of sanitation and quality assurance programs to understand and control microbial effects in food

NDFS 290 : Introduction to Dietetics. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: The profession of dietetics; exposure to specialty areas through guest lectures.

**Course Outcomes**

- Understand how to become a Registered Dietitian Nutritionist, including:Educational requirements and various routes to completion.Requirements for acceptance to the Didactic Program in Dietetics at BYU.Requirements for acceptance to a Dietetic Internship.Requirements for eligibility for Registration by the Commission on Dietetic Registration (CDR)Requirements for maintenance of continuing CDR Registration.
- Understand what a Registered Dietitian Nutritionist is.
- Understand what it means to be a professional.
- Have exposure to a variety of jobs currently held by Registered Dietitian Nutritionists.
- Identify which area of dietetics is personally most appealing
- Identify what future job opportunities are predicted in the profession of dietetics.

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.

RECOMMENDED: A general biology course.

DESCRIPTION: Function of body organ systems.

NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

PSYCH 111 : Introduction to Psychological Science. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic course in modern scientific psychology.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Objective: Apply psychological principles to personal and social issues and problems.Measurement:Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper.
- Objective: Demonstrate a broad knowledge of the basic theoretical perspectives that guide psychological inquiry.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Pyychology 111 sections.
- Objective: Understand the basic research methods used in psychology, including classical and current experiments.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper, participation as a subject in actual psychological research.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

****Note:** Or an equivalent general chemistry course from high school or junior college.
*****Note:** Chem 105, 106, 107, 351, 352, 481 sequence is recommended for students interested in medical or dental school or graduate programs in nutrition.
******Note:** Chem 107 may be subsituted for MMBio 222.

2. Complete the following professional sequence courses (after being admitted into the program):

NDFS 300 : Medical Nutrition Therapy 1. (4:4:0)

WHEN TAUGHT: Fall
PREREQUISITE: Dietetics major status.
DESCRIPTION: Nutritional assessment and medical nutrition therapy across disease states.

**Course Outcomes**

- Develop educational materials for patient teaching and use current nutrition knowledge related to general healthy eating, health promotion, or medical nutrition therapy counseling
- Be familiar with basic counseling and interviewing techniques
- Be familiar with basic counseling and interviewing techniques
- Determine fluid and electrolyte requirements
- Understand and use medical terminology
- Know biochemical markers related to nutrition and how to interpret them
- Gather, analyze and interpret the nutrient composition of foods/menus
- Develop appropriate disease specific diets
- Be familiar with common alternative nutritional therapies and become familiar with resources on herbal remedies
- Understand the dietary supplement act
- Demonstrate counseling techniques to facilitate behavior change

- Assessment and treatment of nutritional health risks
- Identify the appropriate medical nutrition therapy for specific disease states and provide the appropriate intervention, including calculating and defining diets
- Interpret, evaluate and use professional literature to make ethical evidence-based practice decisions
- Use the nutrition care process to make decisions, to identify nutrition-related problems and determine and evaluate nutrition interventions, including MNT, disease prevention and health promotion
- Modify and evaluate menus for diverse groups
- Demonstrate understanding of pharmacology, nutrient metabolism, physiology, genetics and biochemistry

NDFS 356 : Medical Nutrition Therapy 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 300

DESCRIPTION: Medical nutrition therapy across disease states; continuation of NDFS 300.

**Course Outcomes**

- Use oral and written communications in presenting an educational session for a group
- Use current information technologies
- Work effectively as a team member
- Public Speaking
- Media Presentations
- Knowledge of: exercise physiology, pathophysiology related to nutrition care, fluid and electrolyte requirements, pharmacology: nutrient-nutrient interaction.
- Demsonstrated ability to: interpret medical terminology, interpret laboratory parameters related to nutrition
- Document appropriately a variety of activities
- Calculate and interpret nutrient composition of foods
- Knowledge of medical nutrition therapy strategies to assess need for adaptive feeding techniques and equipment
- Calculate and/or define diets for health conditions addressed by health promotion/disease (cancer, pulmonary, liver, pancreas, and kidney)
- Calculate enteral and parenteral nutrition formulations
- Evolving methods of assessing health status
- Assessment and treatment of nutritional health risks
- Identify the appropriate medical nutrition therapy for specific disease states and provide the appropriate intervention, including calculating and defining diets
- Interpret, evaluate and use professional literature to make ethical evidence-based practice decisions
- Use current information technologies to locate and apply evidence based guidelines and protocols; (ADA evidence Analysis Library and the Cochrane Database of Systematic Reviews)
- Use the nutrition care process to make decisions, to identify nutrition-related problems and determine and evaluate nutrition interventions, including MNT, disease prevention and health promotion
- Modify and evaluate menus for diverse groups
- Demonstrate understanding of pharmacology, nutrient metabolism, physiology, genetics and biochemistry

NDFS 374 : Food Production Management. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Dietetics major status.

DESCRIPTION: Managing processes and techniques of quantity food production in commercial and institutional food systems.

**Course Outcomes**

- 1. Explain the foodservice industry in the context of a system and describe food consumption issues and trends for various consumers.
- 2. Be able to identify different paths of food product flow and understand the advantages and disadvantages of these operations.
- 3. Demonstrate knowledge of principles of menu planning through creating an appropriate menu for institutional feeding to meet needs of target population.
- 4. Understand the importance of aesthetically pleasing therapeutic menus and apply knowledge to meet individual or group dietary needs.
- 5. Discuss need for standardized recipes and appropriately quantify recipes for volume food production.
- 6. Be able to identify quantity food production techniques, terminology, and equipment used for: soups, sauces, meat, poultry, fish, egg and dairy foods, vegetables, fruits, salads, sandwiches, and baked goods
- 7. Be able to appropriately use basic principles of food and labor costs for financial accountability
- 8. Accurately quantify recipes and calculate recipe costs.
- 9. Students are able to use current information technologies to demonstrate an effective and professional oral presentation for the class
- 10. Students are able to apply the principles of sanitation and safety to foodservice, and recognize the impact on consumers

NDFS 375 : Food Production Management Laboratory. (2:0:8)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NDFS 374 or concurrent enrollment.

**Course Outcomes**

- 2. Use appropriate controls in quantity food production.
- 1. Apply appropriate quantity food preparation techniques and Food Science knowledge for soups, sauces, meat, poultry, fish, dairy foods, vegetables, fruits, salads, sandwiches, and baked goods
- 3. Demonstrate use of appropriate safety and sanitation principles during food production and service to the customer.
- 4. Demonstrate safe and appropriate use of and cleaning of foodservice equipment.
- 5. Demonstrate effective presentation and service of food.
- 6. Students will work effectively as a team member as evidenced through good communication,

appropriate assertiveness, and effective time management skills.
- 7. Use various monitoring tools to provide data for continuous quality improvement.
- 8. Demonstrate production management skills ensuring that foodservice operation meets the needs of the clients.

NDFS 400 : Community Nutrition. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: NDFS 200; or NDFS 201
DESCRIPTION: Public health nutrition applied to community programs.

**Course Outcomes**

- 1. Describe various community nutrition programs, health care delivery systems, and policies aimed to enhance the nutritional status and overall health of individuals in the US population.
- 2. Effectively write a grant proposal that encompasses the basic elements of implementing community nutrition programs, including a needs assessment, program planning, implementation and evaluation, and budget preparation, and conduct the proposed project in a real-life community setting.
- 3. Exhibit competent communication skills in both written and oral communication for lay and professional audiences in the performance of course assignments.
- 4. Evaluate accuracy of professional and lay resources for nutrition-related complementary and alternative medicine (CAM) products.
- 5. Demonstrate knowledge of the impact of culture and socioeconomic status on consumers' food and nutrition behaviors.
- 6. Demonstrate knowledge of ethical principles in community nutrition research and practice.

NDFS 401 : Community Nutrition Fieldwork. (.5:0:1.5)

WHEN TAUGHT: Fall
PREREQUISITE: Dietetics major status; concurrent enrollment in NDFS 400.
DESCRIPTION: Fieldwork experience in public health and community nutrition programs.
NOTE: Flu vaccine and immunization record is required. Fee may be involved.

**Course Outcomes**

There are no course outcomes available

NDFS 405 : Nutrition Assessment Lab. (.5:0:3)

PREREQUISITE: NDFS 356
DESCRIPTION: Developing skill in anthropometric, biochemical, clinical, and dietary parameters of nutritional assessment.

**Course Outcomes**

- Demonstrate the ability to locate, interpret, evaluate and use professional literature in the process of nutritional assessment.
- Accurately perform and interpret assessment procedures (the first step in the nutrition care process) to identify nutrition-related problems.
- Acreditation Council for Education in Nutrition and Dietetics Core Knowledge for the RDCore KnowledgeBy the conclusion of the course, students will:Measured/Met by:KRD 1.1Demonstrate the ability to locate, interpret, evaluate and use professional literature in the process of nutritional assessmentCompetency Sign-off, Blood Pressure Certification, Lab WorksheetsKRD 3.1Accurately perform and interpret assessment procedures (the first step in the nutrition care process) to identify nutrition-related problemsCompetency Sign-off, Lab WorksheetsKRD 4.2Apply safety principles in laboratory procedures regarding blood-borne pathogens and the disposal of biohazardous wasteQuiz2012 standards
- Apply safety principles in laboratory procedures regarding blood-borne pathogens and the disposal of biohazardous waste.

NDFS 424 : Nutrition Through the Life Cycle. (2:2:0)

WHEN TAUGHT: Winter
PREREQUISITE: NDFS 300; or NDFS 305
DESCRIPTION: Nutritional requirements, diet, and health concerns for pregnancy and lactation; infants; toddlers and preschoolers; school-age children; adolescents; and older adults.

**Course Outcomes**

- 1. Demonstrate knowledge of evidence-based nutrient requirements (including the rationale for specific requirements throughout the life cycle) and nutritional status assessment methods used to determine diet adequacy among pregnant and lactating women; infants; children; adolescents; and older adults.
- 2. Assess the nutritional status of a pregnant woman and provide appropriate recommendations for dietary improvement based on nutrient requirements during this life stage.
- 3. Assess the nutritional status of a young child and provide appropriate recommendations for dietary improvement based on nutrient requirements during this life stage.
- 4. Effectively write a scientific review paper based on searching, evaluating, and synthesizing previously published peer-reviewed research.
- 5. Evaluate and offer constructive feedback of peers' written works in a manner consistent with the "real-world" professional scientific article review process.

NDFS 435 : Nutritional Biochemistry. (4:4:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: NDFS 200 & PDBIO 305 & CHEM 285; or NDFS 200 & PDBIO 305 & CHEM 481
DESCRIPTION: Metabolic interrelationships among nutrients.

**Course Outcomes**

- Demonstrate ability to search, interpret, and summarize original scientific information in an efficiently written scientific paper.
- Demonstrate knowledge of nutrient chemical structures, food sources, digestion, absorption, transport, metabolism and functions, and the metabolic consequences of nutrient deficiencies, interactions, imbalances and toxicities.
- Demonstrate knowledge of appropriate design for scientific experiments.
- Understand the biochemical functions and pathways of nutrients in the body.
- Identify physiological, biochemical and metabolic changes associated with deficient nutrient intake, excessive nutrient intake and selected metabolic diseases.

NDFS 440 : Teaching Methods in Dietetics. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Learning theory; curriculum development and dissemination; nutrition counseling; for dietetics majors.

**Course Outcomes**

- Demonstrate an understanding of the theories of teaching and learning
- Develop lesson plans, to include behavioral objectives, concepts, and learning experiences, and domain of learning
- Demonstrate the ability to meet the varied learning styles of individuals
- Use a variety of instructional methods
- Develop appropriate educational and visual support materials for individual or group instruction
- Demonstrate ability to effectively teach and/or counsel individuals and groups
- Identify and use theories/methods of counseling and interviewing individuals
- Discuss effective use of print and broadcast media
- Demonstrate an understanding of pre-assessment, and of formative and summative evaluation techniques
- Identify the impact of health beliefs and stages of change on education.
- Dress professionally when in the teaching role

NDFS 445 : Foodservice Systems. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 374

DESCRIPTION: Input, transformation, and output in the food service system; emphasizes procurement, production, service, and sanitation.

**Course Outcomes**

- Apply knowledge of management functions and skills to the technical operation of a foodservice system, and compare foodservice operations through application of systems theory
- Discuss the response of industry segments to current societal, demographic, technological, and menu trends
- Discuss the procurement subsystem and the functions of that subsystem, including:The functions of the marketing channel and its agents;Value analysis, sensory analysis, and other tools used in selection of products appropriate for organization's needs;Laws, standards, terminology, specifications, and references for the purchase of food, supplies, and services;Vendor selection and evaluation;Purchasing methods and procedures; and legal and ethical aspects of purchasing
- Identify managerial roles in the food production subsystem, including:Use of forecasting models;Planning and purchasing equipment; Principles of facility design and work flow; and Principles of ergonomics and productivity enhancement.
- Explain the distribution and service subsystem, including:Delivery systems for various types of foodservices;Types of table and self service;Large equipment and small wares used in distribution and service;Service oriented organizations
- Discuss the sanitation and maintenance subsystem from the standpoint of personnel, product, and place
- Identify the relationship of quality assessment programs, including Joint Commission, to foodservice subsystems and the organization
- Identify the interrelated functions of the procurement, production, distribution/service, and maintenance subsystems of a foodservice operation
- Describe the monitoring and marketing of nutrition throughout the foodservice system
- Describe environmental issues related to food production and service.

NDFS 458 : Management in Dietetics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: NDFS 445

DESCRIPTION: Management cycle and theory applied to clinical and administrative dietetics.

**Course Outcomes**

- Explain dietetics management in the context of a system.
- Discuss group dynamics and work group formation and participate effectively in group tasks.
- Identify and use principles of effective communication and negotiation.
- Identify tools used and steps in the decision making and planning processes.
- Identify the management functions, including planning, organizing, staffing, leading, monitoring, and evaluating.
- Use financial planning, control, and budgeting tools.
- Identify principles of human resource management, including determining manpower needs, recruiting and interviewing, orientation and training, performance appraisal, diversity issues, conflict management, and labor relations laws.
- Describe theories of effective management and leadership.
- Identify theories of motivation and organizational change.
- Discuss concepts of disaster planning and risk management.
- Explain management information systems in dietetics

NDFS 466 : Advanced Dietetics Practice. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 356 & NDFS 440 & NDFS 458

DESCRIPTION: Skill development in specialized topics of medical nutrition therapy and administrative dietetics.

**Course Outcomes**

- Apply the principles of the metabolic response to stress to the critical care setting.
- Make recommendations, calculate, and monitor all forms of nutrition support in acute care, home care, and extended care settings.
- Apply the Nutrition Care Process and the principles of Medical Nutrition Therapy to the following conditions: HIV disease, thermal injury, diabetes, high risk pregnancies, high risk infants, complex pediatric disorders, developmental disorders, metabolic disorders.
- Use and interpret menu engineering data in making pricing and menu decisions.
- Apply knowledge of the systems approach and management issues in foodservice, clinical, and community settings to coordinate a department set-up.
- Accreditation Council for Education in Nutrition and Dietetics Core Knowledge for the RDCore Knowledge for the RDBy the conclusion of the course, students will:Measured/Met by:KRD 1.1, 3.1Metabolic Responses. Apply the principles of the metabolic response to stress to the critical care setting.Clinical Nutrition WorksheetsNutrition Support WorksheetsKRD 1.1, 3.1Nutrition Support. Make recommendations, calculate, and monitor all forms of nutrition support in acute care, home care, and extended care settings.Clinical Nutrition WorksheetsNutrition Support WorksheetsKRD 1.1, 3.1, 4.5Nutrition Care Process and Principles of Medical Nutrition. Apply the Nutrition Care Process and the principles of Medical Nutrition Therapy to the following conditions: HIV disease, thermal injury, diabetes, high risk pregnancies, high risk infants, complex pediatric disorders, developmental disorders, metabolic disordersClass Discussions Clinical WorksheetsKRD 4.2, 5.1Menu Engineering Data. Use and interpret menu engineering data in making pricing and menu decisions.Capstone Management ProjectKRD 2.1, 2.3, 4.1, 4.2, 4.3, 4.4, 5.1Systems Approach and Management Issues. Apply knowledge of the systems approach and management issues in foodservice, clinical, and community settings to coordinate a department set-up.Capstone Management Project2012 standards

NDFS 475 : Research Methods in Dietetics. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Senior status in dietetics program.

DESCRIPTION: Research techniques in a variety of dietetics practice areas.

**Course Outcomes**

- Identify types of research and their appropriate use, including: research question, sample selection, methodologies, data collection methods, data analysis methods
- Demonstrate how to locate, interpret and evaluate and use professional literature to make ethical evidence based practice decisions
- Use current information technologies to locate and apply evidence based guidelines and protocols
- Design research projects using appropriate methods of sample selection and data collection
- Develop survey questionnaire for appropriate research objectives
- Utilize visual aids and communication skills to present concepts in oral and written reports
- Interpret and evaluate research reports in literature
- Interpret and apply basic statistics
- Develop ability to see research possibilities in variety of dietetic employment settings

NDFS 490 : Professionalism Seminar. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Senior status in dietetics program.

DESCRIPTION: Issues in professional practice.

**Course Outcomes**

- Understand the ethics of care, including the ADA Standards of Practice and Code of Ethics. Be able to relate these to the issues of death and dying
- Understand changing health care delivery systems, the role of Joint Commission, ADA's Nutrition Care Process and Model, and implications for dietitians; interact with other health care professionals
- Complete a personal portfolio, which includes a professional resume; be prepared for a professional interview, including appropriate dress
- Understand current professional issues as related to the Academy, including reimbursement, Public Policy, the Journal, and Academy Membership
- Accreditation Council for Education in Nutrition and Dietetics Core Knowledge for the RDCore KnowledgeBy the conclusion of the course, students will:Measured/Met by:KRD 2.1, 4.3, 4.4, 4.5Understanding Dietetics Processes. Understand changing health care delivery systems, the role of Joint Commission, AND's Nutrition Care Process and Model, coding/billing and implications for dietitians; interact with other health care professionalsInterview with Health Professional, Class DiscussionKRD 2.1Professionalism. Complete a personal portfolio, which includes a professional resume; be prepared for a professional interview, including appropriate dress Portfolio, Resume, Journal Presentation, Interview with Health ProfessionalKRD 2.3Ethics of Care. Understand the ethics of care, including the AND Standards of Practice and Code of Ethics. Be able to relate these to the issues of death and dying Ethics scenarios, Class discussionKRD 2.3, 4.3Professional Issues Related to the Academy of Nutrition and Dietetics. Understand current professional issues as related to the Academy, including reimbursement, Public Policy, the Journal, Academy Membership, and Scope of PracticeInterview with a Health Professional, The Academy Journal Presentations, Scope of Practice, Class discussion2012 standards

NDFS 491 : Internship Preparation. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: Senior status in dietetics program.

DESCRIPTION: Selecting internship sites and preparing dietetic internship application packet.

**Course Outcomes**

Prepare an effective application packet for the dietetic internship or for other employment/graduate school pursuits
- Consider factors relevant to selecting dietetic internships to which to apply
- Establish realistic plans for life following graduation

PDBIO 365 : Pathophysiology. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 305; or PDBIO 362

DESCRIPTION: Variations in physiological mechanisms that account for development of common disturbances in normal control and activities of body's organs and organ systems.

**Course Outcomes**

- Students will exhibit an integrative understanding of the biochemistry, molecular biology, genetics, cell biology, microbiology, environmental biology, and physiology related to the prevention, development, and treatment of common diseases.
- Students will demonstrate through case study analysis a command of problem solving skills related to the diagnosis and treatment of pathophysiological conditions.
- Pupils will manifest a command of the physiology and pathophysiological vocabulary necessary to effectively communicate with other biomedical professionals and the general public.
- Students will be able to articulate the ethical issues related to the treatment and prevention of pathophysiological conditions.
- Students will manifest an increase in their respect for the human body and adopt a life style consistent with this respect.

## Recommended Courses

BUS M 201 : Financial Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Acc 200 or equivalent.

DESCRIPTION: Financial statement analysis, financial planning, sources of financing, working capital management, risk and return, and valuation.

**Course Outcomes**

There are no course outcomes available

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

IS 100 : Computer Spreadsheet Skills. (.5:0:1)

WHEN TAUGHT: Spring; Summer

DESCRIPTION: Basic computer skills, focusing on spreadsheet and database programs. No technical background necessary.

**Course Outcomes**

- Students will be able to construct an Excel Spreadsheet with appropriate formulas, functions, labels, charts, media inserts, hyperlinks, and data base functions – and output the report.

NDFS 310 : Nutrition and Metabolism in Sports and Exercise. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: NDFS 100 & PDBIO 305

DESCRIPTION: Scientific basis for the role of nutrition in human performance. Critical evaluation of popular practices; making optimal food choices for physical activity.

NOTE: This course was formerly named Sports Nutrition.

**Course Outcomes**

- Students will apply their current understanding of nutrition to aspects of physical performance. Describe the factors (exercise intensity, duration, substrate availability and endocrine) that affect energy utilization.
- Search, interpret, and summarize original scientific information. Evaluate nutritional claims for scientific accuracy.
- Apply evidence-based nutrition recommendations for sports and exercise in real or hypthetical situations.

NDFS 380 : International Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NDFS 100

DESCRIPTION: Causes and consequences of nutrient deficiencies common in developing countries. Appropriate interventions to prevent or treat malnutrition.

**Course Outcomes**

- Relate critical nutrient requirements deficiencies to nutritional diseases and poor cognitive devolopment
- Understand the breadth of undernutrition, poverty and hunger that plague the developing world.
- Understand the scientific literature that relates to nutional problems in devloping societies
- Relate the nutritional status of undernourished children to their diets and suggest plausible solutions

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

STDEV 305 : Advanced Reading Strategies for College Success. (1-2:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Developing improved speed and comprehension skills through selection and practice of college reading strategies.

**Course Outcomes**

There are no course outcomes available

TMA 150 : Public Speaking. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Principles and methods of public speaking; speaking experiences.

**Course Outcomes**

- Develop analytical listening and observation skills.
- Know how to speak publicly so your audience will really listen and understand.
- Construct and deliver effective extemporaneous public speeches.
- Manage speech anxiety and effective use nonverbal communication to inform, persuade, enlighten, and impact your audience.
- Be able to produce and employ effective visual aids in your presentations.

## Recommended Minors

The following minors are very complementary to a dietetics major, but any area of interest could be considered:

Business
Gerontology (See School of Family Life).
International Development
Spanish

*Hours include courses that may fulfill university core requirements.

## Show all Nutrition, Dietetics, and Food Science (NDFS) Courses

College of Life Sciences Home

Nutrition, Dietetics, and Food Science Department Home

Majors

- BS in Dietetics
- BS in Food Science
- BS in Nutritional Science

Minors

- Nutrition

Course Information

- Nutrition, Dietetics, and Food Science (NDFS) Courses

Faculty

# BS in Food Science (65–68 hours*)

Show All Course Descriptions
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## The Discipline

Food science is the multidisciplinary study of food and the application of knowledge thus gained to developing food products and processes, preserving and storing food, and assuring food safety and quality. Food science addresses the conversion of raw agricultural products into a nutritious, convenient, and economical food supply. Most of the food products available in grocery stores were developed, produced, and tested by food scientists. Students graduating in food science are well prepared for immediate employment in the food industry. The technical track curriculum is approved by the Institute of Food Technologists, the principal professional organization of food scientists, and provides excellent preparation as a premedical, predental, or other preprofessional major. With the addition of one credit hour, students graduating in the technical track are able to obtain a minor in chemistry. Students pursuing the management track are eligible to apply for a business minor and are well prepared for graduate studies in a Master of Business Administration (MBA) program.

Valuable experience is gained through numerous opportunities available in the program, including faculty-mentored research, employment within the department, and paid food industry internships. Students also develop a network of professional contacts through participation in the Food Science Club, professional organizations, and national competitions. Scholarships are available from department, college, university, and professional organizations.

## Career Opportunities

Exciting careers are available in the worldwide, multibillion dollar food industry in such areas as food product development, production management and sales, ensuring food safety and quality, or basic research. Salaries are highly competitive. The many facets of food science provide employment in large and small food companies, food ingredient companies, government agencies, and universities. Graduates are prepared for immediate employment, further study toward advanced degrees, or professional programs such as medicine, dentistry, pharmacy, law, and business.

## Program Requirements | View MAP | View Program Outcomes

1. Consult with a faculty advisor prior to finalizing your curriculum plan.
2. Complete the following core requirements:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.
DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.
NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

MMBIO 221 : General Microbiology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Any biology course.
RECOMMENDED: Any chemistry course.
DESCRIPTION: Microbial world, emphasizing communicable diseases, their causes and control.
NOTE: Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses.

**Course Outcomes**

- Explain and discuss the ways by which microbiologists study microorganisms.
- Discuss the principle infectious diseases that affect mankind, including how they are transmitted, treated, controlled and prevented.
- Differentiate between the types of microorganisms by identifying relevant structure and their function in the biosphere.
- Propose microbial solutions to global problems.
- Describe how the human body defends itself against infectious agents.

MMBIO 222 : General Microbiology Laboratory. (1:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: MMBio 221 or concurrent enrollment.

**Course Outcomes**

- Use the bright field microscope to view and interpret microbiological specimens
- Use proper aseptic techniques int he handling and transfer of microbiological specimens
- Use standard microbiological media to culture and identify common microbiological specimens
- Use standard microbiology laboratory equipment correctly
- Follow an experimental protocol, collect and organize data, present data in an appropriate form, assess the validity of the data, and draw appropriate comclusions based on the results
- Integrate information and skills gained int eh course to make informed judgements about the role of microorganisms in everyday life
- Use accepted safety protocols when handling microbiological specimens and chemicals

NDFS 250 : Essentials of Food Science. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 101; or CHEM 105; or SFL 110; concurrent enrollment in NDFS 251

DESCRIPTION: Overview of food science, including chemical, physical and microbiological principles related to food processing, storage, and utilization. Current issues in food science.

NOTE: This class should be taken concurrently with NDFS 251.

**Course Outcomes**

- Explain the basic concepts and principles of Food Science
- Recognize (distinguish) current topics in the news and in lay literature as being related to Food Science and Technology
- Evaluate the scientific validity of various consumer concerns regarding food production, distribution, preservation, storage and utilization
- Obtain further information on Food Science topics through library research of the scientific literature
- Explain how Food Science knowledge applies to your major field of study, and make the connection between what you're learning and what you plan to do after graduation
- Solve Food Science related problems.
- Determine if you more fully enjoy eating, understanding what happens to food between farm gate and dinner plate

NDFS 251 : Essentials of Food Science Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 101; or CHEM 105; or SFL 110; Concurrent enrollment in NDFS 250.

DESCRIPTION: Laboratory experience in the chemistry of changes occurring during food processing, storage, and utilization.

NOTE: This class should be taken concurrently with NDFS 250.

**Course Outcomes**

- Understand the basic chemistry involved in ripening, processing, and storing food*Relates to Program Learning Outcome: Demonstrate an understanding of the chemical changes occurring during food processing and storage, including reactions involving carbohydrates, protein and fats
- Develop the ability to work in teams to carry out laboratory experiments
- Understand key elements of food required for proper preservation and safety*Relates to Program Learning Outcome: Demonstrate an understanding of the role of microorganisms in food processing, food preservation, and food safety with respect to pathogens, spoilage, and fermentative microorganisms, and apply the basic elements of sanitation and quality assurance programs to understand and control microbial effects in food

NDFS 350 : Food Analysis. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 250 & NDFS 251 & CHEM 285; or NDFS 250 & NDFS 251 & CHEM 352

DESCRIPTION: Principles, methods and techniques of qualitative and quantitative physical, chemical, and biological analysis of food and food ingredients.

**Course Outcomes**

- Explain the principles behind the analytical techniques used in food analysis (primarily chemical and physical analyses)
- Measure various components of food (found on the Nutrition Facts label) using laboratory techniques common to food chemistry and food analysis
- Select the appropriate analytical technique when presented with a practical problem
- Prepare a written report and brief oral presentation covering the quality assurance tests required for the analysis of raw ingredients, intermediate products and final product of a food commodity having a standard of identity.

NDFS 355 : Food Process Engineering. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 105 & MATH 112; or PHSCS 105 & MATH 119; Food Science majors only.

DESCRIPTION: Mass and energy balances, thermodynamics, fluid flow, heat and mass transfer; unit operations in food processing, including thermal processing, frying, irradiation, refrigeration, freezing, and dehydration.

**Course Outcomes**

- Solve fluid flow problems to determine velocities, flow volumes, friction losses. Size pipes and select appropriate pump types and select appropriate sizes.
- Compare the effectiveness and amount of heat exchanged in tubular and plate heat exchangers
- Calculate the amount of heat recovered in the regeneration section of a HTST pasteurizer
- Determine effect of flow rate on conductivity of heat exchange partition in a tubular and plate heat exchanger
- Determine the coefficient of performance for Freon and ammonia refrigeration cycles and make a judgment as to which is appropriate for a hypothetical application
- Calculate the amount of steam needed to achieve a hypothetical heating operation
- •Describe the flow of a HTST pasteurizer
- Given an required Fo, be able to do a heat penetration test on a low acid food and determine the process time needed to achieve the required kill
- Be able to concentrate a fluid product on a RO system or separate proteins from salts and sugars on a UF system. Explain the drop in flux rates with time, module design, and construction and care of membranes
- Diagram the operations in a spray drying system and explain what suppresses the product temperature during drying
- Describe the four systems needed and the role each plays in a freeze drying system
- Explain the function and operation of a flow diversion valve.
- Describe the balance of lethal temperature, time, bacterial control and quality on thermally processed products
- Compare the process flow, processing conditions, products, and advantages and disadvantages of process options for long term preservation: retorts, agitating retorts, UHT, High pressure, freeze drying, air drying, spray drying
- Describe the measures taken to achieve the highest quality in frozen foods
- Know the chemistry and barrier characteristics of the commonly used polymers
- Know the functions of a package and be able to determine what functions the package is performing in an array of packaging examples
- Know the environmental implications of each of a wide variety of commonly used packaging materials

NDFS 361 : Food Microbiology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBIO 221 & MMBIO 222

DESCRIPTION: Pathogenic and spoilage microorganisms in foods and their control. Beneficial microorganisms in food systems. Influence of the food system on growth and survival of microorganisms.

**Course Outcomes**

- Understand the growth requirements of common food borne pathogens and...Be able to attribute the characteristics of a food borne illness with unknown etiology to the most likely organism. Differentiate which organisms would be likely to grow in a specific food product
- Understand intrinsic and environmental aspects of foods and how they can be modified to affect the growth and metabolism of food borne microorganisms to include spoilage, pathogenic, and beneficial organisms.
- Carry out a series of laboratory experiments aimed at isolating and identifying common food borne microbial pathogens
- Classify spoilage microorganisms according to the food or foods they are most likely to affect based on the intrinsic and environmental characteristics of the food and compare to various storage methods to determine which method would be most appropriate for the given food product
- Design and carry out a laboratory experiment to evaluate the microbial safety of a common food product

NDFS 362 : Food Commodity Processing. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: NDFS 250 & NDFS 251; Food Science majors only.

DESCRIPTION: Characteristics of raw food material; principles of food preservation and food processing techniques; packaging materials and methods; sanitation and water and waste management.

**Course Outcomes**

- Prepare a flow chart of a plant that produces masa products from corn and point out how raw material and process can be varied to result in different masa products
- Diagram the wheat milling flow and explain the grinding and separation processes that resulted in each stream. Describe the characteristics and uses of different varieties of wheat.
- Prepare a flow chart for a commercial bakery. Include sources and types of ingredients, function of different processes and quality assurance measures
- Analyze the flow of a dry blend soup line and explain how quality blend uniformity and functionality is assured
- Describe the quality assurance checks on milk coming into a dairy plant, diagram the flow and explain the function of each process used to produce each of their products.
- Diagram and critique the Deseret Meat Processing operation from kill to meat cuts to further processed products.
- Diagram and critique a fruit canning operation. Describe the raw material, how it is handled, sorted, graded, how the quality and safety of the canned fruit and the integrity of the can is assured.
- Prepare flow diagrams and explanations for the processes involved in preparing drinking water for a system that uses surface water for its source and for a system that uses deep well and spring water for its source.
- Design and diagram a system that will treat waste water from Provo City so that it is fit to release into

Utah Lake. Demonstrate understanding of the function of each unit operation. Include control measures to assure quality

NDFS 462 : Food Regulations and Quality Assurance. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 121 & NDFS 250 & NDFS 251

DESCRIPTION: Federal and international food regulations and methods of assuring food quality.

**Course Outcomes**

- Apply ethical reasoning to make business decisions based on principles of integrity and honesty
- Be able to locate, retrieve and interpret specific laws, regulations, guidelines and directives relating to food, its manufacture, labeling, distribution and sale
- Be able to apply the principles of food science and statistics to control and assure the quality of food products
- Prepare a HACCP documentation system for any defined food product/process
- Explain how the legislative, executive, and judicial branches of federal and state government function and interact to regulate and control the safety, wholesomeness, and economy of the food supply
- Prepare a legal food label

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: High school algebra and trigonometry.

RECOMMENDED: Concurrent enrollment in Phscs 107.

DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

3. Complete one of the following tracks:
   A. Food science technical track:
      1. Complete the following:

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data,

preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.

NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

(1 hour minimum)

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

NDFS 200 : Nutrient Metabolism. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: NDFS 100; Organic chemistry or concurrent enrollment.

DESCRIPTION: Chemical structures of nutrients, their food sources, requirements, digestion, absorption, transport, metabolism, functions, storage and excretion; metabolic consequences of nutrient deficiencies, interactions, imbalances, and toxicities.

**Course Outcomes**

- Identify chemical structures of amino acids, lipids, carbohydrates, and vitamins.
- List functions, food sources, and consequences of deficiencies and toxicities for each of the essential nutrients.
- Explain the metabolic and physiological basis for the consequences of dietary practices that affect nutrient levels, and relate the consequences to the roles of essential nutrients in metabolic processes.
- Analyze diets and alter food intake to reach predetermined targets for consumption of specific dietary components or to achieve an overall dietary pattern.
- Find answers to questions and summarize results from original research reported in published peer-reviewed scientific journals.

NDFS 450 : Food Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: NDFS 250 & NDFS 251 & CHEM 285; or NDFS 250 & NDFS 251 & CHEM 352

DESCRIPTION: Structure and properties of food components, including water, carbohydrates, protein, lipids, other nutrients, and food additives. Chemistry of changes occurring during processing, storage, and utilization.

**Course Outcomes**

- Explain the chemistry of food components, including their properties and reactions
- Explain the major chemical reactions that occur during food processing and storage, including those that limit food shelf life
- Solve real-world problems related to food chemistry
- Write a research proposal on a food chemistry topic. Include objectives, literature review, experimental design and references

NDFS 464 : Food Sensory Evaluation. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 121 & NDFS 250 & NDFS 251; This class should be taken concurrently with NDFS 465.

DESCRIPTION: Analytical and affective methods of assessing sensory properties of food using statistical methods. Laboratory experience in sensory research and techniques. Integrative capstone course.

**Course Outcomes**

- Use the computer to prepare and deliver questions to panelist.
- Use a computer to collect data from consumer panelists doing affective tests
- Use statistical packages such as SAS to do statistical analysis such as one and two way ANOVA and to make inferences from actual sensory data
- Create and use a spread sheet to display and analyze data, make calculations and do statistical analysis
- Use a computer to write reports.
- Generate a hypothesis, test it using a consumer or discrimination panel, and prepare a report for a client on the findings.
- Use binomial statistics to draw conclusions on categorical data
- Collect data, analyze it using ANOVA, make inferences from the F values and p>F values on the ANOVA result
- Determine your threshold for four basic tastes
- Describe sensory biases and how to best deal with them
- Plan, conduct and report on a discrimination test and use binomial statistics to make inferences
- Demonstrate understanding of preference and ranking tests and use of binomial statistics to make inferences
- Show how to determine when Quantitative Descriptive panelists are trained and when

they need more training
- Lead and participate in groups in developing hypotheses, planning and conducting experimentation to test that hypothesis

NDFS 465 : Food Product Development. (3:1:6)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 361 & NDFS 362 & NDFS 462; This class should be taken concurrently with NDFS 464.

DESCRIPTION: Integration and application of food science principles to develop new food products. Laboratory experience in food product design and development. Integrative capstone course.

**Course Outcomes**

- Prepare raw material, product, and process specifications for a product and related commercial manufacturing process
- Work with a team in successfully commercializing a new or improved food product
- Coordinate, plan, and execute a stability test
- Coordinate, plan, and execute a plant trial
- Prepare and follow workable project time-lines for multiple development projects
- Coordinate, plan, and execute an appropriate consumer test for guidance or decision making
- Properly prepare and document all information required for a finished food product label
- Keep a precise, well-documented laboratory notebook that will stand up under scrutiny in a court of law

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 105 or equivalent.

RECOMMENDED: Concurrent enrollment in Phscs 108.

DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

TMA 150 : Public Speaking. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Principles and methods of public speaking; speaking experiences.

**Course Outcomes**

- Develop analytical listening and observation skills.
- Know how to speak publicly so your audience will really listen and understand.
- Construct and deliver effective extemporaneous public speeches.
- Manage speech anxiety and effective use nonverbal communication to inform, persuade, enlighten, and impact your audience.
- Be able to produce and employ effective visual aids in your presentations.

2. Complete one course from the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 119 : Introduction to Calculus. (4:4:1)

OFFERED: Independent Study only.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 and Math 111; or equivalent.

DESCRIPTION: Introduction to plane analytic geometry and calculus.

**Course Outcomes**

- This course is designed to provide beginning undergraduate students a first exposure to Calculus concepts, theorems, and techniques. In general, theorems will not be proved. An understanding of the theorems and their applications to solve calculus problems will be taught. Students will be expected to develop effective problem solving skills based on their understanding of the theory and not just memorize a set of routines to solve problems. For a more detailed course description, visit the Math 119 Wiki page.

B. Food industry management track:

1. Complete the following:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 488 : Agribusiness Management 1. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: ACC 200 & BUS M 201 & ECON 110; or ACC 200 & FIN 201 & ECON 110
DESCRIPTION: Concepts, tools, and approaches to understanding competitive forces and the development of sustainable competitive advantage for firms in the food, fiber, and horticulture industries.

**Course Outcomes**

There are no course outcomes available

BUS M 489 : Agribusiness Management 2. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: ACC 200 & BUS M 201 & ECON 110; or ACC 200 & FIN 201 & ECON 110
DESCRIPTION: Developing and implementing marketing plans and programs for companies participating in the value chain of agribusiness industries.

**Course Outcomes**

There are no course outcomes available

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chem 101 or equivalent.
DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Acc 200.
DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**
There are no course outcomes available

NDFS 100 : Essentials of Human Nutrition. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Food-oriented study of nutritional facts and principles as a basis for dietary choices; consequences of choices; scientifically examining controversial topics.

**Course Outcomes**
- Apply the scientific method to identify and interpret credible nutrition information.
- Identify, interpret, and apply nutrition information.
- Identify functions of nutrients and their major food sources.

NDFS 191 : Careers in Food Science. (1:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Guest lectures and exposure to vocations in food science.

**Course Outcomes**
- This is an introductory course for food science and is designed for undergraduate students who have not selected a major and/or are considering Food Science or Food Industry Management as a possible major.

NDFS 399R : Academic Internship. (1-9:ARR:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.
DESCRIPTION: Off-campus work experience sponsored by industrial, government, or academic institutions.

**Course Outcomes**
- Gain practical experience in food science and related areas.
- Apply classroom knowledge to practical situations through observation and involvement in different levels of the organization.
- Develop confidence in personal judgment and gain maturity and self-confidence.
- Gain exposure to a company or agency and a specific area of employment to determine whether they want that area for their life's work; evaluate the company for permanent employment.

(1 hour minimum required)
ORG B 320 : Organizational Effectiveness. (3:Arr:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.
NOTE: Taught online.

**Course Outcomes**
There are no course outcomes available

2. Complete one course from the following guest lecture series:
BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type

opportunities.

**Course Outcomes**

There are no course outcomes available

BUS M 380 : Executive Lectures. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by top executives on subjects significant to executive leadership.

**Course Outcomes**

There are no course outcomes available

BUS M 382 : Financial Services Lecture Series. (1:1:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Lectures by executives on financial services topics.

**Course Outcomes**

No outcomes are available at this time.

3. Complete one of the following major electives:

BUS M 372 : Basic Entrepreneurship Skills. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Practical aspects of business formation and growth; key skills and principles needed to successfully start up and grow a business.

NOTE: For non-Marriott School of Management students.

**Course Outcomes**

There are no course outcomes available

NDFS 200 : Nutrient Metabolism. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: NDFS 100; Organic chemistry or concurrent enrollment.

DESCRIPTION: Chemical structures of nutrients, their food sources, requirements, digestion, absorption, transport, metabolism, functions, storage and excretion; metabolic consequences of nutrient deficiencies, interactions, imbalances, and toxicities.

**Course Outcomes**

- Identify chemical structures of amino acids, lipids, carbohydrates, and vitamins.
- List functions, food sources, and consequences of deficiencies and toxicities for each of the essential nutrients.
- Explain the metabolic and physiological basis for the consequences of dietary practices that affect nutrient levels, and relate the consequences to the roles of essential nutrients in metabolic processes.
- Analyze diets and alter food intake to reach predetermined targets for consumption of specific dietary components or to achieve an overall dietary pattern.
- Find answers to questions and summarize results from original research reported in published peer-reviewed scientific journals.

NDFS 450 : Food Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: NDFS 250 & NDFS 251 & CHEM 285; or NDFS 250 & NDFS 251 & CHEM 352

DESCRIPTION: Structure and properties of food components, including water, carbohydrates, protein, lipids, other nutrients, and food additives. Chemistry of changes occurring during processing, storage, and utilization.

**Course Outcomes**

- Explain the chemistry of food components, including their properties and reactions
- Explain the major chemical reactions that occur during food processing and storage, including those that limit food shelf life
- Solve real-world problems related to food chemistry
- Write a research proposal on a food chemistry topic. Include objectives, literature review, experimental design and references

NDFS 465 : Food Product Development. (3:1:6)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 361 & NDFS 362 & NDFS 462; This class should be taken concurrently with NDFS 464.

DESCRIPTION: Integration and application of food science principles to develop new food products. Laboratory experience in food product design and development. Integrative capstone course.

**Course Outcomes**

- Prepare raw material, product, and process specifications for a product and related commercial manufacturing process
- Work with a team in successfully commercializing a new or improved food product
- Coordinate, plan, and execute a stability test
- Coordinate, plan, and execute a plant trial
- Prepare and follow workable project time-lines for multiple development projects
- Coordinate, plan, and execute an appropriate consumer test for guidance or decision making
- Properly prepare and document all information required for a finished food product label
- Keep a precise, well-documented laboratory notebook that will stand up under scrutiny in a court of law

4. During the junior year or upon declaring food science as a major, students are strongly encouraged to select one of the following options to enhance career preparation (students in food industry management track MUST take 1 credit hour of NDFS 399R to graduate):
   A. Choose a research topic and faculty mentor. Working in a research laboratory for 10–20 hours per week over the course of eight months, the student has daily contact with graduate students, technicians, and fellow undergraduate colleagues and frequent interactions with a faculty mentor. Student research often leads to participation in a publication and/or a presentation at a professional meeting. NDFS 494R credit is available.

   B. Produce a senior thesis in collaboration with a faculty mentor, derived primarily from library study that extensively explores the relevant questions. The thesis is written in the format of a scientific review paper. NDFS 494R credit is available.

   C. Work in an approved, faculty-supervised summer internship with a food company (generally the internship does not include study abroad.) NDFS 399R credit is available.

## Recommended Courses

Consult with a faculty advisor before selecting:

1. Food science technical track:

CHEM 223 : Quantitative and Qualitative Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: CHEM 107; or CHEM 113
DESCRIPTION: Principles of chemical equilibrium, quantitative chemical measurements, and qualitative detection of selected chemical species.
NOTE: Primarily for majors in molecular biology and the life sciences.

**Course Outcomes**

- Course Objectives: The course is designed to develop research skills. The labwork will have a somewhat bioanalytical focus, e.g. the chemical analysis of biological molecules or biologically related ions and the use of biomolecules in assays. We will work to develop good laboratory practice, both conceptually and practically, and consider how to do good science. The combined lecture/lab approach will be used to help you understand quantitative approaches to analysis, sources of error, and the utility but also limitations of laboratory measurements. You will be asked to apply a portion of this knowledge to your own laboratory determinations. We will also discuss more advanced analytical methods involving chemical separations and instrumental analyses. This course fills one of the requirements for a minor in chemistry.

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.

- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

IAS 220 : Introduction to Development Studies. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Exploration of international development in non-formal education, micro-enterprises, community organizations; hunger, poverty, and other special problems in developing areas of the world.

**Course Outcomes**

- Upon successfully completing this course, a student will be able to recognize the historical origins of international development and the various agendas that it embodies. Upon successfully completing this course, a student will be able to recognize and articulate the complexity of international development issues and their interdisciplinary nature. Upon successfully completing this course, a student will be able to identify major theories and approaches to international development both in general and across different key disciplines. Upon successfully completing this course, a student will be intellectually ready to embark on an International Development Minor Internship.

MFG 355 : Plastics Materials and Processing. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: ME EN 250; or CH EN 378; or instructor's consent.

DESCRIPTION: Understanding plastic materials, properties, and uses. Survey of plastic-manufacturing processes. Designing plastic products and manufacturing systems.

**Course Outcomes**

- Understand the behavior and properties of plastic materials as they are affected by manufacturing processes.
- Understand the design of plastic products and the equipment, tooling, and environment necessary for their manufacture.
- Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- Function effectively on interdisciplinary teams and to demonstrate leadership characteristics
- Apply knowledge of mathematics, statistics, science and engineering in plastics manufacturing.
- Identify, formulate, and solve manufacturing-engineering problems related to plastics.
- Understand the impact of manufacturing engineering solutions in a global, economic, environmental, and societal context, especially as regards plastics.
- Have a knowledge of contemporary issues in plastics manufacturing.

NDFS 100 : Essentials of Human Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Food-oriented study of nutritional facts and principles as a basis for dietary choices; consequences of choices; scientifically examining controversial topics.

**Course Outcomes**

- Apply the scientific method to identify and interpret credible nutrition information.
- Identify, interpret, and apply nutrition information.
- Identify functions of nutrients and their major food sources.

NDFS 191 : Careers in Food Science. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Guest lectures and exposure to vocations in food science.

**Course Outcomes**

- This is an introductory course for food science and is designed for undergraduate students who have not selected a major and/or are considering Food Science or Food Industry Management as a possible major.

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 105 or concurrent enrollment.

DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 106 or concurrent enrollment

DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PWS 100 : Living with Plants. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to principles of plant function and diversity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a fundamental knowledge of basic principles and concepts of plant biology (i.e., structure, function, and diversity)
- Cultivate an appreciation for the central importance of plants in the way our world and human society functions
- Provide a conceptual framework of how plants influence the environment
- Practice using the scientific method to better understand plant-environment interactions
- Improve verbal and written communication

STDEV 317 : Career Strategies for Employment and Internships. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Preparing for employment and internship opportunities. Practical strategies to facilitate internship and/or career preparation: resumes, cover letters, networking, interviewing, and Internet research.

**Course Outcomes**

There are no course outcomes available

TECH 201 : History of Creativity and Innovation in the Arts, Science, and Technology 1. (3:3:0)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Western civilization from Egyptian antiquity to Renaissance from perspective of changes in civilization enabled by technology. Creativity throughout history. How to improve personal creativity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

TECH 202 : History of Creativity and Innovation in the Arts, Science, and Technology 2. (3:3:0)

WHEN TAUGHT: Winter; Summer

DESCRIPTION: Western civilization from Renaissance to present from perspective of changes in civilization enabled by technology. Creativity throughout history. How to improve personal creativity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

2. Food industry mangement track:

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and

usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

**or**

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.
DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.
NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

IAS 220 : Introduction to Development Studies. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: Exploration of international development in non-formal education, micro-enterprises, community organizations; hunger, poverty, and other special problems in developing areas of the world.

**Course Outcomes**

- Upon successfully completing this course, a student will be able to recognize the historical origins of international development and the various agendas that it embodies. Upon successfully completing this course, a student will be able to recognize and articulate the complexity of international development issues and their interdisciplinary nature. Upon successfully completing this course, a student will be able to identify major theories and approaches to international development both in general and across different key disciplines. Upon successfully completing this course, a student will be intellectually ready to embark on an International Development Minor Internship.

MATH 119 : Introduction to Calculus. (4:4:1)

OFFERED: Independent Study only.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 and Math 111; or equivalent.
DESCRIPTION: Introduction to plane analytic geometry and calculus.

**Course Outcomes**

- This course is designed to provide beginning undergraduate students a first exposure to Calculus concepts, theorems, and techniques. In general, theorems will not be proved. An understanding of the theorems and their applications to solve calculus problems will be taught. Students will be expected to develop effective problem solving skills based on their understanding of the theory and not just memorize a set of routines to solve problems. For a more detailed course description, visit the Math 119 Wiki page.

MFG 479 : Innovation and Entrepreneurship. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: Develop ideas into a business model. Learn product development. Entrepreneurial concepts and practices. Strategic planning and global competitiveness.

**Course Outcomes**

- Participate effectively on an entrepreneurial founding team
- Evaluate business ideas, opportunities, and plans
- Plan a new business financially
- Understand and apply entrepreneurial terminology to the entrepreneurial and investment ecosystems
- Formulate strategies to overcome common start-up business challenges
- Prepare effectively a written business plan
- Make an effective oral business plan presentation

NDFS 200 : Nutrient Metabolism. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: NDFS 100; Organic chemistry or concurrent enrollment.

DESCRIPTION: Chemical structures of nutrients, their food sources, requirements, digestion, absorption, transport, metabolism, functions, storage and excretion; metabolic consequences of nutrient deficiencies, interactions, imbalances, and toxicities.

**Course Outcomes**

- Identify chemical structures of amino acids, lipids, carbohydrates, and vitamins.
- List functions, food sources, and consequences of deficiencies and toxicities for each of the essential nutrients.
- Explain the metabolic and physiological basis for the consequences of dietary practices that affect nutrient levels, and relate the consequences to the roles of essential nutrients in metabolic processes.
- Analyze diets and alter food intake to reach predetermined targets for consumption of specific dietary components or to achieve an overall dietary pattern.
- Find answers to questions and summarize results from original research reported in published peer-reviewed scientific journals.

NDFS 450 : Food Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: NDFS 250 & NDFS 251 & CHEM 285; or NDFS 250 & NDFS 251 & CHEM 352

DESCRIPTION: Structure and properties of food components, including water, carbohydrates, protein, lipids, other nutrients, and food additives. Chemistry of changes occurring during processing, storage, and utilization.

**Course Outcomes**

- Explain the chemistry of food components, including their properties and reactions
- Explain the major chemical reactions that occur during food processing and storage, including those that limit food shelf life
- Solve real-world problems related to food chemistry
- Write a research proposal on a food chemistry topic. Include objectives, literature review, experimental design and references

NDFS 464 : Food Sensory Evaluation. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 121 & NDFS 250 & NDFS 251; This class should be taken concurrently with NDFS 465.

DESCRIPTION: Analytical and affective methods of assessing sensory properties of food using statistical methods. Laboratory experience in sensory research and techniques. Integrative capstone course.

**Course Outcomes**

- Use the computer to prepare and deliver questions to panelist.
- Use a computer to collect data from consumer panelists doing affective tests
- Use statistical packages such as SAS to do statistical analysis such as one and two way ANOVA and to make inferences from actual sensory data
- Create and use a spread sheet to display and analyze data, make calculations and do statistical analysis
- Use a computer to write reports.
- Generate a hypothesis, test it using a consumer or discrimination panel, and prepare a report for a client on the findings.
- Use binomial statistics to draw conclusions on categorical data
- Collect data, analyze it using ANOVA, make inferences from the F values and p>F values on the ANOVA result
- Determine your threshold for four basic tastes
- Describe sensory biases and how to best deal with them
- Plan, conduct and report on a discrimination test and use binomial statistics to make inferences
- Demonstrate understanding of preference and ranking tests and use of binomial statistics to make inferences
- Show how to determine when Quantitative Descriptive panelists are trained and when they need more training
- Lead and participate in groups in developing hypotheses, planning and conducting experimentation to test that hypothesis

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 105 or equivalent.

RECOMMENDED: Concurrent enrollment in Phscs 108.

DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PWS 100 : Living with Plants. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to principles of plant function and diversity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a fundamental knowledge of basic principles and concepts of plant biology (i.e., structure, function, and diversity)

- Cultivate an appreciation for the central importance of plants in the way our world and human society functions
- Provide a conceptual framework of how plants influence the environment
- Practice using the scientific method to better understand plant-environment interactions
- Improve verbal and written communication

STDEV 317 : Career Strategies for Employment and Internships. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Preparing for employment and internship opportunities. Practical strategies to facilitate internship and/or career preparation: resumes, cover letters, networking, interviewing, and Internet research.

**Course Outcomes**

There are no course outcomes available

TECH 201 : History of Creativity and Innovation in the Arts, Science, and Technology 1. (3:3:0)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Western civilization from Egyptian antiquity to Renaissance from perspective of changes in civilization enabled by technology. Creativity throughout history. How to improve personal creativity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

TECH 202 : History of Creativity and Innovation in the Arts, Science, and Technology 2. (3:3:0)

WHEN TAUGHT: Winter; Summer

DESCRIPTION: Western civilization from Renaissance to present from perspective of changes in civilization enabled by technology. Creativity throughout history. How to improve personal creativity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

TMA 150 : Public Speaking. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Principles and methods of public speaking; speaking experiences.

**Course Outcomes**

- Develop analytical listening and observation skills.
- Know how to speak publicly so your audience will really listen and understand.
- Construct and deliver effective extemporaneous public speeches.
- Manage speech anxiety and effective use nonverbal communication to inform, persuade, enlighten, and impact your audience.
- Be able to produce and employ effective visual aids in your presentations.

*Hours include courses that may fulfill university core requirements.

## Show all Nutrition, Dietetics, and Food Science (NDFS) Courses

College of Life Sciences Home

Nutrition, Dietetics, and Food Science Department Home

Majors

- BS in Dietetics
- BS in Food Science
- BS in Nutritional Science

Minors

- Nutrition

Course Information

- Nutrition, Dietetics, and Food Science (NDFS) Courses

Faculty

# BS in Nutritional Science (64 hours*)

Show All Course Descriptions
Hide All Course Descriptions

This degree provides excellent preparation for those individuals in preprofessional programs (e.g., premedicine, predentistry, prelaw) or for an advanced degree (MS, PhD) in nutrition or biological sciences.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following core requirements:

NDFS 100 : Essentials of Human Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Food-oriented study of nutritional facts and principles as a basis for dietary choices; consequences of choices; scientifically examining controversial topics.

**Course Outcomes**

- Apply the scientific method to identify and interpret credible nutrition information.
- Identify, interpret, and apply nutrition information.
- Identify functions of nutrients and their major food sources.

NDFS 200 : Nutrient Metabolism. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: NDFS 100; Organic chemistry or concurrent enrollment.

DESCRIPTION: Chemical structures of nutrients, their food sources, requirements, digestion, absorption, transport, metabolism, functions, storage and excretion; metabolic consequences of nutrient deficiencies, interactions, imbalances, and toxicities.

**Course Outcomes**

- Identify chemical structures of amino acids, lipids, carbohydrates, and vitamins.
- List functions, food sources, and consequences of deficiencies and toxicities for each of the essential nutrients.
- Explain the metabolic and physiological basis for the consequences of dietary practices that affect nutrient levels, and relate the consequences to the roles of essential nutrients in metabolic processes.
- Analyze diets and alter food intake to reach predetermined targets for consumption of specific dietary components or to achieve an overall dietary pattern.
- Find answers to questions and summarize results from original research reported in published peer-reviewed scientific journals.

NDFS 294 : Nutrition Research Fundamentals. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: NDFS 200

DESCRIPTION: Design of protocols for and ethics of research with human subjects and animals. Scientific literature searches and presentations.

NOTE: Recommended during sophomore year.

**Course Outcomes**

- Design a nutrition research experiment using metholdology employed by NDFS faculty and/or that found in peer reviewed nutritional research papers.
- Pass the Institutional Review Board (IRB) research test and implement standards of the Institutional Animal Care and Use Committee (IACUC) into a research study design

NDFS 305 : Nutritional Implications of Disease. (4:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 200 & PDBIO 305

DESCRIPTION: Nutritional assessment and medical nutrition therapy across disease states.

NOTE: For nutritional science majors.

**Course Outcomes**

- Know the basic techniques and parameters used in nutritional assessment

- Identify the consequences of malnutrition and the inflammatory response as they relate to disease progression, disease treatment, cost, and quality of life
- Identify the pathophysiology, risk factors, nutritional assessment, and appropriate nutritional intervention of the following diseases: obesity, heart disease, pressure sores, cancer, diabetes, GI disorders, pulmonary diseases, kidney diseases, dialysis, osteoporosis, and nutritional anemias
- Identify the metabolic differences between starvation and metabolic stress including causes, consequences, and nutritional intervention
- Identify the basic principles of nutritional support including supplementation, tube feedings, and intravenous feedings
- Identify the major nutritional concerns in geriatric populations
- Identify the concept of evidence based practice and know how to find and interpret evidence based practice statements on the role of nutrition in the prevention and treatment of various conditions

NDFS 400 : Community Nutrition. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: NDFS 200; or NDFS 201

DESCRIPTION: Public health nutrition applied to community programs.

**Course Outcomes**

- 1. Describe various community nutrition programs, health care delivery systems, and policies aimed to enhance the nutritional status and overall health of individuals in the US population.
- 2. Effectively write a grant proposal that encompasses the basic elements of implementing community nutrition programs, including a needs assessment, program planning, implementation and evaluation, and budget preparation, and conduct the proposed project in a real-life community setting.
- 3. Exhibit competent communication skills in both written and oral communication for lay and professional audiences in the performance of course assignments.
- 4. Evaluate accuracy of professional and lay resources for nutrition-related complementary and alternative medicine (CAM) products.
- 5. Demonstrate knowledge of the impact of culture and socioeconomic status on consumers' food and nutrition behaviors.
- 6. Demonstrate knowledge of ethical principles in community nutrition research and practice.

NDFS 424 : Nutrition Through the Life Cycle. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 300; or NDFS 305

DESCRIPTION: Nutritional requirements, diet, and health concerns for pregnancy and lactation; infants; toddlers and preschoolers; school-age children; adolescents; and older adults.

**Course Outcomes**

- 1. Demonstrate knowledge of evidence-based nutrient requirements (including the rationale for specific requirements throughout the life cycle) and nutritional status assessment methods used to determine diet adequacy among pregnant and lactating women; infants; children; adolescents; and older adults.
- 2. Assess the nutritional status of a pregnant woman and provide appropriate recommendations for dietary improvement based on nutrient requirements during this life stage.
- 3. Assess the nutritional status of a young child and provide appropriate recommendations for dietary improvement based on nutrient requirements during this life stage.
- 4. Effectively write a scientific review paper based on searching, evaluating, and synthesizing previously published peer-reviewed research.
- 5. Evaluate and offer constructive feedback of peers' written works in a manner consistent with the "real-world" professional scientific article review process.

NDFS 435 : Nutritional Biochemistry. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NDFS 200 & PDBIO 305 & CHEM 285; or NDFS 200 & PDBIO 305 & CHEM 481

DESCRIPTION: Metabolic interrelationships among nutrients.

**Course Outcomes**

- Demonstrate ability to search, interpret, and summarize original scientific information in an efficiently written scientific paper.
- Demonstrate knowledge of nutrient chemical structures, food sources, digestion, absorption, transport, metabolism and functions, and the metabolic consequences of nutrient deficiencies, interactions, imbalances and toxicities.
- Demonstrate knowledge of appropriate design for scientific experiments.
- Understand the biochemical functions and pathways of nutrients in the body.
- Identify physiological, biochemical and metabolic changes associated with deficient nutrient intake, excessive nutrient intake and selected metabolic diseases.

2. After consulting with a faculty advisor, complete 8 hours from the following:

MMBIO 241 : Molecular and Cellular Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBio 240 or concurrent enrollment.

DESCRIPTION: Molecular and cellular biology techniques laboratory.

**Course Outcomes**

- Practice ethics and integrity by working with groups and following lab rules.*Relates to Program Learning Outcome: A commitment to professional integrity and ethical behavior consistent with themission of the university.
- Learn the basics of experimental design, how to formulate a hypothesis, what controls to use, how to interpret experimental data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.

- Practice scientific communication through written lab questions, exams and oral presentations.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Learn molecular biology laboratory techniques through practical laboratory exercises. Techniques include, spectrophotometry,isolation of DNA and protein, quantification of DNA and protein, techniques used to purify or detect specific proteins, such aschromatography, western blot and ELISA, DNA fingerprinting, polymerase chain reaction and enzyme assays.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology.

NDFS 201 : Society, Nutrition, and Chronic Disease. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NDFS 100

DESCRIPTION: Behavioral, dietary, and environmental factors that influence nutrition and risks for chronic disease.

**Course Outcomes**

- Explain or describe how behavioral, dietary, and environmental factors influence nutrition and chronic disease risks.
- Find scientific research articles and identify their key characteristics. Identify consistencies or inconsistencies in studies of diet and chronic disease risks.
- Apply information about behavioral, dietary, and environmental factors to reduce chronic disease risks.

NDFS 250 : Essentials of Food Science. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 101; or CHEM 105; or SFL 110; concurrent enrollment in NDFS 251

DESCRIPTION: Overview of food science, including chemical, physical and microbiological principles related to food processing, storage, and utilization. Current issues in food science.

NOTE: This class should be taken concurrently with NDFS 251.

**Course Outcomes**

- Explain the basic concepts and principles of Food Science
- Recognize (distinguish) current topics in the news and in lay literature as being related to Food Science and Technology
- Evaluate the scientific validity of various consumer concerns regarding food production, distribution, preservation, storage and utilization
- Obtain further information on Food Science topics through library research of the scientific literature
- Explain how Food Science knowledge applies to your major field of study, and make the connection between what you're learning and what you plan to do after graduation
- Solve Food Science related problems.
- Determine if you more fully enjoy eating, understanding what happens to food between farm gate and dinner plate

NDFS 251 : Essentials of Food Science Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 101; or CHEM 105; or SFL 110; Concurrent enrollment in NDFS 250.

DESCRIPTION: Laboratory experience in the chemistry of changes occurring during food processing, storage, and utilization.

NOTE: This class should be taken concurrently with NDFS 250.

**Course Outcomes**

- Understand the basic chemistry involved in ripening, processing, and storing food*Relates to Program Learning Outcome: Demonstrate an understanding of the chemical changes occurring during food processing and storage, including reactions involving carbohydrates, protein and fats
- Develop the ability to work in teams to carry out laboratory experiments
- Understand key elements of food required for proper preservation and safety*Relates to Program Learning Outcome: Demonstrate an understanding of the role of microorganisms in food processing, food preservation, and food safety with respect to pathogens, spoilage, and fermentative microorganisms, and apply the basic elements of sanitation and quality assurance programs to understand and control microbial effects in food

NDFS 310 : Nutrition and Metabolism in Sports and Exercise. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: NDFS 100 & PDBIO 305

DESCRIPTION: Scientific basis for the role of nutrition in human performance. Critical evaluation of popular practices; making optimal food choices for physical activity.

NOTE: This course was formerly named Sports Nutrition.

**Course Outcomes**

- Students will apply their current understanding of nutrition to aspects of physical performance. Describe the factors (exercise intensity, duration, substrate availability and endocrine) that affect energy utilization.
- Search, interpret, and summarize original scientific information. Evaluate nutritional claims for scientific accuracy.
- Apply evidence-based nutrition recommendations for sports and exercise in real or hypthetical situations.

NDFS 380 : International Nutrition. (3:3:0)

WHEN Fall; Winter

TAUGHT:
PREREQUISITE: NDFS 100
DESCRIPTION: Causes and consequences of nutrient deficiencies common in developing countries. Appropriate interventions to prevent or treat malnutrition.

**Course Outcomes**

- Relate critical nutrient requirements deficiencies to nutritional diseases and poor cognitive devolopment
- Understand the breadth of undernutrition, poverty and hunger that plague the developing world.
- Understand the scientific literature that relates to nutional problems in devloping societies
- Relate the nutritional status of undernourished children to their diets and suggest plausible solutions

NDFS 494R : Undergraduate Research in Nutrition, Dietetics, or Food Science. (1-3:0:9)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.
DESCRIPTION: Mentored research experience.

**Course Outcomes**

- Students will develop skillsets in data collection, data entry, and/or data analysis methods.
- Students will develop an increased understanding of the most up-to-date findings in the areas we are researching in the lab.
- To coordinate our research efforts in the lab
- Students will gain experience presenting research to the group and will increase their critical thinking skills discussing original research articles.

(up to 3 hours)
PDBIO 360 : Cell Biology. (3:3:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481
DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies
- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PWS 340 : Genetics. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481
DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

3. Complete one course from the following (prerequisite to PDBio 305, required below):
PDBIO 210 : Human Anatomy (with virtual lab). (3:3:0)
OFFERED: Independent Study only.
DESCRIPTION: Structure and function of the human body. Virtual lab experience included.

**Course Outcomes**

- Students will be able to list the name, location, and function of each of the body's organs and organ systems.
- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

4. Complete the following:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers,

epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: CHEM 351; or CHEM 351M
DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).
DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.
NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

(1 hour required)

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120
DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.
NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105
DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.
NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.

- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.
RECOMMENDED: A general biology course.
DESCRIPTION: Function of body organ systems.
NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: High school algebra and trigonometry.
RECOMMENDED: Concurrent enrollment in Phscs 107.
DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

## Recommended Courses

CHEM 223 : Quantitative and Qualitative Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 107; or CHEM 113

DESCRIPTION: Principles of chemical equilibrium, quantitative chemical measurements, and qualitative detection of selected chemical species.

NOTE: Primarily for majors in molecular biology and the life sciences.

**Course Outcomes**

- Course Objectives: The course is designed to develop research skills. The labwork will have a somewhat bioanalytical focus, e.g. the chemical analysis of biological molecules or biologically related ions and the use of biomolecules in assays. We will work to develop good laboratory practice, both conceptually and practically, and consider how to do good science. The combined lecture/lab approach will be used to help you understand quantitative approaches to analysis, sources of error, and the utility but also limitations of laboratory measurements. You will be asked to apply a portion of this knowledge to your own laboratory determinations. We will also discuss more advanced analytical methods involving chemical separations and instrumental analyses. This course fills one of the requirements for a minor in chemistry.

HLTH 345 : Principles of Epidemiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: Stat 121.

DESCRIPTION: Applying analytical tools to study acute and chronic disease to facilitate investigation and control of epidemics.

**Course Outcomes**

- Investigate disease outbreaks.
- Describe basic concepts, definitions, and history of Epidemiology.
- Describe patterns of disease occurrence.
- Interpret Epidemiologic studies.
- Evaluate treatment effectiveness.
- Measure disease frequency and association.
- Distinguish between statistical association and cause-effect relationships.
- Know basic design strategies in Epidemiology.

MMBIO 221 : General Microbiology. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Any biology course.

RECOMMENDED: Any chemistry course.

DESCRIPTION: Microbial world, emphasizing communicable diseases, their causes and control.

NOTE: Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses.

**Course Outcomes**

- Explain and discuss the ways by which microbiologists study microorganisms.
- Discuss the principle infectious diseases that affect mankind, including how they are transmitted, treated, controlled and prevented.
- Differentiate between the types of microorganisms by identifying relevant structure and their function in the biosphere.
- Propose microbial solutions to global problems.
- Describe how the human body defends itself against infectious agents.

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 105 or equivalent.

RECOMMENDED: Concurrent enrollment in Phscs 108.

DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 105 or concurrent enrollment.

DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 106 or concurrent enrollment

DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through

hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

**Note:** Professional schools and graduate programs may require additional courses not required for the major, such as Phscs 106, 107, 108, or Math 119 or 112. Students should contact the program to which they may apply to determine the specific courses required.

*Hours include courses that may fulfill university core requirements.

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# Minor in Nutrition (16 hours)

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Many of these courses have prerequisites. Most students choosing this minor will have completed the prerequisites as part of their major. Other students will need to complete them.

## Program Requirements | View MAP

1. Complete the following:

NDFS 100 : Essentials of Human Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Food-oriented study of nutritional facts and principles as a basis for dietary choices; consequences of choices; scientifically examining controversial topics.

**Course Outcomes**

- Apply the scientific method to identify and interpret credible nutrition information.
- Identify, interpret, and apply nutrition information.
- Identify functions of nutrients and their major food sources.

NDFS 200 : Nutrient Metabolism. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: NDFS 100; Organic chemistry or concurrent enrollment.

DESCRIPTION: Chemical structures of nutrients, their food sources, requirements, digestion, absorption, transport, metabolism, functions, storage and excretion; metabolic consequences of nutrient deficiencies, interactions, imbalances, and toxicities.

**Course Outcomes**

- Identify chemical structures of amino acids, lipids, carbohydrates, and vitamins.
- List functions, food sources, and consequences of deficiencies and toxicities for each of the essential nutrients.
- Explain the metabolic and physiological basis for the consequences of dietary practices that affect nutrient levels, and relate the consequences to the roles of essential nutrients in metabolic processes.
- Analyze diets and alter food intake to reach predetermined targets for consumption of specific dietary components or to achieve an overall dietary pattern.
- Find answers to questions and summarize results from original research reported in published peer-reviewed scientific journals.

2. After consulting with a faculty advisor, complete 10 hours from the following:

NDFS 201 : Society, Nutrition, and Chronic Disease. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NDFS 100

DESCRIPTION: Behavioral, dietary, and environmental factors that influence nutrition and risks for chronic disease.

**Course Outcomes**

- Explain or describe how behavioral, dietary, and environmental factors influence nutrition and chronic disease risks.
- Find scientific research articles and identify their key characteristics. Identify consistencies or inconsistencies in studies of diet and chronic disease risks.
- Apply information about behavioral, dietary, and environmental factors to reduce chronic disease risks.

NDFS 305 : Nutritional Implications of Disease. (4:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 200 & PDBIO 305

DESCRIPTION: Nutritional assessment and medical nutrition therapy across disease states.

NOTE: For nutritional science majors.

**Course Outcomes**

- Know the basic techniques and parameters used in nutritional assessment
- Identify the consequences of malnutrition and the inflammatory response as they relate to disease progression, disease treatment, cost, and quality of life
- Identify the pathophysiology, risk factors, nutritional assessment, and appropriate nutritional intervention of the following diseases: obesity, heart disease, pressure sores, cancer, diabetes, GI disorders, pulmonary diseases, kidney diseases, dialysis, osteoporosis, and nutritional anemias
- Identify the metabolic differences between starvation and metabolic stress including causes, consequences, and nutritional intervention
- Identify the basic principles of nutritional support including supplementation, tube feedings, and intravenous feedings
- Identify the major nutritional concerns in geriatric populations
- Identify the concept of evidence based practice and know how to find and interpret evidence based practice statements on the role of nutrition in the prevention and treatment of various conditions

NDFS 310 : Nutrition and Metabolism in Sports and Exercise. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: NDFS 100 & PDBIO 305

DESCRIPTION: Scientific basis for the role of nutrition in human performance. Critical evaluation of popular practices; making optimal food choices for physical activity.

NOTE: This course was formerly named Sports Nutrition.

**Course Outcomes**

- Students will apply their current understanding of nutrition to aspects of physical performance. Describe the factors (exercise intensity, duration, substrate availability and endocrine) that affect energy utilization.
- Search, interpret, and summarize original scientific information. Evaluate nutritional claims for scientific accuracy.
- Apply evidence-based nutrition recommendations for sports and exercise in real or hypthetical situations.

NDFS 380 : International Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NDFS 100

DESCRIPTION: Causes and consequences of nutrient deficiencies common in developing countries. Appropriate interventions to prevent or treat malnutrition.

**Course Outcomes**

- Relate critical nutrient requirements deficiencies to nutritional diseases and poor cognitive devolopment
- Understand the breadth of undernutrition, poverty and hunger that plague the developing world.
- Understand the scientific literature that relates to nutional problems in devloping societies
- Relate the nutritional status of undernourished children to their diets and suggest plausible solutions

NDFS 400 : Community Nutrition. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: NDFS 200; or NDFS 201

DESCRIPTION: Public health nutrition applied to community programs.

**Course Outcomes**

- 1. Describe various community nutrition programs, health care delivery systems, and policies aimed to enhance the nutritional status and overall health of individuals in the US population.
- 2. Effectively write a grant proposal that encompasses the basic elements of implementing community nutrition programs, including a needs assessment, program planning, implementation and evaluation, and budget preparation, and conduct the proposed project in a real-life community setting.
- 3. Exhibit competent communication skills in both written and oral communication for lay and professional audiences in the performance of course assignments.
- 4. Evaluate accuracy of professional and lay resources for nutrition-related complementary and alternative medicine (CAM) products.
- 5. Demonstrate knowledge of the impact of culture and socioeconomic status on consumers' food and nutrition behaviors.
- 6. Demonstrate knowledge of ethical principles in community nutrition research and practice.

NDFS 424 : Nutrition Through the Life Cycle. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 300; or NDFS 305

DESCRIPTION: Nutritional requirements, diet, and health concerns for pregnancy and lactation; infants; toddlers and preschoolers; school-age children; adolescents; and older adults.

**Course Outcomes**

- 1. Demonstrate knowledge of evidence-based nutrient requirements (including the rationale for specific requirements throughout the life cycle) and nutritional status assessment methods used to determine diet adequacy among pregnant and lactating women; infants; children; adolescents; and older adults.
- 2. Assess the nutritional status of a pregnant woman and provide appropriate recommendations for dietary improvement based on nutrient requirements during this life stage.
- 3. Assess the nutritional status of a young child and provide appropriate recommendations for dietary improvement based on nutrient requirements during this life stage.
- 4. Effectively write a scientific review paper based on searching, evaluating, and synthesizing previously published peer-reviewed research.
- 5. Evaluate and offer constructive feedback of peers' written works in a manner consistent with the "real-world" professional scientific article review process.

NDFS 435 : Nutritional Biochemistry. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NDFS 200 & PDBIO 305 & CHEM 285; or NDFS 200 & PDBIO 305 & CHEM 481

DESCRIPTION: Metabolic interrelationships among nutrients.

**Course Outcomes**

- Demonstrate ability to search, interpret, and summarize original scientific information in an efficiently written scientific paper.
- Demonstrate knowledge of nutrient chemical structures, food sources, digestion, absorption, transport, metabolism and functions, and the metabolic consequences of nutrient deficiencies, interactions, imbalances and toxicities.
- Demonstrate knowledge of appropriate design for scientific experiments.
- Understand the biochemical functions and pathways of nutrients in the body.
- Identify physiological, biochemical and metabolic changes associated with deficient nutrient intake, excessive nutrient intake and selected metabolic diseases.

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## Undergraduate Courses

### 100-Level Courses

NDFS 100 : Essentials of Human Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Food-oriented study of nutritional facts and principles as a basis for dietary choices; consequences of choices; scientifically examining controversial topics.

**Course Outcomes**

- Apply the scientific method to identify and interpret credible nutrition information.
- Identify, interpret, and apply nutrition information.
- Identify functions of nutrients and their major food sources.

NDFS 191 : Careers in Food Science. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Guest lectures and exposure to vocations in food science.

**Course Outcomes**

- This is an introductory course for food science and is designed for undergraduate students who have not selected a major and/or are considering Food Science or Food Industry Management as a possible major.

### 200-Level Courses

NDFS 200 : Nutrient Metabolism. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: NDFS 100; Organic chemistry or concurrent enrollment.

DESCRIPTION: Chemical structures of nutrients, their food sources, requirements, digestion, absorption, transport, metabolism, functions, storage and excretion; metabolic consequences of nutrient deficiencies, interactions, imbalances, and toxicities.

**Course Outcomes**

- Identify chemical structures of amino acids, lipids, carbohydrates, and vitamins.
- List functions, food sources, and consequences of deficiencies and toxicities for each of the essential nutrients.
- Explain the metabolic and physiological basis for the consequences of dietary practices that affect nutrient levels, and relate the consequences to the roles of essential nutrients in metabolic processes.
- Analyze diets and alter food intake to reach predetermined targets for consumption of specific dietary components or to achieve an overall dietary pattern.
- Find answers to questions and summarize results from original research reported in published peer-reviewed scientific journals.

NDFS 201 : Society, Nutrition, and Chronic Disease. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NDFS 100

DESCRIPTION: Behavioral, dietary, and environmental factors that influence nutrition and risks for chronic disease.

**Course Outcomes**

- Explain or describe how behavioral, dietary, and environmental factors influence nutrition and chronic disease risks.
- Find scientific research articles and identify their key characteristics. Identify consistencies or inconsistencies in studies of diet and chronic disease risks.
- Apply information about behavioral, dietary, and environmental factors to reduce chronic disease risks.

NDFS 250 : Essentials of Food Science. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 101; or CHEM 105; or SFL 110; concurrent enrollment in NDFS 251

DESCRIPTION: Overview of food science, including chemical, physical and microbiological principles related to food processing, storage, and utilization. Current issues in food science.

NOTE: This class should be taken concurrently with NDFS 251.

**Course Outcomes**

- Explain the basic concepts and principles of Food Science
- Recognize (distinguish) current topics in the news and in lay literature as being related to Food Science and Technology
- Evaluate the scientific validity of various consumer concerns regarding food production, distribution, preservation, storage and utilization
- Obtain further information on Food Science topics through library research of the scientific literature
- Explain how Food Science knowledge applies to your major field of study, and make the connection between what you're learning and what you plan to do after graduation
- Solve Food Science related problems.
- Determine if you more fully enjoy eating, understanding what happens to food between farm gate and dinner plate

NDFS 251 : Essentials of Food Science Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 101; or CHEM 105; or SFL 110; Concurrent enrollment in NDFS 250.

DESCRIPTION: Laboratory experience in the chemistry of changes occurring during food processing, storage, and utilization.

NOTE: This class should be taken concurrently with NDFS 250.

**Course Outcomes**

- Understand the basic chemistry involved in ripening, processing, and storing food*Relates to Program Learning Outcome: Demonstrate an understanding of the chemical changes occurring during food processing and storage, including reactions involving carbohydrates, protein and fats
- Develop the ability to work in teams to carry out laboratory experiments
- Understand key elements of food required for proper preservation and safety*Relates to Program Learning Outcome: Demonstrate an understanding of the role of microorganisms in food processing, food preservation, and food safety with respect to pathogens, spoilage, and fermentative microorganisms, and apply the basic elements of sanitation and quality assurance programs to understand and control microbial effects in food

NDFS 290 : Introduction to Dietetics. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: The profession of dietetics; exposure to specialty areas through guest lectures.

**Course Outcomes**

- Understand how to become a Registered Dietitian Nutritionist, including:Educational requirements and various routes to completion.Requirements for acceptance to the Didactic Program in Dietetics at BYU.Requirements for acceptance to a Dietetic Internship.Requirements for eligibility for Registration by the Commission on Dietetic Registration (CDR)Requirements for maintenance of continuing CDR Registration.
- Understand what a Registered Dietitian Nutritionist is.
- Understand what it means to be a professional.
- Have exposure to a variety of jobs currently held by Registered Dietitian Nutritionists.
- Identify which area of dietetics is personally most appealing
- Identify what future job opportunities are predicted in the profession of dietetics.

NDFS 292R : Fieldwork in Dietetics. (.5-2:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fieldwork for international students.

**Course Outcomes**

- Students will demonstrate professional attributes such as customer focus, critical thinking, and time management and work prioritization while developing dietetics-related skills within various organizational structures.

NDFS 294 : Nutrition Research Fundamentals. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: NDFS 200

DESCRIPTION: Design of protocols for and ethics of research with human subjects and animals. Scientific literature searches and presentations.

NOTE: Recommended during sophomore year.

**Course Outcomes**

- Design a nutrition research experiment using metholdology employed by NDFS faculty and/or that found in peer reviewed nutritional research papers.
- Pass the Institutional Review Board (IRB) research test and implement standards of the Institutional Animal Care and Use Committee (IACUC) into a research study design

**300-Level Courses**

NDFS 300 : Medical Nutrition Therapy 1. (4:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: Dietetics major status.

DESCRIPTION: Nutritional assessment and medical nutrition therapy across disease states.

**Course Outcomes**

- Develop educational materials for patient teaching and use current nutrition knowledge related to general healthy eating, health promotion, or medical nutrition therapy counseling
- Be familiar with basic counseling and interviewing techniques
- Be familiar with basic counseling and interviewing techniques
- Determine fluid and electrolyte requirements
- Understand and use medical terminology
- Know biochemical markers related to nutrition and how to interpret them
- Gather, analyze and interpret the nutrient composition of foods/menus
- Develop appropriate disease specific diets
- Be familiar with common alternative nutritional therapies and become familiar with resources on herbal remedies
- Understand the dietary supplement act
- Demonstrate counseling techniques to facilitate behavior change
- Assessment and treatment of nutritional health risks
- Identify the appropriate medical nutrition therapy for specific disease states and provide the appropriate intervention, including calculating and defining diets
- Interpret, evaluate and use professional literature to make ethical evidence-based practice decisions
- Use the nutrition care process to make decisions, to identify nutrition-related problems and determine and evaluate nutrition interventions, including MNT, disease prevention and health promotion
- Modify and evaluate menus for diverse groups
- Demonstrate understanding of pharmacology, nutrient metabolism, physiology, genetics and biochemistry

NDFS 305 : Nutritional Implications of Disease. (4:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 200 & PDBIO 305

DESCRIPTION: Nutritional assessment and medical nutrition therapy across disease states.

NOTE: For nutritional science majors.

**Course Outcomes**

- Know the basic techniques and parameters used in nutritional assessment
- Identify the consequences of malnutrition and the inflammatory response as they relate to disease progression, disease treatment, cost, and quality of life
- Identify the pathophysiology, risk factors, nutritional assessment, and appropriate nutritional intervention of the following diseases: obesity, heart disease, pressure sores, cancer, diabetes, GI disorders, pulmonary diseases, kidney diseases, dialysis, osteoporosis, and nutritional anemias
- Identify the metabolic differences between starvation and metabolic stress including causes, consequences, and nutritional intervention
- Identify the basic principles of nutritional support including supplementation, tube feedings, and intravenous feedings
- Identify the major nutritional concerns in geriatric populations
- Identify the concept of evidence based practice and know how to find and interpret evidence based practice statements on the role of nutrition in the prevention and treatment of various conditions

NDFS 310 : Nutrition and Metabolism in Sports and Exercise. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: NDFS 100 & PDBIO 305

DESCRIPTION: Scientific basis for the role of nutrition in human performance. Critical evaluation of popular practices; making optimal food choices for physical activity.

NOTE: This course was formerly named Sports Nutrition.

**Course Outcomes**

- Students will apply their current understanding of nutrition to aspects of physical performance. Describe the factors (exercise intensity, duration, substrate availability and endocrine) that affect energy utilization.
- Search, interpret, and summarize original scientific information. Evaluate nutritional claims for scientific accuracy.
- Apply evidence-based nutrition recommendations for sports and exercise in real or hypthetical situations.

NDFS 330 : Comparative Animal Nutrition. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Comparative digestion, absorption, and utilization of nutrients and nutritional applications of domestic, pet, and wildlife species.

**Course Outcomes**

- Demonstrate an understanding of the diverse digestive systems in the animal kingdom.
- Demonstrate an understanding how changes in digestive systems affect both nutrient requirements and affect feeding types and systems.
- Apply the roles of nutrients in cellular metabolism.
- Explain how nutrient deficiencies affect body function and performance.
- Demonstrate knowledge of animal feed formulation.

NDFS 350 : Food Analysis. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 250 & NDFS 251 & CHEM 285; or NDFS 250 & NDFS 251 & CHEM 352

DESCRIPTION: Principles, methods and techniques of qualitative and quantitative physical, chemical, and biological analysis of food and food ingredients.

**Course Outcomes**

- Explain the principles behind the analytical techniques used in food analysis (primarily chemical and physical analyses)
- Measure various components of food (found on the Nutrition Facts label) using laboratory techniques common to food chemistry and food analysis
- Select the appropriate analytical technique when presented with a practical problem
- Prepare a written report and brief oral presentation covering the quality assurance tests required for the analysis of raw ingredients, intermediate products and final product of a food commodity having a standard of identity.

NDFS 355 : Food Process Engineering. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 105 & MATH 112; or PHSCS 105 & MATH 119; Food Science majors only.

DESCRIPTION: Mass and energy balances, thermodynamics, fluid flow, heat and mass transfer; unit operations in food processing, including thermal processing, frying, irradiation, refrigeration, freezing, and dehydration.

**Course Outcomes**

- Solve fluid flow problems to determine velocities, flow volumes, friction losses. Size pipes and select appropriate pump types and select appropriate sizes.
- Compare the effectiveness and amount of heat exchanged in tubular and plate heat exchangers
- Calculate the amount of heat recovered in the regeneration section of a HTST pasteurizer
- Determine effect of flow rate on conductivity of heat exchange partition in a tubular and plate heat exchanger
- Determine the coefficient of performance for Freon and ammonia refrigeration cycles and make a judgment as to which is appropriate for a hypothetical application
- Calculate the amount of steam needed to achieve a hypothetical heating operation
- •Describe the flow of a HTST pasteurizer
- Given an required Fo, be able to do a heat penetration test on a low acid food and determine the process time needed to achieve the required kill
- Be able to concentrate a fluid product on a RO system or separate proteins from salts and sugars on a UF system. Explain the drop in flux rates with time, module design, and construction and care of membranes
- Diagram the operations in a spray drying system and explain what suppresses the product temperature during drying
- Describe the four systems needed and the role each plays in a freeze drying system
- Explain the function and operation of a flow diversion valve.
- Describe the balance of lethal temperature, time, bacterial control and quality on thermally processed products
- Compare the process flow, processing conditions, products, and advantages and disadvantages of process options for long term preservation: retorts, agitating retorts, UHT, High pressure, freeze drying, air drying, spray drying
- Describe the measures taken to achieve the highest quality in frozen foods
- Know the chemistry and barrier characteristics of the commonly used polymers
- Know the functions of a package and be able to determine what functions the package is performing in an array of packaging examples
- Know the environmental implications of each of a wide variety of commonly used packaging materials

NDFS 356 : Medical Nutrition Therapy 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 300

DESCRIPTION: Medical nutrition therapy across disease states; continuation of NDFS 300.

**Course Outcomes**

- Use oral and written communications in presenting an educational session for a group
- Use current information technologies
- Work effectively as a team member
- Public Speaking
- Media Presentations
- Knowledge of: exercise physiology, pathophysiology related to nutrition care, fluid and electrolyte requirements, pharmacology: nutrient-nutrient interaction.
- Demsonstrated ability to: interpret medical terminology, interpret laboratory parameters related to nutrition
- Document appropriately a variety of activities
- Calculate and interpret nutrient composition of foods
- Knowledge of medical nutrition therapy strategies to assess need for adaptive feeding techniques and equipment
- Calculate and/or define diets for health conditions addressed by health promotion/disease (cancer, pulmonary, liver, pancreas, and kidney)
- Calculate enteral and parenteral nutrition formulations
- Evolving methods of assessing health status
- Assessment and treatment of nutritional health risks
- Identify the appropriate medical nutrition therapy for specific disease states and provide the appropriate intervention, including calculating and defining diets
- Interpret, evaluate and use professional literature to make ethical evidence-based practice decisions
- Use current information technologies to locate and apply evidence based guidelines and protocols; (ADA evidence Analysis Library and the Cochrane Database of Systematic Reviews)
- Use the nutrition care process to make decisions, to identify nutrition-related problems and determine and evaluate nutrition interventions, including MNT, disease prevention and health promotion
- Modify and evaluate menus for diverse groups
- Demonstrate understanding of pharmacology, nutrient metabolism, physiology, genetics and biochemistry

NDFS 361 : Food Microbiology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBIO 221 & MMBIO 222

DESCRIPTION: Pathogenic and spoilage microorganisms in foods and their control. Beneficial microorganisms in food systems. Influence of the food system on growth and survival of microorganisms.

**Course Outcomes**

- Understand the growth requirements of common food borne pathogens and…Be able to attribute the characteristics of a food borne illness with unknown etiology to the most likely organism. Differentiate which organisms would be likely to grow in a specific food product
- Understand intrinsic and environmental aspects of foods and how they can be modified to affect the growth and metabolism of food borne microorganisms to include spoilage, pathogenic, and beneficial organisms.
- Carry out a series of laboratory experiments aimed at isolating and identifying common food borne microbial pathogens
- Classify spoilage microorganisms according to the food or foods they are most likely to affect based on the intrinsic and environmental characteristics of the food and compare to various storage methods to determine which method would be most appropriate for the given food product
- Design and carry out a laboratory experiment to evaluate the microbial safety of a common food product

NDFS 362 : Food Commodity Processing. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: NDFS 250 & NDFS 251; Food Science majors only.

DESCRIPTION: Characteristics of raw food material; principles of food preservation and food processing techniques; packaging materials and methods; sanitation and water and waste management.

**Course Outcomes**

- Prepare a flow chart of a plant that produces masa products from corn and point out how raw material and process can be varied to result in different masa products
- Diagram the wheat milling flow and explain the grinding and separation processes that resulted in each stream. Describe the characteristics and uses of different varieties of wheat.
- Prepare a flow chart for a commercial bakery. Include sources and types of ingredients, function of different processes and quality assurance measures
- Analyze the flow of a dry blend soup line and explain how quality blend uniformity and functionality is assured
- Describe the quality assurance checks on milk coming into a dairy plant, diagram the flow and explain the function of each process used to produce each of their products.
- Diagram and critique the Deseret Meat Processing operation from kill to meat cuts to further processed products.
- Diagram and critique a fruit canning operation. Describe the raw material, how it is handled, sorted, graded, how the quality and safety of the canned fruit and the integrity of the can is assured.
- Prepare flow diagrams and explanations for the processes involved in preparing drinking water for a system that uses surface water for its source and for a system that uses deep well and spring water for its source.
- Design and diagram a system that will treat waste water from Provo City so that it is fit to release into Utah Lake. Demonstrate understanding of the function of each unit operation. Include control measures to assure quality

NDFS 374 : Food Production Management. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Dietetics major status.

DESCRIPTION: Managing processes and techniques of quantity food production in commercial and institutional food systems.

**Course Outcomes**

- 1. Explain the foodservice industry in the context of a system and describe food consumption issues and trends for various consumers.
- 2. Be able to identify different paths of food product flow and understand the advantages and disadvantages of these operations.
- 3. Demonstrate knowledge of principles of menu planning through creating an appropriate menu for institutional feeding to meet needs of target population.
- 4. Understand the importance of aesthetically pleasing therapeutic menus and apply knowledge to meet individual or group dietary needs.
- 5. Discuss need for standardized recipes and appropriately quantify recipes for volume food production.
- 6. Be able to identify quantity food production techniques, terminology, and equipment used for: soups, sauces, meat, poultry, fish, egg and dairy foods, vegetables, fruits, salads, sandwiches, and baked goods
- 7. Be able to appropriately use basic principles of food and labor costs for financial accountability
- 8. Accurately quantify recipes and calculate recipe costs.
- 9. Students are able to use current information technologies to demonstrate an effective and professional oral presentation for the class
- 10. Students are able to apply the principles of sanitation and safety to foodservice, and recognize the impact on consumers

NDFS 375 : Food Production Management Laboratory. (2:0:8)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NDFS 374 or concurrent enrollment.

**Course Outcomes**

- 2. Use appropriate controls in quantity food production.
- 1. Apply appropriate quantity food preparation techniques and Food Science knowledge for soups, sauces, meat, poultry, fish, dairy foods, vegetables, fruits, salads, sandwiches, and baked goods
- 3. Demonstrate use of appropriate safety and sanitation principles during food production and service to the customer.
- 4. Demonstrate safe and appropriate use of and cleaning of foodservice equipment.
- 5. Demonstrate effective presentation and service of food.
- 6. Students will work effectively as a team member as evidenced through good communication, appropriate assertiveness, and effective time management skills.
- 7. Use various monitoring tools to provide data for continuous quality improvement.
- 8. Demonstrate production management skills ensuring that foodservice operation meets the needs of the clients.

NDFS 380 : International Nutrition. (3:3:0)

WHEN Fall; Winter

TAUGHT:
PREREQUISITE: NDFS 100
DESCRIPTION: Causes and consequences of nutrient deficiencies common in developing countries. Appropriate interventions to prevent or treat malnutrition.

**Course Outcomes**

- Relate critical nutrient requirements deficiencies to nutritional diseases and poor cognitive devolopment
- Understand the breadth of undernutrition, poverty and hunger that plague the developing world.
- Understand the scientific literature that relates to nutional problems in devloping societies
- Relate the nutritional status of undernourished children to their diets and suggest plausible solutions

NDFS 390R : Special Topics in Food Science and Nutrition. (1-3:ARR:0)

DESCRIPTION: Topics vary.

**Course Outcomes**

- Observe and evaluate food and nutriton practices in an international setting.

NDFS 399R : Academic Internship. (1-9:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.
DESCRIPTION: Off-campus work experience sponsored by industrial, government, or academic institutions.

**Course Outcomes**

- Gain practical experience in food science and related areas.
- Apply classroom knowledge to practical situations through observation and involvement in different levels of the organization.
- Develop confidence in personal judgment and gain maturity and self-confidence.
- Gain exposure to a company or agency and a specific area of employment to determine whether they want that area for their life's work; evaluate the company for permanent employment.

### 400-Level Courses

NDFS 400 : Community Nutrition. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: NDFS 200; or NDFS 201
DESCRIPTION: Public health nutrition applied to community programs.

**Course Outcomes**

- 1. Describe various community nutrition programs, health care delivery systems, and policies aimed to enhance the nutritional status and overall health of individuals in the US population.
- 2. Effectively write a grant proposal that encompasses the basic elements of implementing community nutrition programs, including a needs assessment, program planning, implementation and evaluation, and budget preparation, and conduct the proposed project in a real-life community setting.
- 3. Exhibit competent communication skills in both written and oral communication for lay and professional audiences in the performance of course assignments.
- 4. Evaluate accuracy of professional and lay resources for nutrition-related complementary and alternative medicine (CAM) products.
- 5. Demonstrate knowledge of the impact of culture and socioeconomic status on consumers' food and nutrition behaviors.
- 6. Demonstrate knowledge of ethical principles in community nutrition research and practice.

NDFS 401 : Community Nutrition Fieldwork. (.5:0:1.5)

WHEN TAUGHT: Fall
PREREQUISITE: Dietetics major status; concurrent enrollment in NDFS 400.
DESCRIPTION: Fieldwork experience in public health and community nutrition programs.
NOTE: Flu vaccine and immunization record is required. Fee may be involved.

**Course Outcomes**

There are no course outcomes available

NDFS 405 : Nutrition Assessment Lab. (.5:0:3)

PREREQUISITE: NDFS 356
DESCRIPTION: Developing skill in anthropometric, biochemical, clinical, and dietary parameters of nutritional assessment.

**Course Outcomes**

- Demonstrate the ability to locate, interpret, evaluate and use professional literature in the process of nutritional assessment.
- Accurately perform and interpret assessment procedures (the first step in the nutrition care process) to identify nutrition-related problems.
- Acreditation Council for Education in Nutrition and Dietetics Core Knowledge for the RDCore KnowledgeBy the conclusion of the course, students will:Measured/Met by:KRD 1.1Demonstrate the ability to locate, interpret, evaluate and use professional literature in the process of nutritional assessmentCompetency Sign-off, Blood Pressure Certification, Lab WorksheetsKRD 3.1Accurately perform and interpret assessment procedures (the first step in the nutrition care process) to identify nutrition-related problemsCompetency Sign-off, Lab WorksheetsKRD 4.2Apply safety principles in laboratory procedures regarding blood-borne pathogens and the disposal of biohazardous wasteQuiz2012 standards
- Apply safety principles in laboratory procedures regarding blood-borne pathogens and the disposal of

biohazardous waste.

NDFS 424 : Nutrition Through the Life Cycle. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 300; or NDFS 305

DESCRIPTION: Nutritional requirements, diet, and health concerns for pregnancy and lactation; infants; toddlers and preschoolers; school-age children; adolescents; and older adults.

**Course Outcomes**

- 1. Demonstrate knowledge of evidence-based nutrient requirements (including the rationale for specific requirements throughout the life cycle) and nutritional status assessment methods used to determine diet adequacy among pregnant and lactating women; infants; children; adolescents; and older adults.
- 2. Assess the nutritional status of a pregnant woman and provide appropriate recommendations for dietary improvement based on nutrient requirements during this life stage.
- 3. Assess the nutritional status of a young child and provide appropriate recommendations for dietary improvement based on nutrient requirements during this life stage.
- 4. Effectively write a scientific review paper based on searching, evaluating, and synthesizing previously published peer-reviewed research.
- 5. Evaluate and offer constructive feedback of peers' written works in a manner consistent with the "real-world" professional scientific article review process.

NDFS 435 : Nutritional Biochemistry. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NDFS 200 & PDBIO 305 & CHEM 285; or NDFS 200 & PDBIO 305 & CHEM 481

DESCRIPTION: Metabolic interrelationships among nutrients.

**Course Outcomes**

- Demonstrate ability to search, interpret, and summarize original scientific information in an efficiently written scientific paper.
- Demonstrate knowledge of nutrient chemical structures, food sources, digestion, absorption, transport, metabolism and functions, and the metabolic consequences of nutrient deficiencies, interactions, imbalances and toxicities.
- Demonstrate knowledge of appropriate design for scientific experiments.
- Understand the biochemical functions and pathways of nutrients in the body.
- Identify physiological, biochemical and metabolic changes associated with deficient nutrient intake, excessive nutrient intake and selected metabolic diseases.

NDFS 440 : Teaching Methods in Dietetics. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Learning theory; curriculum development and dissemination; nutrition counseling; for dietetics majors.

**Course Outcomes**

- Demonstrate an understanding of the theories of teaching and learning
- Develop lesson plans, to include behavioral objectives, concepts, and learning experiences, and domain of learning
- Demonstrate the ability to meet the varied learning styles of individuals
- Use a variety of instructional methods
- Develop appropriate educational and visual support materials for individual or group instruction
- Demonstrate ability to effectively teach and/or counsel individuals and groups
- Identify and use theories/methods of counseling and interviewing individuals
- Discuss effective use of print and broadcast media
- Demonstrate an understanding of pre-assessment, and of formative and summative evaluation techniques
- Identify the impact of health beliefs and stages of change on education.
- Dress professionally when in the teaching role

NDFS 445 : Foodservice Systems. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 374

DESCRIPTION: Input, transformation, and output in the food service system; emphasizes procurement, production, service, and sanitation.

**Course Outcomes**

- Apply knowledge of management functions and skills to the technical operation of a foodservice system, and compare foodservice operations through application of systems theory
- Discuss the response of industry segments to current societal, demographic, technological, and menu trends
- Discuss the procurement subsystem and the functions of that subsystem, including:The functions of the marketing channel and its agents;Value analysis, sensory analysis, and other tools used in selection of products appropriate for organization's needs;Laws, standards, terminology, specifications, and references for the purchase of food, supplies, and services;Vendor selection and evaluation;Purchasing methods and procedures; and legal and ethical aspects of purchasing
- Identify managerial roles in the food production subsystem, including:Use of forecasting models;Planning and purchasing equipment; Principles of facility design and work flow; and Principles of ergonomics and productivity enhancement.
- Explain the distribution and service subsystem, including:Delivery systems for various types of foodservices;Types of table and self service;Large equipment and small wares used in distribution and service;Service oriented organizations
- Discuss the sanitation and maintenance subsystem from the standpoint of personnel, product, and place
- Identify the relationship of quality assessment programs, including Joint Commission, to foodservice subsystems and the organization
- Identify the interrelated functions of the procurement, production, distribution/service, and maintenance

subsystems of a foodservice operation
- Describe the monitoring and marketing of nutrition throughout the foodservice system
- Describe environmental issues related to food production and service.

NDFS 450 : Food Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: NDFS 250 & NDFS 251 & CHEM 285; or NDFS 250 & NDFS 251 & CHEM 352

DESCRIPTION: Structure and properties of food components, including water, carbohydrates, protein, lipids, other nutrients, and food additives. Chemistry of changes occurring during processing, storage, and utilization.

**Course Outcomes**

- Explain the chemistry of food components, including their properties and reactions
- Explain the major chemical reactions that occur during food processing and storage, including those that limit food shelf life
- Solve real-world problems related to food chemistry
- Write a research proposal on a food chemistry topic. Include objectives, literature review, experimental design and references

NDFS 458 : Management in Dietetics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: NDFS 445

DESCRIPTION: Management cycle and theory applied to clinical and administrative dietetics.

**Course Outcomes**

- Explain dietetics management in the context of a system.
- Discuss group dynamics and work group formation and participate effectively in group tasks.
- Identify and use principles of effective communication and negotiation.
- Identify tools used and steps in the decision making and planning processes.
- Identify the management functions, including planning, organizing, staffing, leading, monitoring, and evaluating.
- Use financial planning, control, and budgeting tools.
- Identify principles of human resource management, including determining manpower needs, recruiting and interviewing, orientation and training, performance appraisal, diversity issues, conflict management, and labor relations laws.
- Describe theories of effective management and leadership.
- Identify theories of motivation and organizational change.
- Discuss concepts of disaster planning and risk management.
- Explain management information systems in dietetics

NDFS 462 : Food Regulations and Quality Assurance. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 121 & NDFS 250 & NDFS 251

DESCRIPTION: Federal and international food regulations and methods of assuring food quality.

**Course Outcomes**

- Apply ethical reasoning to make business decisions based on principles of integrity and honesty
- Be able to locate, retrieve and interpret specific laws, regulations, guidelines and directives relating to food, its manufacture, labeling, distribution and sale
- Be able to apply the principles of food science and statistics to control and assure the quality of food products
- Prepare a HACCP documentation system for any defined food product/process
- Explain how the legislative, executive, and judicial branches of federal and state government function and interact to regulate and control the safety, wholesomeness, and economy of the food supply
- Prepare a legal food label

NDFS 464 : Food Sensory Evaluation. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 121 & NDFS 250 & NDFS 251; This class should be taken concurrently with NDFS 465.

DESCRIPTION: Analytical and affective methods of assessing sensory properties of food using statistical methods. Laboratory experience in sensory research and techniques. Integrative capstone course.

**Course Outcomes**

- Use the computer to prepare and deliver questions to panelist.
- Use a computer to collect data from consumer panelists doing affective tests
- Use statistical packages such as SAS to do statistical analysis such as one and two way ANOVA and to make inferences from actual sensory data
- Create and use a spread sheet to display and analyze data, make calculations and do statistical analysis
- Use a computer to write reports.
- Generate a hypothesis, test it using a consumer or discrimination panel, and prepare a report for a client on the findings.
- Use binomial statistics to draw conclusions on categorical data
- Collect data, analyze it using ANOVA, make inferences from the F values and p>F values on the ANOVA result
- Determine your threshold for four basic tastes
- Describe sensory biases and how to best deal with them
- Plan, conduct and report on a discrimination test and use binomial statistics to make inferences
- Demonstrate understanding of preference and ranking tests and use of binomial statistics to make inferences
- Show how to determine when Quantitative Descriptive panelists are trained and when they need more training
- Lead and participate in groups in developing hypotheses, planning and conducting experimentation to test that hypothesis

NDFS 465 : Food Product Development. (3:1:6)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 361 & NDFS 362 & NDFS 462; This class should be taken concurrently with NDFS 464.

DESCRIPTION: Integration and application of food science principles to develop new food products. Laboratory experience in food product design and development. Integrative capstone course.

**Course Outcomes**

- Prepare raw material, product, and process specifications for a product and related commercial manufacturing process
- Work with a team in successfully commercializing a new or improved food product
- Coordinate, plan, and execute a stability test
- Coordinate, plan, and execute a plant trial
- Prepare and follow workable project time-lines for multiple development projects
- Coordinate, plan, and execute an appropriate consumer test for guidance or decision making
- Properly prepare and document all information required for a finished food product label
- Keep a precise, well-documented laboratory notebook that will stand up under scrutiny in a court of law

NDFS 466 : Advanced Dietetics Practice. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: NDFS 356 & NDFS 440 & NDFS 458

DESCRIPTION: Skill development in specialized topics of medical nutrition therapy and administrative dietetics.

**Course Outcomes**

- Apply the principles of the metabolic response to stress to the critical care setting.
- Make recommendations, calculate, and monitor all forms of nutrition support in acute care, home care, and extended care settings.
- Apply the Nutrition Care Process and the principles of Medical Nutrition Therapy to the following conditions: HIV disease, thermal injury, diabetes, high risk pregnancies, high risk infants, complex pediatric disorders, developmental disorders, metabolic disorders.
- Use and interpret menu engineering data in making pricing and menu decisions.
- Apply knowledge of the systems approach and management issues in foodservice, clinical, and community settings to coordinate a department set-up.
- Accreditation Council for Education in Nutrition and Dietetics Core Knowledge for the RDCore Knowledge for the RDBy the conclusion of the course, students will:Measured/Met by:KRD 1.1, 3.1Metabolic Responses. Apply the principles of the metabolic response to stress to the critical care setting.Clinical Nutrition WorksheetsNutrition Support WorksheetsKRD 1.1, 3.1Nutrition Support. Make recommendations, calculate, and monitor all forms of nutrition support in acute care, home care, and extended care settings.Clinical Nutrition WorksheetsNutrition Support WorksheetsKRD 1.1, 3.1, 4.5Nutrition Care Process and Principles of Medical Nutrition. Apply the Nutrition Care Process and the principles of Medical Nutrition Therapy to the following conditions: HIV disease, thermal injury, diabetes, high risk pregnancies, high risk infants, complex pediatric disorders, developmental disorders, metabolic disordersClass Discussions Clinical WorksheetsKRD 4.2, 5.1Menu Engineering Data. Use and interpret menu engineering data in making pricing and menu decisions.Capstone Management ProjectKRD 2.1, 2.3, 4.1, 4.2, 4.3, 4.4, 5.1Systems Approach and Management Issues. Apply knowledge of the systems approach and management issues in foodservice, clinical, and community settings to coordinate a department set-up.Capstone Management Project2012 standards

NDFS 475 : Research Methods in Dietetics. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Senior status in dietetics program.

DESCRIPTION: Research techniques in a variety of dietetics practice areas.

**Course Outcomes**

- Identify types of research and their appropriate use, including: research question, sample selection, methodologies, data collection methods, data analysis methods
- Demonstrate how to locate, interpret and evaluate and use professional literature to make ethical evidence based practice decisions
- Use current information technologies to locate and apply evidence based guidelines and protocols
- Design research projects using appropriate methods of sample selection and data collection
- Develop survey questionnaire for appropriate research objectives
- Utilize visual aids and communication skills to present concepts in oral and written reports
- Interpret and evaluate research reports in literature
- Interpret and apply basic statistics
- Develop ability to see research possibilities in variety of dietetic employment settings

NDFS 490 : Professionalism Seminar. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Senior status in dietetics program.

DESCRIPTION: Issues in professional practice.

**Course Outcomes**

- Understand the ethics of care, including the ADA Standards of Practice and Code of Ethics. Be able to relate these to the issues of death and dying
- Understand changing health care delivery systems, the role of Joint Commission, ADA's Nutrition Care Process and Model, and implications for dietitians; interact with other health care professionals
- Complete a personal portfolio, which includes a professional resume; be prepared for a professional interview, including appropriate dress
- Understand current professional issues as related to the Academy, including reimbursement, Public Policy, the Journal, and Academy Membership
- Accreditation Council for Education in Nutrition and Dietetics Core Knowledge for the RDCore KnowledgeBy the conclusion of the course, students will:Measured/Met by:KRD 2.1, 4.3, 4.4, 4.5Understanding Dietetics Processes. Understand changing health care delivery systems, the role of Joint Commission, AND's Nutrition Care Process and Model, coding/billing and implications for dietitians; interact with other health care

professionalsInterview with Health Professional, Class DiscussionKRD 2.1Professionalism. Complete a personal portfolio, which includes a professional resume; be prepared for a professional interview, including appropriate dress Portfolio, Resume, Journal Presentation, Interview with Health ProfessionalKRD 2.3Ethics of Care. Understand the ethics of care, including the AND Standards of Practice and Code of Ethics. Be able to relate these to the issues of death and dying Ethics scenarios, Class discussionKRD 2.3, 4.3Professional Issues Related to the Academy of Nutrition and Dietetics. Understand current professional issues as related to the Academy, including reimbursement, Public Policy, the Journal, Academy Membership, and Scope of PracticeInterview with a Health Professional, The Academy Journal Presentations, Scope of Practice, Class discussion2012 standards

NDFS 491 : Internship Preparation. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: Senior status in dietetics program.

DESCRIPTION: Selecting internship sites and preparing dietetic internship application packet.

**Course Outcomes**

- Prepare an effective application packet for the dietetic internship or for other employment/graduate school pursuits
- Consider factors relevant to selecting dietetic internships to which to apply
- Establish realistic plans for life following graduation

NDFS 494R : Undergraduate Research in Nutrition, Dietetics, or Food Science. (1-3:0:9)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Mentored research experience.

**Course Outcomes**

- Students will develop skillsets in data collection, data entry, and/or data analysis methods.
- Students will develop an increased understanding of the most up-to-date findings in the areas we are researching in the lab.
- To coordinate our research efforts in the lab
- Students will gain experience presenting research to the group and will increase their critical thinking skills discussing original research articles.

## 500-Level Graduate Courses (available to advanced undergraduates)

NDFS 520R : Supervised Practice Experience. (1-4:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Acceptance into dietetic internship.

DESCRIPTION: Supervised practice experience in clinical, management, and community dietetics settings.

**Course Outcomes**

- Practice Management and Use of Resource: Use strategic application of principles of management and systems in the provision of services to individuals and organizations.
- Scientific and Evidence Base of Practice: Be able to integratescientific information and research into practice.
- Clinical and Customer Services: develop and deliver quality information, products and services to individuals, groups and populations.
- Professional Practice Expectations: Develop and showbeliefs, values, attitudes and behaviors for the professional dietitian level of practice.

NDFS 521 : Clinical Practice in Dietetics. (2:2:32)

PREREQUISITE: Acceptance into dietetic internship.

DESCRIPTION: Supervised practice in clinical dietetics.

**Course Outcomes**

- Evaluate emerging research for application in dietetics practice
- Apply evidence-based guidelines, systematic reviews and scientific literature (such as the ADA EAL, Cochrane Database of Systemic Reviews and the U.S. DHHS, Agency for Healthcare Research and Quality, National Guideline Clearinghouse) in the nutrition care process and model and other areas of dietetics practice
- Practice in compliance with current federal regulations and state statutes and rules, as applicable and in accordance with accreditation standards and the ADA Scope of Dietetics Practice Framework, Standards of Professional Performance and Code of Ethics for the Profession of Dietetics
- Demonstrate professional writing skills in preparing professional communications (e.g. research manuscripts, project proposals, education materials, policies and procedures)
- Design, implement and evaluate presentations considering life experiences, cultural diversity and education background of the target audience
- Use effective education and counseling skills to facilitate behavior change
- Demonstrate active participation, teamwork and contributions in group settings
- Refer clients and patients to other professionals and services when needs are beyond individual scope of practice
- Apply leadership principles effectively to achieve desired outcomes
- Establish collaborative relationships with internal and external stakeholders, including patients, clients, care givers, physicians, nurses and other health professionals, administrative and support personnel to facilitate individual and organizational goals
- Demonstrate professional attributes such as advocacy, customer focus, risk taking, critical thinking, flexibility, time management, work prioritization and work ethic within various cultures
- Perform self assessment, develop goals and objectives and prepare a draft portfolio for professional development as defined by CDR
- Assess the nutritional status of individuals, groups and populations in a variety of settings where nutrition care is or can be delivered

Diagnose nutrition problems and create problem, etiology, signs and symptoms (PES) statements.
- Plan and implement nutrition interventions to include prioritizing the nutrition diagnosis, formulating a nutrition prescription, establishing goals and selecting and managing intervention
- Monitor and evaluate problems, etiologies, signs, symptoms and the impact of interventions on the nutrition diagnosis
- Develop and demonstrate effective communications skills using oral, print, visual, electronic and mass media methods for maximizing client education, employee training and marketing
- Develop and deliver products, programs or services that promote consumer health, wellness and lifestyle management merging consumer desire for taste, convenience and economy with nutrition food safety and health messages and interventions
- Deliver respectful, science-based answers to consumer questions concerning emerging trends
- Complete documentation that follows professional guidelines, guidelines required by health care systems and guidelines required by the practice setting

NDFS 522 : Food Systems Management Practice in Dietetics. (2:2:32)

PREREQUISITE: Acceptance into dietetic internship.

DESCRIPTION: Supervised practice in foodservice systems management.

**Course Outcomes**

- 2CD 4: Perform self assessment, prepare a portfolio for professional development, and participate in lifelong learning activities• Discuss performance at midpoint and conclusion of rotation with instructors• Complete taste panel & theme day evaluation to examine individual and team performance
- #OBJECTIVESBy the conclusion of the Food Production Management rotation, the intern will:LEARNING ACTIVITIES1CD 1: Perform ethically in accordance with the Code of Ethics for the Profession of Dietetics• Comply with Pendulum Court policies and procedures• Accept responsibility for decisions and actions
- 3CD 6: Use current technologies for information & communication activitiesCD 19: Perform marketing functionsFS 9: Supervise marketing functions• Use computer technology in research, presentations, procurement, advertising/ marketing, and web site maintenance• Oversee all marketing aspects of Pendulum Court• Develop and execute marketing strategy for theme day
- 4CD 13: Interpret and incorporate new scientific knowledge into practiceCD 29: Manage safety and sanitation issues related to food and nutrition• Use scientifically accurate resources to research course topics and projects• Use current sanitation knowledge in foodservice practice• Receive ServSafe Certification following training course• Oversees sanitation file: MSDS forms, HAZCOM Training, Food Handler's Permits• Supervise all sanitation issues and responsibilities
- 5CD 14: Supervise quality improvement, including systems and customer satisfaction, for dietetics service and/or practiceCD 15: Develop and measure outcomes for food and nutrition services and practiceCD 24: Supervise development and/or modification of recipes/formulas• Develop and administer surveys and interact with customers to assess customer and their perceptions• Oversees all food preparation (quality, timely product, aesthetics)• Supervise recipe development and alterations• Develop taste panel evaluation form as a measure of recipe development
- 6CD 16: Participate in organizational change and planning and goal-setting processesCD 20: Participate in human resources functions• Conduct daily production meeting• Develop and implement daily production sheets and service-line set-up form• Advertise, interview, hire, train, and supervise employees in paid positions
- 7CD 18: Supervise the collection and processing of financial data.CD 22: Supervise the integration of financial, human, physical, and material resources and servicesFS 6: Manage the integration of financial, human, physical, and material resources.• Valuing inventory• Manage cashier, cashiering functions, and revenues• Oversee all processing and payment of invoices• Gather and evaluate revenue and expenditure data for Pendulum Court
- 8CD 23: Supervise production of food that meets nutritional guidelines, cost parameters, and consumer acceptanceFS 4: Manage production of food that meets nutritional guidelines, cost parameters, and consumer acceptance• Prepare daily production sheets and frozen food utilization sheets.• Directly responsible for students in production and final food product• Responsible for decision making related to production• Prepare and conduct student performance evaluation at midpoint or conclusion of rotation• Develop and execute theme day
- 9CD 26: Supervise design of menus as indicated by the patient's/client's health status• Collaborate on writing an 8 day cycle menu• Individually modify menu for various health requirements
- 10CD 27: Participate in applied sensory evaluation of food and nutrition products• Conduct taste panel used for recipe development• Participate in cutting demonstration conducted by foodservice professionals
- 11CD 28: Supervise procurement, distribution, and service within delivery systemsFS 5: Manage procurement, distribution, and service within delivery systems• Tour BYU Dining Services for expanded exposure to procurement, distribution, and service• Participate in Pendulum Court Forecasting• Manage all aspects of procurement, including on and off-campus vendors• Compare costs and make recommendations for new products• Write specification for use in Pendulum Court

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Nutrition, Dietetics, and Food Science Department Home**

College of Life Sciences Home

Nutrition, Dietetics, and Food Science Department Home

Majors

- BS in Dietetics
- BS in Food Science
- BS in Nutritional Science

Minors

- Nutrition

Course Information

- Nutrition, Dietetics, and Food Science (NDFS) Courses

Faculty

# Nutrition, Dietetics, and Food Science Faculty

Show All
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## Professors

Brown, Lora Beth

**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Professor
**DEGREES:** BS, Iowa State University, 1965
MS, Cornell University, 1967
EdD, Brigham Young University, 1982

Christensen, Merrill J.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
PhD, Massachusetts Institute of Technology, 1982

Johnston, N. Paul

**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1966
MS, Oregon State University, 1967
MBA, University of Utah, 1969
PhD, Oregon State University, 1971

Pike, Oscar A.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 1982
PhD, Purdue University, 1986

## Associate Professors

Dunn, Michael L.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1987
MS, Brigham Young University, 1989
PhD, Cornell University, 1996

Nyland, Nora Kay

**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, Brigham Young University, 1981
PhD, Kansas State University, 1989

Richards, Rickelle

**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 2001
MPH, Tulane University School of Public Health & Tropical Medicine, 2003
PhD, RD, University of Minnesota, 2007

Steele, Frost M.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1985
MS, Brigham Young University, 1987
PhD, Purdue University, 1990

## Assistant Professors

Hancock, Chad
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1998
PhD, University of Missouri, Columbia, 2005

Jefferies, Laura
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1998
PhD, Utah State University, 2011

Tessem, Jeffrey S.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001/td>
PhD, University of Colorado Health Science Center, 2007

## Teaching Professor

Fullmer, Susan
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Teaching Professor
**DEGREES:** BA, University of Utah, 1986
MS, University of Utah, 1989
PhD, Brigham Young University, 2004

## Assistant Teaching Professor

Williams, D. Pauline
**COLLEGE:** Life Sciences
**DEPARTMENT:** Nutrition, Dietetics, and Food Science
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 1992
MPA, Brigham Young University, 1998
PhD, Utah State University, 2011

College of Life Sciences Home

Physiology and Developmental Biology Department Home

Majors

- BS in Biophysics
- BS in Physiology and Developmental Biology

Course Information

- Physiology and Developmental Biology (PDBio) Courses

Faculty

# Physiology and Developmental Biology

Dixon J. Woodbury, Chair
4005B LSB, (801) 422-7562

Life Sciences Student Services
2060 LSB, (801) 422-3042

## Admission to Degree Program

All degree programs in the Department of Physiology and Developmental Biology are open enrollment.

## The Discipline

Physiology is the study of the *functions* of the body systems. Developmental biology is the study of how specific genes govern differentiation of cells, tissues, and organs with unique structure and functions. Both disciplines require a firm foundation of mathematics, chemistry, physics, and cellular biology. The related area of biophysics uses the methods of physics, chemistry, mathematics, and biology to investigate the *physical* basis of life.

Upper-division courses require synthesizing and integrating information from many areas of science to allow understanding of such remarkable processes as how the heart pumps blood, how neurons communicate with one another, how insulin regulates blood sugar, and how specific gene products determine the morphology and functional capacity of the nervous system. Knowledge in these areas is expanding rapidly as new techniques are applied in molecular biology. Hence, significant exposure to the concepts and techniques of molecular biology is an important component of the major.

## Career Opportunities

A major in physiology and developmental biology prepares students to pursue advanced degrees in either the biological sciences or nonbiological fields or to enter directly into employment. This major provides outstanding preparation for students seeking admittance into professional programs in medicine, dentistry, optometry, podiatry, chiropractic, or pharmacy. Students who have aspirations of doing health-related research will find a challenging, thorough preparation for entrance into graduate programs and beyond. Graduates of the program will also have the academic and laboratory skills necessary for employment in medical, biotechnological, and pharmaceutical industries. This degree offers students pursuing advanced degrees in business, public management, or law the knowledge and training necessary to be admitted into professional schools and work in governmental agencies, health care and biotechnical industries, and patent or health care law.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Biophysics** (Program Outcomes)
**BS in Physiology and Developmental Biology** (Program Outcomes)

Students should see the Life Sciences Student Services for help or information concerning the undergraduate programs.

**Note:** For the neuroscience program, see the Neuroscience Center section.

## Graduate Programs and Degrees

MS and PhD degrees are offered. For information see the BYU 2014–2015 Graduate Catalog and the Web page for the College of Life Sciences.

College of Life Sciences Home

Physiology and Developmental Biology Department Home

Majors

- BS in Biophysics
- BS in Physiology and Developmental Biology

Course Information

- Physiology and Developmental Biology (PDBio) Courses

Faculty

# BS in Biophysics (71.5 hours*)

Show All Course Descriptions
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## Program Requirements | View MAP | View Program Outcomes

1. Complete the following life sciences core courses:

BIO 420 : Evolutionary Biology. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240 & PWS 340
RECOMMENDED: Concurrent enrollment in Bio 421.
DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**

- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105
DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.
NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

MMBIO 241 : Molecular and Cellular Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBio 240 or concurrent enrollment.
DESCRIPTION: Molecular and cellular biology techniques laboratory.

**Course Outcomes**

- Practice ethics and integrity by working with groups and following lab rules.*Relates to Program Learning Outcome: A commitment to professional integrity and ethical behavior consistent with themission of the university.
- Learn the basics of experimental design, how to formulate a hypothesis, what controls to use, how to interpret experimental data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Practice scientific communication through written lab questions, exams and oral presentations.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Learn molecular biology laboratory techniques through practical laboratory exercises. Techniques include, spectrophotometry,isolation of DNA and protein, quantification of DNA and protein, techniques used to purify or detect specific proteins, such aschromatography, western blot and ELISA, DNA fingerprinting, polymerase chain reaction and enzyme assays.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology.

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies
- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

2. Complete the following chemistry courses:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.
DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.
NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: CHEM 105; or CHEM 111
DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.
NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: CHEM 351; or CHEM 351M
DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).
DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.
NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and

after providing unambiguous interpretation of the necessary spectra.

(1 hour required)

CHEM 468 : Biophysical Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481 & MATH 113 & PHSCS 220; or CHEM 481M & MATH 113 & PHSCS 220

DESCRIPTION: Applications of physical chemistry to biological systems. Spectroscopic applications, computational methods, structural biochemistry, thermodynamics, equilibria, statistical mechanics, transport properties, kinetics, quantum mechanics.

NOTE: For biochemistry (BS) majors and those interested in the health professions or biochemistry. (For prerequisites, Phscs 220 may be taken concurrently.)

**Course Outcomes**

- Describe conceptually the fundamental concepts in the four principal areas of physical chemistry: classical thermodynamics, statistical thermodynamics kinetics and quantum mechanics
- Define mathematically the concepts outlined in 1) and manipulate the fundamental and derived equations associated with these concepts
- Use the above skills to calculate or predict the equilibrium conditions or direction of spontaneous biochemical processes that are involved in metabolism or energy transfer events given appropriate thermodynamic data and initial system conditions
- Employ mathematical and graphical techniques on enzyme kinetic data to extract key parameters and to identify inhibition mechanisms
- Solve simple Schroedinger equation problems (e.g., particle in a box), identify boundary conditions, and explain the significance of boundary conditions on the observance of quantized effects
- Relate the simple Hamiltonians from above to biological molecules and systems and generalize from the simple results to make predictions regarding behavior in the biological systems
- Identify the nature of electronic energy levels in key photoactive biological molecules and use spectroscopic data to probe these levels
- Apply fundamental concepts of electronic structure and reaction kinetics to the steps in photosynthesis and vision
- Provide examples in which physical chemistry perspectives have enabled a deeper more complete understanding of the structure and function of biological molecules and complex biological systems

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

3. Complete the following math and physics courses:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN Fall; Winter; Spring; Summer

TAUGHT:
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Calculus or concurrent enrollment.
DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 121 or equivalent. Calculus.
DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHSCS 140 : Electronics Lab. (1:1:2)
WHEN TAUGHT: Winter; Spring
DESCRIPTION: Introduction to analog and digital circuits.

**Course Outcomes**

- Build and debug basic analog circuits that are of practical use in experimental physics such as voltage dividers, diode rectifiers, inverting and non-inverting op amp circuits, and transistor switches.
- Demonstrate understanding of electrical concepts of voltage, current, resistance, power, and input and output resistance through the analysis of simple circuits.
- Demonstrate proper use and limitations of electrical sources and test equipment including DC power supplies, multimeters, oscilloscopes, and function generators.
- Build and debug basic digital circuits that use components such as digital gates, flipflops, counters, and digital to analog converters.

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: MATH 113; Phscs 121 or equivalent.
DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

4. Complete the following major core courses:

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220

DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.

NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

PDBIO 363 : Advanced Physiology Laboratory. (1:.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBio 362 or concurrent enrollment; or instructor's consent.

DESCRIPTION: Experiments and exercises in advanced physiology emphasizing human physiology. Computer simulations of muscle function, endocrine disease, and human physiology. Emphasizes problem solving and calculations.

**Course Outcomes**

- Students will demonstrate the skills required to properly interpret data from scientific experimentation to discover how physiological systems function.
- Students will manifest an understanding of basic physiological principles by modeling how human cells, organs, and organ systems function.
- Students will describe how interactions between human organ systems work to maintain homeostasis.

PDBIO 455R : Physiology and Developmental Biology Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Seminar (research) presentations for undergraduates in physiology and developmental biology.

**Course Outcomes**

- Students will be able to demonstrate the format, organization, and presentation of a typical scientific seminar.
- Students will demonstrate the proper etiquette of scientific interactions by participating in question/answer periods following each seminar.

PDBIO 568 : Cellular Electrophysiology and Biophysics. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 362 & PHSCS 140; or PDBIO 362 & PHSCS 220

DESCRIPTION: Using electrophysiology and biophysics as an approach to study of physiology. Extensive look at ion channels and cell signaling.

**Course Outcomes**

- Students will demonstrate biophysical knowledge gained in specific areas including membrane properties, voltage and ligand-gated receptors, neurotransmission and mathematical modeling.
- Students will apply the biophysical knowledge gained in a laboratory setting.
- Students will demonstrate critical thinking and evaluation skills gained in the course by preparing a competent and clearly written research proposal.
- Students will demonstrate knowledge of a particular research topic and presentation skills in a clear and informative oral presentation.

5. Complete 11 hours from the following. At least 4 hours must come from the mentored experience and at least 5 hours from electives.
   a. Mentored laboratory experience (must be in an approved biophysics lab):

PDBIO 494R : Undergraduate Research in Physiology and Developmental Biology. (1-4:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic (entry level) research laboratory experience for students interested in physiology and developmental biology.

**Course Outcomes**

- Students will demonstrate the ability to properly perform basic laboratory-specific techniques.
- Students will complete laboratory-specific safety training.

PDBIO 495R : Advanced Undergraduate Research in Physiology and Developmental Biology. (1-4:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: 2 credit hours of PDBio 494R.

DESCRIPTION: Senior level research laboratory experience for majors in physiology and developmental biology.

**Course Outcomes**

Students will demonstrate an understanding of hypothesis development and the design of experiments to test hypothesis.
- Students will independently carry out laboratory experiments.
- Students will analyze experimental data and, where appropriate, perform statistical analysis.

PDBIO 498 : Advanced Senior Research Project. (3:Arr.:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PDBIO 494R & PDBIO 495R; Instructor's consent must be obtained during previous semester.

DESCRIPTION: Special project course for advanced PDBio research students. Engaging in scientific research as specified in an approved research proposal. Comprehensive written work of research required.

**Course Outcomes**

- Students will formulate a testable hypothesis relating to a topic in physiology and developmental biology .
- Students will design experiment (s) to test their hypothesis.
- Students will present a proposal describing their research topic, their hypothesis and experimental design.
- Students will independently carry out their proposed research.
- Students will analyze their experimental data.
- Students will report their findings in a manuscript intended for publication in a scientific journal.

b. Electives

CHEM 223 : Quantitative and Qualitative Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 107; or CHEM 113

DESCRIPTION: Principles of chemical equilibrium, quantitative chemical measurements, and qualitative detection of selected chemical species.

NOTE: Primarily for majors in molecular biology and the life sciences.

**Course Outcomes**

- Course Objectives: The course is designed to develop research skills. The labwork will have a somewhat bioanalytical focus, e.g. the chemical analysis of biological molecules or biologically related ions and the use of biomolecules in assays. We will work to develop good laboratory practice, both conceptually and practically, and consider how to do good science. The combined lecture/lab approach will be used to help you understand quantitative approaches to analysis, sources of error, and the utility but also limitations of laboratory measurements. You will be asked to apply a portion of this knowledge to your own laboratory determinations. We will also discuss more advanced analytical methods involving chemical separations and instrumental analyses. This course fills one of the requirements for a minor in chemistry.

CHEM 227 : Principles of Chemical Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 113

DESCRIPTION: Principles of quantitative analysis, introductory instrumental methods, and computer applications to chemical analysis.

**Course Outcomes**

- Demonstrate skill in performing precise, careful, basic laboratory operations such as sample preparation, calibration techniques, spectrophotometry, electrochemical analysis, titrimetric and chromatographic methods
- Explain basic measurement methods and devices
- Show proficiency in reporting scientific results in numerical, graphical, and written formats, and be able to explain the ethical standards for such reports
- Show proficiency in using computer programs for data analysis
- Apply basic statistics to data analysis including, confidence intervals, t-test, linear regression, propagation of error, sampling statistics and signal-noise enhancement
- Critically evaluate experiments and data with respect to theory and models
- Apply knowledge to new problems, including the design and validation of new analytical methods

CHEM 482 : Mechanisms of Molecular Biology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Second-semester biochemistry. Nucleic acid biochemistry and molecular biology: nucleotide metabolism, chromosome and chromatin structure, DNA structure and replication, RNA transcription and gene expression, protein synthesis and regulation, eukaryotic gene systems, signal transduction.

**Course Outcomes**

- Draw the structure of DNA, determine the topology of a plasmid, explain the chemical sequence of events that occur during DNA replication and draw structural changes that occur due to mutation.
- Determine how to perform and interpret an electrophoresis separation of DNA fragments, southern blot, restriction map, polymerase chain reaction, and a DNA sequencing reaction with necessary controls.
- Design a DNA cloning strategy, explain controls necessary, and write procedural plan.

- Draw and explain the mechanism of RNA transcription and how RNA is processed, spliced, and regulated. Understand the basic mechanisms of transcriptional regulation using the example of transcription of genes necessary for cholesterol synthesis.
- Determine when and how to use techniques that involve RNA: Northern blots, quantitative PCR, microarrays, S1 nuclease and primer extension mapping of the transcriptional start with appropriate controls.
- Determine the sequence of amino acids in a protein from a series of nucleotides.
- Draw and explain the process of protein translation and how it is regulated.
- Determine where a protein is localized in a tissue or cell: interpret a western blot, protein fusion assays.
- Determine with what a protein interacts: Interpret gel shift assays, Chromatin Immunoprecipitation, DNA footprinting, and yeast two hybrid reporter assays.
- Maintain faith through challenges and ethical boundaries in reporting and interpreting data.

CHEM 489 : Structural Biochemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 468

DESCRIPTION: Molecular structures of proteins, RNA and DNA as determinants of biological function. Topics include thermodynamics of folding and binding, structural determination, spectroscopy, modeling, protein recognition.

**Course Outcomes**

- Identify motifs and symmetries in macromolecular structures and chemical interactions that maintain structural integrity
- Relate the structure of a macromolecule to its biological function
- Describe how X-ray crystallography, nuclear magnetic resonance, cryogenic electron microscopy, and circular dichroism techniques give structural information for biological macromolecules
- Communicate scientific ideas (e.g. structure-function relationships) clearly and concisely to others orally and in writing, and use ethical standards in oral and written presentations
- Work with peers to answer scientific questions

CHEM 581 : Advanced Biochemical Methodology 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 482

DESCRIPTION: Analytical and structural determination methods used in biochemical research, including mass spectrometry-based proteomics, immunotechniques, atomic force and electron microscopy, NMR and X-ray diffraction.

NOTE: One of two required courses for biochemistry graduate students. May be taken before or after Chem 583.

**Course Outcomes**

- Understand the theory, instrumentation and applications of proteomic, immunological and structural methods currently used to address important biochemical questions.
- Interpret and critique data from these techniques.
- Design appropriate experiments and apply these techniques to their own research problems.
- Recognize important technological advances in proteomic, immunological and structural methods.
- Present findings from the primary literature describing the application of these methods to significant biochemical questions in a professional manner.

CHEM 583 : Advanced Biochemical Methodology 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Maintenance and expression of genetic information, the role of nucleic acids in biology at the chemical and structural level, and methods to study and control nucleic acid function as a means of solving biological problems.

NOTE: One of two required courses for biochemistry graduate students. May be taken before or after Chem 581.

**Course Outcomes**

- Describe how genetic information is stably maintained, how it is expressed, and how that expression is regulated, with an emphasis on the mechanism by which molecular machines perform these processes.
- Understand methods for studying the structure and function of nucleic acids and methods for manipulating gene expression in living systems.
- Interpret and critique data obtained using these methods as reported in the primary scientific literature.
- Communicate this understanding in both oral and written formats. [
- Design appropriate experiments and apply the techniques of nucleic acid biochemistry to their own research problems.

CHEM 584 : Biochemistry Laboratory/Proteins. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Introduction to current biochemical research procedures including spectrophotometry, chromatography, electrophoresis, and immunological techniques. Protein over-expression; isolation and characterization methods. Enzyme kinetics and protein-ligand interactions. Introduction to bioinformatics.

NOTE: May be taken before or after Chem 586.

**Course Outcomes**

- Apply spectroscopic techniques to analyze proteins, both their enzymatic and binding reactions
- Use gel electrophoresis and immunoblotting techniques to determine the presence and purity of proteins in biological samples
- Identify protein binding partners using co-immunoprecipitation methods
- Purify proteins using state-of-the-art separations methods
- Characterize an enzyme using steady state kinetics methods
- Use enzymes as analytical and diagnostic tools
- Properly record and interpret data
- Present data they have collected in an oral presentation and in a written scientific paper
- Understand ethical means of reporting results and giving proper credit to the work of others
- Measure ligand binding to proteins; determine dissociation constants and the degree of cooperativity.

CHEM 586 : Biochemistry Laboratory/Nucleic Acids. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Laboratory course covering major techniques involved in isolation, amplification, and cloning of recombinant DNA as well as isolation, synthesis, translation, and identification of RNA.

NOTE: May be taken before or after Chem 584.

**Course Outcomes**

- Understand, design and execute experiments using basic DNA manipulation procedures that include isolation, purification and modification of DNA
- Explain and perform PCR amplification and use this technique to detect the presence of DNA “targets”, DNA cloning (subcloning) and DNA sequencing
- Understand and explain how to isolate, quantitate and manipulate RNA
- Design and perform experiments to reverse transcribe RNA into complementary DNA (cDNA) and assess gene expression by semi- and quantitative PCR
- Isolate total RNA and be able to purify mRNA from this material
- Introduce and express foreign DNA and/or RNA in mammalian cells using the techniques of electroporation, lipid-based transfection, calcium phosphate based transfection and retroviral transduction
- “Knockdown” an expressed gene in mammalian cells using RNA silencing
- Prepare laboratory notebooks that include the objective, results and methods of each laboratory experiment. Additionally, students will provide conclusions to each experiment, including when appropriate, potential explanations to unexpected results

EC EN 301 : Elements of Electrical Engineering. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PHSCS 220 & MATH 303; or PHSCS 220 & MATH 334

DESCRIPTION: Linear electric circuits, computer organization, and logic circuits for nonmajors.

NOTE: Fee.

**Course Outcomes**

- Understand and apply basic principles of electronic circuits.

MATH 302 : Mathematics for Engineering 1. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Math 113.

DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

MATH 303 : Mathematics for Engineering 2. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 302

DESCRIPTION: ODEs, Laplace transforms, Fourier series, PDEs.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For a more detailed course description, visit Math 303 Wiki.

MMBIO 430 : Advanced Cell Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 360; Bioscience major status.

DESCRIPTION: Molecular genetics, cell biology, and developmental biology.

**Course Outcomes**

- Read primary literature to further their own understanding of the topic*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or

employment in teaching, basic research, or the health professions.
- Explain the processes of cell biology*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic research, or the health professions.
- Apply knowledge of these molecular processes to broader topics*Relates to Program Learning Outcome: Proficiency in formulating and carrying out independent and collaborative research projects.
- Analyze research data, design experiments and present data in a clear manner*Relates to Program Learning Outcome: Communication skills in presenting their research findings through effective oral and written presentations.

MMBIO 441 : Advanced Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & CHEM 352

DESCRIPTION: Molecular biology of gene structure and expression in prokaryotic and eukaryotic organisms.

**Course Outcomes**

- Learn molecular biology principles through study, lecture, and class discussion. An emphasis will be on understanding the experiments used to learn these principles.â ¨ *Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology preparing students for further education and/or employment.
- Apply the principles learned to design experiments and properly interpret experimental data.â ¨ *Relates to Program Learning Outcome: Proficiency in formulating research projects
- Present current research from the scientific literature.*Relates to Program Learning Outcomes: Communicate scientific information using oral methods; interpret, analyze and critique experiments from the primary scientific literature. Presenting research findings through effective oral and written presentations.
- Demonstrate integrity and ethical behavior during all class work.â ¨ *Relates to Program Learning Outcome: Commitment to professional integrity and ethical behavior consistent with the mission of the University.

MMBIO 442 : Advanced Molecular Biology Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 241; MMBio 441 or concurrent enrollment.

DESCRIPTION: Laboratory to accompany MMBio 441.

**Course Outcomes**

- Learn molecular biology laboratory techniques through hands-on experience. Techniques will include DNA and RNA isolation, PCR, microRNA isolation, northern blotting, RFLP analysis, site-directed mutagenisis, protein extraction and EMSA.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology
- Apply the techniques to design experiments with appropriate hypotheses and controls and properly interpret experimental data*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls
- Practice scientific communication and record-keeping through the completion of a laboratory notebook and answering written and oral questions and presentations.*Relates to Program Learning Outcome: Demonstrate Communication skills in presenting research findings through effective oral and written presentations.
- Design and carry out independent experiments*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls

NEURO 480 : Advanced Neuroscience. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NEURO 205; or PDBIO 362; PDBio 360; Neuroscience or PDBio major status.

DESCRIPTION: Principles of neural science. Structure-function relationships and integration of the nervous system.

**Course Outcomes**

There are no course outcomes available

PDBIO 365 : Pathophysiology. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 305; or PDBIO 362

DESCRIPTION: Variations in physiological mechanisms that account for development of common disturbances in normal control and activities of body's organs and organ systems.

**Course Outcomes**

- Students will exhibit an integrative understanding of the biochemistry, molecular biology, genetics, cell biology, microbiology, environmental biology, and physiology related to the prevention, development, and treatment of common diseases.
- Students will demonstrate through case study analysis a command of problem solving skills related to the diagnosis and treatment of pathophysiological conditions.
- Pupils will manifest a command of the physiology and pathophysiological vocabulary necessary to effectively communicate with other biomedical professionals and the general public.
- Students will be able to articulate the ethical issues related to the treatment and prevention of pathophysiological conditions.

- Students will manifest an increase in their respect for the human body and adopt a life style consistent with this respect.

PDBIO 450R : Topics in Physiology and Developmental Biology. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Close interaction between small groups of students and instructor on topics in physiology, developmental biology, or biophysics. Topics vary.

**Course Outcomes**

- Students will demonstrate an understanding of the scientific principles that underlie the techniques taught in the course.
- Students will perform effectively any experimental techniques taught in the course.
- Pupils will demonstrate an understanding of the specialized subject matter presented in the course.

PDBIO 498 : Advanced Senior Research Project. (3:Arr.:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PDBIO 494R & PDBIO 495R; Instructor's consent must be obtained during previous semester.

DESCRIPTION: Special project course for advanced PDBio research students. Engaging in scientific research as specified in an approved research proposal. Comprehensive written work of research required.

**Course Outcomes**

- Students will formulate a testable hypothesis relating to a topic in physiology and developmental biology .
- Students will design experiment (s) to test their hypothesis.
- Students will present a proposal describing their research topic, their hypothesis and experimental design.
- Students will independently carry out their proposed research.
- Students will analyze their experimental data.
- Students will report their findings in a manuscript intended for publication in a scientific journal.

PDBIO 561 : Physiology of Drug Mechanisms. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 362

DESCRIPTION: Overview of physiological and pharmacological mechanisms and principles of human therapeutics as applied to clinically significant pathophysiology.

**Course Outcomes**

- Students will manifest an interactive understanding of drug mechanisms at the molecular, cellular, tissue, organ, and/or systemic levels.
- Students will demonstrate that they understand the cellular pathways targeted for pharmacological treatment.
- Pupils will demonstrate a comprehension of how the body interacts with compounds used for pharmacological treatments.
- Students will manifest the knowledge, skills and vocabulary necessary to converse with health care providers concerning their own and family's medical treatments.

PDBIO 565 : Endocrinology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PDBio 362 or instructor's consent.

DESCRIPTION: Mammalian hormones.

**Course Outcomes**

- Students will be able to describe major actions of each hormone on target cells.
- Students will be able to describe pathways for synthesis, post-translational processing, and cellular localization or secretion for peptide hormones and hormone receptors.
- Students will be able to describe pathways for synthesis and inactivation for steroid hormones, thyroid hormones, and catecholamines.
- Students will be able to describe the control of synthesis and secretion for each hormone, including feedback relationships.
- Students will be able to describe major signaling pathways in target cells for each hormone.
- Students will be able to describe methodologies used to test hypotheses in study of problems in endocrinology.
- Students will be able to describe and recognize etiology and clinical symptoms of the major endocrine diseases

PHSCS 145 : Experimental Methods in Physics. (1:0:3)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: PHSCS 140; Phscs 121 or equivalent.

DESCRIPTION: Introduction to physical measurement and analysis, optics, sensors, actuators, and computer-based data acquisition.

**Course Outcomes**

- Demonstrate good practices in experimental physics documentation and communication such as

data collection, record keeping, and presentation.
- Demonstrate the ability to analyze experimental data this includes techniques such as error estimation, error propagation, model selection, and curve fitting.
- Use simple optical devices (e.g. lenses, mirrors, slits and gratings, polarizers) to explore the geometric and wave properties of light.
- Apply AC concepts such as frequency response, frequency filtering, fourier transform analysis, and impedance to sinusoidally-driven electrical, mechanical, optical, and acoustical systems.

PHSCS 230 : Computational Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 113

DESCRIPTION: Introduction to numerical and symbolic computation and graphical analysis using a symbolic mathematics program. Applications to mechanics, optics, and special relativity.

**Course Outcomes**

- Demonstrate the ability to apply calculus, linear algebra, and complex analysis to solve undergraduate-level physics problems.
- Demonstrate the ability to use programming constructs such as looping, conditional execution, and iteration to solve physics problems.
- Solve equations, including systems of equation, related to physical phenomena both symbolically and numerically.
- Demonstrate the ability to visualize, analyze, and interpret equations, data, and physical models.

PHSCS 240 : Design, Fabrication, and Use of Scientific Apparatus. (2:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHSCS 123 & PHSCS 145

DESCRIPTION: Machining, computer interfacing, controls, and vacuum systems.

**Course Outcomes**

- Design, build, and interface experimental apparatus.
- Make involved physical measurements and analyze experimental results.
- Document in a personal lab notebook the procedures, methods, results, and analysis of laboratory exercises.
- Present work in writing and through oral presentations.
- Demonstrate understanding of professional ethics guidelines for research activities and presentation of results.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

## Show all Physiology and Developmental Biology (PDBio) Courses

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Physiology and Developmental Biology Department Home

Majors

- BS in Biophysics
- BS in Physiology and Developmental Biology

Course Information

- Physiology and Developmental Biology (PDBio) Courses

Faculty

# BS in Physiology and Developmental Biology (66–67 hours*)

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## Program Requirements | View MAP | View Program Outcomes

1. Complete the following life sciences core courses:

BIO 420 : Evolutionary Biology. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240 & PWS 340
RECOMMENDED: Concurrent enrollment in Bio 421.
DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**

- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105
DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.
NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

MMBIO 241 : Molecular and Cellular Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBio 240 or concurrent enrollment.
DESCRIPTION: Molecular and cellular biology techniques laboratory.

**Course Outcomes**

- Practice ethics and integrity by working with groups and following lab rules.*Relates to Program Learning Outcome: A commitment to professional integrity and ethical behavior consistent with themission of the university.
- Learn the basics of experimental design, how to formulate a hypothesis, what controls to use, how to interpret experimental data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Practice scientific communication through written lab questions, exams and oral presentations.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Learn molecular biology laboratory techniques through practical laboratory exercises. Techniques include, spectrophotometry,isolation of DNA and protein, quantification of DNA and protein, techniques used to purify or detect specific proteins, such aschromatography, western blot and ELISA, DNA fingerprinting, polymerase chain reaction and enzyme assays.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology.

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies
- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

2. Complete the following chemistry and physics courses:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function

- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: High school algebra and trigonometry.
RECOMMENDED: Concurrent enrollment in Phscs 107.
DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 105 or equivalent.
RECOMMENDED: Concurrent enrollment in Phscs 108.
DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

3. Complete the following major core courses:

PDBIO 325 : Tissue Biology (with lab). (3:2:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PDBIO 120 & PDBIO 220
DESCRIPTION: Human anatomy and histology; function of cells in tissue; early stages of embryology.
NOTE: Course should be taken during a student's second or third year and before courses in physiology and developmental biology.

**Course Outcomes**

- Students will be able to communicate with health professionals effectively regarding tissue/organ anatomy and physiology in instances of health and disease.
- Students will demonstrate how the relationship between cell organization and cell function correlates with normal and pathological organ behavior.
- Students will be able to describe anatomical and physiological characteristics of epithelial, connective, nervous, and muscular tissue.

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220
DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.
NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

PDBIO 363 : Advanced Physiology Laboratory. (1:.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PDBio 362 or concurrent enrollment; or instructor's consent.
DESCRIPTION: Experiments and exercises in advanced physiology emphasizing human physiology. Computer simulations of muscle function, endocrine disease, and human physiology. Emphasizes problem solving and calculations.

**Course Outcomes**

- Students will demonstrate the skills required to properly interpret data from scientific experimentation to discover how physiological systems function.
- Students will manifest an understanding of basic physiological principles by modeling how human cells, organs, and organ systems function.
- Students will describe how interactions between human organ systems work to maintain homeostasis.

PDBIO 455R : Physiology and Developmental Biology Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Seminar (research) presentations for undergraduates in physiology and developmental biology.

**Course Outcomes**

- Students will be able to demonstrate the format, organization, and presentation of a typical scientific seminar.
- Students will demonstrate the proper etiquette of scientific interactions by participating in question/answer periods following each seminar.

PDBIO 482 : Developmental Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 240 & PDBIO 360
RECOMMENDED: PDBio 325.
DESCRIPTION: Invertebrate and vertebrate developmental biology. Embryonic gastrulation, neurulation, pattering, etc. Modern approaches and research strategies. Emphasizes gene function, cell signaling, signal transduction during embryogenesis.

**Course Outcomes**

- Students will be able to generally describe the early development (from fertilization to axis formation) of one invertebrate and one vertebrate model organism.
- Students will be able to generally describe the concepts of cellular competence, induction, specification, commitment and differentiation in embryonic development.
- Students will be able to give two examples of organogenesis, including genes and signal transduction pathways that lead to organ system formation.
- Students will be able to explain embryonic patterning, using examples that include genes known to act in patterning events.
- Students will be able to explain at least two concepts in developmental biology that overlap with other sciences, such as stem cell research, cancer research, evolutionary sciences, or neuroscience.
- Students will be able to discern and summarize the current state of knowledge on a given topic, construct pioneering research questions on that topic, and propose experiments aimed at answering those questions.

4. Complete one course from the following:

PDBIO 210 : Human Anatomy (with virtual lab). (3:3:0)

OFFERED: Independent Study only.
DESCRIPTION: Structure and function of the human body. Virtual lab experience included.

**Course Outcomes**

- Students will be able to list the name, location, and function of each of the body's organs and organ systems.
- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

5. Complete one course from the following:

PDBIO 365 : Pathophysiology. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PDBIO 305; or PDBIO 362
DESCRIPTION: Variations in physiological mechanisms that account for development of common disturbances in normal control and activities of body's organs and organ systems.

**Course Outcomes**

- Students will exhibit an integrative understanding of the biochemistry, molecular biology, genetics, cell biology, microbiology, environmental biology, and physiology related to the prevention, development, and treatment of common diseases.
- Students will demonstrate through case study analysis a command of problem solving skills related to the diagnosis and treatment of pathophysiological conditions.
- Pupils will manifest a command of the physiology and pathophysiological vocabulary necessary to effectively communicate with other biomedical professionals and the general public.
- Students will be able to articulate the ethical issues related to the treatment and prevention of pathophysiological conditions.
- Students will manifest an increase in their respect for the human body and adopt a life style consistent with this respect.

PDBIO 484 : Human Embryology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBio 360 or equivalent.

RECOMMENDED: PDBio 325.

DESCRIPTION: Developmental milestones of prenatal life: etiology of congenital malformations, emphasizing molecular and cellular changes and their functional consequences.

**Course Outcomes**

- Students will identify the developmental trajectories of the various organ systems and why abnormalities at any step in the lineage of organogenesis may cause birth defects.
- Students will be able to communicate with health professionals effectively regarding embryonic events from conception to birth and the ramifications of each event in instances of health and disease.
- Students will demonstrate how signaling between participating cells leads to important events during the first, second, third, and fourth weeks of development.

6. Complete one course from the following advanced molecular courses:

BIO 468 : (Bio-MMBio-PWS) Genomics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & PWS 340

DESCRIPTION: Current analysis of genes and genomes; computational and statistical approaches for analyzing genomic data, including genome sequencing and annotation, gene expression and the transcriptome, proteomics and functional genomics, and genetic variation and SNPs.

**Course Outcomes**

- Students will complete a series of exercises with data representing genomic experiments (analysis and interpret).
- Students will describe how genomes are sequenced.
- Students will understand techniques and concepts to assess genomic features such as methylation, gene expression, etc.

CHEM 482 : Mechanisms of Molecular Biology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Second-semester biochemistry. Nucleic acid biochemistry and molecular biology: nucleotide metabolism, chromosome and chromatin structure, DNA structure and replication, RNA transcription and gene expression, protein synthesis and regulation, eukaryotic gene systems, signal transduction.

**Course Outcomes**

- Draw the structure of DNA, determine the topology of a plasmid, explain the chemical sequence of events that occur during DNA replication and draw structural changes that occur due to mutation.
- Determine how to perform and interpret an electrophoresis separation of DNA fragments, southern blot, restriction map, polymerase chain reaction, and a DNA sequencing reaction with necessary controls.
- Design a DNA cloning strategy, explain controls necessary, and write procedural plan.
- Draw and explain the mechanism of RNA transcription and how RNA is processed, spliced, and regulated. Understand the basic mechanisms of transcriptional regulation using the example of transcription of genes necessary for cholesterol synthesis.
- Determine when and how to use techniques that involve RNA: Northern blots, quantitative PCR, microarrays, S1 nuclease and primer extension mapping of the transcriptional start with appropriate controls.
- Determine the sequence of amino acids in a protein from a series of nucleotides.
- Draw and explain the process of protein translation and how it is regulated.
- Determine where a protein is localized in a tissue or cell: interpret a western blot, protein fusion assays.
- Determine with what a protein interacts: Interpret gel shift assays, Chromatin Immunoprecipitation, DNA footprinting, and yeast two hybrid reporter assays.
- Maintain faith through challenges and ethical boundaries in reporting and interpreting data.

CHEM 489 : Structural Biochemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 468

DESCRIPTION: Molecular structures of proteins, RNA and DNA as determinants of biological function. Topics include thermodynamics of folding and binding, structural determination, spectroscopy, modeling, protein recognition.

**Course Outcomes**

- Identify motifs and symmetries in macromolecular structures and chemical interactions that maintain structural integrity
- Relate the structure of a macromolecule to its biological function
- Describe how X-ray crystallography, nuclear magnetic resonance, cryogenic electron microscopy, and circular dichroism techniques give structural information for biological macromolecules
- Communicate scientific ideas (e.g. structure-function relationships) clearly and concisely to others orally and in writing, and use ethical standards in oral and written presentations
- Work with peers to answer scientific questions

MMBIO 430 : Advanced Cell Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 360; Bioscience major status.

DESCRIPTION: Molecular genetics, cell biology, and developmental biology.

**Course Outcomes**

- Read primary literature to further their own understanding of the topic*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic research, or the health professions.
- Explain the processes of cell biology*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic research, or the health professions.
- Apply knowledge of these molecular processes to broader topics*Relates to Program Learning Outcome: Proficiency in formulating and carrying out independent and collaborative research projects.
- Analyze research data, design experiments and present data in a clear manner*Relates to Program Learning Outcome: Communication skills in presenting their research findings through effective oral and written presentations.

MMBIO 441 : Advanced Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & CHEM 352

DESCRIPTION: Molecular biology of gene structure and expression in prokaryotic and eukaryotic organisms.

**Course Outcomes**

- Learn molecular biology principles through study, lecture, and class discussion. An emphasis will be on understanding the experiments used to learn these principles.â ¨ *Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology preparing students for further education and/or employment.
- Apply the principles learned to design experiments and properly interpret experimental data.â ¨ *Relates to Program Learning Outcome: Proficiency in formulating research projects
- Present current research from the scientific literature.*Relates to Program Learning Outcomes: Communicate scientific information using oral methods; interpret, analyze and critique experiments from the primary scientific literature. Presenting research findings through effective oral and written presentations.
- Demonstrate integrity and ethical behavior during all class work.â ¨ *Relates to Program Learning Outcome: Commitment to professional integrity and ethical behavior consistent with the mission of the University.

7. Complete one course from the following capstone courses:

NEURO 480 : Advanced Neuroscience. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NEURO 205; or PDBIO 362; PDBio 360; Neuroscience or PDBio major status.

DESCRIPTION: Principles of neural science. Structure-function relationships and integration of the nervous system.

**Course Outcomes**

There are no course outcomes available

PDBIO 498 : Advanced Senior Research Project. (3:Arr.:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PDBIO 494R & PDBIO 495R; Instructor's consent must be obtained during previous semester.

DESCRIPTION: Special project course for advanced PDBio research students. Engaging in scientific research as specified in an approved research proposal. Comprehensive written work of research required.

**Course Outcomes**

- Students will formulate a testable hypothesis relating to a topic in physiology and developmental biology .
- Students will design experiment (s) to test their hypothesis.
- Students will present a proposal describing their research topic, their hypothesis and experimental design.
- Students will independently carry out their proposed research.
- Students will analyze their experimental data.
- Students will report their findings in a manuscript intended for publication in a scientific journal.

PDBIO 561 : Physiology of Drug Mechanisms. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 362

DESCRIPTION: Overview of physiological and pharmacological mechanisms and principles of human therapeutics as applied to clinically significant pathophysiology.

**Course Outcomes**

- Students will manifest an interactive understanding of drug mechanisms at the molecular, cellular, tissue, organ, and/or systemic levels.
- Students will demonstrate that they understand the cellular pathways targeted for pharmacological treatment.
- Pupils will demonstrate a comprehension of how the body interacts with compounds used for pharmacological treatments.
- Students will manifest the knowledge, skills and vocabulary necessary to converse with health care providers concerning their own and family's medical treatments.

PDBIO 562 : Reproductive Physiology. (0-3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBio 362 or equivalent.

RECOMMENDED: Chem 481, PDBio 482; or equivalents.

DESCRIPTION: Mammalian reproductive physiology.

**Course Outcomes**

- Students will be expected to demonstrate acquisition of both the basic and in-depthknowledge needed to be able to perform the following skills on course assignments, quizzes, and examinations:1. Demonstrate understanding of various reproductive processes at the molecular,biochemical, microscopic, and physiological levels.2. Demonstrate the skills needed to read, analyze, evaluate, comprehend, and synthesizescientific information from several different sources for use in both written and oralcommunication about various reproductive processes.3. Demonstrate an appreciation for the sacred nature of the reproductive processes thatresult in the production of offspring during in-class oral communication.

PDBIO 565 : Endocrinology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PDBio 362 or instructor's consent.

DESCRIPTION: Mammalian hormones.

**Course Outcomes**

- Students will be able to describe major actions of each hormone on target cells.
- Students will be able to describe pathways for synthesis, post-translational processing, and cellular localization or secretion for peptide hormones and hormone receptors.
- Students will be able to describe pathways for synthesis and inactivation for steroid hormones, thyroid hormones, and catecholamines.
- Students will be able to describe the control of synthesis and secretion for each hormone, including feedback relationships.
- Students will be able to describe major signaling pathways in target cells for each hormone.
- Students will be able to describe methodologies used to test hypotheses in study of problems in endocrinology.
- Students will be able to describe and recognize etiology and clinical symptoms of the major endocrine diseases

PDBIO 568 : Cellular Electrophysiology and Biophysics. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 362 & PHSCS 140; or PDBIO 362 & PHSCS 220

DESCRIPTION: Using electrophysiology and biophysics as an approach to study of physiology. Extensive look at ion channels and cell signaling.

**Course Outcomes**

- Students will demonstrate biophysical knowledge gained in specific areas including membrane properties, voltage and ligand-gated receptors, neurotransmission and mathematical modeling.
- Students will apply the biophysical knowledge gained in a laboratory setting.
- Students will demonstrate critical thinking and evaluation skills gained in the course by preparing a competent and clearly written research proposal.
- Students will demonstrate knowledge of a particular research topic and presentation skills in a clear and informative oral presentation.

PDBIO 582 : Developmental Genetics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PDBio 482 or equivalent.

DESCRIPTION: Gene function and regulation during cell specification and differentiation, pattern formation, and organogenesis in developing embryo.

**Course Outcomes**

- Students will demonstrate understanding of, and the ability to think critically about, primary developmental biology research articles.
- Students will demonstrate confidence in contributing to scientific discussions.
- Students will demonstrate the ability to think scientifically by formulating a research proposal.

8. Complete 6.5 hours from the following courses, including at least 1 hour from the mentored experience list and at least 2 hours from the advanced laboratory requirement list.
   a. Mentored experience:

PDBIO 349R : Physiology and Developmental Biology Teaching Seminar. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: B or above in the specific physiology and developmental biology course; instructor's consent.

DESCRIPTION: Undergraduate students teaching small help sections for lecture portion of physiology and developomental biology courses or helping to teach departmental student laboratory.

**Course Outcomes**

- Students will develop a more in depth understanding of the subject material of a course by having the students teach the course material to other students.

- Students will develop a close professional relationship with the instructor for the course. The students should perceive that this individual is a mentor.
- Student instructors will increase oral communication skills for instruction by practicing laboratory materials with other undergraduate/graduate and/or mentoring faculty member(s).
- Student will receive constructive input from surveys that will be collected from laboratory sections and feedback provided by the graduate student and/or the mentoring faculty member.

PDBIO 494R : Undergraduate Research in Physiology and Developmental Biology. (1-4:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic (entry level) research laboratory experience for students interested in physiology and developmental biology.

**Course Outcomes**

- Students will demonstrate the ability to properly perform basic laboratory-specific techniques.
- Students will complete laboratory-specific safety training.

PDBIO 550R : Advanced Topics in Physiology and Developmental Biology. (.5-4:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Close interaction between small groups of students and instructor on topics in physiology, developmental biology, or biophysics. Topics vary.

**Course Outcomes**

- Students will prove they have an understanding of the scientific principles that underlie any techniques taught in the course.
- Students will master any experimental techniques taught in the course.
- Students will demonstrate an understanding of the specialized subject matter presented in the course.

b. Advanced laboratory experience (courses used to fill any requirements listed above cannot count for this requirement):

BIO 468 : (Bio-MMBio-PWS) Genomics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & PWS 340

DESCRIPTION: Current analysis of genes and genomes; computational and statistical approaches for analyzing genomic data, including genome sequencing and annotation, gene expression and the transcriptome, proteomics and functional genomics, and genetic variation and SNPs.

**Course Outcomes**

- Students will complete a series of exercises with data representing genomic experiments (analysis and interpret).
- Students will describe how genomes are sequenced.
- Students will understand techniques and concepts to assess genomic features such as methylation, gene expression, etc.

CHEM 581 : Advanced Biochemical Methodology 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 482

DESCRIPTION: Analytical and structural determination methods used in biochemical research, including mass spectrometry-based proteomics, immunotechniques, atomic force and electron microscopy, NMR and X-ray diffraction.

NOTE: One of two required courses for biochemistry graduate students. May be taken before or after Chem 583.

**Course Outcomes**

- Understand the theory, instrumentation and applications of proteomic, immunological and structural methods currently used to address important biochemical questions.
- Interpret and critique data from these techniques.
- Design appropriate experiments and apply these techniques to their own research problems.
- Recognize important technological advances in proteomic, immunological and structural methods.
- Present findings from the primary literature describing the application of these methods to significant biochemical questions in a professional manner.

CHEM 583 : Advanced Biochemical Methodology 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Maintenance and expression of genetic information, the role of nucleic acids in biology at the chemical and structural level, and methods to study and control nucleic acid function as a means of solving biological problems.

NOTE: One of two required courses for biochemistry graduate students. May be taken before or after Chem 581.

**Course Outcomes**

Describe how genetic information is stably maintained, how it is expressed, and how that expression is regulated, with an emphasis on the mechanism by which molecular machines perform these processes.
- Understand methods for studying the structure and function of nucleic acids and methods for manipulating gene expression in living systems.
- Interpret and critique data obtained using these methods as reported in the primary scientific literature.
- Communicate this understanding in both oral and written formats. [
- Design appropriate experiments and apply the techniques of nucleic acid biochemistry to their own research problems.

CHEM 584 : Biochemistry Laboratory/Proteins. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Introduction to current biochemical research procedures including spectrophotometry, chromatography, electrophoresis, and immunological techniques. Protein over-expression; isolation and characterization methods. Enzyme kinetics and protein-ligand interactions. Introduction to bioinformatics.

NOTE: May be taken before or after Chem 586.

**Course Outcomes**

- Apply spectroscopic techniques to analyze proteins, both their enzymatic and binding reactions
- Use gel electrophoresis and immunoblotting techniques to determine the presence and purity of proteins in biological samples
- Identify protein binding partners using co-immunoprecipitation methods
- Purify proteins using state-of-the-art separations methods
- Characterize an enzyme using steady state kinetics methods
- Use enzymes as analytical and diagnostic tools
- Properly record and interpret data
- Present data they have collected in an oral presentation and in a written scientific paper
- Understand ethical means of reporting results and giving proper credit to the work of others
- Measure ligand binding to proteins; determine dissociation constants and the degree of cooperativity.

CHEM 586 : Biochemistry Laboratory/Nucleic Acids. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Laboratory course covering major techniques involved in isolation, amplification, and cloning of recombinant DNA as well as isolation, synthesis, translation, and identification of RNA.

NOTE: May be taken before or after Chem 584.

**Course Outcomes**

- Understand, design and execute experiments using basic DNA manipulation procedures that include isolation, purification and modification of DNA
- Explain and perform PCR amplification and use this technique to detect the presence of DNA “targets”, DNA cloning (subcloning) and DNA sequencing
- Understand and explain how to isolate, quantitate and manipulate RNA
- Design and perform experiments to reverse transcribe RNA into complementary DNA (cDNA) and assess gene expression by semi- and quantitative PCR
- Isolate total RNA and be able to purify mRNA from this material
- Introduce and express foreign DNA and/or RNA in mammalian cells using the techniques of electroporation, lipid-based transfection, calcium phosphate based transfection and retroviral transduction
- “Knockdown” an expressed gene in mammalian cells using RNA silencing
- Prepare laboratory notebooks that include the objective, results and methods of each laboratory experiment. Additionally, students will provide conclusions to each experiment, including when appropriate, potential explanations to unexpected results

MMBIO 442 : Advanced Molecular Biology Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 241; MMBio 441 or concurrent enrollment.

DESCRIPTION: Laboratory to accompany MMBio 441.

**Course Outcomes**

- Learn molecular biology laboratory techniques through hands-on experience. Techniques will include DNA and RNA isolation, PCR, microRNA isolation, northern blotting, RFLP analysis, site-directed mutagenisis, protein extraction and EMSA.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology
- Apply the techniques to design experiments with appropriate hypotheses and controls and properly interpret experimental data*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls
- Practice scientific communication and record-keeping through the completion of a laboratory notebook and answering written and oral questions and presentations.*Relates to Program Learning Outcome: Demonstrate Communication skills in presenting research findings through effective oral and written presentations.
- Design and carry out independent experiments*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls

PDBIO 399R : Academic Internship: Physiology and Developmental Biology. (1-9:ARR:ARR)

WHEN Fall; Winter; Spring; Summer

TAUGHT:
PREREQUISITE: Consent of internship coordinator.
DESCRIPTION: On-the-job experience in off-campus laboratories with a focus related to physiology, biophysics, or developmental biology.

**Course Outcomes**

- Students will demonstrate research proficiency.
- Students will demonstrate that they have learned how to establish a research experience with an extramural provider.

PDBIO 495R : Advanced Undergraduate Research in Physiology and Developmental Biology. (1-4:ARR:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: 2 credit hours of PDBio 494R.
DESCRIPTION: Senior level research laboratory experience for majors in physiology and developmental biology.

**Course Outcomes**

- Students will demonstrate an understanding of hypothesis development and the design of experiments to test hypothesis.
- Students will independently carry out laboratory experiments.
- Students will analyze experimental data and, where appropriate, perform statistical analysis.

c. Elective courses (courses used to fill any requirements listed above cannot count for this requirement):

BIO 350 : Ecology. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PDBIO 120; or BIO 130
DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth.

**Course Outcomes**

- Understand the major physical processes that form and characterize the biosphere, including global scale energy flow, the carbon cycle, climate, and soil formation.
- Understand the processes that drive major levels of organization of the biotic world, including energetics in the ecosystem, population dynamics, and species interactions.
- Understand the importance of writing as a way of synthesizing and solidifying critical thought.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Understand the importance of ecology to issues regarding human well-being
- See the connectivity and relevance of ecology to other fields of study

BIO 370 : Bioethics. (2:1:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Introductory biology course.
DESCRIPTION: In-depth lecture and small group discussion of varied bioethical issues. LDS Church positions emphasized when appropriate.

**Course Outcomes**

- Students will understand the ethical and philosophical underpinnings of bioethics and to develop ethical intuitions on bioethical issues.
- Students will learn the terminology, vocabulary, and objectives of bioethics.
- Students will understand the tools and approaches needed to make a bioethical decision and to communicate that decision in rationally informed ways.
- Students will understand the bioethical primary literature, to understand how to read case studies, and familiarity with the major issues being discussed in bioethics today.

BIO 421 : Evolutionary Biology Laboratory. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240
DESCRIPTION: Hands-on applications and analytical tools of evolutionary biology; emphasizing inference methodology and evidence complementing the theoretical constructs introduced in Bio 520, including comparative anatomy, phylogenetic inference, population genetics, species concepts, and human evolution.
NOTE: Concurrent enrollment with Bio 420 is strongly recommended.

**Course Outcomes**

- Students will gain a better understanding of the basic principles of evolution within a population including selection, drift, and founder effects by using computer simulations.
- Students will have a deeper understanding of the LDS position on evolution.
- Students will learn the details of phylogenetic reconstruction, tree searching, DNA sequence alignment, and other bioinformatics tools for deciphering patterns of evolution.
- Students will learn the details of species concepts and the criteria used for identifying and diagnosing species.
- Students will gain hands-on experience with hominid fossils and gain an understanding of the evidence that elucidates the biological history of humans.

BIO 463 : Genetics of Human Disease. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 340

DESCRIPTION: Examining the application of genetics to understanding and treatment of human disease. Functional consequences of mutations; use of model organisms; linkage and association analysis of complex traits; pharmacogenetics; ethical considerations.

**Course Outcomes**

- Understand and explain the different types of genetic variants, how they can be typed and how they can be used to understand the genetic architecture of human disease.
- Understand linkage disequilibrium in the human genome and the role it plays in the search for genetic risk factors for human disease
- Understand and use basic statistics and software for analyzing the correlation between genetic markers and risk for disease.
- Understand and explain how model organisms contribute to our understanding of the genetics of human disease.
- Demonstrate the ability to obtain, aggregate and present information about the current knowledge of the genetics of a human disease.

BIO 468 : (Bio-MMBio-PWS) Genomics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & PWS 340

DESCRIPTION: Current analysis of genes and genomes; computational and statistical approaches for analyzing genomic data, including genome sequencing and annotation, gene expression and the transcriptome, proteomics and functional genomics, and genetic variation and SNPs.

**Course Outcomes**

- Students will complete a series of exercises with data representing genomic experiments (analysis and interpret).
- Students will describe how genomes are sequenced.
- Students will understand techniques and concepts to assess genomic features such as methylation, gene expression, etc.

BIO 475 : Plant Developmental Biology. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: PWS 340

RECOMMENDED: Bio 220B.

DESCRIPTION: Developmental mechanisms controlling plant development, with particular emphasis on genetic and molecular regulation.

**Course Outcomes**

There are no course outcomes available

CHEM 482 : Mechanisms of Molecular Biology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Second-semester biochemistry. Nucleic acid biochemistry and molecular biology: nucleotide metabolism, chromosome and chromatin structure, DNA structure and replication, RNA transcription and gene expression, protein synthesis and regulation, eukaryotic gene systems, signal transduction.

**Course Outcomes**

- Draw the structure of DNA, determine the topology of a plasmid, explain the chemical sequence of events that occur during DNA replication and draw structural changes that occur due to mutation.
- Determine how to perform and interpret an electrophoresis separation of DNA fragments, southern blot, restriction map, polymerase chain reaction, and a DNA sequencing reaction with necessary controls.
- Design a DNA cloning strategy, explain controls necessary, and write procedural plan.
- Draw and explain the mechanism of RNA transcription and how RNA is processed, spliced, and regulated. Understand the basic mechanisms of transcriptional regulation using the example of transcription of genes necessary for cholesterol synthesis.
- Determine when and how to use techniques that involve RNA: Northern blots, quantitative PCR, microarrays, S1 nuclease and primer extension mapping of the transcriptional start with appropriate controls.
- Determine the sequence of amino acids in a protein from a series of nucleotides.
- Draw and explain the process of protein translation and how it is regulated.
- Determine where a protein is localized in a tissue or cell: interpret a western blot, protein fusion assays.
- Determine with what a protein interacts: Interpret gel shift assays, Chromatin Immunoprecipitation, DNA footprinting, and yeast two hybrid reporter assays.
- Maintain faith through challenges and ethical boundaries in reporting and interpreting data.

CHEM 489 : Structural Biochemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 468

DESCRIPTION: Molecular structures of proteins, RNA and DNA as determinants of biological function. Topics include thermodynamics of folding and binding, structural determination, spectroscopy, modeling, protein recognition.

**Course Outcomes**

- Identify motifs and symmetries in macromolecular structures and chemical interactions that maintain structural integrity
- Relate the structure of a macromolecule to its biological function
- Describe how X-ray crystallography, nuclear magnetic resonance, cryogenic electron microscopy, and circular dichroism techniques give structural information for biological macromolecules
- Communicate scientific ideas (e.g. structure-function relationships) clearly and concisely to others orally and in writing, and use ethical standards in oral and written presentations
- Work with peers to answer scientific questions

CHEM 581 : Advanced Biochemical Methodology 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 482

DESCRIPTION: Analytical and structural determination methods used in biochemical research, including mass spectrometry-based proteomics, immunotechniques, atomic force and electron microscopy, NMR and X-ray diffraction.

NOTE: One of two required courses for biochemistry graduate students. May be taken before or after Chem 583.

**Course Outcomes**

- Understand the theory, instrumentation and applications of proteomic, immunological and structural methods currently used to address important biochemical questions.
- Interpret and critique data from these techniques.
- Design appropriate experiments and apply these techniques to their own research problems.
- Recognize important technological advances in proteomic, immunological and structural methods.
- Present findings from the primary literature describing the application of these methods to significant biochemical questions in a professional manner.

CHEM 583 : Advanced Biochemical Methodology 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Maintenance and expression of genetic information, the role of nucleic acids in biology at the chemical and structural level, and methods to study and control nucleic acid function as a means of solving biological problems.

NOTE: One of two required courses for biochemistry graduate students. May be taken before or after Chem 581.

**Course Outcomes**

- Describe how genetic information is stably maintained, how it is expressed, and how that expression is regulated, with an emphasis on the mechanism by which molecular machines perform these processes.
- Understand methods for studying the structure and function of nucleic acids and methods for manipulating gene expression in living systems.
- Interpret and critique data obtained using these methods as reported in the primary scientific literature.
- Communicate this understanding in both oral and written formats. [
- Design appropriate experiments and apply the techniques of nucleic acid biochemistry to their own research problems.

CHEM 584 : Biochemistry Laboratory/Proteins. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Introduction to current biochemical research procedures including spectrophotometry, chromatography, electrophoresis, and immunological techniques. Protein over-expression; isolation and characterization methods. Enzyme kinetics and protein-ligand interactions. Introduction to bioinformatics.

NOTE: May be taken before or after Chem 586.

**Course Outcomes**

- Apply spectroscopic techniques to analyze proteins, both their enzymatic and binding reactions
- Use gel electrophoresis and immunoblotting techniques to determine the presence and purity of proteins in biological samples
- Identify protein binding partners using co-immunoprecipitation methods
- Purify proteins using state-of-the-art separations methods
- Characterize an enzyme using steady state kinetics methods
- Use enzymes as analytical and diagnostic tools
- Properly record and interpret data
- Present data they have collected in an oral presentation and in a written scientific paper
- Understand ethical means of reporting results and giving proper credit to the work of others
- Measure ligand binding to proteins; determine dissociation constants and the degree of cooperativity.

CHEM 586 : Biochemistry Laboratory/Nucleic Acids. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 482
DESCRIPTION: Laboratory course covering major techniques involved in isolation, amplification, and cloning of recombinant DNA as well as isolation, synthesis, translation, and identification of RNA.
NOTE: May be taken before or after Chem 584.

**Course Outcomes**

- Understand, design and execute experiments using basic DNA manipulation procedures that include isolation, purification and modification of DNA
- Explain and perform PCR amplification and use this technique to detect the presence of DNA "targets", DNA cloning (subcloning) and DNA sequencing
- Understand and explain how to isolate, quantitate and manipulate RNA
- Design and perform experiments to reverse transcribe RNA into complementary DNA (cDNA) and assess gene expression by semi- and quantitative PCR
- Isolate total RNA and be able to purify mRNA from this material
- Introduce and express foreign DNA and/or RNA in mammalian cells using the techniques of electroporation, lipid-based transfection, calcium phosphate based transfection and retroviral transduction
- "Knockdown" an expressed gene in mammalian cells using RNA silencing
- Prepare laboratory notebooks that include the objective, results and methods of each laboratory experiment. Additionally, students will provide conclusions to each experiment, including when appropriate, potential explanations to unexpected results

EXSC 463 : Exercise Physiology. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: PDBIO 305; or PDBIO 362
RECOMMENDED: Concurrent enrollment in ExSc 464.
DESCRIPTION: The function of the physiological systems and their responses to acute and chronic exercise.

**Course Outcomes**

- Describe the substrates used, amount and rate of ATP resynthesized, metabolic end products, and control of anaerobic and aerobic metabolic pathways.
- Describe the responses to acute bouts of exercise and the mechanisms of the observed response, and the physiological adaptations which occur as a result of physical conditioning.
- Describe the physiological rationale for applying the eight principles of physical conditioning to improve health, fitness, and performance.
- Describe the depolarization of skeletal muscle beginning at the spinal cord and ending with the contraction of the muscle fiber.
- Describe the transportation and diffusion of O2and CO2 through the pulmonary and systemic circuits at rest and during exercise.
- Describe the anatomical, physiological, and functional differences between the three types of huma skeletal muscle fibers.
- Describe the interaction of the nervous, muscle, cardiovascular, pulmonary, and metabolic systems at rest and during exercise.
- Describe the normal anatomy and physiology of the heart, blood, and blood vessels; describe the normal function of the cardiovascular system at rest and during exercise.
- Describe how the human body functions and maintain homeostasis during the increased metabolic demands of exercise.
- Describe the function of sympathetic, parasympathetic, and somatic motor neurons, including differences in structure, neurotransmitters, receptors and efferent organs.

EXSC 464 : Exercise Physiology Lab. (.5:0:1)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: ExSc 463 or concurrent enrollment.
DESCRIPTION: Introduction of laboratory and field methods; applying principles of exercise physiology to assessing physical fitness and physiological responses to exercise.

**Course Outcomes**

- The purpose of this class is to apply knowledge of exercise physiology to the assessment of the fivecomponents of health related physical fitness. The labs are the means to review and apply the physiologyof exercise and to develop and practice fundamental skills related to the assessment of physical fitness.

MMBIO 261 : Infection and Immunity. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Principles of infectious organisms (principally bacteria and viruses), the diseases they cause, and the role of host immune responses in health and disease.

**Course Outcomes**

There are no course outcomes available

MMBIO 417 : Medical Parasitology. (3:2:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 261 & MMBIO 240
DESCRIPTION: Pathogenesis, diagnosis, and epidemiology of human parasitic diseases. Laboratory included.

**Course Outcomes**

- Gain familiarity with the medically important parasites. This includes understanding parasite host range as well as pathology and mechanisms of pathogenesis.*Relates to Program Learning Outcome: Exhibit mastery of medical microbiology
- Be able to design experiments, with appropriate controls, to test various hypotheses in parasitology.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Read and critically interpret current scientific literature in the field of parasitology.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Students should gain an understanding of their role and responsibility in alleviating suffering caused by parasitic diseases.*Relates to Program Learning Outcome: Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological principles.

MMBIO 430 : Advanced Cell Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 360; Bioscience major status.

DESCRIPTION: Molecular genetics, cell biology, and developmental biology.

**Course Outcomes**

- Read primary literature to further their own understanding of the topic*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic research, or the health professions.
- Explain the processes of cell biology*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic research, or the health professions.
- Apply knowledge of these molecular processes to broader topics*Relates to Program Learning Outcome: Proficiency in formulating and carrying out independent and collaborative research projects.
- Analyze research data, design experiments and present data in a clear manner*Relates to Program Learning Outcome: Communication skills in presenting their research findings through effective oral and written presentations.

MMBIO 441 : Advanced Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & CHEM 352

DESCRIPTION: Molecular biology of gene structure and expression in prokaryotic and eukaryotic organisms.

**Course Outcomes**

- Learn molecular biology principles through study, lecture, and class discussion. An emphasis will be on understanding the experiments used to learn these principles.â¨ *Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology preparing students for further education and/or employment.
- Apply the principles learned to design experiments and properly interpret experimental data.â ¨ *Relates to Program Learning Outcome: Proficiency in formulating research projects
- Present current research from the scientific literature.*Relates to Program Learning Outcomes: Communicate scientific information using oral methods; interpret, analyze and critique experiments from the primary scientific literature. Presenting research findings through effective oral and written presentations.
- Demonstrate integrity and ethical behavior during all class work.â ¨ *Relates to Program Learning Outcome: Commitment to professional integrity and ethical behavior consistent with the mission of the University.

MMBIO 442 : Advanced Molecular Biology Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 241; MMBio 441 or concurrent enrollment.

DESCRIPTION: Laboratory to accompany MMBio 441.

**Course Outcomes**

- Learn molecular biology laboratory techniques through hands-on experience. Techniques will include DNA and RNA isolation, PCR, microRNA isolation, northern blotting, RFLP analysis, site-directed mutagenisis, protein extraction and EMSA.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology
- Apply the techniques to design experiments with appropriate hypotheses and controls and properly interpret experimental data*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls
- Practice scientific communication and record-keeping through the completion of a laboratory notebook and answering written and oral questions and presentations.*Relates to Program Learning Outcome: Demonstrate Communication skills in presenting research findings through effective oral and written presentations.
- Design and carry out independent experiments*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls

NDFS 200 : Nutrient Metabolism. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: NDFS 100; Organic chemistry or concurrent enrollment.

DESCRIPTION: Chemical structures of nutrients, their food sources, requirements, digestion, absorption,

transport, metabolism, functions, storage and excretion; metabolic consequences of nutrient deficiencies, interactions, imbalances, and toxicities.

**Course Outcomes**

- Identify chemical structures of amino acids, lipids, carbohydrates, and vitamins.
- List functions, food sources, and consequences of deficiencies and toxicities for each of the essential nutrients.
- Explain the metabolic and physiological basis for the consequences of dietary practices that affect nutrient levels, and relate the consequences to the roles of essential nutrients in metabolic processes.
- Analyze diets and alter food intake to reach predetermined targets for consumption of specific dietary components or to achieve an overall dietary pattern.
- Find answers to questions and summarize results from original research reported in published peer-reviewed scientific journals.

NEURO 480 : Advanced Neuroscience. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NEURO 205; or PDBIO 362; PDBio 360; Neuroscience or PDBio major status.

DESCRIPTION: Principles of neural science. Structure-function relationships and integration of the nervous system.

**Course Outcomes**

There are no course outcomes available

PDBIO 320 : Dissection Techniques in Human Anatomy. (1:0:3)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PDBIO 220

DESCRIPTION: Techniques of human cadaver dissection.

**Course Outcomes**

- Students will demonstrate they understand the composition of the human body through successfully completing various dissection assignments on human cadavers.
- Students will manifest an increases preparation at both a spiritual and secular level, for professional training in the field of human health.

PDBIO 365 : Pathophysiology. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 305; or PDBIO 362

DESCRIPTION: Variations in physiological mechanisms that account for development of common disturbances in normal control and activities of body's organs and organ systems.

**Course Outcomes**

- Students will exhibit an integrative understanding of the biochemistry, molecular biology, genetics, cell biology, microbiology, environmental biology, and physiology related to the prevention, development, and treatment of common diseases.
- Students will demonstrate through case study analysis a command of problem solving skills related to the diagnosis and treatment of pathophysiological conditions.
- Pupils will manifest a command of the physiology and pathophysiological vocabulary necessary to effectively communicate with other biomedical professionals and the general public.
- Students will be able to articulate the ethical issues related to the treatment and prevention of pathophysiological conditions.
- Students will manifest an increase in their respect for the human body and adopt a life style consistent with this respect.

PDBIO 450R : Topics in Physiology and Developmental Biology. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Close interaction between small groups of students and instructor on topics in physiology, developmental biology, or biophysics. Topics vary.

**Course Outcomes**

- Students will demonstrate an understanding of the scientific principles that underlie the techniques taught in the course.
- Students will perform effectively any experimental techniques taught in the course.
- Pupils will demonstrate an understanding of the specialized subject matter presented in the course.

PDBIO 455R : Physiology and Developmental Biology Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Seminar (research) presentations for undergraduates in physiology and developmental biology.

**Course Outcomes**

- Students will be able to demonstrate the format, organization, and presentation of a typical scientific seminar.
- Students will demonstrate the proper etiquette of scientific interactions by participating in

question/answer periods following each seminar.

PDBIO 484 : Human Embryology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBio 360 or equivalent.

RECOMMENDED: PDBio 325.

DESCRIPTION: Developmental milestones of prenatal life: etiology of congenital malformations, emphasizing molecular and cellular changes and their functional consequences.

**Course Outcomes**

- Students will identify the developmental trajectories of the various organ systems and why abnormalities at any step in the lineage of organogenesis may cause birth defects.
- Students will be able to communicate with health professionals effectively regarding embryonic events from conception to birth and the ramifications of each event in instances of health and disease.
- Students will demonstrate how signaling between participating cells leads to important events during the first, second, third, and fourth weeks of development.

PDBIO 498 : Advanced Senior Research Project. (3:Arr.:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PDBIO 494R & PDBIO 495R; Instructor's consent must be obtained during previous semester.

DESCRIPTION: Special project course for advanced PDBio research students. Engaging in scientific research as specified in an approved research proposal. Comprehensive written work of research required.

**Course Outcomes**

- Students will formulate a testable hypothesis relating to a topic in physiology and developmental biology .
- Students will design experiment (s) to test their hypothesis.
- Students will present a proposal describing their research topic, their hypothesis and experimental design.
- Students will independently carry out their proposed research.
- Students will analyze their experimental data.
- Students will report their findings in a manuscript intended for publication in a scientific journal.

PDBIO 561 : Physiology of Drug Mechanisms. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 362

DESCRIPTION: Overview of physiological and pharmacological mechanisms and principles of human therapeutics as applied to clinically significant pathophysiology.

**Course Outcomes**

- Students will manifest an interactive understanding of drug mechanisms at the molecular, cellular, tissue, organ, and/or systemic levels.
- Students will demonstrate that they understand the cellular pathways targeted for pharmacological treatment.
- Pupils will demonstrate a comprehension of how the body interacts with compounds used for pharmacological treatments.
- Students will manifest the knowledge, skills and vocabulary necessary to converse with health care providers concerning their own and family's medical treatments.

PDBIO 562 : Reproductive Physiology. (0-3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBio 362 or equivalent.

RECOMMENDED: Chem 481, PDBio 482; or equivalents.

DESCRIPTION: Mammalian reproductive physiology.

**Course Outcomes**

- Students will be expected to demonstrate acquisition of both the basic and in-depthknowledge needed to be able to perform the following skills on course assignments, quizzes, and examinations:1. Demonstrate understanding of various reproductive processes at the molecular,biochemical, microscopic, and physiological levels.2. Demonstrate the skills needed to read, analyze, evaluate, comprehend, and synthesizescientific information from several different sources for use in both written and oralcommunication about various reproductive processes.3. Demonstrate an appreciation for the sacred nature of the reproductive processes thatresult in the production of offspring during in-class oral communication.

PDBIO 565 : Endocrinology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PDBio 362 or instructor's consent.

DESCRIPTION: Mammalian hormones.

**Course Outcomes**

- Students will be able to describe major actions of each hormone on target cells.
- Students will be able to describe pathways for synthesis, post-translational processing, and

cellular localization or secretion for peptide hormones and hormone receptors.
- Students will be able to describe pathways for synthesis and inactivation for steroid hormones, thyroid hormones, and catecholamines.
- Students will be able to describe the control of synthesis and secretion for each hormone, including feedback relationships.
- Students will be able to describe major signaling pathways in target cells for each hormone.
- Students will be able to describe methodologies used to test hypotheses in study of problems in endocrinology.
- Students will be able to describe and recognize etiology and clinical symptoms of the major endocrine diseases

PDBIO 568 : Cellular Electrophysiology and Biophysics. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 362 & PHSCS 140; or PDBIO 362 & PHSCS 220

DESCRIPTION: Using electrophysiology and biophysics as an approach to study of physiology. Extensive look at ion channels and cell signaling.

**Course Outcomes**

- Students will demonstrate biophysical knowledge gained in specific areas including membrane properties, voltage and ligand-gated receptors, neurotransmission and mathematical modeling.
- Students will apply the biophysical knowledge gained in a laboratory setting.
- Students will demonstrate critical thinking and evaluation skills gained in the course by preparing a competent and clearly written research proposal.
- Students will demonstrate knowledge of a particular research topic and presentation skills in a clear and informative oral presentation.

PDBIO 582 : Developmental Genetics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PDBio 482 or equivalent.

DESCRIPTION: Gene function and regulation during cell specification and differentiation, pattern formation, and organogenesis in developing embryo.

**Course Outcomes**

- Students will demonstrate understanding of, and the ability to think critically about, primary developmental biology research articles.
- Students will demonstrate confidence in contributing to scientific discussions.
- Students will demonstrate the ability to think scientifically by formulating a research proposal.

## Recommended Courses

Professional schools and graduate programs may require additional courses not required for this major, such as Phscs 107, 108, Chem, calculus, or statistics. Contact the programs to which you may apply to determine the specific courses required.

Students considering professional or graduate degrees should take at least two semesters of mathematical courses. The recommended sequences are:

1. Math 112, Stat 121 for students who want exposure to calculus and statistics.
2. Math 112, 113 for students who want a firm foundation in calculus.
3. Math 112, 113, Stat 121 for students who want a firm foundation in both calculus and statistics.

*Hours include courses that may fulfill university core requirements.

## Show all Physiology and Developmental Biology (PDBio) Courses

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# Physiology and Developmental Biology (PDBio)

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## Undergraduate Courses

### 100-Level Courses

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

PDBIO 205 : Human Biology. (3:3:0)

OFFERED: Independent Study online course.
DESCRIPTION: Body systems and influence of heredity.
NOTE: For nonbiology majors. Currently offered online only.

**Course Outcomes**

- Demonstrate understanding of the anatomic and physiologic terminology necessary forwritten and oral communication about the body, its functions, and its interaction with allother species on this planet.
- Students will demonstrate understanding of human biology at the chemical, microscopic,anatomical, physiological, and ecological levels.
- Demonstrate the ability to connect understanding of the body and its function with thefunction and survival of the world we live in.

PDBIO 210 : Human Anatomy (with virtual lab). (3:3:0)

OFFERED: Independent Study only.
DESCRIPTION: Structure and function of the human body. Virtual lab experience included.

**Course Outcomes**

- Students will be able to list the name, location, and function of each of the body's organs and organ systems.
- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

### 300-Level Courses

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.
RECOMMENDED: A general biology course.

DESCRIPTION: Function of body organ systems.
NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

PDBIO 320 : Dissection Techniques in Human Anatomy. (1:0:3)

WHEN TAUGHT: Contact Department.
PREREQUISITE: PDBIO 220
DESCRIPTION: Techniques of human cadaver dissection.

**Course Outcomes**

- Students will demonstrate they understand the composition of the human body through successfully completing various dissection assignments on human cadavers.
- Students will manifest an increases preparation at both a spiritual and secular level, for professional training in the field of human health.

PDBIO 325 : Tissue Biology (with lab). (3:2:3)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PDBIO 120 & PDBIO 220
DESCRIPTION: Human anatomy and histology; function of cells in tissue; early stages of embryology.
NOTE: Course should be taken during a student's second or third year and before courses in physiology and developmental biology.

**Course Outcomes**

- Students will be able to communicate with health professionals effectively regarding tissue/organ anatomy and physiology in instances of health and disease.
- Students will demonstrate how the relationship between cell organization and cell function correlates with normal and pathological organ behavior.
- Students will be able to describe anatomical and physiological characteristics of epithelial, connective, nervous, and muscular tissue.

PDBIO 349R : Physiology and Developmental Biology Teaching Seminar. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: B or above in the specific physiology and developmental biology course; instructor's consent.
DESCRIPTION: Undergraduate students teaching small help sections for lecture portion of physiology and developomental biology courses or helping to teach departmental student laboratory.

**Course Outcomes**

- Students will develop a more in depth understanding of the subject material of a course by having the students teach the course material to other students.
- Students will develop a close professional relationship with the instructor for the course. The students should perceive that this individual is a mentor.
- Student instructors will increase oral communication skills for instruction by practicing laboratory materials with other undergraduate/graduate and/or mentoring faculty member(s).
- Student will receive constructive input from surveys that will be collected from laboratory sections and feedback provided by the graduate student and/or the mentoring faculty member.

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481
DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies

- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220

DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.

NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

PDBIO 363 : Advanced Physiology Laboratory. (1:.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBio 362 or concurrent enrollment; or instructor's consent.

DESCRIPTION: Experiments and exercises in advanced physiology emphasizing human physiology. Computer simulations of muscle function, endocrine disease, and human physiology. Emphasizes problem solving and calculations.

**Course Outcomes**

- Students will demonstrate the skills required to properly interpret data from scientific experimentation to discover how physiological systems function.
- Students will manifest an understanding of basic physiological principles by modeling how human cells, organs, and organ systems function.
- Students will describe how interactions between human organ systems work to maintain homeostasis.

PDBIO 365 : Pathophysiology. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 305; or PDBIO 362

DESCRIPTION: Variations in physiological mechanisms that account for development of common disturbances in normal control and activities of body's organs and organ systems.

**Course Outcomes**

- Students will exhibit an integrative understanding of the biochemistry, molecular biology, genetics, cell biology, microbiology, environmental biology, and physiology related to the prevention, development, and treatment of common diseases.
- Students will demonstrate through case study analysis a command of problem solving skills related to the diagnosis and treatment of pathophysiological conditions.
- Pupils will manifest a command of the physiology and pathophysiological vocabulary necessary to effectively communicate with other biomedical professionals and the general public.
- Students will be able to articulate the ethical issues related to the treatment and prevention of pathophysiological conditions.
- Students will manifest an increase in their respect for the human body and adopt a life style consistent with this respect.

PDBIO 399R : Academic Internship: Physiology and Developmental Biology. (1-9:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Consent of internship coordinator.

DESCRIPTION: On-the-job experience in off-campus laboratories with a focus related to physiology, biophysics, or developmental biology.

**Course Outcomes**

- Students will demonstrate research proficiency.
- Students will demonstrate that they have learned how to establish a research experience with an extramural provider.

### 400-Level Courses

PDBIO 450R : Topics in Physiology and Developmental Biology. (1-3:ARR:ARR)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Close interaction between small groups of students and instructor on topics in physiology, developmental biology, or biophysics. Topics vary.

**Course Outcomes**

- Students will demonstrate an understanding of the scientific principles that underlie the techniques taught in the course.
- Students will perform effectively any experimental techniques taught in the course.
- Pupils will demonstrate an understanding of the specialized subject matter presented in the course.

PDBIO 455R : Physiology and Developmental Biology Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Seminar (research) presentations for undergraduates in physiology and developmental biology.

**Course Outcomes**

- Students will be able to demonstrate the format, organization, and presentation of a typical scientific seminar.
- Students will demonstrate the proper etiquette of scientific interactions by participating in question/answer periods following each seminar.

PDBIO 482 : Developmental Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & PDBIO 360

RECOMMENDED: PDBio 325.

DESCRIPTION: Invertebrate and vertebrate developmental biology. Embryonic gastrulation, neurulation, pattering, etc. Modern approaches and research strategies. Emphasizes gene function, cell signaling, signal transduction during embryogenesis.

**Course Outcomes**

- Students will be able to generally describe the early development (from fertilization to axis formation) of one invertebrate and one vertebrate model organism.
- Students will be able to generally describe the concepts of cellular competence, induction, specification, commitment and differentiation in embryonic development.
- Students will be able to give two examples of organogenesis, including genes and signal transduction pathways that lead to organ system formation.
- Students will be able to explain embryonic patterning, using examples that include genes known to act in patterning events.
- Students will be able to explain at least two concepts in developmental biology that overlap with other sciences, such as stem cell research, cancer research, evolutionary sciences, or neuroscience.
- Students will be able to discern and summarize the current state of knowledge on a given topic, construct pioneering research questions on that topic, and propose experiments aimed at answering those questions.

PDBIO 484 : Human Embryology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBio 360 or equivalent.

RECOMMENDED: PDBio 325.

DESCRIPTION: Developmental milestones of prenatal life: etiology of congenital malformations, emphasizing molecular and cellular changes and their functional consequences.

**Course Outcomes**

- Students will identify the developmental trajectories of the various organ systems and why abnormalities at any step in the lineage of organogenesis may cause birth defects.
- Students will be able to communicate with health professionals effectively regarding embryonic events from conception to birth and the ramifications of each event in instances of health and disease.
- Students will demonstrate how signaling between participating cells leads to important events during the first, second, third, and fourth weeks of development.

PDBIO 494R : Undergraduate Research in Physiology and Developmental Biology. (1-4:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic (entry level) research laboratory experience for students interested in physiology and developmental biology.

**Course Outcomes**

- Students will demonstrate the ability to properly perform basic laboratory-specific techniques.
- Students will complete laboratory-specific safety training.

PDBIO 495R : Advanced Undergraduate Research in Physiology and Developmental Biology. (1-4:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: 2 credit hours of PDBio 494R.

DESCRIPTION: Senior level research laboratory experience for majors in physiology and developmental biology.

**Course Outcomes**

- Students will demonstrate an understanding of hypothesis development and the design of experiments to test hypothesis.
- Students will independently carry out laboratory experiments.
- Students will analyze experimental data and, where appropriate, perform statistical analysis.

PDBIO 498 : Advanced Senior Research Project. (3:Arr.:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PDBIO 494R & PDBIO 495R; Instructor's consent must be obtained during previous semester.

DESCRIPTION: Special project course for advanced PDBio research students. Engaging in scientific research as specified in an approved research proposal. Comprehensive written work of research required.

**Course Outcomes**

- Students will formulate a testable hypothesis relating to a topic in physiology and developmental biology .
- Students will design experiment (s) to test their hypothesis.
- Students will present a proposal describing their research topic, their hypothesis and experimental design.
- Students will independently carry out their proposed research.
- Students will analyze their experimental data.
- Students will report their findings in a manuscript intended for publication in a scientific journal.

PDBIO 499R : Senior Honors Thesis. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Honors thesis. Topic to be cleared with Honors Program and Physiology and Developmental Biology Department.

**Course Outcomes**

- Students will be expected to demonstrate acquisition of the necessary laboratory,analytical, and writing skills needed to:1. Successfully generate, analyze, and write about the scientific data they have collected.2. Demonstrate an understanding of the information previously published in the scientificliterature in order to write about their research efforts in the context of what is known andunderstood on their chosen thesis topic.3. Combine their skills, abilities, and efforts in both of the above areas sufficient togenerate a thesis acceptable to meet the requirements for graduation with honors.

## 500-Level Graduate Courses (available to advanced undergraduates)

PDBIO 550R : Advanced Topics in Physiology and Developmental Biology. (.5-4:ARR:ARR)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Close interaction between small groups of students and instructor on topics in physiology, developmental biology, or biophysics. Topics vary.

**Course Outcomes**

- Students will prove they have an understanding of the scientific principles that underlie any techniques taught in the course.
- Students will master any experimental techniques taught in the course.
- Students will demonstrate an understanding of the specialized subject matter presented in the course.

PDBIO 561 : Physiology of Drug Mechanisms. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 362

DESCRIPTION: Overview of physiological and pharmacological mechanisms and principles of human therapeutics as applied to clinically significant pathophysiology.

**Course Outcomes**

- Students will manifest an interactive understanding of drug mechanisms at the molecular, cellular, tissue, organ, and/or systemic levels.
- Students will demonstrate that they understand the cellular pathways targeted for pharmacological treatment.
- Pupils will demonstrate a comprehension of how the body interacts with compounds used for pharmacological treatments.
- Students will manifest the knowledge, skills and vocabulary necessary to converse with health care providers concerning their own and family's medical treatments.

PDBIO 562 : Reproductive Physiology. (0-3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBio 362 or equivalent.

RECOMMENDED: Chem 481, PDBio 482; or equivalents.

DESCRIPTION: Mammalian reproductive physiology.

**Course Outcomes**

- Students will be expected to demonstrate acquisition of both the basic and in-depthknowledge needed to be able to perform the following skills on course assignments, quizzes, and examinations:1. Demonstrate understanding of various reproductive processes at the molecular,biochemical, microscopic, and physiological levels.2. Demonstrate the skills needed to read, analyze, evaluate, comprehend, and synthesizescientific information from several different sources for use in both written and oralcommunication about various reproductive processes.3. Demonstrate an appreciation for the sacred nature of the reproductive processes thatresult in the production of offspring during in-class oral communication.

PDBIO 565 : Endocrinology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PDBio 362 or instructor's consent.

DESCRIPTION: Mammalian hormones.

**Course Outcomes**

- Students will be able to describe major actions of each hormone on target cells.
- Students will be able to describe pathways for synthesis, post-translational processing, and cellular localization or secretion for peptide hormones and hormone receptors.
- Students will be able to describe pathways for synthesis and inactivation for steroid hormones, thyroid hormones, and catecholamines.
- Students will be able to describe the control of synthesis and secretion for each hormone, including feedback relationships.
- Students will be able to describe major signaling pathways in target cells for each hormone.
- Students will be able to describe methodologies used to test hypotheses in study of problems in endocrinology.
- Students will be able to describe and recognize etiology and clinical symptoms of the major endocrine diseases

PDBIO 568 : Cellular Electrophysiology and Biophysics. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 362 & PHSCS 140; or PDBIO 362 & PHSCS 220

DESCRIPTION: Using electrophysiology and biophysics as an approach to study of physiology. Extensive look at ion channels and cell signaling.

**Course Outcomes**

- Students will demonstrate biophysical knowledge gained in specific areas including membrane properties, voltage and ligand-gated receptors, neurotransmission and mathematical modeling.
- Students will apply the biophysical knowledge gained in a laboratory setting.
- Students will demonstrate critical thinking and evaluation skills gained in the course by preparing a competent and clearly written research proposal.
- Students will demonstrate knowledge of a particular research topic and presentation skills in a clear and informative oral presentation.

PDBIO 582 : Developmental Genetics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PDBio 482 or equivalent.

DESCRIPTION: Gene function and regulation during cell specification and differentiation, pattern formation, and organogenesis in developing embryo.

**Course Outcomes**

- Students will demonstrate understanding of, and the ability to think critically about, primary developmental biology research articles.
- Students will demonstrate confidence in contributing to scientific discussions.
- Students will demonstrate the ability to think scientifically by formulating a research proposal.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Physiology and Developmental Biology Department Home**

College of Life Sciences Home

Physiology and Developmental Biology Department Home

Majors

- BS in Biophysics
- BS in Physiology and Developmental Biology

Course Information

- Physiology and Developmental Biology (PDBio) Courses

Faculty

# Physiology and Developmental Biology Faculty

Show All
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## Professors

Bell, John David
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1982
PhD, University of California, San Diego, 1987

Busath, David Don
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1974
MD, University of Utah, 1978

Judd, Allan M.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1973
MS, Brigham Young University, 1978
PhD, West Virginia University, 1982

Kooyman, David Lee
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** AA, Ottumwa Heights College, 1974
BS, California State Polytechnic University, Pomona, 1982
MS, California State Polytechnic University, Pomona, 1986
PhD, Ohio University, Athens, 1993

Lephart, Edwin D.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1979
MS, Brigham Young University, 1982
PhD, University of Texas Southwestern Medical Center, Dallas, 1989

Porter, James Paul
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1976
MS, Brigham Young University, 1978
PhD, University of California, San Francisco, 1982

Rhees, Reuben Ward
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1967
PhD, Colorado State University, 1971

Woodbury, Dixon John

**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1980
PhD, University of California, Irvine, 1986

## Associate Professors

Barrow, Jeffery Richard

**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1990
PhD, University of Utah, 1999

Brown, Michael D.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Colorado State University, 1998
PhD, Colorado State University, 1999

Edwards, Jeff Glen

**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
PhD, University of Utah, 2003

Hansen, Marc D.H.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1997
PhD, Stanford University, 2002

Reynolds, Paul R.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2001
PhD, University of Cincinnati, 2004

Silcox, Roy W.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, North Carolina State University, 1984
PhD, North Carolina State University, 1986

Stark, Michael Robert

**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Idaho State University, 1994
PhD, University of California, Irvine, 1998

Sudweeks, Sterling N.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992
PhD, University of Utah, 1997

Wisco, Jonathan Jayme

**COLLEGE:** Life Sciences

**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Associate Professor
**DEGREES:** BS, University of Washington, 1994
PhD, Boston University School of Medicine, 2003

## Assistant Professors

Alder, Jonathan K.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 2001
PhD, Johns Hopkins University, 2007

Arroyo, Juan Alberto
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Assistant Professor
**DEGREES:** BS, University of Puerto Rico, 1991
PhD, Southern Illinois University School of Medicine, 2003

Bikman, Benjamin Thomas
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MS, Brigham Young University, 2005
PhD, East Carolina University, 2008

Suli, Arminda
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
PhD, University of Utah, 2007

Thomson, David M.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Physiology and Developmental Biology
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
MS, Brigham Young University, 2001
PhD, East Carolina University, 2005

College of Life Sciences Home

Plant and Wildlife Sciences Department Home

Majors

- BS in Environmental Science
- BS in Genetics and Biotechnology
- BS in Landscape Management
- BS in Wildlife and Wildlands Conservation

Minors

- Environmental Science
- Landscape Management

Course Information

- Plant and Wildlife Sciences (PWS) Courses

Faculty

# Plant and Wildlife Sciences

Eric N. Jellen, Chair
4105B LSB, (801) 422-7279

College of Life Sciences Office of Academic Advisement Office
2060 LSB, (801) 422-3042

## Admission to Degree Program

All degree programs in the Department of Plant and Wildlife Sciences are open enrollment.

## The Discipline

Disciplines in the Department of Plant and Wildlife Sciences focus on four of the great dilemmas facing mankind in the twenty-first century: harnessing biological technology to meet the needs of an expanding human population in the developing world; assessing and minimizing the impact of human activities on an increasingly vulnerable environment; management and conservation of wildlife and wildlands; and managing landscapes to meet increasing water, space, and other resource limitations while enhancing the aesthetic quality of urban environments.

Majors offered provide a flexible education for directly entering the job market or preparing for graduate or professional schools in business, engineering, the health professions (medical and dental schools), landscape architecture, law, natural resources, public administration, or science.

## Career Opportunities

### Genetics and Biotechnology

The discipline of genetics and biotechnology focuses on applications of molecular biology and genomics to solve problems related to health, crop and animal production, forensics, and environmental remediation. This field holds tremendous promise for meeting food sustainability needs in the developing world, delivering medical treatments customized to each patient's genomic makeup, and reducing human impacts upon the environment. The major program educates students in scientific principles and current biotechniques through a combination of classroom instruction and mentored laboratory experience on original research projects with faculty and graduate students. Graduates are prepared for immediate employment in the biotechnology industry or for graduate study in biotechnology, molecular genetics, or the health professions. An optional, integrated track in biotechnology business affords students the option of obtaining a management minor through the Marriott School of Management in preparation for management careers in life sciences industries or for law school and subsequent careers as biological patent attorneys.

### Environmental Science

Students majoring in environmental science learn fundamental principles of ecology; biodiversity; conservation; chemistry; engineering; geology; geography; and plant, animal (invertebrate/vertebrate), and soil sciences to help them solve environmental problems. They are prepared for graduate study and direct employment in fields dealing with assessing and remediating human-induced environmental impacts, as well as for careers in law, business, and the health professions.

### Landscape Management

This program is accredited by the Professional Landcare Network (PLANET), the leading professional organization in landscape contracting. The major combines practice and instruction in horticultural science, business, and landscape design to prepare students for employment as managers in landscape contracting or for graduate studies in business, law, landscape architecture, and horticulture.

### Wildlife and Wildlands Conservation

Wildlife and wildlands conservation is directed at managing wildland ecosystems-optimizing the function and services of natural ecosystems. Students are educated in wildland plants, animals, soils, and ecology, as well as wildlife and land management techniques. Graduates are well prepared to deal with complex issues involving wildlife and wildlands management and the overall conservation of natural resources.

This degree program qualifies students to work for a wide array of government and private land-management and conservation agencies. Students can qualify for federal job series employment in wildlife biology, range conservation, ecology, zoology, and botany. Common employers of these students include the U.S. Forest Service, Bureau of Land Management, Natural Resource Conservation Service, Fish and Wildlife Service, Park Service, and state wildlife management agencies. Graduates are well prepared to deal with complex issues involving wildlife and wildlands management and the overall conservation of natural resources.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Environmental Science** (Program Outcomes)
**BS in Genetics and Biotechnology** (Program Outcomes)
**BS in Landscape Management** (Program Outcomes)
**BS in Wildlife and Wildlands Conservation** (Program Outcomes)

**Minor in Environmental Science**
**Minor in Landscape Management**

Students should see their college advisement center for help or information concerning the undergraduate programs. Undergraduate advisement in major requirements is available from departmental faculty (assigned advisor).

## Graduate Programs and Degrees

MS in Agronomy
MS in Genetics and Biotechnology
MS in Wildlife and Wildlands Conservation
PhD in Wildlife and Wildlands Conservation

For more information see the BYU 2014–2015 Graduate Catalog.

**College of Life Sciences Home**

**Plant and Wildlife Sciences Department Home**

**Majors**

- BS in Environmental Science
- BS in Genetics and Biotechnology
- BS in Landscape Management
- BS in Wildlife and Wildlands Conservation

**Minors**

- Environmental Science
- Landscape Management

**Course Information**

- Plant and Wildlife Sciences (PWS) Courses

**Faculty**

# BS in Environmental Science (59–61 hours*)

Show All Course Descriptions
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## Program Requirements | View MAP | View Program Outcomes

1. Complete the following environmental science core courses:

PWS 150 : Environmental Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Conservation and management of natural resources concurrent with increasing socioeconomic and human population demands; factors such as soil, water, and air pollution, resources management, bioremediation, nutrient cycles, and global climate changes

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Gain a deep appreciation for the Lord's admonition to Adam and Eve regarding the Earth to dress it and keep it
- Engage others and participate in discussions about major environmental problems, movements, and solutions (e.g., desertification, invasive species, water pollution, green revolution, and renewable energy).
- Understand how “science” is conducted.
- Demonstrate a fundamental knowledge (i.e., scientific literacy) of the environment and current environmental problems facing us locally, regionally, and globally.
- Devise experiments with testable hypotheses based the scientific method—process of making observations and logically integrating those observations into a model of how the world works.
- Foster and promote environmental stewardship within your realm of influence and your community.

PWS 155 : Careers in Environmental Science. (1:1:0)

WHEN TAUGHT: Fall

**Course Outcomes**

There are no course outcomes available

PWS 282 : Introduction to Soil Science. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 283 or concurrent enrollment.

DESCRIPTION: Physical, chemical and microbiological properties of soils that affect plant growth in natural, agricultural, and urban environments.

**Course Outcomes**

- Enhance critically thinking skills as they apply to soil resource management and conservation
- Demonstrate a fundamental knowledge of soil chemistry, genesis, microbiology, physics, taxonomy, and nutrient and water relations
- Create a conceptual framework to help manage soil resources (i.e., animal habitat, plant nutrient fertility, salinity, soil and water quality, and wind and water erosion) in agricultural, urban, and ecological settings
- Understand the historical and current problems, and cultural concerns facing soils as a natural resource essential to human life

PWS 283 : Introduction to Soil Science Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 282 or concurrent enrollment.

DESCRIPTION: Laboratory techniques in determining soil physical, chemical, and fertility properties.

**Course Outcomes**

- Understand basic soil assessments related to soil chemistry, physics, biology, and nutrient fertility
- Apply laboratory techniques to determine problems associated with soil resource conservation and management
- Conduct basic soil methods in nutrient analysis; textural classification; and organic matter, cation exchange capacity, acidity, and alkalinity content

PWS 305 : Soils and Water Quality. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 282 & CHEM 105; or PWS 282 & CHEM 101; PWS 100 or equivalent; Math 110 or equivalent.

DESCRIPTION: Principles and practices of safe management of agricultural and urban wastes; amendments and nutrients including remediation methods for conservation of soils and water quality.

**Course Outcomes**

- Evaluate case studies in current topics soil and water quality
- Demonstrate a fundamental knowledge in water quality and water resource conservation as influenced by soil-water-atmosphere interactions
- Enhance critically thinking skills as it relates to issues in water quality management and resource conservation
- Improve mathematical and statistical skills related to nutrient, salinity, sodicity, and toxicity evaluation and management

PWS 306 : Soil and Water Quality Laboratory. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent enrollment in PWS 305.

DESCRIPTION: Principles of environmental soil and water quality in the context of a case-study watershed. Students will participate in environmental soil and water sampling, laboratory analysis, and data interpretation; synthesizing and creating written and oral reports identifying environmental concerns and proposing solutions.

**Course Outcomes**

There are no course outcomes available

PWS 345 : Air Quality and Pollution. (2:2:0)

WHEN TAUGHT: Winter

DESCRIPTION: Origin, effects, ecology, and management of major atmospheric pollutants - current topics in air quality, methods for quantifying pollutants and assessing air quality, and policy and management principles governing air as a natural resource.

**Course Outcomes**

There are no course outcomes available

PWS 365 : Environmental Microbiology. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Chem 101 or 105; PDBio 120; PWS 150.

DESCRIPTION: Environmental microbiology in aquatic and terrestrial systems. Detecting, enumerating, and identifying microorganisms. Bioremediation of organic and metal pollutants. Microbial-mediated transformations in nutrient cycling. Spread of pathogens.

**Course Outcomes**

- Demonstrate a fundamental knowledge of the environmental microbiology surrounding soil, water, and air conservation, quality, and pollution
- Understand the basic chemistry, biochemistry, and physics associated with the bioremediation, nutrient cycling, and pathogenesis
- Foster and promote environmental stewardship within yourself and your community
- Write and orally communicate more effectively and concisely

PWS 366 : Environmental Microbiology Lab. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 365 or concurrent enrollment.

RECOMMENDED: Chem 101 or 105; PDBio 120; PWS 150.

DESCRIPTION: Laboratory and field techniques. Detecting, enumerating, and identifying microorganisms via microscopic and cultural assays. Microbial transformation and responses to pollutants. Detecting techniques evaluating coliforms and fecal coliforms, viruses, and parasites.

**Course Outcomes**

There are no course outcomes available

PWS 375 : Environmental Policies and Laws. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Inception, current state, and future directions of seminal environmental policies and laws established in the US to improve environmental quality. Application of policies and laws in resource conservation and management, including a National Environmental Policy Act certification program.

**Course Outcomes**

- Demonstrate a fundamental understanding of the inception, current state, and future needs of the five seminal developments in environmental policy and law (i.e., Clean Air Act; Clean Water Act; National Environmental Policy Act; Comprehensive Environmental Response, Compensation, and Liability Act or Superfund; and the Endangered Species Act)
- Create your own conceptual framework for analyzing policy change in the United States and abroad, and

understand the role of government, society, and economics in shaping this framework
- Understand the formal institutional setting in which policy is developed, the major participants involved, and the role of science in shaping policy
- Gain a basic understanding of how environmental laws (e.g., statutes, cases, and common laws) operate to regulate our interaction with the environment and one another
- Write more effectively and concisely

2. Complete one course from the following biology courses:

BIO 350 : Ecology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth.

**Course Outcomes**

- Understand the major physical processes that form and characterize the biosphere, including global scale energy flow, the carbon cycle, climate, and soil formation.
- Understand the processes that drive major levels of organization of the biotic world, including energetics in the ecosystem, population dynamics, and species interactions.
- Understand the importance of writing as a way of synthesizing and solidifying critical thought.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Understand the importance of ecology to issues regarding human well-being
- See the connectivity and relevance of ecology to other fields of study

PWS 350 : Rangeland Ecology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 150 or Bio 100 or Bio 130 or PDBio 120.

DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth emphasizing rangeland ecosystems.

**Course Outcomes**

- Demonstrate a fundamental knowledge of ecological principles and the multiple dimensions of biodiversity.
- Possess a working knowledge of the ecology relating to soil, water, and air conservation.
- Understand how global and geologic processes affect life on earth.
- See the connectivity and relevance of ecology to other fields of study.
- Understand the importance of ecology to issues regarding human well-being.

3. Complete one course from the following biology courses:

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

PWS 100 : Living with Plants. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to principles of plant function and diversity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a fundamental knowledge of basic principles and concepts of plant biology (i.e., structure, function, and diversity)
- Cultivate an appreciation for the central importance of plants in the way our world and human society functions
- Provide a conceptual framework of how plants influence the environment
- Practice using the scientific method to better understand plant-environment interactions
- Improve verbal and written communication

4. Complete one course from the following:

BIO 450 : Conservation Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A & BIO 350; or BIO 220B & BIO 350

DESCRIPTION: Scientific principles of conservation: applying population genetics, and phylogenetic and ecological theory to preservation of biological diversity; developing sustainable ecological systems compatible with human resource use.

**Course Outcomes**

- Apply an understanding of ecological processes to conservation of populations, species, and ecosystems.

- Foster and promote environmental stewardship within your realm of influence and your community.
- Demonstrate the ability to apply the scientific method and analytical thinking to ecological and conservation issues.
- Demonstrate the ability to synthesize literature relevant to a topic in conservation bioloigy
- Demonstrate the ability to write a scientific term paper

PWS 199R : Academic Internship. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Consent of both department chair and internship coordinator.

DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Students will find an entry level internship position with a high quality company and receive above average ratings from the employer.

(2 hours required).

PWS 494R : Mentored Learning Experience. (1-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Topics vary.

NOTE: Registration required for mentored experiences.

**Course Outcomes**

- Design and/or participate in basic experiments attempting to answer questions in biochemistry, biotechnology, genetics, molecular biology, and soil science
- Generate and analyze experimental results for publications or presentations at professional meetings
- Learn how to be an effective and efficient mentor

: Biotechnology Laboratory.

**Course Outcomes**

: Plant Physiology Laboratory.

**Course Outcomes**

: Environmental Science Laboratory.

**Course Outcomes**

: Soil, Plant, and Water Science Laboratory.

**Course Outcomes**

: Environmental Science Field Techniques.

**Course Outcomes**

: Plant and Soil Science Field Techniques.

**Course Outcomes**

: Plant Breeding Field Techniques.

**Course Outcomes**

: Plant Tissue Culture and Transformation Techniques.

**Course Outcomes**

: Plant Cytogenetics Laboratory.

**Course Outcomes**

: Animal Cytogenetics Laboratory.

**Course Outcomes**

: Plant Cell Biology Laboratory.

**Course Outcomes**

: Analytical Techniques in Plant Biology.

**Course Outcomes**

: Environmental Science Computation Laboratory.

**Course Outcomes**

: Molecular Genetics and Gene Mapping Laboratory.

**Course Outcomes**

: Plant and Animal Genomics Laboratory.

**Course Outcomes**

: Analytical Techniques in Soil Science.

**Course Outcomes**

: Animal Genetics and Breeding Techniques.

**Course Outcomes**

: Soil Physical Properties Laboratory.

**Course Outcomes**

: Soil and Water Chemistry Laboratory.

**Course Outcomes**

: Animal Reproductive Research Laboratory.

**Course Outcomes**

: Field Techniques in Environmental Soil Research.

**Course Outcomes**

: Soil Microbiology Laboratory.

**Course Outcomes**

: Plant ID / URME Team.

**Course Outcomes**

(2 hours required).

5. Complete at least 6 hours from either of the two following groups:
   - CHEM 105 : General College Chemistry. (4:5:0)

     WHEN TAUGHT: Fall; Winter; Spring; Summer

     PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

     DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

     NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

     **Course Outcomes**

     - Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
     - Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
     - Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
     - A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
     - Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

   CHEM 106 : General College Chemistry. (3:4:0)

   WHEN TAUGHT: Fall; Winter; Summer

   PREREQUISITE: CHEM 105; or CHEM 111

   DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

   NOTE: Three lectures and one recitation section per week.

   **Course Outcomes**

   - Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
   - Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

   CHEM 107 : General College Chemistry Laboratory. (1:0:3)

   WHEN TAUGHT: Fall; Winter; Spring; Summer

   PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

   DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

   NOTE: Required for most students needing one year of general chemistry.

   **Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

- CHEM 101 : Introductory General Chemistry. (3:3:0)

  WHEN TAUGHT: Fall; Winter; Spring; Summer

  PREREQUISITE: Math 97 or equivalent.

  DESCRIPTION: Atomic and molecular structure, periodic relationships, states of matter, chemical reactions and stoichiometry, acids and bases.

  NOTE: Primarily for nonscience majors who require a broad introduction to general chemistry.

  **Course Outcomes**

  - Students will be able to view the world around them in chemical terms. Students will use the concepts of atoms, molecules, and their properties to understand a variety of phenomena.
  - Students will be able to make qualitative and/or quantitative predictions regarding a number of chemical concepts including chemical reactions and stoichiometry, calorimetry, osmosis, gases, acid/base chemistry, chemical equilibria, and radioactivity.

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent.

DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

**Note:** Recommended courses for graduate school and for toxicology, soil, and water tracks: Chem 105, 106, 107, 351, 352, 353.

6. Complete 25 hours from the following list of general electives. The list is organized into suggested career tracks that students may find useful, but students may choose *any* combination of the courses listed below to fulfill their 25 hours.

*Health and Ecotoxicology Core Track*:

- Complete the following:

  CHEM 351 : Organic Chemistry. (3:3:1)

  WHEN TAUGHT: Fall; Winter; Spring

  PREREQUISITE: CHEM 105; or CHEM 111

  DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

  NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: CHEM 351; or CHEM 351M
DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).
DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.
NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

MMBIO 261 : Infection and Immunity. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Principles of infectious organisms (principally bacteria and viruses), the diseases they cause, and the role of host immune responses in health and disease.

**Course Outcomes**

There are no course outcomes available

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220
DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.
NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

PDBIO 363 : Advanced Physiology Laboratory. (1:.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PDBio 362 or concurrent enrollment; or instructor's consent.
DESCRIPTION: Experiments and exercises in advanced physiology emphasizing human physiology.

Computer simulations of muscle function, endocrine disease, and human physiology. Emphasizes problem solving and calculations.

**Course Outcomes**

- Students will demonstrate the skills required to properly interpret data from scientific experimentation to discover how physiological systems function.
- Students will manifest an understanding of basic physiological principles by modeling how human cells, organs, and organ systems function.
- Students will describe how interactions between human organ systems work to maintain homeostasis.

PDBIO 365 : Pathophysiology. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 305; or PDBIO 362

DESCRIPTION: Variations in physiological mechanisms that account for development of common disturbances in normal control and activities of body's organs and organ systems.

**Course Outcomes**

- Students will exhibit an integrative understanding of the biochemistry, molecular biology, genetics, cell biology, microbiology, environmental biology, and physiology related to the prevention, development, and treatment of common diseases.
- Students will demonstrate through case study analysis a command of problem solving skills related to the diagnosis and treatment of pathophysiological conditions.
- Pupils will manifest a command of the physiology and pathophysiological vocabulary necessary to effectively communicate with other biomedical professionals and the general public.
- Students will be able to articulate the ethical issues related to the treatment and prevention of pathophysiological conditions.
- Students will manifest an increase in their respect for the human body and adopt a life style consistent with this respect.

- Complete an additional 7 hours from the general major electives list below.

*Soil Science and Conservation Core Track*:

- Complete the following:

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent.

DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

GEOG 306 : Public Land Conservation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Environmental and social geography of public lands; analyzing historical, planning, management, and ecological issues.

**Course Outcomes**

There are no course outcomes available

PWS 303 : Soils Conservation and Resources. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 282 & CHEM 105; or PWS 282 & CHEM 101; PWS 100 or equivalent; Math 110 or equivalent.

RECOMMENDED: Geol 111.

DESCRIPTION: Taxonomy of world soils; conservation and management of agricultural, wildland, wetland, and urban soils.

**Course Outcomes**

- Understand soil physics, chemistry, taxonomy, and water movement to maintain natural resources.
- Apply soil conservation practices and principles to regions sensitive to soil degradation.
- Understand the history, development, and terminology associated with USDA Soil Taxonomy and be familiar with other soil taxonomic systems. Recognize soil orders and suborders from the physical and chemical characteristics of the soil

PWS 306 : Soil and Water Quality Laboratory. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent enrollment in PWS 305.

DESCRIPTION: Principles of environmental soil and water quality in the context of a case-study watershed. Students will participate in environmental soil and water sampling, laboratory analysis, and data interpretation; synthesizing and creating written and oral reports identifying environmental concerns and proposing solutions.

**Course Outcomes**

There are no course outcomes available

PWS 402 : Soils and Water in the Urban Environment. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 100 & PWS 282 & PWS 283

DESCRIPTION: Principles of water management, soil physics, and soil fertility used in a problem-solving environment addressing current challenges in managing soils and water in the urban landscape.

**Course Outcomes**

There are no course outcomes available

- Complete an additional 10 hours from the general major electives list below. (Recommended for advanced students: PWS 511, 514, 520, and/or 560.)

*Water Resources and Conservation Core Track*:

- Complete the following:

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent.

DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

GEOL 111 : Physical Geology. (4:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Materials, structure, and surface features of the earth and the geologic processes involved in their development. Field trips and lab studies, use of aerial photos.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.
- Learn some fundamental skills in preparation to conduct research and ultimately write research papers in other classes, including:1. Using online databases (GEOREF, Web of Science) to obtain information on a particular topic.2. Using online resources (Refworks) to manage and format references.3. Reading articles in the primary geologic literature and drawing out primary information such as the topic of and article and its conclusions even if the student is not prepared (at this stage) to understand the methodology employed.4. Appreciate the need to properly format cited literature in a research paper.5. Learn the content and proper voice for the abstract of a research paper.
- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin, distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the role of human activity in climate change.
- 1. Learn or review the large scale features of the Earth's interior and exterior, including the basic features of the tectonic and hydrological systems.2. Appreciate the role of heat transfer, and in particular convection, in making both the hydrosphere and tectonosphere dynamic.

GEOL 435 : Introduction to Groundwater. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330; Math 110 or equivalent.

DESCRIPTION: Introduction to the occurrence, movement, and properties of subsurface water; surface and groundwater relationships.

**Course Outcomes**

- Demonstrate knowledge of the hydrologic cycle by creating a basin-scale water budget.
- Evaluate the relationship between grain size, sorting, and hydraulic conductivity using Darcy's Law.
- Produce a potentiometric surface map and water table map for a well field.
- Evaluate the relationship between mechanical energy, hydraulic head, and force potential.
- Construct a flow net to describe groundwater flow.
- Evaluate different aquifer test methods for calculating aquifer parameters.
- Evaluate different methods for estimating groundwater recharge rates.
- Describe groundwater flow paths for confined and unconfined aquifers.
- Produce a consulting-type report that synthesizes the groundwater resources, flow paths, and aquifer characteristics of a basin.

PWS 325 : Fisheries and Wetlands Management. (3:2:3)

WHEN TAUGHT: Fall

RECOMMENDED: PWS 225 or equivalent.

DESCRIPTION: Principles of fisheries and wetlands mangement, emphasizing managing fish populations and their diverse micro- and macro-habitats within the context of community and ecosystem dynamics. Case studies and models used to evaluate growth, recruitments, and mortality in age-structured populations in relationship to the dynamics of watershed and wetland landscapes.

**Course Outcomes**

- Understand ecological aspects of fisheries and wetland systems.
- Learn important aspects of fisheries and wetland management.
- Integrate concepts taught in class to other ecological systems.

PWS 402 : Soils and Water in the Urban Environment. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 100 & PWS 282 & PWS 283

DESCRIPTION: Principles of water management, soil physics, and soil fertility used in a problem-solving environment addressing current challenges in managing soils and water in the urban landscape.

**Course Outcomes**

There are no course outcomes available

PWS 411 : Watershed Management. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: BIO 350; or PWS 350

DESCRIPTION: Processes and management of the hydrologic cycle of forests and rangelands.

**Course Outcomes**

- Students will understand the history and policy that drives water management in the western US.
- Students will understand ecological and hydrological processes and concepts and apply them to watershed management actions such as harvesting, grazing, and restoration.
- Students will be able to apply assessment and classification tools to watersheds and their components to determine how management actions affect hydrologic responses.

- Complete an additional 4 hours from the general major electives list below. (Recommended for advanced students: PWS 511, 514, Bio 556 and/or Bio 557.)

*Ecology Core Track*:

- Complete the following:

PWS 215 : Principles of Range Management. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Overview of rangeland resources and management principles, including rangeland classification, multiple use management, natural resource policy, and grazing management.

**Course Outcomes**

- Describe rangeland physical characteristics, types, physiology, and ecology
- To understand the principles of stewardship and how they apply to Rangelands
- To understand the importance of rangeland grazing, how it is managed, and nutrient needs of livestock and wildlife
- Describe multiple use management and its implications to wildlife and livestock
- To improve reading and writing skills relating to scientific research

PWS 344 : Natural History of Wildlife. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: PWS 225 or equivalent.
DESCRIPTION: Wildlife species and their habitats, including ecology, life histories, adaptations, behavior, genetics and population viability variables, and the ethics of global stewardship. Field trips required.

**Course Outcomes**

- In this course, students will be rigorously taught the scientific method and given opportunities to demonstrate the understanding through wildlife ecology problem solving. They will have writing assignments that provide opportunities for the synthesis and expression of the depth of their understanding.
- This course introduces students to a number of wildlife and fish species, and basic ecological concepts as they relate to wildlife and fisheries. Students will understand the biology, ecological roles, habitat needs, ecological adaptations, and interactions of fish and wildlife at various levels in an ecosystem.
- Be able to define "natural history" and be able to describe basic concepts and principles that comprise the natural history of an organism
- Gain an appreciation for the diversity of lifestyles among vertebrates
- Develop critical reading and thinking skills
- Improve oral and written communication skills

PWS 355 : Rangeland Vegetation Measurements and Analysis. (3:2:3)

WHEN TAUGHT: Fall
DESCRIPTION: Field methodologies for vegetation inventories and analysis (density, biomass, cover, frequency, utilization, etc.) in wildland settings.

**Course Outcomes**

- Students will be able to demonstrate, through lab exercises and write-ups, an understanding of ecological processes that drive secondary succession in wildland ecosystems which in turn impact management decisions.
- Students will be able to apply vegetation data collection techniques to quantify vegetation and make interpretations used in resource management decisions.

PWS 417 : Rangeland Planning and GIS. (3:2:3)

WHEN TAUGHT: Winter
RECOMMENDED: PWS 215, 225, 350.
DESCRIPTION: Development of a multiple-use natural resource plan for watershed forestry, recreation, wildlife, and livestock. Policies that govern planning and conflict resolution.

**Course Outcomes**

- Identify and articulate stewardship for the creation as a basis for professional judgment.
- Apply an understanding of ecological processes to wildland management
- Demonstrate ability to apply the scientific method and analytical thinking to ecological and management issues.

PWS 419 : Forest Management and Ecology. (3:2:3)

WHEN TAUGHT: Fall
DESCRIPTION: Managing forests, emphasizing ecosystem managment.
NOTE: Field trips required.

**Course Outcomes**

- 1. Articulate their role as stewards over forested environments.
- 2. Appreciate the diversity of forests world-wide and their importance to human populations.
- 3. Apply knowledge of forest structure, function, and process in making management decisions
- 4. Be able to quantify forest structure and production
- 5. Recognize forest pests and diseases and know appropriate control techniques.
- 6. Relate forests to wildlife habitat
- 7. Identify 75 tree species located in Utah and on BYU campus.

PWS 440 : Plant Physiology. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: GE Biological Science requirement; college chemistry
RECOMMENDED: Chem 285; or 351, 352.
DESCRIPTION: Photosynthesis, respiration, water relations, mineral nutrition, growth of flowering plants.

**Course Outcomes**

- Students will be fluent in understanding plant function at the molecular, biochemical and whole plant levels
- Students will understand the connections between plant function and ecosystem processes
- Student will practice applying the scientific method in order to develop critical thinking and problem solving skills
- Student will engage in learning activities that increase there writing and speaking proficiency

- Complete an additional 7 hours from the general major electives list below. (Recommended for advanced students: PWS 540, 551 and/or PWS 553.)

*Eco-business Core Track*:

- Complete the following:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

or

BUS M 489 : Agribusiness Management 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ACC 200 & BUS M 201 & ECON 110; or ACC 200 & FIN 201 & ECON 110

DESCRIPTION: Developing and implementing marketing plans and programs for companies participating in the value chain of agribusiness industries.

**Course Outcomes**

There are no course outcomes available

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**

There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Acc 200.

DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

GEOG 306 : Public Land Conservation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Environmental and social geography of public lands; analyzing historical, planning, management, and ecological issues.

**Course Outcomes**

There are no course outcomes available

HLTH 322 : Environmental Health. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: Hlth 100.

DESCRIPTION: Environmental factors as determinants of human health: ecosystem and population dynamics; biological, chemical, and physical hazards; risk assessment; economic, political, cultural, and genetic factors.

**Course Outcomes**

- Provide a global perspective of environmental issues impacting human health
- Describe the various biological, chemical and physical hazards of the ambient, indoor, and work environment that can adversely affect human health
- Discuss those determinents and factors that affect human health and the health of the environment
- Describe how environmental management practices may contribute to or help control emerging diseases
- Provide an assessment of those national and international health agencies, programs, and other resources that play critical roles in improving human health relative to environmental factors
- Discuss elements of policy making as they influence environmental health issues

- Complete an additional 6 hours from the general major electives list below.

Major electives:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BIO 235 : Field Botany. (3:3:6)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Recognition, characteristics, and uses of common trees and shrubs.

**Course Outcomes**

- Students will demonstrate a fundamental knowledge of biology
- Students will develop the discovery skills and tools used by biologists
- Students will use biological knowledge to enhance their personal lives
- Students will use their skills and knowledge in biology to secure employment or to advance in higher education in biology-related disciplines

BIO 370 : Bioethics. (2:1:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Introductory biology course.

DESCRIPTION: In-depth lecture and small group discussion of varied bioethical issues. LDS Church positions emphasized when appropriate.

**Course Outcomes**

- Students will understand the ethical and philosophical underpinnings of bioethics and to develop ethical intuitions on bioethical issues.

- Students will learn the terminology, vocabulary, and objectives of bioethics.
- Students will understand the tools and approaches needed to make a bioethical decision and to communicate that decision in rationally informed ways.
- Students will understand the bioethical primary literature, to understand how to read case studies, and familiarity with the major issues being discussed in bioethics today.

BIO 420 : Evolutionary Biology. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PWS 340

RECOMMENDED: Concurrent enrollment in Bio 421.

DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**

- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

BIO 421 : Evolutionary Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240

DESCRIPTION: Hands-on applications and analytical tools of evolutionary biology; emphasizing inference methodology and evidence complementing the theoretical constructs introduced in Bio 520, including comparative anatomy, phylogenetic inference, population genetics, species concepts, and human evolution.

NOTE: Concurrent enrollment with Bio 420 is strongly recommended.

**Course Outcomes**

- Students will gain a better understanding of the basic principles of evolution within a population including selection, drift, and founder effects by using computer simulations.
- Students will have a deeper understanding of the LDS position on evolution.
- Students will learn the details of phylogenetic reconstruction, tree searching, DNA sequence alignment, and other bioinformatics tools for deciphering patterns of evolution.
- Students will learn the details of species concepts and the criteria used for identifying and diagnosing species.
- Students will gain hands-on experience with hominid fossils and gain an understanding of the evidence that elucidates the biological history of humans.

BIO 556 : Limnology. (3:2:4)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Bio 350, Chem 106; or equivalents.

DESCRIPTION: Lakes, reservoirs; their biota and physical/chemical properties.

**Course Outcomes**

- Understand the major physical processes that form and characterize lentic habitats.
- Understand the dominant chemical processes that occur in lake systems.
- Understand how organisms adapt to the above physical and chemical constraints.
- Gain teaching experience through preparing a Powerpoint presenting your study presentation to the class.
- Experience pursuing a focused research topic from the initial question to a competed report.

BIO 557 : Stream and Wetland Ecology. (4:3:4)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Bio 350, Chem 106; or equivalent.

DESCRIPTION: Stream and wetland ecology; their biota and their physical/chemical properties.

**Course Outcomes**

- Develop an understanding of streams and wetlands within the broader context of ecology and conservation.
- Become familiar with the major conservation issue in streams and wetlands and the underlying ecological concepts.
- Initial exposure to the current literature.
- Develop skills related to critical thinking. That is, learn how to: a) read critically and summarize information, b) draw conclusions and synthesize information to develop new questions and hypotheses, and c) design experiments or comparative studies. It is important to start early to learn how to think, read, and write critically.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and

management of marketing mix.

**Course Outcomes**

There are no course outcomes available

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**

There are no course outcomes available

BUS M 489 : Agribusiness Management 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ACC 200 & BUS M 201 & ECON 110; or ACC 200 & FIN 201 & ECON 110

DESCRIPTION: Developing and implementing marketing plans and programs for companies participating in the value chain of agribusiness industries.

**Course Outcomes**

There are no course outcomes available

CHEM 223 : Quantitative and Qualitative Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 107; or CHEM 113

DESCRIPTION: Principles of chemical equilibrium, quantitative chemical measurements, and qualitative detection of selected chemical species.

NOTE: Primarily for majors in molecular biology and the life sciences.

**Course Outcomes**

- Course Objectives: The course is designed to develop research skills. The labwork will have a somewhat bioanalytical focus, e.g. the chemical analysis of biological molecules or biologically related ions and the use of biomolecules in assays. We will work to develop good laboratory practice, both conceptually and practically, and consider how to do good science. The combined lecture/lab approach will be used to help you understand quantitative approaches to analysis, sources of error, and the utility but also limitations of laboratory measurements. You will be asked to apply a portion of this knowledge to your own laboratory determinations. We will also discuss more advanced analytical methods involving chemical separations and instrumental analyses. This course fills one of the requirements for a minor in chemistry.

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent.

DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.

Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.

NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Acc 200.

DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

GEOG 101 : Global Environment: Understanding Physical Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Physical environment, distribution and interrelationships of climates, landforms, ecosystems and their human significance.

**Course Outcomes**

There are no course outcomes available

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

GEOG 303 : Biogeography. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 101.

DESCRIPTION: Broad-scale distribution of plants and animals. Theoretical and practical applications to conservation and effects of global environmental change.

**Course Outcomes**

- Demonstrate an understanding of basic concepts and processes in biogeography
- Recognize and be able to explain patterns of plant and animal life at many different scales
- Explain how humans have affected the distribution and diversity of plants and animals, and apply concepts to decisions regarding human use of the environment
- Demonstrate a knowledge of prominent professional biogeographers and ecologists and their current research themes
- Plan for future changes in species distributions and diversity as a result of environmental and human-induced pressures

GEOG 306 : Public Land Conservation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Environmental and social geography of public lands; analyzing historical, planning, management, and ecological issues.

**Course Outcomes**

There are no course outcomes available

GEOG 310 : Introduction to Urban and Regional Planning. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to the profession and practice of urban and regional planning.

**Course Outcomes**

There are no course outcomes available

GEOL 101 : Introduction to Geology. (3:2:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Cultural focus on physical and environmental geology for nonscience majors; rocks and minerals. Field trips.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- 1. Understand the difference between minerals and rocks.2. Be able to identify common rocks and minerals.3. Know where and when the basic rock and mineral types form and how they are related to the hydrologic and tectonic systems.
- 1. Understand how the hydrologic system helps to shape the Earth and how the different sub-systems interact.2. Learn the reasons for climate change in both ancient and modern times.
- 1. Learn the basic evidences and ideas that support the Theory of Plate Tectonics.2. Understand

how the plate tectonic system works, including the role of the different types of plate boundaries and the forces that help to drive the system.3. Learn how the plate tectonic system has helped to shape the Earth's surface.
- 1. Gain a greater insight into the enormous length of geologic time and the evidences that support this claim.2. Learn the different ways that scientists can determine geologic ages.
- Learn how and why the other planets and moons in our solar system are different from Earth.

GEOL 111 : Physical Geology. (4:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Materials, structure, and surface features of the earth and the geologic processes involved in their development. Field trips and lab studies, use of aerial photos.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.
- Learn some fundamental skills in preparation to conduct research and ultimately write research papers in other classes, including:1. Using online databases (GEOREF, Web of Science) to obtain information on a particular topic.2. Using online resources (Refworks) to manage and format references.3. Reading articles in the primary geologic literature and drawing out primary information such as the topic of and article and its conclusions even if the student is not prepared (at this stage) to understand the methodology employed.4. Appreciate the need to properly format cited literature in a research paper.5. Learn the content and proper voice for the abstract of a research paper.
- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin, distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the role of human activity in climate change.
- 1. Learn or review the large scale features of the Earth's interior and exterior, including the basic features of the tectonic and hydrological systems.2. Appreciate the role of heat transfer, and in particular convection, in making both the hydrosphere and tectonosphere dynamic.

GEOL 435 : Introduction to Groundwater. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330; Math 110 or equivalent.

DESCRIPTION: Introduction to the occurrence, movement, and properties of subsurface water; surface and groundwater relationships.

**Course Outcomes**

- Demonstrate knowledge of the hydrologic cycle by creating a basin-scale water budget.
- Evaluate the relationship between grain size, sorting, and hydraulic conductivity using Darcy's Law.
- Produce a potentiometric surface map and water table map for a well field.
- Evaluate the relationship between mechanical energy, hydraulic head, and force potential.
- Construct a flow net to describe groundwater flow.
- Evaluate different aquifer test methods for calculating aquifer parameters.
- Evaluate different methods for estimating groundwater recharge rates.
- Describe groundwater flow paths for confined and unconfined aquifers.
- Produce a consulting-type report that synthesizes the groundwater resources, flow paths, and aquifer characteristics of a basin.

HLTH 322 : Environmental Health. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: HIth 100.

DESCRIPTION: Environmental factors as determinants of human health: ecosystem and population dynamics; biological, chemical, and physical hazards; risk assessment; economic, political, cultural, and genetic factors.

**Course Outcomes**

- Provide a global perspective of environmental issues impacting human health
- Describe the various biological, chemical and physical hazards of the ambient, indoor, and work environment that can adversely affect human health
- Discuss those determinents and factors that affect human health and the health of the environment
- Describe how environmental management practices may contribute to or help control emerging diseases
- Provide an assessment of those national and international health agencies, programs, and other resources that play critical roles in improving human health relative to environmental factors
- Discuss elements of policy making as they influence environmental health issues

MATH 302 : Mathematics for Engineering 1. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Math 113.
DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

MATH 303 : Mathematics for Engineering 2. (4:4:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MATH 302
DESCRIPTION: ODEs, Laplace transforms, Fourier series, PDEs.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For a more detailed course description, visit Math 303 Wiki.

MMBIO 221 : General Microbiology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Any biology course.
RECOMMENDED: Any chemistry course.
DESCRIPTION: Microbial world, emphasizing communicable diseases, their causes and control.
NOTE: Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses.

**Course Outcomes**

- Explain and discuss the ways by which microbiologists study microorganisms.
- Discuss the principle infectious diseases that affect mankind, including how they are transmitted, treated, controlled and prevented.
- Differentiate between the types of microorganisms by identifying relevant structure and their function in the biosphere.
- Propose microbial solutions to global problems.
- Describe how the human body defends itself against infectious agents.

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105
DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.
NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

MMBIO 241 : Molecular and Cellular Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBio 240 or concurrent enrollment.
DESCRIPTION: Molecular and cellular biology techniques laboratory.

**Course Outcomes**

- Practice ethics and integrity by working with groups and following lab rules.*Relates to Program Learning Outcome: A commitment to professional integrity and ethical behavior consistent with themission of the university.
- Learn the basics of experimental design, how to formulate a hypothesis, what controls to use, how to interpret experimental data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Practice scientific communication through written lab questions, exams and oral presentations.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Learn molecular biology laboratory techniques through practical laboratory exercises. Techniques include, spectrophotometry,isolation of DNA and protein, quantification of DNA and protein, techniques used to purify or detect specific proteins, such aschromatography, western blot and ELISA, DNA fingerprinting, polymerase chain reaction and enzyme assays.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology.

MMBIO 261 : Infection and Immunity. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Principles of infectious organisms (principally bacteria and viruses), the diseases they cause, and the

role of host immune responses in health and disease.

**Course Outcomes**

There are no course outcomes available

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220

DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.

NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

PDBIO 363 : Advanced Physiology Laboratory. (1:.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBio 362 or concurrent enrollment; or instructor's consent.

DESCRIPTION: Experiments and exercises in advanced physiology emphasizing human physiology. Computer simulations of muscle function, endocrine disease, and human physiology. Emphasizes problem solving and calculations.

**Course Outcomes**

- Students will demonstrate the skills required to properly interpret data from scientific experimentation to discover how physiological systems function.
- Students will manifest an understanding of basic physiological principles by modeling how human cells, organs, and organ systems function.
- Students will describe how interactions between human organ systems work to maintain homeostasis.

PDBIO 365 : Pathophysiology. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 305; or PDBIO 362

DESCRIPTION: Variations in physiological mechanisms that account for development of common disturbances in normal control and activities of body's organs and organ systems.

**Course Outcomes**

- Students will exhibit an integrative understanding of the biochemistry, molecular biology, genetics, cell biology, microbiology, environmental biology, and physiology related to the prevention, development, and treatment of common diseases.
- Students will demonstrate through case study analysis a command of problem solving skills related to the diagnosis and treatment of pathophysiological conditions.
- Pupils will manifest a command of the physiology and pathophysiological vocabulary necessary to effectively communicate with other biomedical professionals and the general public.
- Students will be able to articulate the ethical issues related to the treatment and prevention of pathophysiological conditions.
- Students will manifest an increase in their respect for the human body and adopt a life style consistent with this respect.

PHIL 205 : Introduction to Formal Logic. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: History and use of syllogistic and propositional logic; evaluating arguments with Venn diagrams, truth tables, and Copi-style proofs and proof strategies; informal reasoning and fallacies.

**Course Outcomes**

- Know the basic vocabulary and concepts of formal and informal logic.
- Learn how to appraise validity by refuting invalid arguments and by constructing formal proofs for valid ones.
- Learn how to translate ordinary language into logical symbolism.

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 105 or equivalent.

RECOMMENDED: Concurrent enrollment in Phscs 108.

DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 105 or concurrent enrollment.

DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 106 or concurrent enrollment

DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PWS 100 : Living with Plants. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to principles of plant function and diversity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a fundamental knowledge of basic principles and concepts of plant biology (i.e., structure, function, and diversity)
- Cultivate an appreciation for the central importance of plants in the way our world and human society functions
- Provide a conceptual framework of how plants influence the environment
- Practice using the scientific method to better understand plant-environment interactions
- Improve verbal and written communication

PWS 215 : Principles of Range Management. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Overview of rangeland resources and management principles, including rangeland classification, multiple use management, natural resource policy, and grazing management.

**Course Outcomes**

- Describe rangeland physical characteristics, types, physiology, and ecology
- To understand the principles of stewardship and how they apply to Rangelands
- To understand the importance of rangeland grazing, how it is managed, and nutrient needs of livestock and wildlife
- Describe multiple use management and its implications to wildlife and livestock
- To improve reading and writing skills relating to scientific research

PWS 225 : Principles of Wildlife and Fisheries Management. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: PWS 115.

DESCRIPTION: Basic principles of fish and wildlife management, their habitats, and their human users. Ecological concepts, population dynamics, nutrition, behavior, population assessment, management strategies, habitat sampling and management.

**Course Outcomes**

- Learning Outcome #1: Identify and articulate stewardship for the creation as a basis for professional judgment.This course not only provides an understanding of tools used by wildlife and fisheries managers to restore, revive, and maintain wildlife and fish populations, but also discusses our stewardship roles and responsibilities for those aspects of the creation.
- Learning Outcome #2: Identify wildland plants, soils, and wildlife species and understand how they function in the environment.This course introduces students to a number of wildlife and fish species, and basic ecological concepts as they relate to wildlife and fisheries. Students will understand the ecological roles, habitat needs, and interactions of fish and wildlife at various levels in an ecosystem
- Learning Outcome #3: Apply an understanding of ecological processes to wildlife management.This course includes an extensive overview of basic ecological processes and how to use them for fish and wildlife management.
- Learning Outcome #4: Demonstrate the ability to apply the scientific method and analytical thinking to ecological and management issues.In this course students will be rigorously taught the scientific method and given opportunities to demonstrate the understanding through fish and wildlife management problem solving. They will have writing assignments that provide opportunities for the synthesis and expression of the depth of their understanding. The term paper required in this course may be used for one of the “three written papers relating to stewardship ethics and management situations” that will be placed in the student’s portfolio required for graduation with a Wildlife and Wildlands Conservation BS degree.

PWS 275 : Genetics and Reproduction. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Any general biology course.

DESCRIPTION: Principles of inheritance.

**Course Outcomes**

- Identify and articulate principles of stewardship as a basis for professional judgment.
- Apply knowledge of genetics to conservation and management of natural populations.
- Provide a foundation in the basic and applied principles of genetics for natural resource management andconservation.

PWS 303 : Soils Conservation and Resources. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 282 & CHEM 105; or PWS 282 & CHEM 101; PWS 100 or equivalent; Math 110 or equivalent.

RECOMMENDED: Geol 111.

DESCRIPTION: Taxonomy of world soils; conservation and management of agricultural, wildland, wetland, and urban soils.

**Course Outcomes**

- Understand soil physics, chemistry, taxonomy, and water movement to maintain natural resources.
- Apply soil conservation practices and principles to regions sensitive to soil degradation.
- Understand the history, development, and terminology associated with USDA Soil Taxonomy and be familiar with other soil taxonomic systems. Recognize soil orders and suborders from the physical and chemical characteristics of the soil

PWS 325 : Fisheries and Wetlands Management. (3:2:3)

WHEN TAUGHT: Fall

RECOMMENDED: PWS 225 or equivalent.

DESCRIPTION: Principles of fisheries and wetlands mangement, emphasizing managing fish populations and their diverse micro- and macro-habitats within the context of community and ecosystem dynamics. Case studies and models used to evaluate growth, recruitments, and mortality in age-structured populations in relationship to the dynamics of watershed and wetland landscapes.

**Course Outcomes**

- Understand ecological aspects of fisheries and wetland systems.
- Learn important aspects of fisheries and wetland management.
- Integrate concepts taught in class to other ecological systems.

PWS 330 : Rangeland Plant Identification and Ecology. (3:2:3)

WHEN TAUGHT: Winter

DESCRIPTION: Identification, characteristics, phenology, distribution, site adaptation, forage value, and response to management of significant range and pasture plants.

**Course Outcomes**

- Students will be able to sight identify many common range plants of North America
- Students will be able to use a grass key to identify unknown grasses
- Students will be able to pair symptoms of sick animals with poisonous plants that may have been consumed

PWS 331 : Science of Plant Pest Control. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Management of plant health problems, namely weed, insect, and disease, through integrated pest management and proper pesticide management and safety.

**Course Outcomes**

- Enhance critical thinking skills.
- Develop a framework for decision-making and implementation in applied pest management and ecology.
- Recommend control options for plant pest management.
- Safely and accurately apply plant pesticides in urban and agricultural environments.
- Identify various plant pest control measures.
- Improve communication and interpersonal skills.

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to

complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

PWS 344 : Natural History of Wildlife. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: PWS 225 or equivalent.

DESCRIPTION: Wildlife species and their habitats, including ecology, life histories, adaptations, behavior, genetics and population viability variables, and the ethics of global stewardship. Field trips required.

**Course Outcomes**

- In this course, students will be rigorously taught the scientific method and given opportunities to demonstrate the understanding through wildlife ecology problem solving. They will have writing assignments that provide opportunities for the synthesis and expression of the depth of their understanding.
- This course introduces students to a number of wildlife and fish species, and basic ecological concepts as they relate to wildlife and fisheries. Students will understand the biology, ecological roles, habitat needs, ecological adaptations, and interactions of fish and wildlife at various levels in an ecosystem.
- Be able to define “natural history” and be able to describe basic concepts and principles that comprise the natural history of an organism
- Gain an appreciation for the diversity of lifestyles among vertebrates
- Develop critical reading and thinking skills
- Improve oral and written communication skills

PWS 355 : Rangeland Vegetation Measurements and Analysis. (3:2:3)

WHEN TAUGHT: Fall

DESCRIPTION: Field methodologies for vegetation inventories and analysis (density, biomass, cover, frequency, utilization, etc.) in wildland settings.

**Course Outcomes**

- Students will be able to demonstrate, through lab exercises and write-ups, an understanding of ecological processes that drive secondary succession in wildland ecosystems which in turn impact management decisions.
- Students will be able to apply vegetation data collection techniques to quantify vegetation and make interpretations used in resource management decisions.

PWS 402 : Soils and Water in the Urban Environment. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 100 & PWS 282 & PWS 283

DESCRIPTION: Principles of water management, soil physics, and soil fertility used in a problem-solving environment addressing current challenges in managing soils and water in the urban landscape.

**Course Outcomes**

There are no course outcomes available

PWS 405 : Environmental Chemistry Lab 1. (1:0:2)

WHEN TAUGHT: Fall

PREREQUISITE: Chem 105, 106, 107; or equivalent.

RECOMMENDED: Chem 223; PWS 283, 306.

DESCRIPTION: Soil, water, biosolid, and biotic tissue sample preparation and analysis using chromatography, combustion, and spectroscopy.

**Course Outcomes**

There are no course outcomes available

PWS 406 : Environmental Chemistry Lab 2. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 105, 106, 107; or equivalent.

RECOMMENDED: Chem 223; PWS 283, 306.

DESCRIPTION: Soil, water, biosolid, and biotic tissue sample preparation and analysis using ICP-AES and AAS instrumentation.

**Course Outcomes**

There are no course outcomes available

PWS 411 : Watershed Management. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: BIO 350; or PWS 350

DESCRIPTION: Processes and management of the hydrologic cycle of forests and rangelands.

**Course Outcomes**

- Students will understand the history and policy that drives water management in the western US.
- Students will understand ecological and hydrological processes and concepts and apply them to watershed management actions such as harvesting, grazing, and restoration.
- Students will be able to apply assessment and classification tools to watersheds and their components to determine how management actions affect hydrologic responses.

PWS 416 : Rangeland Vegetation Improvement. (3:2:3)

WHEN TAUGHT: Fall

RECOMMENDED: PWS 330, 350.

DESCRIPTION: Habitat improvement for domestic and wild animals. Plant control by mechanical equipment, herbicides, and prescribed fire. Restoration of disturbed lands.

NOTE: Field trips required.

**Course Outcomes**

- Apply the historical and successional history of land to current rangeland vegetation conditions and treatments
- Describe and plan biological, chemical, mechanical methods, and fire to achieve land management goals.
- Assess site potential and fuels relative to potential vegetation changes with and without management.
- Apply and plan revegetation, fire rehabilitation, and restoration practices to rangelands.
- Integrate plant control, revegetation and other restoration practices to meet land management goals
- Become familiar with approaches, practices, and outcomes of rangeland vegetation improvements in actual field situations.

PWS 417 : Rangeland Planning and GIS. (3:2:3)

WHEN TAUGHT: Winter

RECOMMENDED: PWS 215, 225, 350.

DESCRIPTION: Development of a multiple-use natural resource plan for watershed forestry, recreation, wildlife, and livestock. Policies that govern planning and conflict resolution.

**Course Outcomes**

- Identify and articulate stewardship for the creation as a basis for professional judgment.
- Apply an understanding of ecological processes to wildland management
- Demonstrate ability to apply the scientific method and analytical thinking to ecological and management issues.

PWS 419 : Forest Management and Ecology. (3:2:3)

WHEN TAUGHT: Fall

DESCRIPTION: Managing forests, emphasizing ecosystem managment.

NOTE: Field trips required.

**Course Outcomes**

- 1. Articulate their role as stewards over forested environments.
- 2. Appreciate the diversity of forests world-wide and their importance to human populations.
- 3. Apply knowledge of forest structure, function, and process in making management decisions
- 4. Be able to quantify forest structure and production
- 5. Recognize forest pests and diseases and know appropriate control techniques.
- 6. Relate forests to wildlife habitat
- 7. Identify 75 tree species located in Utah and on BYU campus.

PWS 431 : Plant Health Diagnostics. (3:2:3)

WHEN TAUGHT: Fall

DESCRIPTION: Diagnosing plant health problems; pest biology and identification (weed, insect, and disease).

**Course Outcomes**

There are no course outcomes available

PWS 440 : Plant Physiology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GE Biological Science requirement; college chemistry

RECOMMENDED: Chem 285; or 351, 352.

DESCRIPTION: Photosynthesis, respiration, water relations, mineral nutrition, growth of flowering plants.

**Course Outcomes**

- Students will be fluent in understanding plant function at the molecular, biochemical and whole plant levels
- Students will understand the connections between plant function and ecosystem processes
- Student will practice applying the scientific method in order to develop critical thinking and problem solving skills
- Student will engage in learning activities that increase there writing and speaking proficiency

PWS 511 : Environmental Biophysics: Soil and Plant Water Relations. (4:3:2)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Phscs 105 and PWS 282; or equivalents.

DESCRIPTION: Integrating biological, physical, and chemical processes of water and solute movements through the soil-plant-atmosphere continuum.

**Course Outcomes**

- Students will take a pre- and post-semester exam and at least double their score to assess understanding of the importance of physics in biological systems.

PWS 514 : Soil Microbiology. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Chem 105 and 106; or equivalents.

DESCRIPTION: Ecology and role of soil microorganisms in biogeochemical cycles, decomposition of organic matter and waste materials, and bioremediation of contaminated soils and water.

**Course Outcomes**

- Ecology and role of soil microorganisms in nutrient cycling, decomposition of organic matter and waste materials, and degradation of agricultural chemicals in soils

PWS 540 : Plant Response to the Environment. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: PWS 440 or equivalent; PWS 494R or concurrent enrollment.

DESCRIPTION: Advanced plant physiological ecology principles.

**Course Outcomes**

- Students will learn to apply the scientific method in order to become more proficient and independent learners
- Students will be able to conceptualize the physiological mechanisms by which plants sense and respond to their environment and how that impacts ecological systems.
- Students will participate in learning exercises that teaches them how to gather, interpret and communicate scientific information.
- Students will be exposed to the instrumentation and techniques commonly used to gather data in the field of plant physiological ecology.

PWS 551 : Quantitative Ecology. (3:2:3)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Bio 350 or equivalent; Stat 121 or 511 or concurrent enrollment.

DESCRIPTION: Quantitative methods for ecological sampling and data analysis.

**Course Outcomes**

- Demonstrate application of the scientific and analytical methods in ecological research.
- Learn how and when to use appropriate sampling and a data analysis techniques for ecological inquiry.
- Demonstrate ability to synthesize literature relevant to a research project.
- Demonstrate oral and written scientific communications skills.

PWS 560 : Soil and Plant Analysis. (2:1:3)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Chem 105, 106, 107; or equivalent.

RECOMMENDED: Chem 223 and/or PWS 283, 306, 405, 406

DESCRIPTION: Laboratory chemical analysis of soils and plant materials in soil and plant research.

**Course Outcomes**

There are no course outcomes available

## Federal Register Requirements

The federal register requirements for environmental science ecology or physical science emphasis can be met by choosing appropriate electives. Ecology requires 30 semester hours of basic and applied biology, including at least 9 semester hours of ecology and 12 hours of physical and mathematical sciences. Physical science requires 25 semester hours of physical sciences (chemistry, physics, math, etc.)

*Hours include courses that may fulfill university core requirements.

## Show all Plant and Wildlife Sciences (PWS) Courses

College of Life Sciences Home

Plant and Wildlife Sciences Department Home

Majors

- BS in Environmental Science
- BS in Genetics and Biotechnology
- BS in Landscape Management
- BS in Wildlife and Wildlands Conservation

Minors

- Environmental Science
- Landscape Management

Course Information

- Plant and Wildlife Sciences (PWS) Courses

Faculty

# BS in Genetics and Biotechnology (62 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following core courses:

BIO 165 : Introduction to Bioinformatics. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction to basic concepts in bioinformatics. Standard bioinformatic applications.

**Course Outcomes**

There are no course outcomes available

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific

instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105
DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.
NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481
DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies
- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PWS 188 : Introduction to Genetics and Biotechnology. (2:2:0)

WHEN TAUGHT: Winter
RECOMMENDED: PDBio 120 or concurrent enrollment.
DESCRIPTION: Orientation to the genetics and biotechnology major and introduction to the scientific field, including undergraduate mentored research, internships, extracurricular activities, professional careers, scientific literature, and applications of biotechnology in biomedicine, plant and animal improvement, and environmental remediation. Developing fluency in primary vocabulary of the discipline, familiarization with key technologies, writing reviews of primary literature and portfolio establishment, experiencing basic laboratory protocols.

**Course Outcomes**

- Students can understand and discuss basic concepts underlying genetics, biotechnology, and genomics.
- Students can explain basic operations and applications of existing and emerging technologies for applied genomics.
- Students can readily access primary literature in the discipline and draw upon these sources to compose appropriately formatted literature reviews.
- Students can identify and apply for undergraduate educational research opportunities (BYU mentored research and external internships).
- Students can describe a broad range of careers for geneticists and biotechnologists.

PWS 288 : Mentored Laboratory Techniques. (2:.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: CHEM 105
DESCRIPTION: Mentored, systematic instruction in basic biotechnology techniques and their application in addressing molecular genetic research questions.

**Course Outcomes**

There are no course outcomes available

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481
DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

PWS 468 : (PWS-Bio-MMBio) Genomics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 240 & PWS 340
DESCRIPTION: Current analysis of genes and genomes; computational and statistical approaches for analyzing genomic data, including genome sequencing and annotation, gene expression and the transcriptome, proteomics and functional genomics, and genetic variation and SNPs.

**Course Outcomes**

- Students can describe the technology and process used to sequence genomes (de novo and re-sequencing)
- Students can complete a series of exercises with data representing genomic experiments (analyze and interpret)
- Students can outline techniques and concepts for assessing genomic parameters such as methylation, gene expression, DNA-binding motifs, metagenomics, and comparative genomics.

PWS 488 : Readings in Biotechnology. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: PWS 340 & PDBIO 360
RECOMMENDED: PWS 440 or PDBio 362.
DESCRIPTION: Capstone course for the genetics and biotechnology major focusing on scientific literature relating to the biotechnological improvement of plants, animals, and microbes.
NOTE: Course should be taken the last year before graduation.

**Course Outcomes**

- Students can describe a variety of techniques and experimental approaches used by biotechnologists to improve plants, animals, microbes and human health.
- Students can deliver an oral presentation summarizing a scientific paper related to the field of biotechnology.
- Students can produce a written review synthesizing scientific findings related to recent biotechnological advances.

2. Complete 26 hours from one of the following tracks:

A. Plant Genetics and biotechnology core track:

1. Complete the following:

BIO 220B : Biological Diversity: Plants. (4:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in fungi, algae, and principal groups of land plants. Laboratory included.

**Course Outcomes**

- Students will be able to discuss differences between cyanobacteria, algae, bryophytes, non-seed vascular plants, gymnosperms, flowering plants, and fungi with repsect to their lifecycles, characteristic morphologies, and biological roles.
- Students will develop the skills necessary to understand and critically apply evolutionary logic including the use of phylogeny and tree-thinking to formulate and test hypotheses that explain biological diversity
- Students will be able to continue to explore related topics with confidence and understanding throughout their lives.

BIO 420 : Evolutionary Biology. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PWS 340

RECOMMENDED: Concurrent enrollment in Bio 421.

DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**

- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.

- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

PWS 100 : Living with Plants. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to principles of plant function and diversity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a fundamental knowledge of basic principles and concepts of plant biology (i.e., structure, function, and diversity)
- Cultivate an appreciation for the central importance of plants in the way our world and human society functions
- Provide a conceptual framework of how plants influence the environment
- Practice using the scientific method to better understand plant-environment interactions
- Improve verbal and written communication

PWS 440 : Plant Physiology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GE Biological Science requirement; college chemistry

RECOMMENDED: Chem 285; or 351, 352.

DESCRIPTION: Photosynthesis, respiration, water relations, mineral nutrition, growth of flowering plants.

**Course Outcomes**

- Students will be fluent in understanding plant function at the molecular, biochemical and whole plant levels
- Students will understand the connections between plant function and ecosystem processes
- Student will practice applying the scientific method in order to develop critical thinking and problem solving skills
- Student will engage in learning activities that increase there writing and speaking proficiency

PWS 494R : Mentored Learning Experience. (1-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Topics vary.

NOTE: Registration required for mentored experiences.

**Course Outcomes**

- Design and/or participate in basic experiments attempting to answer questions in biochemistry, biotechnology, genetics, molecular biology, and soil science
- Generate and analyze experimental results for publications or presentations at professional meetings
- Learn how to be an effective and efficient mentor

(2 hours required)

2. Complete an additional 3 hours from the general major electives list below.

B. Animal genetics and biotechnology core track:

1. Complete the following:

BIO 420 : Evolutionary Biology. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PWS 340
RECOMMENDED: Concurrent enrollment in Bio 421.
DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**

- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: CHEM 105; or CHEM 111
DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.
NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: CHEM 351; or CHEM 351M
DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120
DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.
NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing

- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

2. Complete one course from the following:

BIO 463 : Genetics of Human Disease. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 340

DESCRIPTION: Examining the application of genetics to understanding and treatment of human disease. Functional consequences of mutations; use of model organisms; linkage and association analysis of complex traits; pharmacogenetics; ethical considerations.

**Course Outcomes**

- Understand and explain the different types of genetic variants, how they can be typed and how they can be used to understand the genetic architecture of human disease.
- Understand linkage disequilibrium in the human genome and the role it plays in the search for genetic risk factors for human disease
- Understand and use basic statistics and software for analyzing the correlation between genetic markers and risk for disease.
- Understand and explain how model organisms contribute to our understanding of the genetics of human disease.
- Demonstrate the ability to obtain, aggregate and present information about the current knowledge of the genetics of a human disease.

PDBIO 482 : Developmental Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & PDBIO 360

RECOMMENDED: PDBio 325.

DESCRIPTION: Invertebrate and vertebrate developmental biology. Embryonic gastrulation, neurulation, pattering, etc. Modern approaches and research strategies. Emphasizes gene function, cell signaling, signal transduction during embryogenesis.

**Course Outcomes**

- Students will be able to generally describe the early development (from fertilization to axis formation) of one invertebrate and one vertebrate model organism.
- Students will be able to generally describe the concepts of cellular competence, induction, specification, commitment and differentiation in embryonic development.
- Students will be able to give two examples of organogenesis, including genes and signal transduction pathways that lead to organ system formation.
- Students will be able to explain embryonic patterning, using examples that include genes known to act in patterning events.
- Students will be able to explain at least two concepts in developmental biology that overlap with other sciences, such as stem cell research, cancer research, evolutionary sciences, or neuroscience.
- Students will be able to discern and summarize the current state of knowledge on a given topic, construct pioneering research questions on that topic, and propose experiments aimed at answering those questions.

3. Complete one of the following:

BIO 380 : Comparative Animal Physiology and Anatomy. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: Bio 220A or instructor's consent.

DESCRIPTION: Structure and function of animal organ systems; structural and physiological responses to demands of and changes in environment; evolutionary constraints on anatomy and physiology.

**Course Outcomes**

- Students will demonstrate a fundamental knowledge of comparative vertebrate animal physiology and anatomy.
- Students will develop critical thinking skills while learning concepts and understanding the tools used by comparative vertebrate animal physiologists and anatomists to study function and structure.
- Students will use physiological and anatomical knowledge to enhance their personal lives.
- Students will use their skills and knowledge in comparative vertebrate animal physiology and anatomy to secure employment or to advance in higher education in biology-related disciplines.
- Students will develop an understanding of physiologic isotopic techniques utilized to indicate energy sources, trophic levels, body water, and latitudinal and altitudinal animal migration reflected by stable isotopes of carbon, nitrogen, hydrogen and oxygen.

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220

DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.

NOTE: Requires background in chemistry and molecular biology. Students without this

background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

4. Complete two credit hours from one of the following:

BIO 494R : Mentored Research. (1-6:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Supervisor's consent.

DESCRIPTION: Independent student research under faculty supervision.

**Course Outcomes**

- Students will demonstrate an understanding of the methods of scientific inquiry.
- Students will demonstrate an ability to design and implement a research project in a specialized area.
- Students will effectively interpret, analyze, and present results of experimentation to others.
- Students will show an appreciation for and understanding of the specialized field.

: Aquatic Biology.

**Course Outcomes**

: Bioinformatics.

**Course Outcomes**

: Ecology.

**Course Outcomes**

: Electron Microscopy.

**Course Outcomes**

: Entomology.

**Course Outcomes**

: Evolution.

**Course Outcomes**

: Marine Biology.

**Course Outcomes**

: Plant Biology.

**Course Outcomes**

: Systematics.

**Course Outcomes**

: Veterinary Science.

**Course Outcomes**

: Medicinal Botany.

**Course Outcomes**

: Plant Biochemistry.

**Course Outcomes**

: Fungal Biology.

**Course Outcomes**

CHEM 497R : Undergraduate Special Problems. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent and Chem 201 or concurrent enrollment or special safety training.

DESCRIPTION: Undergraduate research experience.

**Course Outcomes**

- The student will participate in mentored research with a specific research group under the tutelage of a faculty member, and generate original scientific results.

MMBIO 494R : Mentored Research. (.5-3:ARR:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Mentor's consent.
DESCRIPTION: Mentored research.

**Course Outcomes**
- Perform current techniques and carry out experiments in a professional manner. Gather data and evaluate results.
- Properly notate work and results in a scientific notebook. Participate in the preparation of scientific papers and presentations.
- Develop, design and troubleshoot experimental procedures.
- Form relationships with a research mentor and other students in the lab. Begin networking and professional activities.
- Read, and use primary literature to design experiements and advance a project. Present and evaluate articles from the primary literature

NDFS 494R : Undergraduate Research in Nutrition, Dietetics, or Food Science. (1-3:0:9)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.
DESCRIPTION: Mentored research experience.

**Course Outcomes**
- Students will develop skillsets in data collection, data entry, and/or data analysis methods.
- Students will develop an increased understanding of the most up-to-date findings in the areas we are researching in the lab.
- To coordinate our research efforts in the lab
- Students will gain experience presenting research to the group and will increase their critical thinking skills discussing original research articles.

PDBIO 494R : Undergraduate Research in Physiology and Developmental Biology. (1-4:ARR:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic (entry level) research laboratory experience for students interested in physiology and developmental biology.

**Course Outcomes**
- Students will demonstrate the ability to properly perform basic laboratory-specific techniques.
- Students will complete laboratory-specific safety training.

PWS 494R : Mentored Learning Experience. (1-6:ARR:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Topics vary.
NOTE: Registration required for mentored experiences.

**Course Outcomes**
- Design and/or participate in basic experiments attempting to answer questions in biochemistry, biotechnology, genetics, molecular biology, and soil science
- Generate and analyze experimental results for publications or presentations at professional meetings
- Learn how to be an effective and efficient mentor

5. Complete an additional 6–7 hours from the general major electives list below.

C. Microbial genetics and biotechnology core track:
1. Complete the following:

BIO 420 : Evolutionary Biology. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240 & PWS 340
RECOMMENDED: Concurrent enrollment in Bio 421.
DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**
- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

MMBIO 151 : Introduction to Microbiology. (4:3:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Chem 105 or concurrent enrollment.

DESCRIPTION: Principles of prokaryotic biology emphasizing cell structure, function, and metabolism. Introduction to bacterial genetics, microbial diversity, and microbial ecology.

**Course Outcomes**

- Understand what microbes are, what they are composed of, how they are built, and their phylogenetic relationships to the living world. Be able to distinguish between eukaryotes, prokaryotes, and viruses.*Relates to Program Learning Outcome: "Exhibit mastery of four

of the following six principal areas of the discipline" five of which are microbial physiology, microbial genetics, microbial ecology, medical microbiology, and virology
- Become familiar with the tools of microbiology through both lecture and labs and demonstrate basic aseptic technique. Develop proficiency in working with bacteria including streaking for isolation and performing growth experiments.*Relates to Program Learning Outcome: "Exhibit mastery of four of the following six principal areas of the discipline" three of which are microbial physiology, microbial genetics, microbial ecology
- Formulate questions, testable hypotheses and implement appropriate experimental protocol. Collect and analyze data and be able to draw appropriate conclusions.*Relates to Program Learning Outcome: “Devise experiments with appropriate hypotheses and controls.”
- Integrate knowledge to make informed judgments on tests, lab reports, lab presentations and lab write-ups*Relates to Program Learning Outcome: "Communicate scientific information using both oral and written methods"
- Obtain a deeper appreciation for the complexity, diversity and purposes of life.*Relates to Program Learning Outcome: "Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological principles"

MMBIO 360 : Microbial Genetics. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBIO 240

DESCRIPTION: How DNA governs complex bacterial functions. Classical and modern approaches to gene discovery, including genetic screens, gene mapping, targeted genetic manipulations, and analyzing gene activity.

**Course Outcomes**

There are no course outcomes available

MMBIO 461 : Advanced Bacterial Physiology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481 & MMBIO 151

DESCRIPTION: Principles of prokaryotic physiology, including cell structure and function, gene regulation, and biochemical processes; focusing on the unique aspects of prokaryotic biology.

**Course Outcomes**

- Students will demonstrate an advanced understanding of selected topics in microbial physiology (cell structure, growth, biosynthesis, transport, etc.) through their participation in classroom discussions, writing assignments and oral presentations.
- Students will demonstrate the ability to read, comprehend and communicate current research in microbial physiology by making Powerpoint presentations to the class.
- Students will write a scientific review article on a topic of their choice related to microbial physiology.

2. Complete two credit hours from one of the following:

MMBIO 494R : Mentored Research. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Mentor's consent.

DESCRIPTION: Mentored research.

**Course Outcomes**

- Perform current techniques and carry out experiments in a professional manner. Gather data and evaluate results.
- Properly notate work and results in a scientific notebook. Participate in the preparation of scientific papers and presentations.
- Develop, design and troubleshoot experimental procedures.
- Form relationships with a research mentor and other students in the lab. Begin networking and professional activities.
- Read, and use primary literature to design experiements and advance a project. Present and evaluate articles from the primary literature

PWS 494R : Mentored Learning Experience. (1-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Topics vary.

NOTE: Registration required for mentored experiences.

**Course Outcomes**

- Design and/or participate in basic experiments attempting to answer questions in biochemistry, biotechnology, genetics, molecular biology, and soil science
- Generate and analyze experimental results for publications or presentations at professional meetings
- Learn how to be an effective and efficient mentor

3. Complete an additional 2 hours from the general major electives list below.

D. Bio-business core track:

1. Complete the following:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 201 : Financial Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Acc 200 or equivalent.

DESCRIPTION: Financial statement analysis, financial planning, sources of financing, working capital management, risk and return, and valuation.

**Course Outcomes**

There are no course outcomes available

BUS M 488 : Agribusiness Management 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ACC 200 & BUS M 201 & ECON 110; or ACC 200 & FIN 201 & ECON 110

DESCRIPTION: Concepts, tools, and approaches to understanding competitive forces and the development of sustainable competitive advantage for firms in the food, fiber, and horticulture industries.

**Course Outcomes**

There are no course outcomes available

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent.

DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

ORG B 320 : Organizational Effectiveness. (3:Arr:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

NOTE: Taught online.

**Course Outcomes**

There are no course outcomes available

2. Complete one of the following:

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

BUS M 489 : Agribusiness Management 2. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ACC 200 & BUS M 201 & ECON 110; or ACC 200 & FIN 201 & ECON 110
DESCRIPTION: Developing and implementing marketing plans and programs for companies participating in the value chain of agribusiness industries.

**Course Outcomes**

There are no course outcomes available

3. Complete one of the following:

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**

There are no course outcomes available

BUS M 380 : Executive Lectures. (1:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Lectures by top executives on subjects significant to executive leadership.

**Course Outcomes**

There are no course outcomes available

4. Complete an additional 6 hours from the general major electives list below.

General Major Electives:

BIO 220A : Biological Diversity: Animals. (4:3:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: PDBIO 120; or BIO 130
DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in invertebrates and vertebrates. Laboratory included.

**Course Outcomes**

- Students will be able to discuss the broad patterns of the evolution of the clade Animalia, emphasizing the relationships among major sub-clades (phyla), the unique biological attributes that define these clades, and the novel changes in morphology over major transitions (unicellular to multicellular; acoelomate to pseudocoelomate to coelomate body plans, bilaterial vs radial symmetry, origins of exoskeletons, gill slits, notochord, crania & vertebral columns, etc.).
- Students will develop the skills necessary to understand the terminology of phylogenetic systematics and methods used to recover the “tree of life”, the logic behind the hierarchy (i.e., the only possible outcome of the process of “descent with modification”), and critically apply evolutionary reasoning, including the use of phylogeny and tree-thinking, to formulate and test hypotheses that explain biological diversity.
- Students will have the intellectual tools to continue to explore related topics with confidence and understanding throughout their lives, and a deeper appreciation for the diversity of life on earth.

BIO 220B : Biological Diversity: Plants. (4:3:3)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: PDBIO 120; or BIO 130
DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in fungi, algae, and principal groups of land plants. Laboratory included.

**Course Outcomes**

- Students will be able to discuss differences between cyanobacteria, algae, bryophytes, non-seed vascular plants, gymnosperms, flowering plants, and fungi with repsect to their lifecycles, characteristic morphologies, and biological roles.
- Students will develop the skills necessary to understand and critically apply evolutionary logic including the use of phylogeny and tree-thinking to formulate and test hypotheses that explain biological diversity
- Students will be able to continue to explore related topics with confidence and understanding throughout their lives.

BIO 350 : Ecology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth.

**Course Outcomes**

- Understand the major physical processes that form and characterize the biosphere, including global scale energy flow, the carbon cycle, climate, and soil formation.
- Understand the processes that drive major levels of organization of the biotic world, including energetics in the ecosystem, population dynamics, and species interactions.
- Understand the importance of writing as a way of synthesizing and solidifying critical thought.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Understand the importance of ecology to issues regarding human well-being
- See the connectivity and relevance of ecology to other fields of study

BIO 365 : Computational Biology. (3:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: C S 240

DESCRIPTION: Computational analysis of DNA data; introduction to bioinformatics databasing using Perl and SQL; configuration of UNIX workstations for bioinformatics analyses.

**Course Outcomes**

- To provide practical experience in using computational approaches to address biological problems.
- Describe general areas of computational problems in biology (alignment, estimation, tree searches, molecular modeling, gene prediction) and learn about existing computational approaches to these general problems.
- Learn basic computational tools for statistical inference (Bayesian, Maximum likelihood, Markov Chain Monte Carlo, Hidden Markov Chain)
- Apply programming skills to alignment problems through the development of novel tools and software for alignment
- Apply programming skills to tree searching problems through the development of novel tools software
- Apply programming tools to gene prediction problems through the development of novel tools and software
- Develop ability to use existing and write new database code to access and manipulate genetic data

BIO 370 : Bioethics. (2:1:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Introductory biology course.

DESCRIPTION: In-depth lecture and small group discussion of varied bioethical issues. LDS Church positions emphasized when appropriate.

**Course Outcomes**

- Students will understand the ethical and philosophical underpinnings of bioethics and to develop ethical intuitions on bioethical issues.
- Students will learn the terminology, vocabulary, and objectives of bioethics.
- Students will understand the tools and approaches needed to make a bioethical decision and to communicate that decision in rationally informed ways.
- Students will understand the bioethical primary literature, to understand how to read case studies, and familiarity with the major issues being discussed in bioethics today.

BIO 420 : Evolutionary Biology. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PWS 340

RECOMMENDED: Concurrent enrollment in Bio 421.

DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**

- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

BIO 421 : Evolutionary Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240

DESCRIPTION: Hands-on applications and analytical tools of evolutionary biology; emphasizing inference methodology and evidence complementing the theoretical constructs introduced in Bio 520, including comparative anatomy, phylogenetic inference, population genetics, species concepts, and human evolution.

NOTE: Concurrent enrollment with Bio 420 is strongly recommended.

**Course Outcomes**

- Students will gain a better understanding of the basic principles of evolution within a population including selection, drift, and founder effects by using computer simulations.
- Students will have a deeper understanding of the LDS position on evolution.
- Students will learn the details of phylogenetic reconstruction, tree searching, DNA sequence alignment, and

other bioinformatics tools for deciphering patterns of evolution.
- Students will learn the details of species concepts and the criteria used for identifying and diagnosing species.
- Students will gain hands-on experience with hominid fossils and gain an understanding of the evidence that elucidates the biological history of humans.

BIO 430 : Plant Classification and Identification. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: Bio 100 or Bio 130 or PDBio 120 or PWS 100 or instructor's consent.

DESCRIPTION: Principles of plant systematics, taxonomy, and classification, emphasizing family recognition by sight, terminology, and use of identification keys to the temperate flora.

**Course Outcomes**

- Students will apply correct vocabulary for describing plant parts and be able to deduce the meaning of new terms based on knowledge of common roots, prefixes, and suffixes.
- Students will recognize the major groups of vascular plants, be able to differentiate them by their principal characters, and understand their phylogenetic relationships.
- Students will identify by sight 40 families of flower plants as well as common families of ferns and gymnosperms, by recognizing differentiating features of each family.
- Students will gain proficiency in the use of keys and identification manuals for identifying any unknown plant to species.

BIO 450 : Conservation Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A & BIO 350; or BIO 220B & BIO 350

DESCRIPTION: Scientific principles of conservation: applying population genetics, and phylogenetic and ecological theory to preservation of biological diversity; developing sustainable ecological systems compatible with human resource use.

**Course Outcomes**

- Apply an understanding of ecological processes to conservation of populations, species, and ecosystems.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Demonstrate the ability to apply the scientific method and analytical thinking to ecological and conservation issues.
- Demonstrate the ability to synthesize literature relevant to a topic in conservation bioloigy
- Demonstrate the ability to write a scientific term paper

BIO 463 : Genetics of Human Disease. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 340

DESCRIPTION: Examining the application of genetics to understanding and treatment of human disease. Functional consequences of mutations; use of model organisms; linkage and association analysis of complex traits; pharmacogenetics; ethical considerations.

**Course Outcomes**

- Understand and explain the different types of genetic variants, how they can be typed and how they can be used to understand the genetic architecture of human disease.
- Understand linkage disequilibrium in the human genome and the role it plays in the search for genetic risk factors for human disease
- Understand and use basic statistics and software for analyzing the correlation between genetic markers and risk for disease.
- Understand and explain how model organisms contribute to our understanding of the genetics of human disease.
- Demonstrate the ability to obtain, aggregate and present information about the current knowledge of the genetics of a human disease.

BIO 465 : Bioinformatics and Proteomics. (3:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: BIO 365

DESCRIPTION: 3-D protein structural comparisons, hidden Markov models for database comparisons, homology detection, multiple sequence analyses, and protein family comparisons. Exercises in computer programming in genomics.

**Course Outcomes**

- Students will learn and demonstrate mastery of advanced analytical bioinformatics techniques, including genome assembly, genome annotation, and protein analyses.
- Demonstrate ability to use and evaluate literature databases and primary literature directed to the bioinformatics community in terms of newly developed software, analytical algorithms, application to empirical data, etc.
- Apply and develop computational skills in secondary (i.e., helices, etc.) and tertiary (i.e., folding, etc.) prediction, and 3-dimensional (i.e., x-ray crystal structures, etc.) modeling of protein structures.
- Apply evolutionary concepts to modeling DNA/proteins to evaluate and/or predict function, utilizing 3D structures, physical and chemical amino acid properties, etc.
- Apply existing and develop new tools for genome assembly and annotation from next-generation DNA sequencing projects

BIO 560 : Population Genetics. (4:4:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: Bio 420 or equivalent.

DESCRIPTION: Basic principles of population genetics applied to natural populations; drift, selection, and nonrandom mating; inferring population subdivision, migration, and gene flow.

**Course Outcomes**

- Students will gain a general introduction to the field a population genetics.
- Students will experience the broad application of population genetics to diverse fields from ecology to medicine.
- Students will manipulate and analyze population genetic data, especially molecular data.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.

NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

MMBIO 221 : General Microbiology. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Any biology course.

RECOMMENDED: Any chemistry course.

DESCRIPTION: Microbial world, emphasizing communicable diseases, their causes and control.

NOTE: Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses.

**Course Outcomes**

- Explain and discuss the ways by which microbiologists study microorganisms.
- Discuss the principle infectious diseases that affect mankind, including how they are transmitted, treated, controlled and prevented.
- Differentiate between the types of microorganisms by identifying relevant structure and their function in the biosphere.
- Propose microbial solutions to global problems.
- Describe how the human body defends itself against infectious agents.

MMBIO 241 : Molecular and Cellular Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBio 240 or concurrent enrollment.

DESCRIPTION: Molecular and cellular biology techniques laboratory.

**Course Outcomes**

- Practice ethics and integrity by working with groups and following lab rules.*Relates to Program Learning Outcome: A commitment to professional integrity and ethical behavior consistent with themission of the university.
- Learn the basics of experimental design, how to formulate a hypothesis, what controls to use, how to interpret experimental data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Practice scientific communication through written lab questions, exams and oral presentations.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Learn molecular biology laboratory techniques through practical laboratory exercises. Techniques include, spectrophotometry,isolation of DNA and protein, quantification of DNA and protein, techniques used to purify or detect specific proteins, such aschromatography, western blot and ELISA, DNA fingerprinting, polymerase chain reaction and enzyme assays.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology.

MMBIO 261 : Infection and Immunity. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Principles of infectious organisms (principally bacteria and viruses), the diseases they cause, and the role of host immune responses in health and disease.

**Course Outcomes**

There are no course outcomes available

MMBIO 360 : Microbial Genetics. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBIO 240

DESCRIPTION: How DNA governs complex bacterial functions. Classical and modern approaches to gene discovery, including genetic screens, gene mapping, targeted genetic manipulations, and analyzing gene activity.

**Course Outcomes**

There are no course outcomes available

MMBIO 363 : Microbial Ecology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 130; or MMBIO 151; or PDBIO 120

DESCRIPTION: Natural history of a microbe; its distribution and abundance. Critical influence of scale and perspective in determining underlying mechanisms.

**Course Outcomes**

There are no course outcomes available

MMBIO 364 : Bacterial Pathogenesis. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: MMBIO 261

DESCRIPTION: Fundamental principles of bacterial pathogenesis, emphasizing the molecular interactions of medically important bacteria and their hosts.

**Course Outcomes**

There are no course outcomes available

MMBIO 390R : Readings in Molecular Biology. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240

RECOMMENDED: PDBio 360.

DESCRIPTION: Selected readings in molecular biology.

**Course Outcomes**

- Become familiar with the current literature and techniques in molecular biology
- Gain experience in critically evaluating the current literature in molecular biology.
- Gain confidence in scientific presentations and discussions.

MMBIO 430 : Advanced Cell Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBIO 360; Bioscience major status.

DESCRIPTION: Molecular genetics, cell biology, and developmental biology.

**Course Outcomes**

- Read primary literature to further their own understanding of the topic*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic research, or the health professions.
- Explain the processes of cell biology*Relates to Program Learning Outcome: Knowledge of the principles and techniques of molecular, cell, and evolutionary biology and genetics which prepares the students for further education and/or employment in teaching, basic research, or the health professions.
- Apply knowledge of these molecular processes to broader topics*Relates to Program Learning Outcome: Proficiency in formulating and carrying out independent and collaborative research projects.
- Analyze research data, design experiments and present data in a clear manner*Relates to Program Learning Outcome: Communication skills in presenting their research findings through effective oral and written presentations.

MMBIO 441 : Advanced Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & CHEM 352

DESCRIPTION: Molecular biology of gene structure and expression in prokaryotic and eukaryotic organisms.

**Course Outcomes**

- Learn molecular biology principles through study, lecture, and class discussion. An emphasis will be on understanding the experiments used to learn these principles.â ¨ *Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology preparing students for further education and/or employment.
- Apply the principles learned to design experiments and properly interpret experimental data.â ¨ *Relates to Program Learning Outcome: Proficiency in formulating research projects
- Present current research from the scientific literature.*Relates to Program Learning Outcomes: Communicate scientific information using oral methods; interpret, analyze and critique experiments from the primary scientific literature. Presenting research findings through effective oral and written presentations.
- Demonstrate integrity and ethical behavior during all class work.â ¨ *Relates to Program Learning Outcome: Commitment to professional integrity and ethical behavior consistent with the mission of the University.

MMBIO 442 : Advanced Molecular Biology Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 241; MMBio 441 or concurrent enrollment.

DESCRIPTION: Laboratory to accompany MMBio 441.

**Course Outcomes**

- Learn molecular biology laboratory techniques through hands-on experience. Techniques will include DNA and RNA isolation, PCR, microRNA isolation, northern blotting, RFLP analysis, site-directed mutagenisis, protein extraction and EMSA.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology
- Apply the techniques to design experiments with appropriate hypotheses and controls and properly interpret experimental data*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls
- Practice scientific communication and record-keeping through the completion of a laboratory notebook and answering written and oral questions and presentations.*Relates to Program Learning Outcome: Demonstrate Communication skills in presenting research findings through effective oral and written presentations.
- Design and carry out independent experiments*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls

MMBIO 461 : Advanced Bacterial Physiology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481 & MMBIO 151

DESCRIPTION: Principles of prokaryotic physiology, including cell structure and function, gene regulation, and biochemical processes; focusing on the unique aspects of prokaryotic biology.

**Course Outcomes**

- Students will demonstrate an advanced understanding of selected topics in microbial physiology (cell structure, growth, biosynthesis, transport, etc.) through their participation in classroom discussions, writing assignments and oral presentations.
- Students will demonstrate the ability to read, comprehend and communicate current research in microbial physiology by making Powerpoint presentations to the class.
- Students will write a scientific review article on a topic of their choice related to microbial physiology.

MMBIO 463 : Immunology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & MMBIO 261

DESCRIPTION: Advanced concepts of immunological processes.

**Course Outcomes**

- Understanding advanced concepts of Immunology by studying and reflecting on the subject.*Relates to Program Learning Outcome: Exhibit mastery of four of the principle areas of the discipline
- Understands experimental designs used in immunology research and determine the soundness of the immunological data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Read and understand current publications in Immunology and be able to discuss and critically evaluate experiments and data*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Engage in discussions about concepts in immunology and research. Present a PowerPoint on a particular immunological topic. Engage in a question and answer session on the content. Write an easy on a chosen subject relating to recent immunological advances.*Relates to Program Learning Outcome: Communicate scientific information using both oral and written methods.
- Develop a deep appreciation for our Heavenly Father and his love for each of us by engaging in studying how he designed the immune system to protect his children from disease.*Relates to Program Learning Outcome: Reflect/ discuss/ explore how faith in the Lord, and Christ like living are affected by an understanding of the fundamental biological processes.

MMBIO 465 : Virology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBio 261 or equivalent.

DESCRIPTION: Basic principles of virology, emphasizing selected molecular aspects of virus life cycles and disease processes.

**Course Outcomes**

- Be able to answer basic questions about Virology: Why are viruses organized as they are? How do viruses replicate? How do viruses cause disease? What are the interactions between viruses and the host immune system? How to prevent/treat/cure viral infections? How can viruses be used as tools to study biological processes and for gene transfer? How can an understanding of viruses help you in your future career? *Relates to Program Learning Outcome: “Exhibit mastery of four of the principal areas of the discipline”, one of which is Virology.
- Understand experimental tools used to study viruses (these are broadly applicable to molecular biology, cell biology, and microbiology) and be able to develop experiments and interpret data.*Relates to Program Learning Outcomes: “Devise experiments with appropriate hypotheses and controls” and “Interpret experiments from primary scientific literature”
- Write about a current, pressing issue in the field of Virology.*Relates to Program Learning Outcome: “Communicate scientific information”
- Understand how research of viruses “by study and also by faith” can lead to alleviation of human disease and suffering.*Relates to Program Learning Outcome: “Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological processes”

MMBIO 466 : Virology Laboratory. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: MMBio 261; or MMBio 465 or concurrent enrollment.

DESCRIPTION: Laboratory exercises illustrating in vitro behavior of selected viruses. Developing laboratory skills for virus studies.

**Course Outcomes**

- Be able to gain hands-on experience in the ability to characterize various aspects of viral infections based upon

cultured eukaryotic cells.
- Be able to titrate virus stocks.
- Be able to determine if a human has been previously exposed to a specific virus by perform serological tests.

MMBIO 467 : Immunology Lab. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: MMBio 261; or 463 or concurrent enrollment.

DESCRIPTION: Laboratory exercises in advanced concepts of immunological processes.

**Course Outcomes**

- Maintain a research lab book with experimental protocol, data, and discussion of results.
- Understand advanced laboratory concepts of Immunology by completing protocols and experiments
- Understand experimental design used in immunology research and determine the soundness of immunological data according to the design and controls used in the experiment.
- Obtain and interpret experimental data.
- Expand the student's understanding of immunology research and acknowledge the miracle of immunological processes. Develop good social skills through participation in laboratory experiments with other students.

MMBIO 490R : Molecular Biology Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 441; Senior status.

DESCRIPTION: Critical examination of current literature and research in molecular biology.

**Course Outcomes**

- Describe the current research in the field of molecular biology
- Network and talk to prominent researchers in the field
- Analyze current research and experimental design.

MMBIO 557 : Genes and Cancer. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: MMBio 441 or equivalent.

DESCRIPTION: Molecular basis of human cancers, emphasizing oncogenes, tumor suppressor genes, chromosomal instability, hereditary cancers, chemical and physical carcinogens, and viral carcinogenesis.

**Course Outcomes**

There are no course outcomes available

NDFS 330 : Comparative Animal Nutrition. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Comparative digestion, absorption, and utilization of nutrients and nutritional applications of domestic, pet, and wildlife species.

**Course Outcomes**

- Demonstrate an understanding of the diverse digestive systems in the animal kingdom.
- Demonstrate an understanding how changes in digestive systems affect both nutrient requirements and affect feeding types and systems.
- Apply the roles of nutrients in cellular metabolism.
- Explain how nutrient deficiencies affect body function and performance.
- Demonstrate knowledge of animal feed formulation.

PDBIO 325 : Tissue Biology (with lab). (3:2:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120 & PDBIO 220

DESCRIPTION: Human anatomy and histology; function of cells in tissue; early stages of embryology.

NOTE: Course should be taken during a student's second or third year and before courses in physiology and developmental biology.

**Course Outcomes**

- Students will be able to communicate with health professionals effectively regarding tissue/organ anatomy and physiology in instances of health and disease.
- Students will demonstrate how the relationship between cell organization and cell function correlates with normal and pathological organ behavior.
- Students will be able to describe anatomical and physiological characteristics of epithelial, connective, nervous, and muscular tissue.

PDBIO 363 : Advanced Physiology Laboratory. (1:.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBio 362 or concurrent enrollment; or instructor's consent.

DESCRIPTION: Experiments and exercises in advanced physiology emphasizing human physiology. Computer simulations of muscle function, endocrine disease, and human physiology. Emphasizes problem solving and calculations.

**Course Outcomes**

- Students will demonstrate the skills required to properly interpret data from scientific experimentation to

discover how physiological systems function.
- Students will manifest an understanding of basic physiological principles by modeling how human cells, organs, and organ systems function.
- Students will describe how interactions between human organ systems work to maintain homeostasis.

PDBIO 482 : Developmental Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & PDBIO 360

RECOMMENDED: PDBio 325.

DESCRIPTION: Invertebrate and vertebrate developmental biology. Embryonic gastrulation, neurulation, pattering, etc. Modern approaches and research strategies. Emphasizes gene function, cell signaling, signal transduction during embryogenesis.

**Course Outcomes**

- Students will be able to generally describe the early development (from fertilization to axis formation) of one invertebrate and one vertebrate model organism.
- Students will be able to generally describe the concepts of cellular competence, induction, specification, commitment and differentiation in embryonic development.
- Students will be able to give two examples of organogenesis, including genes and signal transduction pathways that lead to organ system formation.
- Students will be able to explain embryonic patterning, using examples that include genes known to act in patterning events.
- Students will be able to explain at least two concepts in developmental biology that overlap with other sciences, such as stem cell research, cancer research, evolutionary sciences, or neuroscience.
- Students will be able to discern and summarize the current state of knowledge on a given topic, construct pioneering research questions on that topic, and propose experiments aimed at answering those questions.

PDBIO 562 : Reproductive Physiology. (0-3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PDBio 362 or equivalent.

RECOMMENDED: Chem 481, PDBio 482; or equivalents.

DESCRIPTION: Mammalian reproductive physiology.

**Course Outcomes**

- Students will be expected to demonstrate acquisition of both the basic and in-depthknowledge needed to be able to perform the following skills on course assignments, quizzes, and examinations:1. Demonstrate understanding of various reproductive processes at the molecular,biochemical, microscopic, and physiological levels.2. Demonstrate the skills needed to read, analyze, evaluate, comprehend, and synthesizescientific information from several different sources for use in both written and oralcommunication about various reproductive processes.3. Demonstrate an appreciation for the sacred nature of the reproductive processes thatresult in the production of offspring during in-class oral communication.

PDBIO 582 : Developmental Genetics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PDBio 482 or equivalent.

DESCRIPTION: Gene function and regulation during cell specification and differentiation, pattern formation, and organogenesis in developing embryo.

**Course Outcomes**

- Students will demonstrate understanding of, and the ability to think critically about, primary developmental biology research articles.
- Students will demonstrate confidence in contributing to scientific discussions.
- Students will demonstrate the ability to think scientifically by formulating a research proposal.

PWS 100 : Living with Plants. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to principles of plant function and diversity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a fundamental knowledge of basic principles and concepts of plant biology (i.e., structure, function, and diversity)
- Cultivate an appreciation for the central importance of plants in the way our world and human society functions
- Provide a conceptual framework of how plants influence the environment
- Practice using the scientific method to better understand plant-environment interactions
- Improve verbal and written communication

PWS 199R : Academic Internship. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Consent of both department chair and internship coordinator.

DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Students will find an entry level internship position with a high quality company and receive above average ratings from the employer.

PWS 282 : Introduction to Soil Science. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 283 or concurrent enrollment.

DESCRIPTION: Physical, chemical and microbiological properties of soils that affect plant growth in natural, agricultural, and urban environments.

**Course Outcomes**

- Enhance critically thinking skills as they apply to soil resource management and conservation
- Demonstrate a fundamental knowledge of soil chemistry, genesis, microbiology, physics, taxonomy, and nutrient and water relations
- Create a conceptual framework to help manage soil resources (i.e., animal habitat, plant nutrient fertility, salinity, soil and water quality, and wind and water erosion) in agricultural, urban, and ecological settings
- Understand the historical and current problems, and cultural concerns facing soils as a natural resource essential to human life

PWS 283 : Introduction to Soil Science Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 282 or concurrent enrollment.

DESCRIPTION: Laboratory techniques in determining soil physical, chemical, and fertility properties.

**Course Outcomes**

- Understand basic soil assessments related to soil chemistry, physics, biology, and nutrient fertility
- Apply laboratory techniques to determine problems associated with soil resource conservation and management
- Conduct basic soil methods in nutrient analysis; textural classification; and organic matter, cation exchange capacity, acidity, and alkalinity content

PWS 301 : Plant Growth and Reproduction. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 100 or equivalent.

DESCRIPTION: Scientific principles of plant propagation by seeds, cuttings, budding and grafting, and tissue culture.

**Course Outcomes**

- Students will take a pre- and post-test for foundational principles related to this course and will show learning by an increase of at least double the average score.
- Students will complete a class project that involves the use of foundation principles in this course and use this written project for their portfolio.

PWS 305 : Soils and Water Quality. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 282 & CHEM 105; or PWS 282 & CHEM 101; PWS 100 or equivalent; Math 110 or equivalent.

DESCRIPTION: Principles and practices of safe management of agricultural and urban wastes; amendments and nutrients including remediation methods for conservation of soils and water quality.

**Course Outcomes**

- Evaluate case studies in current topics soil and water quality
- Demonstrate a fundamental knowledge in water quality and water resource conservation as influenced by soil-water-atmosphere interactions
- Enhance critically thinking skills as it relates to issues in water quality management and resource conservation
- Improve mathematical and statistical skills related to nutrient, salinity, sodicity, and toxicity evaluation and management

PWS 306 : Soil and Water Quality Laboratory. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent enrollment in PWS 305.

DESCRIPTION: Principles of environmental soil and water quality in the context of a case-study watershed. Students will participate in environmental soil and water sampling, laboratory analysis, and data interpretation; synthesizing and creating written and oral reports identifying environmental concerns and proposing solutions.

**Course Outcomes**

There are no course outcomes available

PWS 331 : Science of Plant Pest Control. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Management of plant health problems, namely weed, insect, and disease, through integrated pest management and proper pesticide management and safety.

**Course Outcomes**

- Enhance critical thinking skills.
- Develop a framework for decision-making and implementation in applied pest management and ecology.
- Recommend control options for plant pest management.
- Safely and accurately apply plant pesticides in urban and agricultural environments.
- Identify various plant pest control measures.
- Improve communication and interpersonal skills.

PWS 431 : Plant Health Diagnostics. (3:2:3)

WHEN TAUGHT: Fall

DESCRIPTION: Diagnosing plant health problems; pest biology and identification (weed, insect, and disease).

**Course Outcomes**

There are no course outcomes available

PWS 494R : Mentored Learning Experience. (1-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Topics vary.

NOTE: Registration required for mentored experiences.

**Course Outcomes**

- Design and/or participate in basic experiments attempting to answer questions in biochemistry, biotechnology, genetics, molecular biology, and soil science
- Generate and analyze experimental results for publications or presentations at professional meetings
- Learn how to be an effective and efficient mentor

PWS 514 : Soil Microbiology. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Chem 105 and 106; or equivalents.

DESCRIPTION: Ecology and role of soil microorganisms in biogeochemical cycles, decomposition of organic matter and waste materials, and bioremediation of contaminated soils and water.

**Course Outcomes**

- Ecology and role of soil microorganisms in nutrient cycling, decomposition of organic matter and waste materials, and degradation of agricultural chemicals in soils

PWS 559 : Molecular Plant Breeding. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: PWS 265, 340, 485, 586, PDBio 360; or equivalents; PWS 494R or concurrent enrollment.

DESCRIPTION: Molecular genetics methods applied to improvement of economically important plants. Theory and methods of plant transformations.

**Course Outcomes**

- Outline the history and uses of genetic molecular markers
- Discuss with proficiency the pros and cons of a minimum of seven different marker systems. Examples of these systems include RFLPs, RAPDs, AFLPs, SSRs, and SNPs
- Lead classroom discussions using current scientific literature as the basis for the discussion
- Prepare a manuscript for submission to a refereed scientific journal
- Explain scientific ethics, etiquette, and the underpinnings as to why it is important to publish scientific journals
- Discuss the differences between academic and industry-based science

PWS 575 : Plant Pathology. (3:2:3)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: PWS 100 or equivalent.

DESCRIPTION: Concepts associated with symptoms, development, control, and classification of plant diseases. Identification and classification of plant fungi, bacteria, and viruses.

**Course Outcomes**

- Diagnose and treat plant problems
- Identify major diseases that affect plants
- Culture and identify fungi and bacteria
- Employ problem solving skills, including enhanced ability to critically think and reason
- Display enhanced communication and interpersonal skills, including writing

PWS 586 : Plant Cell Biology. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: PDBio 360, PWS 340, 440; or equivalents.

DESCRIPTION: Molecular aspects of the structural and functional characteristics of plant cells, emphasizing characteristics of plant cells setting them apart from animal cells.

**Course Outcomes**

- Explain unique aspects of plant cell structure and function
- Read and explicate published research in plant cell biology
- Write coherently on topics related to plant cell biology
- Deliver an oral presentation of a topic related to plant cell biology

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

## Recommended Courses

For preprofessional students in tracks A, B, or C above:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 201 : Financial Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Acc 200 or equivalent.

DESCRIPTION: Financial statement analysis, financial planning, sources of financing, working capital management, risk and return, and valuation.

**Course Outcomes**

There are no course outcomes available

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: High school algebra and trigonometry.

RECOMMENDED: Concurrent enrollment in Phscs 107.

DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 105 or equivalent.

RECOMMENDED: Concurrent enrollment in Phscs 108.

DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 105 or concurrent enrollment.

DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 106 or concurrent enrollment

DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

For graduate school preparation in biotechnology:

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: High school algebra and trigonometry.

RECOMMENDED: Concurrent enrollment in Phscs 107.

DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 105 or equivalent.

RECOMMENDED: Concurrent enrollment in Phscs 108.

DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 105 or concurrent enrollment.

DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 106 or concurrent enrollment

DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

For students seeking employment in the biotech industry:

PWS 199R : Academic Internship. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Consent of both department chair and internship coordinator.

DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Students will find an entry level internship position with a high quality company and receive above average ratings from the employer.

GE courses for bio-business students seeking a Marriott School of Management minor:

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

## Show all Plant and Wildlife Sciences (PWS) Courses

College of Life Sciences Home

Plant and Wildlife Sciences Department Home

Majors

- BS in Environmental Science
- BS in Genetics and Biotechnology
- BS in Landscape Management
- BS in Wildlife and Wildlands Conservation

Minors

- Environmental Science
- Landscape Management

Course Information

- Plant and Wildlife Sciences (PWS) Courses

Faculty

# BS in Landscape Management (65.5–69.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following required courses:

BIO 235 : Field Botany. (3:3:6)
WHEN TAUGHT: Fall; Spring
DESCRIPTION: Recognition, characteristics, and uses of common trees and shrubs.

**Course Outcomes**

- Students will demonstrate a fundamental knowledge of biology
- Students will develop the discovery skills and tools used by biologists
- Students will use biological knowledge to enhance their personal lives
- Students will use their skills and knowledge in biology to secure employment or to advance in higher education in biology-related disciplines

PWS 100 : Living with Plants. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction to principles of plant function and diversity.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a fundamental knowledge of basic principles and concepts of plant biology (i.e., structure, function, and diversity)
- Cultivate an appreciation for the central importance of plants in the way our world and human society functions
- Provide a conceptual framework of how plants influence the environment
- Practice using the scientific method to better understand plant-environment interactions
- Improve verbal and written communication

PWS 103 : Residential Landscape Design. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Design and composition as applied to development of residential grounds.

**Course Outcomes**

- Design residential landscapes that are both funtional and beautiful
- Make better decisions when purchasing plants and landscape construction materials
- Discuss issues and challenges dealing with landscape planning and maintenance.
- Enjoy nature more
- Explain professional opportunities related to landscape design.

PWS 105 : Landscape Design Graphics. (2:2:0)
WHEN TAUGHT: Winter; Spring
PREREQUISITE: PWS 103
DESCRIPTION: Communication through descriptive drawing and professional plan graphics: plan views, elevation, color, and computer-aided design.

**Course Outcomes**

- Feel comfortable and confident with the different methods of drawing as they relate to landscape design
- Have a clear and developed drawing style
- Be able to produce drawings using graphics that clearly communicate and portray the design intent.
- Develop drawing techniques that allow for quick design and those that allow for more professional design.

PWS 191 : Introduction to Landscape Management. (1:1:0)
WHEN TAUGHT: Fall
DESCRIPTION: Introduction to the landscape management competency matrix and portfolio. Overview of professional opportunities presented by faculty and industry professionals.

**Course Outcomes**

- Understand the opportunities for learning and growth that are available in the landscape contracting profession
- identify and evaluate professional areas in which to pursue excellence
- Maximize your potential for professional success

PWS 198R : BYU Grounds Practicum. (.5:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent; concurrent employment with BYU Grounds Department.

DESCRIPTION: Multiple horticulture experiences through collaboration with BYU Grounds.

**Course Outcomes**

- To provide a practical outside of the classroom experience for students
- To introduce students to a diverse range of practical skills and on the job training.
- To expose students to the different aspects of the Green Industry through on campus grounds experience.
- To strengthen the relationship between the Landscape Management Program and the Grounds department on campus.
- To make campus part of the learning laboratory.

PWS 199R : Academic Internship. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Consent of both department chair and internship coordinator.

DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Students will find an entry level internship position with a high quality company and receive above average ratings from the employer.

(0.5 hour required)

PWS 211 : Landscape Structures. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 103

DESCRIPTION: Theory and mechanics of hardscape design and construction.

**Course Outcomes**

- To apply basic knowledge of common hardscape, irrigation, and similar materials learned in the landscape structures course.
- To be able to implement (construct) certain elements of landscape construction.
- To know how to think creatively and conceptually of a landscape design and be able to translate that into a construction document.

PWS 212 : Landscape Laboratory. (1:0:2)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 211 or concurrent enrollment.

DESCRIPTION: Working methods of the landscape industry: irrigation, equipment, and materials.

**Course Outcomes**

- To apply basic knowledge of common hardscape, irrigation, and similar materials learned in the landscape structures course.
- To be able to implement (construct) certain elements of landscape construction.
- To know how to think creatively and conceptually of a landscape design and be able to translate that into a construction document.

PWS 214 : Landscape Bidding and Estimating. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 103; Math 110 or equivalent.

DESCRIPTION: Competitive bidding strategies, quantity takeoffs, bid analyses for landscape construction and maintenance.

**Course Outcomes**

- Understand the different players in the landscape industry and how they interact with each other.
- Discuss and understand basic construction law and landscape construction and maintenance contracts.
- Create and accurately figure estimates for both landscape construction and landscape maintenance projects.
- Understand cost accounting and cash flow accounting for business.
- Be able to use a planimeter and other measuring instruments for estimating purposes.

PWS 282 : Introduction to Soil Science. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 283 or concurrent enrollment.

DESCRIPTION: Physical, chemical and microbiological properties of soils that affect plant growth in natural, agricultural, and urban environments.

**Course Outcomes**

- Enhance critically thinking skills as they apply to soil resource management and conservation
- Demonstrate a fundamental knowledge of soil chemistry, genesis, microbiology, physics, taxonomy, and nutrient and water relations
- Create a conceptual framework to help manage soil resources (i.e., animal habitat, plant nutrient fertility, salinity, soil and water quality, and wind and water erosion) in agricultural, urban, and ecological settings
- Understand the historical and current problems, and cultural concerns facing soils as a natural resource essential to human life

PWS 283 : Introduction to Soil Science Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 282 or concurrent enrollment.

DESCRIPTION: Laboratory techniques in determining soil physical, chemical, and fertility properties.

**Course Outcomes**

- Understand basic soil assessments related to soil chemistry, physics, biology, and nutrient fertility
- Apply laboratory techniques to determine problems associated with soil resource conservation and management
- Conduct basic soil methods in nutrient analysis; textural classification; and organic matter, cation exchange capacity, acidity, and alkalinity content

PWS 301 : Plant Growth and Reproduction. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 100 or equivalent.

DESCRIPTION: Scientific principles of plant propagation by seeds, cuttings, budding and grafting, and tissue culture.

**Course Outcomes**

- Students will take a pre- and post-test for foundational principles related to this course and will show learning by an increase of at least double the average score.
- Students will complete a class project that involves the use of foundation principles in this course and use this written project for their portfolio.

PWS 319 : Turf Science. (3:2:2)

WHEN TAUGHT: Fall

DESCRIPTION: Design, installation, and management of agricultural and urban turfgrass systems. Physiological and soil interaction principles of turfgrass management.

**Course Outcomes**

- Students will become compentant enough to pass a mock up of the Turfgrass Certification exam patterned after the industry standard.
- Students will be given a pre- and post-class attitude survey to access their understanding and appreciation of the importance of turfgrass in terms of aesthetics, environmental quality, and athlete/child safety with a goal of the score doubling (on average) at the end of semester.
- Students will conduct a research project to the point of having a written manuscript that is in draft form in order to show them the possibility of doing a graduate program. Also, students will write a short paper on how turfgrass science is important in their anticipated field of choice.

PWS 320 : Arboriculture. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 100 & PWS 282

RECOMMENDED: Bio 235.

DESCRIPTION: Biology and culture of woody plants for use in urban landscapes.

**Course Outcomes**

- Understand fundamental concepts dealing with the ecology, biology and culture of woody landscape plants
- become deeply interested in trees

PWS 331 : Science of Plant Pest Control. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Management of plant health problems, namely weed, insect, and disease, through integrated pest management and proper pesticide management and safety.

**Course Outcomes**

- Enhance critical thinking skills.
- Develop a framework for decision-making and implementation in applied pest management and ecology.
- Recommend control options for plant pest management.
- Safely and accurately apply plant pesticides in urban and agricultural environments.
- Identify various plant pest control measures.
- Improve communication and interpersonal skills.

PWS 391 : Careers in Landscape Management. (1:1:0)

WHEN Fall

TAUGHT:
DESCRIPTION: Current information on internships, career options, and employment preparation skills in the landscape management/green industry.

**Course Outcomes**

There are no course outcomes available

(1 hour required)

PWS 402 : Soils and Water in the Urban Environment. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 100 & PWS 282 & PWS 283

DESCRIPTION: Principles of water management, soil physics, and soil fertility used in a problem-solving environment addressing current challenges in managing soils and water in the urban landscape.

**Course Outcomes**

There are no course outcomes available

PWS 431 : Plant Health Diagnostics. (3:2:3)

WHEN TAUGHT: Fall

DESCRIPTION: Diagnosing plant health problems; pest biology and identification (weed, insect, and disease).

**Course Outcomes**

There are no course outcomes available

PWS 481 : Case Studies, Landscape Management Systems. (2:2:0)

WHEN TAUGHT: Fall

DESCRIPTION: Understanding and demonstrating competency with business systems used in landscape contracting companies.

**Course Outcomes**

There are no course outcomes available

2. Complete the following required non-departmental courses:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 488 : Agribusiness Management 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ACC 200 & BUS M 201 & ECON 110; or ACC 200 & FIN 201 & ECON 110

DESCRIPTION: Concepts, tools, and approaches to understanding competitive forces and the development of sustainable competitive advantage for firms in the food, fiber, and horticulture industries.

**Course Outcomes**

There are no course outcomes available

BUS M 489 : Agribusiness Management 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ACC 200 & BUS M 201 & ECON 110; or ACC 200 & FIN 201 & ECON 110

DESCRIPTION: Developing and implementing marketing plans and programs for companies participating in the value chain of agribusiness industries.

**Course Outcomes**

There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Acc 200.
DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

IS 100 : Computer Spreadsheet Skills. (.5:0:1)

WHEN TAUGHT: Spring; Summer
DESCRIPTION: Basic computer skills, focusing on spreadsheet and database programs. No technical background necessary.

**Course Outcomes**

- Students will be able to construct an Excel Spreadsheet with appropriate formulas, functions, labels, charts, media inserts, hyperlinks, and data base functions – and output the report.

**And** complete one course from the following:

CHEM 101 : Introductory General Chemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 97 or equivalent.
DESCRIPTION: Atomic and molecular structure, periodic relationships, states of matter, chemical reactions and stoichiometry, acids and bases.
NOTE: Primarily for nonscience majors who require a broad introduction to general chemistry.

**Course Outcomes**

- Students will be able to view the world around them in chemical terms. Students will use the concepts of atoms, molecules, and their properties to understand a variety of phenomena.
- Students will be able to make qualitative and/or quantitative predictions regarding a number of chemical concepts including chemical reactions and stoichiometry, calorimetry, osmosis, gases, acid/base chemistry, chemical equilibria, and radioactivity.

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.
DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.
NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

3. Complete two courses from the following:

BIO 430 : Plant Classification and Identification. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: Bio 100 or Bio 130 or PDBio 120 or PWS 100 or instructor's consent.

DESCRIPTION: Principles of plant systematics, taxonomy, and classification, emphasizing family recognition by sight, terminology, and use of identification keys to the temperate flora.

**Course Outcomes**

- Students will apply correct vocabulary for describing plant parts and be able to deduce the meaning of new terms based on knowledge of common roots, prefixes, and suffixes.
- Students will recognize the major groups of vascular plants, be able to differentiate them by their principal characters, and understand their phylogenetic relationships.
- Students will identify by sight 40 families of flower plants as well as common families of ferns and gymnosperms, by recognizing differentiating features of each family.
- Students will gain proficiency in the use of keys and identification manuals for identifying any unknown plant to species.

PWS 112 : Floral Design. (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: History and principles of floral design; identification, care, and handling of cut flowers; techniques of arranging flowers and other plant materials for home and professional use.

NOTE: Fee. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will take a pre- and post-test for foundational principles related to floral design and will show learning by an increase of at least double the average score.
- Students will learn how to build various floral arrangements and will successfully complete one design per week.

PWS 210 : Herbaceous Plants. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Systematic study of nearly 170 ornamental herbaceous plant species emphasizing their desirable attributes and cultural requirements.

**Course Outcomes**

- Students will take a pre- and post-test for foundational principles related to growth of herbaceous plants and will show learning by an increase of at least double the average score.
- Students will complete a class project that involves the use of foundation principles in this course and use this written project for their portfolio.

PWS 213 : Interior Plants and Landscapes. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Identification and culture of plants used in the interior landscape industry; applying principles of design to the placement and use in interior landscapes.

**Course Outcomes**

- Students will take a pre- and post-test for foundational principles related to this course and will show learning by an increase of at least double the average score.
- Students will complete a class project that involves the use of foundation principles in this course and use this written project for their portfolio.

PWS 330 : Rangeland Plant Identification and Ecology. (3:2:3)

WHEN TAUGHT: Winter

DESCRIPTION: Identification, characteristics, phenology, distribution, site adaptation, forage value, and response to management of significant range and pasture plants.

**Course Outcomes**

- Students will be able to sight identify many common range plants of North America
- Students will be able to use a grass key to identify unknown grasses
- Students will be able to pair symptoms of sick animals with poisonous plants that may have been consumed

PWS 380 : Plant Community Design. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 103 & PWS 105 & BIO 235

DESCRIPTION: Design and ecology of thematic plant communities.

**Course Outcomes**

- Design a variety of landscapes and gardens with different contextual variables.
- Select plants, appropriate for a given design, based on correct horticultural and ecological knowledge (plant justification)
- Design better, design faster
- Further develop critiquing skills

Prepare a landscape design portfolio for client interviews or graduate school applications.

## Recommended Courses

A management minor is *strongly* recommended.

Completion of the following courses (some listed above) will meet the requirements for this minor:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**

There are no course outcomes available

BUS M 489 : Agribusiness Management 2. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: ACC 200 & BUS M 201 & ECON 110; or ACC 200 & FIN 201 & ECON 110
DESCRIPTION: Developing and implementing marketing plans and programs for companies participating in the value chain of agribusiness industries.

**Course Outcomes**

There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Acc 200.
DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

MATH 110 : College Algebra. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 97 or equivalent (see Independent Study).

DESCRIPTION: Functions, polynomials, theory of equations, exponential and logarithmic functions, matrices, systems of linear equations, permutations, combinations, binomial theorem.

**Course Outcomes**

- Graph functions using horizontal and vertical shiftsGraph functions using compressions and stretchesGraph functions using reflections about the x-axis or y-axisForm composite functions and find the domainDetermine the inverse of a function and graph an inverse function from the graph of a function
- This course prepares students to take courses in calculus, statistics, mathematics for elementary education majors, and other areas where algebra skills are required. Fluent skills in algebra are necessary for success in any area that uses mathematical analysis. The mastery of college algebra requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. College Algebra develops the concepts of graphing functions, polynomial and rational functions, exponential and logarithmic functions, conic sections, solving systems of equations, the binomial theorem, permutations, combinations, and probability. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information, visit the Math 110 Wiki page.
- Quadratic functionsPolynomial functionsRational functionsPolynomial and rational inequalitiesThe real zeros of a polynomial functionComplex zeros and the Fundamental Theorem of Algebra
- Exponential functionsLogarithmic functionsProperties of LogarithmsLogarithmic and exponential equationsCompound interestExponential growth and decay
- Graph parabolas, ellipses, and hyperbolasFind the equation of parabolas, ellipses, and hyperbolasDiscuss the equation of conic sections to find vertices, foci, asymptotes, and the directrixWork with conic sections that are not centered at the origin
- Solve systems of linear equations using substitution and eliminationSolve systems of non-linear equations using substitution and eliminationDecompose rational functions using partial fractions
- Find terms in a sequence using a formula and a recursive definitionFind a formula for terms in an arithmetic sequence and be able to add the terms of a finite arithmetic sequenceFind a formula for the terms in a geometric sequence and be able to find the sum of finite and infinite geometric seriesProve statements using mathematical induction
- Work with operations on sets such as union, intersection and complement and count the number of elements in a setCompute permutations and combinationsEvaluate binomial coefficients and expand binomials using the Binomial TheoremCompute probabilities of equally likely outcomes

ORG B 320 : Organizational Effectiveness. (3:Arr:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

NOTE: Taught online.

**Course Outcomes**

There are no course outcomes available

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

The following courses are also suggested:

BUS M 372 : Basic Entrepreneurship Skills. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Practical aspects of business formation and growth; key skills and principles needed to successfully start up and grow a business.

NOTE: For non-Marriott School of Management students.

**Course Outcomes**

There are no course outcomes available

TMA 150 : Public Speaking. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Principles and methods of public speaking; speaking experiences.

**Course Outcomes**

- Develop analytical listening and observation skills.
- Know how to speak publicly so your audience will really listen and understand.
- Construct and deliver effective extemporaneous public speeches.
- Manage speech anxiety and effective use nonverbal communication to inform, persuade, enlighten, and impact your audience.
- Be able to produce and employ effective visual aids in your presentations.

For students planning to pursue a master's degree in landscape architecture (MLA), the following courses are also recommended:

BIO 350 : Ecology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth.

**Course Outcomes**

- Understand the major physical processes that form and characterize the biosphere, including global scale energy flow, the carbon cycle, climate, and soil formation.
- Understand the processes that drive major levels of organization of the biotic world, including energetics in the ecosystem, population dynamics, and species interactions.
- Understand the importance of writing as a way of synthesizing and solidifying critical thought.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Understand the importance of ecology to issues regarding human well-being
- See the connectivity and relevance of ecology to other fields of study

CFM 105 : Introduction to Construction and Facilities Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to construction and facilities management including BIM, estimating, scheduling, and construction calculation methods.

NOTE: Fee.

**Course Outcomes**

There are no course outcomes available

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

PWS 380 : Plant Community Design. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 103 & PWS 105 & BIO 235

DESCRIPTION: Design and ecology of thematic plant communities.

**Course Outcomes**

- Design a variety of landscapes and gardens with different contextual variables.
- Select plants, appropriate for a given design, based on correct horticultural and ecological knowledge (plant justification)
- Design better, design faster
- Further develop critiquing skills
- Prepare a landscape design portfolio for client interviews or graduate school applications.

For students planning to pursue a master's degree in horticulture science (MS), the following courses are recommended:

BIO 350 : Ecology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth.

**Course Outcomes**

- Understand the major physical processes that form and characterize the biosphere, including global scale energy flow, the carbon cycle, climate, and soil formation.

Understand the processes that drive major levels of organization of the biotic world, including energetics in the ecosystem, population dynamics, and species interactions.
- Understand the importance of writing as a way of synthesizing and solidifying critical thought.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Understand the importance of ecology to issues regarding human well-being
- See the connectivity and relevance of ecology to other fields of study

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

MATH 119 : Introduction to Calculus. (4:4:1)

OFFERED: Independent Study only.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 and Math 111; or equivalent.

DESCRIPTION: Introduction to plane analytic geometry and calculus.

**Course Outcomes**

- This course is designed to provide beginning undergraduate students a first exposure to Calculus concepts, theorems, and techniques. In general, theorems will not be proved. An understanding of the theorems and their applications to solve calculus problems will be taught. Students will be expected to develop effective problem solving skills based on their understanding of the theory and not just memorize a set of routines to solve problems. For a more detailed course description, visit the Math 119 Wiki page.

Or

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: High school algebra and trigonometry.

RECOMMENDED: Concurrent enrollment in Phscs 107.

DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 105 or equivalent.

RECOMMENDED: Concurrent enrollment in Phscs 108.

DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PWS 305 : Soils and Water Quality. (3:3:0)

WHEN Winter

TAUGHT:

PREREQUISITE: PWS 282 & CHEM 105; or PWS 282 & CHEM 101; PWS 100 or equivalent; Math 110 or equivalent.

DESCRIPTION: Principles and practices of safe management of agricultural and urban wastes; amendments and nutrients including remediation methods for conservation of soils and water quality.

**Course Outcomes**

- Evaluate case studies in current topics soil and water quality
- Demonstrate a fundamental knowledge in water quality and water resource conservation as influenced by soil-water-atmosphere interactions
- Enhance critically thinking skills as it relates to issues in water quality management and resource conservation
- Improve mathematical and statistical skills related to nutrient, salinity, sodicity, and toxicity evaluation and management

PWS 369 : Science of Plant Production. (4:4:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PWS 100, 282; or equivalents.

DESCRIPTION: Scientific principles of crop production related to agronomic and horticultural plants, including relationship of management principles and physiological processes in plants.

**Course Outcomes**

No outcomes are available at this time.

PWS 390R : Special Topics in Plant and Wildlife Sciences. (1-3:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Current topics in plant and wildlife sciences.

**Course Outcomes**

- Students will gain knowledge from specialized instruction in focused area

PWS 440 : Plant Physiology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GE Biological Science requirement; college chemistry

RECOMMENDED: Chem 285; or 351, 352.

DESCRIPTION: Photosynthesis, respiration, water relations, mineral nutrition, growth of flowering plants.

**Course Outcomes**

- Students will be fluent in understanding plant function at the molecular, biochemical and whole plant levels
- Students will understand the connections between plant function and ecosystem processes
- Student will practice applying the scientific method in order to develop critical thinking and problem solving skills
- Student will engage in learning activities that increase there writing and speaking proficiency

PWS 494R : Mentored Learning Experience. (1-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Topics vary.

NOTE: Registration required for mentored experiences.

**Course Outcomes**

- Design and/or participate in basic experiments attempting to answer questions in biochemistry, biotechnology, genetics, molecular biology, and soil science
- Generate and analyze experimental results for publications or presentations at professional meetings
- Learn how to be an effective and efficient mentor

: Biotechnology Laboratory.

**Course Outcomes**

: Plant Physiology Laboratory.

**Course Outcomes**

: Environmental Science Laboratory.

**Course Outcomes**

: Soil, Plant, and Water Science Laboratory.

**Course Outcomes**

: Environmental Science Field Techniques.

**Course Outcomes**

: Plant and Soil Science Field Techniques.

**Course Outcomes**

: Plant Breeding Field Techniques.

**Course Outcomes**

: Plant Tissue Culture and Transformation Techniques.

**Course Outcomes**

: Plant Cytogenetics Laboratory.

**Course Outcomes**

: Animal Cytogenetics Laboratory.

**Course Outcomes**

: Plant Cell Biology Laboratory.

**Course Outcomes**

: Analytical Techniques in Plant Biology.

**Course Outcomes**

: Environmental Science Computation Laboratory.

**Course Outcomes**

: Molecular Genetics and Gene Mapping Laboratory.

**Course Outcomes**

: Plant and Animal Genomics Laboratory.

**Course Outcomes**

: Analytical Techniques in Soil Science.

**Course Outcomes**

: Animal Genetics and Breeding Techniques.

**Course Outcomes**

: Soil Physical Properties Laboratory.

**Course Outcomes**

: Soil and Water Chemistry Laboratory.

**Course Outcomes**

: Animal Reproductive Research Laboratory.

**Course Outcomes**

: Field Techniques in Environmental Soil Research.

**Course Outcomes**

: Soil Microbiology Laboratory.

**Course Outcomes**

: Plant ID / URME Team.

**Course Outcomes**

PWS 511 : Environmental Biophysics: Soil and Plant Water Relations. (4:3:2)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Phscs 105 and PWS 282; or equivalents.

DESCRIPTION: Integrating biological, physical, and chemical processes of water and solute movements through the soil-plant-atmosphere continuum.

**Course Outcomes**

- Students will take a pre- and post-semester exam and at least double their score to assess understanding of the importance of physics in biological systems.

*Hours include courses that may fulfill university core requirements.

Show all Plant and Wildlife Sciences (PWS) Courses

College of Life Sciences Home

Plant and Wildlife Sciences Department Home

Majors

- BS in Environmental Science
- BS in Genetics and Biotechnology
- BS in Landscape Management
- BS in Wildlife and Wildlands Conservation

Minors

- Environmental Science
- Landscape Management

Course Information

- Plant and Wildlife Sciences (PWS) Courses

Faculty

# BS in Wildlife and Wildlands Conservation (67 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## The Discipline

This degree program qualifies students for federal job series employment in wildlife biology, range conservation, fisheries, ecology, biology, zoology, and botany. It also prepares for graduate programs in renewable natural resources and for eventual professional affiliations with state wildlife agencies and a number of federal agencies, including the U.S. Forest Service, Natural Resource Conservation Service, Bureau of Land Management, Fish and Wildlife Service, and Park Service. Graduates are well prepared to deal with complex issues involving wildlife and wildlands management and the overall conservation of natural resources.

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following:

BIO 447 : Mammalogy. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A; or PWS 344

DESCRIPTION: Mammalian diversity, evolution, distribution, and natural history. Two three-day field trips required.

**Course Outcomes**

- Be able to recognize the more common species of Utah mammals based on external and skull features
- Be able to recognize and identify most orders of mammals based on features of the skull
- Understand the evolutionary history of mammals and the modern diversity of mammalian orders
- Enhance skills directed toward understanding and interpreting original scientific literature dealing with mammalian biology

NDFS 330 : Comparative Animal Nutrition. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Comparative digestion, absorption, and utilization of nutrients and nutritional applications of domestic, pet, and wildlife species.

**Course Outcomes**

- Demonstrate an understanding of the diverse digestive systems in the animal kingdom.
- Demonstrate an understanding how changes in digestive systems affect both nutrient requirements and affect feeding types and systems.
- Apply the roles of nutrients in cellular metabolism.
- Explain how nutrient deficiencies affect body function and performance.
- Demonstrate knowledge of animal feed formulation.

PWS 100 : Living with Plants. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to principles of plant function and diversity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a fundamental knowledge of basic principles and concepts of plant biology (i.e., structure, function, and diversity)
- Cultivate an appreciation for the central importance of plants in the way our world and human society functions
- Provide a conceptual framework of how plants influence the environment
- Practice using the scientific method to better understand plant-environment interactions
- Improve verbal and written communication

PWS 113 : Safety Certifications for Field Biologists. (1:2:0)

WHEN TAUGHT: Winter

DESCRIPTION: Certification modules promoting field safety to prepare students to be leaders in workplace safety. Specific trainings include first aid, CPR, hot and cold weather exposure, ATV and snowmobile operation, wild animal safety, and more.

**Course Outcomes**

There are no course outcomes available

PWS 115 : Introduction to Wildlife and Wildlands Conservation. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Assisting students in choosing individual professions and curricula.

**Course Outcomes**

- Student will be able to make an informed decision on majoring in Wildlife and Wildlands Conservation based on career opportunities and course work required to qualify for career positions.
- Students will be able to articulate stewardship responsibilities of managers to represent multiple uses of resources by multiple users with divergent opinions and perspectives.

PWS 215 : Principles of Range Management. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Overview of rangeland resources and management principles, including rangeland classification, multiple use management, natural resource policy, and grazing management.

**Course Outcomes**

- Describe rangeland physical characteristics, types, physiology, and ecology
- To understand the principles of stewardship and how they apply to Rangelands
- To understand the importance of rangeland grazing, how it is managed, and nutrient needs of livestock and wildlife
- Describe multiple use management and its implications to wildlife and livestock
- To improve reading and writing skills relating to scientific research

PWS 225 : Principles of Wildlife and Fisheries Management. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: PWS 115.

DESCRIPTION: Basic principles of fish and wildlife management, their habitats, and their human users. Ecological concepts, population dynamics, nutrition, behavior, population assessment, management strategies, habitat sampling and management.

**Course Outcomes**

- Learning Outcome #1: Identify and articulate stewardship for the creation as a basis for professional judgment.This course not only provides an understanding of tools used by wildlife and fisheries managers to restore, revive, and maintain wildlife and fish populations, but also discusses our stewardship roles and responsibilities for those aspects of the creation.
- Learning Outcome #2: Identify wildland plants, soils, and wildlife species and understand how they function in the environment.This course introduces students to a number of wildlife and fish species, and basic ecological concepts as they relate to wildlife and fisheries. Students will understand the ecological roles, habitat needs, and interactions of fish and wildlife at various levels in an ecosystem
- Learning Outcome #3: Apply an understanding of ecological processes to wildlife management.This course includes an extensive overview of basic ecological processes and how to use them for fish and wildlife management.
- Learning Outcome #4: Demonstrate the ability to apply the scientific method and analytical thinking to ecological and management issues.In this course students will be rigorously taught the scientific method and given opportunities to demonstrate the understanding through fish and wildlife management problem solving. They will have writing assignments that provide opportunities for the synthesis and expression of the depth of their understanding. The term paper required in this course may be used for one of the “three written papers relating to stewardship ethics and management situations” that will be placed in the student’s portfolio required for graduation with a Wildlife and Wildlands Conservation BS degree.

PWS 275 : Genetics and Reproduction. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Any general biology course.

DESCRIPTION: Principles of inheritance.

**Course Outcomes**

- Identify and articulate principles of stewardship as a basis for professional judgment.
- Apply knowledge of genetics to conservation and management of natural populations.
- Provide a foundation in the basic and applied principles of genetics for natural resource management andconservation.

PWS 282 : Introduction to Soil Science. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 283 or concurrent enrollment.

DESCRIPTION: Physical, chemical and microbiological properties of soils that affect plant growth in natural, agricultural, and urban environments.

**Course Outcomes**

- Enhance critically thinking skills as they apply to soil resource management and conservation
- Demonstrate a fundamental knowledge of soil chemistry, genesis, microbiology, physics, taxonomy, and nutrient and water relations
- Create a conceptual framework to help manage soil resources (i.e., animal habitat, plant nutrient fertility, salinity, soil and water quality, and wind and water erosion) in agricultural, urban, and

ecological settings
- Understand the historical and current problems, and cultural concerns facing soils as a natural resource essential to human life

PWS 283 : Introduction to Soil Science Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 282 or concurrent enrollment.

DESCRIPTION: Laboratory techniques in determining soil physical, chemical, and fertility properties.

**Course Outcomes**

- Understand basic soil assessments related to soil chemistry, physics, biology, and nutrient fertility
- Apply laboratory techniques to determine problems associated with soil resource conservation and management
- Conduct basic soil methods in nutrient analysis; textural classification; and organic matter, cation exchange capacity, acidity, and alkalinity content

PWS 330 : Rangeland Plant Identification and Ecology. (3:2:3)

WHEN TAUGHT: Winter

DESCRIPTION: Identification, characteristics, phenology, distribution, site adaptation, forage value, and response to management of significant range and pasture plants.

**Course Outcomes**

- Students will be able to sight identify many common range plants of North America
- Students will be able to use a grass key to identify unknown grasses
- Students will be able to pair symptoms of sick animals with poisonous plants that may have been consumed

PWS 344 : Natural History of Wildlife. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: PWS 225 or equivalent.

DESCRIPTION: Wildlife species and their habitats, including ecology, life histories, adaptations, behavior, genetics and population viability variables, and the ethics of global stewardship. Field trips required.

**Course Outcomes**

- In this course, students will be rigorously taught the scientific method and given opportunities to demonstrate the understanding through wildlife ecology problem solving. They will have writing assignments that provide opportunities for the synthesis and expression of the depth of their understanding.
- This course introduces students to a number of wildlife and fish species, and basic ecological concepts as they relate to wildlife and fisheries. Students will understand the biology, ecological roles, habitat needs, ecological adaptations, and interactions of fish and wildlife at various levels in an ecosystem.
- Be able to define “natural history” and be able to describe basic concepts and principles that comprise the natural history of an organism
- Gain an appreciation for the diversity of lifestyles among vertebrates
- Develop critical reading and thinking skills
- Improve oral and written communication skills

PWS 350 : Rangeland Ecology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 150 or Bio 100 or Bio 130 or PDBio 120.

DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth emphasizing rangeland ecosystems.

**Course Outcomes**

- Demonstrate a fundamental knowledge of ecological principles and the multiple dimensions of biodiversity.
- Possess a working knowledge of the ecology relating to soil, water, and air conservation.
- Understand how global and geologic processes affect life on earth.
- See the connectivity and relevance of ecology to other fields of study.
- Understand the importance of ecology to issues regarding human well-being.

PWS 355 : Rangeland Vegetation Measurements and Analysis. (3:2:3)

WHEN TAUGHT: Fall

DESCRIPTION: Field methodologies for vegetation inventories and analysis (density, biomass, cover, frequency, utilization, etc.) in wildland settings.

**Course Outcomes**

- Students will be able to demonstrate, through lab exercises and write-ups, an understanding of ecological processes that drive secondary succession in wildland ecosystems which in turn impact management decisions.
- Students will be able to apply vegetation data collection techniques to quantify vegetation and make interpretations used in resource management decisions.

PWS 357 : Techniques for Wildlife Investigations and Management. (3:2:3)

WHEN TAUGHT: Fall
RECOMMENDED: PWS 350, 355.
DESCRIPTION: Investigatiion and management of fish and wildlife populations. Methods for population assessment, capture, handling, marking, radio-telemetry, behavioral studies, and human disturbance. Lab is required.

**Course Outcomes**

- The purpose of this course is to introduce students to a variety of methods used by wildlife biologists for the investigation and management of wildlife. Course content prepares students to observe wildlife, research wildlife literature, to rigorously apply the scientific method for problem solving, to evaluate data objectively, and to communicate research results effectively. This course is built upon principles of biodiversity, ecology, population dynamics, habitat, and conservation.

PWS 375 : Environmental Policies and Laws. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Inception, current state, and future directions of seminal environmental policies and laws established in the US to improve environmental quality. Application of policies and laws in resource conservation and management, including a National Environmental Policy Act certification program.

**Course Outcomes**

- Demonstrate a fundamental understanding of the inception, current state, and future needs of the five seminal developments in environmental policy and law (i.e., Clean Air Act; Clean Water Act; National Environmental Policy Act; Comprehensive Environmental Response, Compensation, and Liability Act or Superfund; and the Endangered Species Act)
- Create your own conceptual framework for analyzing policy change in the United States and abroad, and understand the role of government, society, and economics in shaping this framework
- Understand the formal institutional setting in which policy is developed, the major participants involved, and the role of science in shaping policy
- Gain a basic understanding of how environmental laws (e.g., statutes, cases, and common laws) operate to regulate our interaction with the environment and one another
- Write more effectively and concisely

PWS 416 : Rangeland Vegetation Improvement. (3:2:3)

WHEN TAUGHT: Fall
RECOMMENDED: PWS 330, 350.
DESCRIPTION: Habitat improvement for domestic and wild animals. Plant control by mechanical equipment, herbicides, and prescribed fire. Restoration of disturbed lands.
NOTE: Field trips required.

**Course Outcomes**

- Apply the historical and successional history of land to current rangeland vegetation conditions and treatments
- Describe and plan biological, chemical, mechanical methods, and fire to achieve land management goals.
- Assess site potential and fuels relative to potential vegetation changes with and without management.
- Apply and plan revegetation, fire rehabilitation, and restoration practices to rangelands.
- Integrate plant control, revegetation and other restoration practices to meet land management goals
- Become familiar with approaches, practices, and outcomes of rangeland vegetation improvements in actual field situations.

PWS 417 : Rangeland Planning and GIS. (3:2:3)

WHEN TAUGHT: Winter
RECOMMENDED: PWS 215, 225, 350.
DESCRIPTION: Development of a multiple-use natural resource plan for watershed forestry, recreation, wildlife, and livestock. Policies that govern planning and conflict resolution.

**Course Outcomes**

- Identify and articulate stewardship for the creation as a basis for professional judgment.
- Apply an understanding of ecological processes to wildland management
- Demonstrate ability to apply the scientific method and analytical thinking to ecological and management issues.

PWS 446 : (PWS-Bio) Ornithology. (3:2:3)

WHEN TAUGHT: Winter
PREREQUISITE: Bio 100 or Bio 130 or PDBio 120 or PWS 100 or equivalent or instructor's consent.
DESCRIPTION: Avian systematics, evolution, distribution, identification, and natural history.
NOTE: One three-day field trip required.

**Course Outcomes**

- 1) Define ornithology and what it encompasses
- 2) Become proficient in bird identification (sight, sound, sign)
- 3) Develop an understanding of the unique characteristics of birds
- 4) Understand the current thinking regarding the evolution of birds
- 5) Describe the life history characteristics of birds and their annual cycle

PWS 492 : Wildlife and Wildlands Conservation Senior Seminar. (1:1:0)

WHEN TAUGHT: Winter

DESCRIPTION: Capstone course bringing together portfolios, student experiences, exams, and exercises necessary for completing and assessing wildlife and wildlands program learning outcomes.

**Course Outcomes**

- Students will understand how to take the next step toward permanent employment or post-graduate training.
- Students will pass plant, mammal, and bird ID competency exams as well as a comprehensive discipline exam.
- Students will build a professional portfolio that will demonstrate their specific training, experience, skills and abilities relative to Wildlife and Wildlands Conservation.

2. Complete 15 elective credit hours from the following course list. With the help of your advisor, select courses to qualify for 2–3 federal job series (wildlife biologist, ecologist, range conservationist, GIS specialist, soil conservationist, botanist, fisheries biologist):

BIO 220A : Biological Diversity: Animals. (4:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in invertebrates and vertebrates. Laboratory included.

**Course Outcomes**

- Students will be able to discuss the broad patterns of the evolution of the clade Animalia, emphasizing the relationships among major sub-clades (phyla), the unique biological attributes that define these clades, and the novel changes in morphology over major transitions (unicellular to multicellular; acoelomate to pseudocoelomate to coelomate body plans, bilaterial vs radial symmetry, origins of exoskeletons, gill slits, notochord, crania & vertebral columns, etc.).
- Students will develop the skills necessary to understand the terminology of phylogenetic systematics and methods used to recover the “tree of life”, the logic behind the hierarchy (i.e., the only possible outcome of the process of “descent with modification”), and critically apply evolutionary reasoning, including the use of phylogeny and tree-thinking, to formulate and test hypotheses that explain biological diversity.
- Students will have the intellectual tools to continue to explore related topics with confidence and understanding throughout their lives, and a deeper appreciation for the diversity of life on earth.

BIO 220B : Biological Diversity: Plants. (4:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in fungi, algae, and principal groups of land plants. Laboratory included.

**Course Outcomes**

- Students will be able to discuss differences between cyanobacteria, algae, bryophytes, non-seed vascular plants, gymnosperms, flowering plants, and fungi with repsect to their lifecycles, characteristic morphologies, and biological roles.
- Students will develop the skills necessary to understand and critically apply evolutionary logic including the use of phylogeny and tree-thinking to formulate and test hypotheses that explain biological diversity
- Students will be able to continue to explore related topics with confidence and understanding throughout their lives.

BIO 270 : Animal Restraint. (1:0:2)

WHEN TAUGHT: Winter

DESCRIPTION: Restraint and first aid techniques for pet, laboratory, domestic, and wild animals.

**Course Outcomes**

- Know how to safely restrain domestic animals and wildlife species
- Understand basic animal restraint techniques for a number of domestic and wildlife species
- Understand why certain restraint techniques work with only certain animals and not others
- Develop a basic knowledge of animal chemical restraint methods and their indications
- Understand why the use of pharmaceutical agents by lay persons is not advocated without a veterinarian's prescription or special knowledge and training of non-veterinarian personnel, such as wildlife biologists

BIO 352 : Introduction to Marine Biology. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: BIO 220A

DESCRIPTION: Marine life, the sea as an environment, and research methods.

**Course Outcomes**

There are no course outcomes available

BIO 380 : Comparative Animal Physiology and Anatomy. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: Bio 220A or instructor's consent.

DESCRIPTION: Structure and function of animal organ systems; structural and physiological responses to demands of and changes in environment; evolutionary constraints on anatomy and physiology.

**Course Outcomes**

- Students will demonstrate a fundamental knowledge of comparative vertebrate animal physiology and anatomy.
- Students will develop critical thinking skills while learning concepts and understanding the tools used by comparative vertebrate animal physiologists and anatomists to study function and structure.
- Students will use physiological and anatomical knowledge to enhance their personal lives.
- Students will use their skills and knowledge in comparative vertebrate animal physiology and anatomy to secure employment or to advance in higher education in biology-related disciplines.
- Students will develop an understanding of physiologic isotopic techniques utilized to indicate energy sources, trophic levels, body water, and latitudinal and altitudinal animal migration reflected by stable isotopes of carbon, nitrogen, hydrogen and oxygen.

BIO 420 : Evolutionary Biology. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240 & PWS 340
RECOMMENDED: Concurrent enrollment in Bio 421.
DESCRIPTION: Intensive examination of evolution as the conceptual cornerstone of biology.

**Course Outcomes**

- Students will be able to describe the history and development of evolutionary thought.
- Students will be able to list and describe the evidence for evolution and its required corollaries.
- Students will be able to describe the mechanisms by which evolution occurs. Provide detailed explanations of the the processes of evolution by mutation, migration, genetic drift, non-random mating, and natural selection.
- Students will be able to explain adaptation, providing examples from several different fields of biology (e.g., cell biology, physiology, conservation biology, bioinformatics, medicine, behavior, etc.).
- Students will be able to describe the history of life on earth. Identify major evolutionary transitions over time, and explain the tools and evidence that support current hypotheses of the history of life.

BIO 430 : Plant Classification and Identification. (4:3:3)

WHEN TAUGHT: Fall
PREREQUISITE: Bio 100 or Bio 130 or PDBio 120 or PWS 100 or instructor's consent.
DESCRIPTION: Principles of plant systematics, taxonomy, and classification, emphasizing family recognition by sight, terminology, and use of identification keys to the temperate flora.

**Course Outcomes**

- Students will apply correct vocabulary for describing plant parts and be able to deduce the meaning of new terms based on knowledge of common roots, prefixes, and suffixes.
- Students will recognize the major groups of vascular plants, be able to differentiate them by their principal characters, and understand their phylogenetic relationships.
- Students will identify by sight 40 families of flower plants as well as common families of ferns and gymnosperms, by recognizing differentiating features of each family.
- Students will gain proficiency in the use of keys and identification manuals for identifying any unknown plant to species.

BIO 441 : Entomology. (3:2:3)

WHEN TAUGHT: Fall
PREREQUISITE: Bio 220A or equivalent.
DESCRIPTION: External morphology, natural history, evolution, distribution, and phylogeny of insects. Insect collection required.

**Course Outcomes**

- Understand basic principles of morphology and systematics and apply these principles to your own knowledge of insects.
- Judge genetic relationships. Be able to recall current hypotheses of insect phylogeny at the ordinal level and have the tools needed to judge validity of new hypotheses of phylogeny that might be proposed. You will also study carefully the modifications associated with phylogenies that led to insect diversification and success.
- Understand details of insect morphology, and be well versed in both internal and external body structures.
- Recognize common insect families and be able to quickly identify them on sight.
- Gain or regain a sense of wonder for the natural world, especially as it relates to insects and other arthropods. Gain perspectives of the diversity and complexity in the insect world. Enhance your appreciation for the natural world we share with them.
- Learn life histories and specific collecting techniques for insects in their own habitats. You will learn how they fit in the natural world.
- Learn the protocols for detailed identificiations. Many insects will be totally new in appearance to you. You will use identification guides and illustrations to help you decide what the name of an insect is at the Order and Family levels.
- Use a variety of identification techniques to correctly identify insects and other arthropods. Throughout your life you will be asked by employers, friends, and family to answer the question, "What is this?" This course will give you these exact skills. A correct identification is a beginning step to learning more about a species and its relationships to the natural world and its pragmatic relationship to humans.

BIO 442 : Advanced Invertebrate Zoology. (5:6:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: BIO 220A
DESCRIPTION: Functional morphology, cladistics, ecology, behavior, and interrelationships of invertebrates.

**Course Outcomes**

There are no course outcomes available

BIO 443 : Ichthyology. (3:2:3)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: BIO 220A

DESCRIPTION: Fish systematics, evolution, morphology, distribution, and natural history.

**Course Outcomes**

- Students will have a general understanding of fish respiration.
- Students will have a general understanding of fish body structure.
- Students will have a general understanding of fish food processing.
- Students will have a general understanding of fish behavior and communication.

BIO 445 : Herpetology. (4:3:2)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: BIO 220A

DESCRIPTION: Reptile and amphibian evolution, systematics, morphology, distribution, and natural history. Lab emphasizes taxonomy, classification, and distribution of western U.S. species.

**Course Outcomes**

- Each student will gain a deeper understanding of some details of the origin of tetrapods, and the origin of the amniotes.
- Each student will gain a deeper understanding of the phylogenetic position of extinct and extant clades of amphibians & reptiles within the clade Vertebrate.
- Each student will acquire a detailed knowledge of the evolution and natural history (natural history, behavior, etc.) of the major clades of extant amphibians and reptiles .
- Through lab and field experiences, each student will acquire a detailed knowledge of diagnostic characters, taxonomy & distributions, and some aspects of ecology of native western species.
- Each student will acquire some knowledge of the conservation status of selected species in the US and abroad.

BIO 450 : Conservation Biology. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BIO 220A & BIO 350; or BIO 220B & BIO 350

DESCRIPTION: Scientific principles of conservation: applying population genetics, and phylogenetic and ecological theory to preservation of biological diversity; developing sustainable ecological systems compatible with human resource use.

**Course Outcomes**

- Apply an understanding of ecological processes to conservation of populations, species, and ecosystems.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Demonstrate the ability to apply the scientific method and analytical thinking to ecological and conservation issues.
- Demonstrate the ability to synthesize literature relevant to a topic in conservation biologigy
- Demonstrate the ability to write a scientific term paper

BIO 452 : Marine Biology. (4:3:1)

WHEN TAUGHT: Spring Even Yrs.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Principles of physical and biological oceanography, biodiversity, and ecology of numerous ocean habitats. Extensive field trips.

**Course Outcomes**

No outcomes are available at this time.

BIO 525 : Animal Disease, Biosecurity, and Zoonoses. (3:3.0:0)

WHEN TAUGHT: Winter

PREREQUISITE: Bio 380 or instructor's consent.

DESCRIPTION: Animal disease emphasizing prevention, organ systems affected, biosecurity, and zoonotic potential.

**Course Outcomes**

- Comparative pathophysiology will be taught using canine, feline, bovine, ovine, caprine, equine, lab animals, and wildlife examples
- Understand basic animal pathophysiology of disease on an organ system basis and preventive measures to maintain animal health
- Identify biosecurity practices to prevent animal disease
- Differentiate between zoonoses, sapronoses and anthroponoses and understand how to institute preventive measures and management practices to avert these health problems
- Design a herd health program with preventive measures that addresses nutrition, sanitation, housing, ventilation, lighting, and other components for a particular species the student wants to work with as a producer
- Understand how to institute good management procedures that can prevent the occurrence of animal disease

- Develop a basic knowledge of animal immunology as it pertains to disease induction and prevention, with natural and artificial immunity practices that should be implemented to enhance disease prevention, and nutritional practices to optimize animal immunity

BIO 541 : Aquatic Entomology. (4:2:4)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Bio 441 or equivalent.

DESCRIPTION: Morphology, classification, biology, and functional ecology of aquatic insects. Field trips required.

**Course Outcomes**

- Develop an apprecitation for the diversity of the living aquatic insect world.
- Learn to become better stewards of the earth and its living inhabitants.
- Understanding of all aquatic biology.

BIO 556 : Limnology. (3:2:4)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Bio 350, Chem 106; or equivalents.

DESCRIPTION: Lakes, reservoirs; their biota and physical/chemical properties.

**Course Outcomes**

- Understand the major physical processes that form and characterize lentic habitats.
- Understand the dominant chemical processes that occur in lake systems.
- Understand how organisms adapt to the above physical and chemical constraints.
- Gain teaching experience through preparing a Powerpoint presenting your study presentation to the class.
- Experience pursuing a focused research topic from the initial question to a competed report.

BIO 557 : Stream and Wetland Ecology. (4:3:4)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Bio 350, Chem 106; or equivalent.

DESCRIPTION: Stream and wetland ecology; their biota and their physical/chemical properties.

**Course Outcomes**

- Develop an understanding of streams and wetlands within the broader context of ecology and conservation.
- Become familiar with the major conservation issue in streams and wetlands and the underlying ecological concepts.
- Initial exposure to the current literature.
- Develop skills related to critical thinking. That is, learn how to: a) read critically and summarize information, b) draw conclusions and synthesize information to develop new questions and hypotheses, and c) design experiments or comparative studies. It is important to start early to learn how to think, read, and write critically.

GEOG 211 : Map Use and Interpretation. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Maps as tools for spatial analysis of problems in physical and cultural geography.

**Course Outcomes**

- Identify each component of the â Big Threeâ when using or observing geographic technologies. The Big Three includes 1) Geographic Information Systems, 2) Global Positioning Systems, and 3) Remote Sensing.
- Complete all typical map scale calculations related to land distance and area including unit conversions.
- Give and take coordinate references in UTM and lat / long and convert between the two. select a datum and coordinate system appropriate for a given job-related task. Explain the logic of and give / take a reference in the PLSS
- Configure a GPS receiver properly to use both with and without a map. Lay-in and follow the course in a GPS receiver.
- Measure elevation, distance, direction, slope, and aspect from digital or paper topographic maps. Perform a simple statistical analysis of data on a USGS topographic map.
- When presented with a typical specimen, perform a simple interpretation of a thematic map (e.g. Choropleth, Isoline)

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

GEOG 306 : Public Land Conservation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Environmental and social geography of public lands; analyzing historical, planning, management, and ecological issues.

**Course Outcomes**

There are no course outcomes available

GEOG 412 : Advanced Geographic Information Systems. (3:3:1)

WHEN TAUGHT: Fall Contact Department
PREREQUISITE: GEOG 212 & GEOG 311
RECOMMENDED: Geog 222.
DESCRIPTION: Performing geographic tasks in resource management decision support and scientific research using spatial data management and analysis tools and techniques.

**Course Outcomes**

There are no course outcomes available

PDBIO 482 : Developmental Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MMBIO 240 & PDBIO 360
RECOMMENDED: PDBio 325.
DESCRIPTION: Invertebrate and vertebrate developmental biology. Embryonic gastrulation, neurulation, pattering, etc. Modern approaches and research strategies. Emphasizes gene function, cell signaling, signal transduction during embryogenesis.

**Course Outcomes**

- Students will be able to generally describe the early development (from fertilization to axis formation) of one invertebrate and one vertebrate model organism.
- Students will be able to generally describe the concepts of cellular competence, induction, specification, commitment and differentiation in embryonic development.
- Students will be able to give two examples of organogenesis, including genes and signal transduction pathways that lead to organ system formation.
- Students will be able to explain embryonic patterning, using examples that include genes known to act in patterning events.
- Students will be able to explain at least two concepts in developmental biology that overlap with other sciences, such as stem cell research, cancer research, evolutionary sciences, or neuroscience.
- Students will be able to discern and summarize the current state of knowledge on a given topic, construct pioneering research questions on that topic, and propose experiments aimed at answering those questions.

PWS 113 : Safety Certifications for Field Biologists. (1:2:0)

WHEN TAUGHT: Winter
DESCRIPTION: Certification modules promoting field safety to prepare students to be leaders in workplace safety. Specific trainings include first aid, CPR, hot and cold weather exposure, ATV and snowmobile operation, wild animal safety, and more.

**Course Outcomes**

There are no course outcomes available

PWS 270 : Animal Husbandry. (3:2:3)

WHEN TAUGHT: Winter
DESCRIPTION: Introduction to animal husbandry and management techniques for domestic and wild animals.

**Course Outcomes**

- Integrate livestock husbandry and management practices with wildlife management.
- Learn important aspects of livestock stewardship through daily care and management.
- Understand how livestock production can and will impact wildlife ecology.

PWS 301 : Plant Growth and Reproduction. (3:2:2)

WHEN TAUGHT: Winter
PREREQUISITE: PWS 100 or equivalent.
DESCRIPTION: Scientific principles of plant propagation by seeds, cuttings, budding and grafting, and tissue culture.

**Course Outcomes**

- Students will take a pre- and post-test for foundational principles related to this course and will show learning by an increase of at least double the average score.
- Students will complete a class project that involves the use of foundation principles in this course and use this written project for their portfolio.

PWS 303 : Soils Conservation and Resources. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: PWS 282 & CHEM 105; or PWS 282 & CHEM 101; PWS 100 or equivalent; Math 110 or equivalent.
RECOMMENDED: Geol 111.
DESCRIPTION: Taxonomy of world soils; conservation and management of agricultural, wildland, wetland, and

urban soils.

**Course Outcomes**

- Understand soil physics, chemistry, taxonomy, and water movement to maintain natural resources.
- Apply soil conservation practices and principles to regions sensitive to soil degradation.
- Understand the history, development, and terminology associated with USDA Soil Taxonomy and be familiar with other soil taxonomic systems. Recognize soil orders and suborders from the physical and chemical characteristics of the soil

PWS 315 : Conflict Resolution Management. (1:1:0)

WHEN TAUGHT: Winter

DESCRIPTION: Modern techniques associated with resolution of conflicts surrounding natural resources.

**Course Outcomes**

There are no course outcomes available

PWS 324 : Wildlife Law Enforcement. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Bio 100 or equivalent.

DESCRIPTION: Current and historical principles of federal and state wildlife law enforcement, case development, evidence, evaluation, human rights, and testimony.

**Course Outcomes**

There are no course outcomes available

PWS 325 : Fisheries and Wetlands Management. (3:2:3)

WHEN TAUGHT: Fall

RECOMMENDED: PWS 225 or equivalent.

DESCRIPTION: Principles of fisheries and wetlands mangement, emphasizing managing fish populations and their diverse micro- and macro-habitats within the context of community and ecosystem dynamics. Case studies and models used to evaluate growth, recruitments, and mortality in age-structured populations in relationship to the dynamics of watershed and wetland landscapes.

**Course Outcomes**

- Understand ecological aspects of fisheries and wetland systems.
- Learn important aspects of fisheries and wetland management.
- Integrate concepts taught in class to other ecological systems.

PWS 411 : Watershed Management. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: BIO 350; or PWS 350

DESCRIPTION: Processes and management of the hydrologic cycle of forests and rangelands.

**Course Outcomes**

- Students will understand the history and policy that drives water management in the western US.
- Students will understand ecological and hydrological processes and concepts and apply them to watershed management actions such as harvesting, grazing, and restoration.
- Students will be able to apply assessment and classification tools to watersheds and their components to determine how management actions affect hydrologic responses.

PWS 419 : Forest Management and Ecology. (3:2:3)

WHEN TAUGHT: Fall

DESCRIPTION: Managing forests, emphasizing ecosystem managment.

NOTE: Field trips required.

**Course Outcomes**

- 1. Articulate their role as stewards over forested environments.
- 2. Appreciate the diversity of forests world-wide and their importance to human populations.
- 3. Apply knowledge of forest structure, function, and process in making management decisions
- 4. Be able to quantify forest structure and production
- 5. Recognize forest pests and diseases and know appropriate control techniques.
- 6. Relate forests to wildlife habitat
- 7. Identify 75 tree species located in Utah and on BYU campus.

PWS 440 : Plant Physiology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GE Biological Science requirement; college chemistry

RECOMMENDED: Chem 285; or 351, 352.

DESCRIPTION: Photosynthesis, respiration, water relations, mineral nutrition, growth of flowering plants.

**Course Outcomes**

- Students will be fluent in understanding plant function at the molecular, biochemical and whole plant levels
- Students will understand the connections between plant function and ecosystem processes
- Student will practice applying the scientific method in order to develop critical thinking and problem

solving skills
- Student will engage in learning activities that increase there writing and speaking proficiency

PWS 511 : Environmental Biophysics: Soil and Plant Water Relations. (4:3:2)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Phscs 105 and PWS 282; or equivalents.

DESCRIPTION: Integrating biological, physical, and chemical processes of water and solute movements through the soil-plant-atmosphere continuum.

**Course Outcomes**

- Students will take a pre- and post-semester exam and at least double their score to assess understanding of the importance of physics in biological systems.

PWS 512 : Rangeland Landscape Ecology and Geographic Information Systems. (3:2:3)

WHEN TAUGHT: Fall Odd Yrs.

RECOMMENDED: PWS 215, Geog 212.

DESCRIPTION: Applying landscape ecology theory to evaluate, describe, and predict spatial patterns and processes within rangeland ecosystems using geographic information systems (GIS), remote sensing, and global positioning systems (GPS).

**Course Outcomes**

- Students will be able to apply landscape ecology theory to evaluate, describe, and predict spatial patterns and processes in wildlife ecosystems. This will be furthered by synthesis of the literature and current theory.

PWS 547 : Ungulate Conservation and Management. (2:2:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: PWS or Bio 350; and Bio 447; or equivalents.

DESCRIPTION: Integrating principles of natural history, population ecology, behavior, and conservation biology of North American ungulates. Special emphasis on management and conservation applications.

**Course Outcomes**

- Will understand and be able to articulate current understanding concerning the role of ungulates in ecosystems
- students will develop the ability to critically think by reviewing and evaluating scientific articles or book chapters that examine ungulate ecology
- Students will develop presentation skills

PWS 553 : Restoration Ecology. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: PWS 282, 416; Bio 350; or equivalents.

DESCRIPTION: Nature of ecosystem disturbance and plant succession; developing science and practice of ecological restoration; case studies of applied restoration.

**Course Outcomes**

- Students will understand the applications of plant population ecology, ecophysiology, and community ecology to restoration ecology.
- Students will understand the processes of plant succession as the foundation for restoration ecology.
- Students will be able to apply restoration ecology and techniques to practical problems such mined and other drastically-disturbed lands, disturbed terrestrial and riparian or wetland systems, and invasive species concerns

PWS 554 : Wildlife Behavioral Ecology. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Bio 100, 350; or equivalents.

DESCRIPTION: Integrating principles of ethology, sociobiology, and behavioral ecology using examples from wildlife resources; behavioral sampling methods.

NOTE: Field trips required.

**Course Outcomes**

- Students will become familiar with the basic principles of animal behavior including:An introduction to the basic principles of animal behaviorA review of natural selection and its role in shaping animal behaviorA study of proximate factors which influence behaviorThe role of learningCooperationForagingAntipredator behaviorCommunicationHabitat selection, territoriality, and migrationAggressionPlayAging and diseaseAnimal personalities

## Recommended Courses for Preprofessional Track

These recommended preprofessional courses can be used to satisfy the elective credits above.

CHEM 105 : General College Chemistry. (4:5:0)

WHEN Fall; Winter; Spring; Summer

TAUGHT:

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.

- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).
DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.
NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: High school algebra and trigonometry.
RECOMMENDED: Concurrent enrollment in Phscs 107.
DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 105 or equivalent.
RECOMMENDED: Concurrent enrollment in Phscs 108.
DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 105 or concurrent enrollment.
DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 106 or concurrent enrollment
DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.
RECOMMENDED: A general biology course.
DESCRIPTION: Function of body organ systems.
NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

Or

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220
DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.
NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.
- Students will describe how organ systems work together interactively to maintain homeostasis.

Or

BIO 380 : Comparative Animal Physiology and Anatomy. (4:3:3)

WHEN TAUGHT: Fall
PREREQUISITE: Bio 220A or instructor's consent.
DESCRIPTION: Structure and function of animal organ systems; structural and physiological responses to demands of and changes in environment; evolutionary constraints on anatomy and physiology.

**Course Outcomes**

- Students will demonstrate a fundamental knowledge of comparative vertebrate animal physiology and anatomy.
- Students will develop critical thinking skills while learning concepts and understanding the tools used by comparative vertebrate animal physiologists and anatomists to study function and structure.
- Students will use physiological and anatomical knowledge to enhance their personal lives.
- Students will use their skills and knowledge in comparative vertebrate animal physiology and anatomy to secure employment or to advance in higher education in biology-related disciplines.
- Students will develop an understanding of physiologic isotopic techniques utilized to indicate energy sources, trophic levels, body water, and latitudinal and altitudinal animal migration reflected by stable isotopes of carbon, nitrogen, hydrogen and oxygen.

## GIS Applications

Students interested in GIS applications should consider a minor in geographic information systems (20-23 hours). See the Geography Department for details.

*Hours include courses that may fulfill university core requirements.

## Show all Plant and Wildlife Sciences (PWS) Courses

**College of Life Sciences Home**

**Plant and Wildlife Sciences Department Home**

**Majors**

- BS in Environmental Science
- BS in Genetics and Biotechnology
- BS in Landscape Management
- BS in Wildlife and Wildlands Conservation

**Minors**

- Environmental Science
- Landscape Management

**Course Information**

- Plant and Wildlife Sciences (PWS) Courses

**Faculty**

# Minor in Environmental Science (17 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Complete the following environmental science core courses:

PWS 150 : Environmental Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Conservation and management of natural resources concurrent with increasing socioeconomic and human population demands; factors such as soil, water, and air pollution, resources management, bioremediation, nutrient cycles, and global climate changes

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Gain a deep appreciation for the Lord's admonition to Adam and Eve regarding the Earth to dress it and keep it
- Engage others and participate in discussions about major environmental problems, movements, and solutions (e.g., desertification, invasive species, water pollution, green revolution, and renewable energy).
- Understand how "science" is conducted.
- Demonstrate a fundamental knowledge (i.e., scientific literacy) of the environment and current environmental problems facing us locally, regionally, and globally.
- Devise experiments with testable hypotheses based the scientific method—process of making observations and logically integrating those observations into a model of how the world works.
- Foster and promote environmental stewardship within your realm of influence and your community.

PWS 375 : Environmental Policies and Laws. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Inception, current state, and future directions of seminal environmental policies and laws established in the US to improve environmental quality. Application of policies and laws in resource conservation and management, including a National Environmental Policy Act certification program.

**Course Outcomes**

- Demonstrate a fundamental understanding of the inception, current state, and future needs of the five seminal developments in environmental policy and law (i.e., Clean Air Act; Clean Water Act; National Environmental Policy Act; Comprehensive Environmental Response, Compensation, and Liability Act or Superfund; and the Endangered Species Act)
- Create your own conceptual framework for analyzing policy change in the United States and abroad, and understand the role of government, society, and economics in shaping this framework
- Understand the formal institutional setting in which policy is developed, the major participants involved, and the role of science in shaping policy
- Gain a basic understanding of how environmental laws (e.g., statutes, cases, and common laws) operate to regulate our interaction with the environment and one another
- Write more effectively and concisely

2. Complete a minimum of 11 credit hours from the following course lists:

A. Complete at least six hours of the following supporting core courses:

PWS 282 : Introduction to Soil Science. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 283 or concurrent enrollment.

DESCRIPTION: Physical, chemical and microbiological properties of soils that affect plant growth in natural, agricultural, and urban environments.

**Course Outcomes**

- Enhance critically thinking skills as they apply to soil resource management and conservation
- Demonstrate a fundamental knowledge of soil chemistry, genesis, microbiology, physics, taxonomy, and nutrient and water relations
- Create a conceptual framework to help manage soil resources (i.e., animal habitat, plant nutrient fertility, salinity, soil and water quality, and wind and water erosion) in agricultural, urban, and ecological settings

Understand the historical and current problems, and cultural concerns facing soils as a natural resource essential to human life

PWS 283 : Introduction to Soil Science Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 282 or concurrent enrollment.

DESCRIPTION: Laboratory techniques in determining soil physical, chemical, and fertility properties.

**Course Outcomes**

- Understand basic soil assessments related to soil chemistry, physics, biology, and nutrient fertility
- Apply laboratory techniques to determine problems associated with soil resource conservation and management
- Conduct basic soil methods in nutrient analysis; textural classification; and organic matter, cation exchange capacity, acidity, and alkalinity content

PWS 305 : Soils and Water Quality. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 282 & CHEM 105; or PWS 282 & CHEM 101; PWS 100 or equivalent; Math 110 or equivalent.

DESCRIPTION: Principles and practices of safe management of agricultural and urban wastes; amendments and nutrients including remediation methods for conservation of soils and water quality.

**Course Outcomes**

- Evaluate case studies in current topics soil and water quality
- Demonstrate a fundamental knowledge in water quality and water resource conservation as influenced by soil-water-atmosphere interactions
- Enhance critically thinking skills as it relates to issues in water quality management and resource conservation
- Improve mathematical and statistical skills related to nutrient, salinity, sodicity, and toxicity evaluation and management

PWS 345 : Air Quality and Pollution. (2:2:0)

WHEN TAUGHT: Winter

DESCRIPTION: Origin, effects, ecology, and management of major atmospheric pollutants - current topics in air quality, methods for quantifying pollutants and assessing air quality, and policy and management principles governing air as a natural resource.

**Course Outcomes**

There are no course outcomes available

PWS 365 : Environmental Microbiology. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Chem 101 or 105; PDBio 120; PWS 150.

DESCRIPTION: Environmental microbiology in aquatic and terrestrial systems. Detecting, enumerating, and identifying microorganisms. Bioremediation of organic and metal pollutants. Microbial-mediated transformations in nutrient cycling. Spread of pathogens.

**Course Outcomes**

- Demonstrate a fundamental knowledge of the environmental microbiology surrounding soil, water, and air conservation, quality, and pollution
- Understand the basic chemistry, biochemistry, and physics associated with the bioremediation, nutrient cycling, and pathogenesis
- Foster and promote environmental stewardship within yourself and your community
- Write and orally communicate more effectively and concisely

PWS 366 : Environmental Microbiology Lab. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 365 or concurrent enrollment.

RECOMMENDED: Chem 101 or 105; PDBio 120; PWS 150.

DESCRIPTION: Laboratory and field techniques. Detecting, enumerating, and identifying microorganisms via microscopic and cultural assays. Microbial transformation and responses to pollutants. Detecting techniques evaluating coliforms and fecal coliforms, viruses, and parasites.

**Course Outcomes**

There are no course outcomes available

PWS 490 : Case Studies. (2:1:2)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PWS 282

DESCRIPTION: Contemporary agricultural and environmental problems using decision case studies dealing with environmental technology issues and analysis.

**Course Outcomes**

There are no course outcomes available

PWS 494R : Mentored Learning Experience. (1-6:ARR:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Topics vary.
NOTE: Registration required for mentored experiences.

**Course Outcomes**

- Design and/or participate in basic experiments attempting to answer questions in biochemistry, biotechnology, genetics, molecular biology, and soil science
- Generate and analyze experimental results for publications or presentations at professional meetings
- Learn how to be an effective and efficient mentor

: Biotechnology Laboratory.

**Course Outcomes**

: Plant Physiology Laboratory.

**Course Outcomes**

: Environmental Science Laboratory.

**Course Outcomes**

: Soil, Plant, and Water Science Laboratory.

**Course Outcomes**

: Environmental Science Field Techniques.

**Course Outcomes**

: Plant and Soil Science Field Techniques.

**Course Outcomes**

: Plant Breeding Field Techniques.

**Course Outcomes**

: Plant Tissue Culture and Transformation Techniques.

**Course Outcomes**

: Plant Cytogenetics Laboratory.

**Course Outcomes**

: Animal Cytogenetics Laboratory.

**Course Outcomes**

: Plant Cell Biology Laboratory.

**Course Outcomes**

: Analytical Techniques in Plant Biology.

**Course Outcomes**

: Environmental Science Computation Laboratory.

**Course Outcomes**

: Molecular Genetics and Gene Mapping Laboratory.

**Course Outcomes**

: Plant and Animal Genomics Laboratory.

**Course Outcomes**

: Analytical Techniques in Soil Science.

**Course Outcomes**

: Animal Genetics and Breeding Techniques.

**Course Outcomes**

: Soil Physical Properties Laboratory.

**Course Outcomes**

: Soil and Water Chemistry Laboratory.

**Course Outcomes**

: Animal Reproductive Research Laboratory.

**Course Outcomes**

: Field Techniques in Environmental Soil Research.

**Course Outcomes**

: Soil Microbiology Laboratory.

**Course Outcomes**

: Plant ID / URME Team.

**Course Outcomes**

B. Complete up to five hours from the following:

BIO 220A : Biological Diversity: Animals. (4:3:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Comparative organization and evolutionary significance of morphological, physiological, reproductive, and ecological differences in invertebrates and vertebrates. Laboratory included.

**Course Outcomes**

- Students will be able to discuss the broad patterns of the evolution of the clade Animalia, emphasizing the relationships among major sub-clades (phyla), the unique biological attributes that define these clades, and the novel changes in morphology over major transitions (unicellular to multicellular; acoelomate to pseudocoelomate to coelomate body plans, bilaterial vs radial symmetry, origins of exoskeletons, gill slits, notochord, crania & vertebral columns, etc.).
- Students will develop the skills necessary to understand the terminology of phylogenetic systematics and methods used to recover the “tree of life”, the logic behind the hierarchy (i.e., the only possible outcome of the process of “descent with modification”), and critically apply evolutionary reasoning, including the use of phylogeny and tree-thinking, to formulate and test hypotheses that explain biological diversity.
- Students will have the intellectual tools to continue to explore related topics with confidence and understanding throughout their lives, and a deeper appreciation for the diversity of life on earth.

BIO 370 : Bioethics. (2:1:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Introductory biology course.

DESCRIPTION: In-depth lecture and small group discussion of varied bioethical issues. LDS Church positions emphasized when appropriate.

**Course Outcomes**

- Students will understand the ethical and philosophical underpinnings of bioethics and to develop ethical intuitions on bioethical issues.
- Students will learn the terminology, vocabulary, and objectives of bioethics.
- Students will understand the tools and approaches needed to make a bioethical decision and to communicate that decision in rationally informed ways.
- Students will understand the bioethical primary literature, to understand how to read case studies, and familiarity with the major issues being discussed in bioethics today.

BIO 441 : Entomology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: Bio 220A or equivalent.

DESCRIPTION: External morphology, natural history, evolution, distribution, and phylogeny of insects. Insect collection required.

**Course Outcomes**

- Understand basic principles of morphology and systematics and apply these principles to your own knowledge of insects.
- Judge genetic relationships. Be able to recall current hypotheses of insect phylogeny at the ordinal level and have the tools needed to judge validity of new hypotheses of phylogeny that might be proposed. You will also study carefully the modifications associated with phylogenies that led to insect diversification and success.
- Understand details of insect morphology, and be well versed in both internal and external body structures.
- Recognize common insect families and be able to quickly identify them on sight.
- Gain or regain a sense of wonder for the natural world, especially as it relates to insects and other arthropods. Gain perspectives of the diversity and complexity in the insect world. Enhance your appreciation for the natural world we share with them.
- Learn life histories and specific collecting techniques for insects in their own habitats. You will learn how they fit in the natural world.
- Learn the protocols for detailed identificiations. Many insects will be totally new in appearance to you. You will use identification guides and illustrations to help you decide what the name of an insect is at the Order and Family levels.
- Use a variety of identification techniques to correctly identify insects and other arthropods. Throughout your life you will be asked by employers, friends, and family to answer the question,

"What is this?" This course will give you these exact skills. A correct identification is a beginning step to learning more about a species and its relationships to the natural world and its pragmatic relationship to humans.

CHEM 101 : Introductory General Chemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 97 or equivalent.

DESCRIPTION: Atomic and molecular structure, periodic relationships, states of matter, chemical reactions and stoichiometry, acids and bases.

NOTE: Primarily for nonscience majors who require a broad introduction to general chemistry.

**Course Outcomes**

- Students will be able to view the world around them in chemical terms. Students will use the concepts of atoms, molecules, and their properties to understand a variety of phenomena.
- Students will be able to make qualitative and/or quantitative predictions regarding a number of chemical concepts including chemical reactions and stoichiometry, calorimetry, osmosis, gases, acid/base chemistry, chemical equilibria, and radioactivity.

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 223 : Quantitative and Qualitative Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 107; or CHEM 113

DESCRIPTION: Principles of chemical equilibrium, quantitative chemical measurements, and qualitative detection of selected chemical species.

NOTE: Primarily for majors in molecular biology and the life sciences.

**Course Outcomes**

- Course Objectives: The course is designed to develop research skills. The labwork will have a somewhat bioanalytical focus, e.g. the chemical analysis of biological molecules or biologically related ions and the use of biomolecules in assays. We will work to develop good laboratory practice, both conceptually and practically, and consider how to do good science. The combined lecture/lab approach will be used to help you understand quantitative approaches to analysis, sources of error, and the utility but also limitations of laboratory measurements. You will be asked to apply a portion of this knowledge to your own laboratory determinations. We will also discuss more advanced analytical methods involving chemical separations and instrumental analyses. This course fills one of the requirements for a minor in chemistry.

CHEM 227 : Principles of Chemical Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 113

DESCRIPTION: Principles of quantitative analysis, introductory instrumental methods, and computer applications to chemical analysis.

**Course Outcomes**

- Demonstrate skill in performing precise, careful, basic laboratory operations such as sample preparation, calibration techniques, spectrophotometry, electrochemical analysis, titrimetric and chromatographic methods
- Explain basic measurement methods and devices
- Show proficiency in reporting scientific results in numerical, graphical, and written formats, and be able to explain the ethical standards for such reports
- Show proficiency in using computer programs for data analysis
- Apply basic statistics to data analysis including, confidence intervals, t-test, linear regression, propagation of error, sampling statistics and signal-noise enhancement
- Critically evaluate experiments and data with respect to theory and models
- Apply knowledge to new problems, including the design and validation of new analytical methods

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent.

DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).
DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.
NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120
DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.
NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

ECON 440 : Natural Resources and Environmental Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: ECON 380 & ECON 388
RECOMMENDED: Econ 382.
DESCRIPTION: Economic theory applied to allocation of natural resources and environmental amenities. Issues relating to externalities, common property resources, public goods, allocation of depletable natural resources over time, economic factors of environmental polarization, and others.

**Course Outcomes**

- Utilize economic principles and models to address private and public policy issues related to allocating natural resources and environmental amenities.Demonstrate an active understanding of the following elements of economic theory as it relates to natural resource and environmental economics:Welfare economics and concepts of Pareto optimality, efficiency, and equityThe role of property, property rights, and the bundle of rights conceptThe role of externalities, common property resources, and public goodsConcepts and measures of economic value including non-market valuation.Demonstrate a basic knowledge of the role of markets and market failure with regards to the allocation of natural resources and environmental amenities.Gain a basic understanding of the effects and relative merits of public environmental policy efforts, including cap-and-trade schemes, Pigovian taxes, regulation, and public ownership and/or management.Become knowledgeable about and be able to use economic principles and non-market valuation techniques to address a variety of continuing and contemporary natural resource and environmental issues. These issues may include, but are not exclusive to:Population growth and the environmentGlobal warmingWilderness protection and related public lands issuesAir pollution and public healthIntergenerational allocation of soil, forest, and other depleteable natural resourcesImpacts of environmental features on property values.

GEOG 101 : Global Environment: Understanding Physical Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Physical environment, distribution and interrelationships of climates, landforms, ecosystems and their human significance.

**Course Outcomes**

There are no course outcomes available

GEOG 212 : Introduction to Geographic Information Systems. (3:2:1)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Concepts in the use of small- and large-scale digital map data, emphasizing landscape interpretation and feature description.

**Course Outcomes**

- Understand basic spatial concepts and data models that form the foundation of GIS.
- Acquire geospatial data from common sources and manipuate them for a specific application.
- Analyze data using GIS to solve real world problems.
- Describe several applications in which GIS is used to solve geographic problems.
- Design and use maps to explore and communicate geospatial information.

GEOG 303 : Biogeography. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Geog 101.

DESCRIPTION: Broad-scale distribution of plants and animals. Theoretical and practical applications to conservation and effects of global environmental change.

**Course Outcomes**

- Demonstrate an understanding of basic concepts and processes in biogeography
- Recognize and be able to explain patterns of plant and animal life at many different scales
- Explain how humans have affected the distribution and diversity of plants and animals, and apply concepts to decisions regarding human use of the environment
- Demonstrate a knowledge of prominent professional biogeographers and ecologists and their current research themes
- Plan for future changes in species distributions and diversity as a result of environmental and human-induced pressures

GEOG 305 : Geography of Landforms. (3:3:0)

WHEN TAUGHT: Fall Contact Department

RECOMMENDED: Geog 101.

DESCRIPTION: Elements of landforms: distributions and cultural significance.

**Course Outcomes**

- Examine the history of landform study and the key individuals in the history of geomorphology.
- Explain the physical processes that produce landforms.
- Examine a physical landscape and describe why it looks the way it does.
- Describe how human settlement and recreation patterns are influenced by landforms.
- Understand dating techniques geomorphologists use to understand earth's history.

GEOG 306 : Public Land Conservation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Environmental and social geography of public lands; analyzing historical, planning, management, and ecological issues.

**Course Outcomes**

There are no course outcomes available

GEOG 307 : Landscape Ecology. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Geog 101, 212, 213.

DESCRIPTION: Interaction between spatial patterns and spatial processes in an ecological context. Methods, theories, and practical applications of landscapes at various scales.

**Course Outcomes**

- Demonstrate an understanding of the basic concepts of landscape ecology
- Understand the relation between pattern and process in landscapes across multiple spatial and temporal scales
- Read, understand, and critique research articles in scholarly journals related to landscape ecology
- Understand and be able to use landscape metrics and associated methodologies and technologies to quantitatively analyze landscapes
- Identify and address a research question in landscape ecology, and effectively communicate the results orally and in writing
- Apply landscape ecology concepts to environmental planning and conservation biology

GEOG 310 : Introduction to Urban and Regional Planning. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to the profession and practice of urban and regional planning.

**Course Outcomes**

There are no course outcomes available

GEOG 311 : Intermediate Geographic Information Systems. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: GEOG 212
DESCRIPTION: Collecting, managing, and analyzing spatial data to solve common geographic tasks.

**Course Outcomes**

There are no course outcomes available

GEOG 331 : Economic Geography. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Geog 100 or instructor's consent.
DESCRIPTION: Introduction to economic processes and spatial patterns, emphasizing theoretical approaches, locational strategies, and changing economic land-use patterns.

**Course Outcomes**

There are no course outcomes available

GEOG 412 : Advanced Geographic Information Systems. (3:3:1)

WHEN TAUGHT: Fall Contact Department
PREREQUISITE: GEOG 212 & GEOG 311
RECOMMENDED: Geog 222.
DESCRIPTION: Performing geographic tasks in resource management decision support and scientific research using spatial data management and analysis tools and techniques.

**Course Outcomes**

There are no course outcomes available

GEOL 101 : Introduction to Geology. (3:2:1)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Summer
DESCRIPTION: Cultural focus on physical and environmental geology for nonscience majors; rocks and minerals. Field trips.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- 1. Understand the difference between minerals and rocks.2. Be able to identify common rocks and minerals.3. Know where and when the basic rock and mineral types form and how they are related to the hydrologic and tectonic systems.
- 1. Understand how the hydrologic system helps to shape the Earth and how the different sub-systems interact.2. Learn the reasons for climate change in both ancient and modern times.
- 1. Learn the basic evidences and ideas that support the Theory of Plate Tectonics.2. Understand how the plate tectonic system works, including the role of the different types of plate boundaries and the forces that help to drive the system.3. Learn how the plate tectonic system has helped to shape the Earth's surface.
- 1. Gain a greater insight into the enormous length of geologic time and the evidences that support this claim.2. Learn the different ways that scientists can determine geologic ages.
- Learn how and why the other planets and moons in our solar system are different from Earth.

GEOL 111 : Physical Geology. (4:3:2)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Materials, structure, and surface features of the earth and the geologic processes involved in their development. Field trips and lab studies, use of aerial photos.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.
- Learn some fundamental skills in preparation to conduct research and ultimately write research papers in other classes, including:1. Using online databases (GEOREF, Web of Science) to obtain information on a particular topic.2. Using online resources (Refworks) to manage and format references.3. Reading articles in the primary geologic literature and drawing out primary information such as the topic of and article and its conclusions even if the student is not prepared (at this stage) to understand the methodology employed.4. Appreciate the need to properly format cited literature in a research paper.5. Learn the content and proper voice for the abstract of a research paper.
- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin,

distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the role of human activity in climate change.
- 1. Learn or review the large scale features of the Earth's interior and exterior, including the basic features of the tectonic and hydrological systems.2. Appreciate the role of heat transfer, and in particular convection, in making both the hydrosphere and tectonosphere dynamic.

GEOL 435 : Introduction to Groundwater. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330; Math 110 or equivalent.

DESCRIPTION: Introduction to the occurrence, movement, and properties of subsurface water; surface and groundwater relationships.

**Course Outcomes**

- Demonstrate knowledge of the hydrologic cycle by creating a basin-scale water budget.
- Evaluate the relationship between grain size, sorting, and hydraulic conductivity using Darcy's Law.
- Produce a potentiometric surface map and water table map for a well field.
- Evaluate the relationship between mechanical energy, hydraulic head, and force potential.
- Construct a flow net to describe groundwater flow.
- Evaluate different aquifer test methods for calculating aquifer parameters.
- Evaluate different methods for estimating groundwater recharge rates.
- Describe groundwater flow paths for confined and unconfined aquifers.
- Produce a consulting-type report that synthesizes the groundwater resources, flow paths, and aquifer characteristics of a basin.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 119 : Introduction to Calculus. (4:4:1)

OFFERED: Independent Study only.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 and Math 111; or equivalent.

DESCRIPTION: Introduction to plane analytic geometry and calculus.

**Course Outcomes**

- This course is designed to provide beginning undergraduate students a first exposure to Calculus concepts, theorems, and techniques. In general, theorems will not be proved. An understanding of the theorems and their applications to solve calculus problems will be taught. Students will be expected to develop effective problem solving skills based on their understanding of the theory and not just memorize a set of routines to solve problems. For a more detailed course description, visit the Math 119 Wiki page.

MATH 302 : Mathematics for Engineering 1. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Math 113.

DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

MATH 303 : Mathematics for Engineering 2. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 302

DESCRIPTION: ODEs, Laplace transforms, Fourier series, PDEs.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For a more detailed course description, visit Math 303 Wiki.

MMBIO 221 : General Microbiology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Any biology course.
RECOMMENDED: Any chemistry course.
DESCRIPTION: Microbial world, emphasizing communicable diseases, their causes and control.
NOTE: Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses.

**Course Outcomes**

- Explain and discuss the ways by which microbiologists study microorganisms.
- Discuss the principle infectious diseases that affect mankind, including how they are transmitted, treated, controlled and prevented.
- Differentiate between the types of microorganisms by identifying relevant structure and their function in the biosphere.
- Propose microbial solutions to global problems.
- Describe how the human body defends itself against infectious agents.

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105
DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.
NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

MMBIO 241 : Molecular and Cellular Biology Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBio 240 or concurrent enrollment.
DESCRIPTION: Molecular and cellular biology techniques laboratory.

**Course Outcomes**

- Practice ethics and integrity by working with groups and following lab rules.*Relates to Program Learning Outcome: A commitment to professional integrity and ethical behavior consistent with themission of the university.
- Learn the basics of experimental design, how to formulate a hypothesis, what controls to use, how to interpret experimental data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Practice scientific communication through written lab questions, exams and oral presentations.*Relates to Program Learning Outcome: Devise experiments with appropriate hypothesis and controls.
- Learn molecular biology laboratory techniques through practical laboratory exercises. Techniques include, spectrophotometry,isolation of DNA and protein, quantification of DNA and protein, techniques used to purify or detect specific proteins, such aschromatography, western blot and ELISA, DNA fingerprinting, polymerase chain reaction and enzyme assays.*Relates to Program Learning Outcome: Knowledge of principles and techniques of molecular and cellular biology.

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481
DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems

work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies
- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: High school algebra and trigonometry.
RECOMMENDED: Concurrent enrollment in Phscs 107.
DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 105 or equivalent.
RECOMMENDED: Concurrent enrollment in Phscs 108.
DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 105 or concurrent enrollment.
DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 106 or concurrent enrollment
DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

Or

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Calculus or concurrent enrollment.
DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 121 or equivalent. Calculus.
DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHIL 205 : Introduction to Formal Logic. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: History and use of syllogistic and propositional logic; evaluating arguments with Venn diagrams, truth tables, and Copi-style proofs and proof strategies; informal reasoning and fallacies.

**Course Outcomes**

- Know the basic vocabulary and concepts of formal and informal logic.
- Learn how to appraise validity by refuting invalid arguments and by constructing formal proofs for valid ones.
- Learn how to translate ordinary language into logical symbolism.

PWS 100 : Living with Plants. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to principles of plant function and diversity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a fundamental knowledge of basic principles and concepts of plant biology (i.e., structure, function, and diversity)
- Cultivate an appreciation for the central importance of plants in the way our world and human society functions
- Provide a conceptual framework of how plants influence the environment
- Practice using the scientific method to better understand plant-environment interactions
- Improve verbal and written communication

PWS 103 : Residential Landscape Design. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Design and composition as applied to development of residential grounds.

**Course Outcomes**

- Design residential landscapes that are both funtional and beautiful
- Make better decisions when purchasing plants and landscape construction materials
- Discuss issues and challenges dealing with landscape planning and maintenance.
- Enjoy nature more
- Explain professional opportunities related to landscape design.

PWS 215 : Principles of Range Management. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Overview of rangeland resources and management principles, including rangeland classification, multiple use management, natural resource policy, and grazing management.

**Course Outcomes**

- Describe rangeland physical characteristics, types, physiology, and ecology
- To understand the principles of stewardship and how they apply to Rangelands
- To understand the importance of rangeland grazing, how it is managed, and nutrient needs of livestock and wildlife
- Describe multiple use management and its implications to wildlife and livestock
- To improve reading and writing skills relating to scientific research

PWS 225 : Principles of Wildlife and Fisheries Management. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: PWS 115.

DESCRIPTION: Basic principles of fish and wildlife management, their habitats, and their human users. Ecological concepts, population dynamics, nutrition, behavior, population assessment, management strategies, habitat sampling and management.

**Course Outcomes**

- Learning Outcome #1: Identify and articulate stewardship for the creation as a basis for professional judgment.This course not only provides an understanding of tools used by wildlife and fisheries managers to restore, revive, and maintain wildlife and fish populations, but also discusses our stewardship roles and responsibilities for those aspects of the creation.
- Learning Outcome #2: Identify wildland plants, soils, and wildlife species and understand how they function in the environment.This course introduces students to a number of wildlife and fish species, and basic ecological concepts as they relate to wildlife and fisheries. Students will understand the ecological roles, habitat needs, and interactions of fish and wildlife at various levels in an ecosystem
- Learning Outcome #3: Apply an understanding of ecological processes to wildlife management.This course includes an extensive overview of basic ecological processes and how to use them for fish and wildlife management.
- Learning Outcome #4: Demonstrate the ability to apply the scientific method and analytical thinking to ecological and management issues.In this course students will be rigorously taught the scientific method and given opportunities to demonstrate the understanding through fish and wildlife management problem solving. They will have writing assignments that provide opportunities for the synthesis and expression of the depth of their understanding. The term paper required in this course may be used for one of the "three written papers relating to stewardship ethics and management situations" that will be placed in the student's portfolio required for graduation with a Wildlife and Wildlands Conservation BS degree.

PWS 288 : Mentored Laboratory Techniques. (2:.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105

DESCRIPTION: Mentored, systematic instruction in basic biotechnology techniques and their application in addressing molecular genetic research questions.

**Course Outcomes**

There are no course outcomes available

PWS 303 : Soils Conservation and Resources. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 282 & CHEM 105; or PWS 282 & CHEM 101; PWS 100 or equivalent; Math 110 or equivalent.

RECOMMENDED: Geol 111.

DESCRIPTION: Taxonomy of world soils; conservation and management of agricultural, wildland, wetland, and urban soils.

**Course Outcomes**

- Understand soil physics, chemistry, taxonomy, and water movement to maintain natural resources.
- Apply soil conservation practices and principles to regions sensitive to soil degradation.
- Understand the history, development, and terminology associated with USDA Soil Taxonomy and be familiar with other soil taxonomic systems. Recognize soil orders and suborders from the physical and chemical characteristics of the soil

PWS 306 : Soil and Water Quality Laboratory. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent enrollment in PWS 305.

DESCRIPTION: Principles of environmental soil and water quality in the context of a case-study watershed. Students will participate in environmental soil and water sampling, laboratory analysis, and data interpretation; synthesizing and creating written and oral reports identifying environmental concerns and proposing solutions.

**Course Outcomes**

There are no course outcomes available

PWS 330 : Rangeland Plant Identification and Ecology. (3:2:3)

WHEN TAUGHT: Winter

DESCRIPTION: Identification, characteristics, phenology, distribution, site adaptation, forage value, and response to management of significant range and pasture plants.

**Course Outcomes**

- Students will be able to sight identify many common range plants of North America
- Students will be able to use a grass key to identify unknown grasses
- Students will be able to pair symptoms of sick animals with poisonous plants that may have been consumed

PWS 331 : Science of Plant Pest Control. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Management of plant health problems, namely weed, insect, and disease, through integrated pest management and proper pesticide management and safety.

**Course Outcomes**

- Enhance critical thinking skills.
- Develop a framework for decision-making and implementation in applied pest management and ecology.
- Recommend control options for plant pest management.
- Safely and accurately apply plant pesticides in urban and agricultural environments.
- Identify various plant pest control measures.
- Improve communication and interpersonal skills.

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

PWS 355 : Rangeland Vegetation Measurements and Analysis. (3:2:3)

WHEN TAUGHT: Fall

DESCRIPTION: Field methodologies for vegetation inventories and analysis (density, biomass, cover, frequency, utilization, etc.) in wildland settings.

**Course Outcomes**

- Students will be able to demonstrate, through lab exercises and write-ups, an understanding of ecological processes that drive secondary succession in wildland ecosystems which in turn impact management decisions.
- Students will be able to apply vegetation data collection techniques to quantify vegetation and make interpretations used in resource management decisions.

PWS 390R : Special Topics in Plant and Wildlife Sciences. (1-3:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Current topics in plant and wildlife sciences.

**Course Outcomes**

- Students will gain knowledge from specialized instruction in focused area

PWS 402 : Soils and Water in the Urban Environment. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 100 & PWS 282 & PWS 283

DESCRIPTION: Principles of water management, soil physics, and soil fertility used in a problem-solving environment addressing current challenges in managing soils and water in the urban landscape.

**Course Outcomes**

There are no course outcomes available

PWS 405 : Environmental Chemistry Lab 1. (1:0:2)

WHEN TAUGHT: Fall

PREREQUISITE: Chem 105, 106, 107; or equivalent.

RECOMMENDED: Chem 223; PWS 283, 306.

DESCRIPTION: Soil, water, biosolid, and biotic tissue sample preparation and analysis using chromatography, combustion, and spectroscopy.

**Course Outcomes**

There are no course outcomes available

PWS 406 : Environmental Chemistry Lab 2. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 105, 106, 107; or equivalent.

RECOMMENDED: Chem 223; PWS 283, 306.

DESCRIPTION: Soil, water, biosolid, and biotic tissue sample preparation and analysis using ICP-AES and AAS instrumentation.

**Course Outcomes**

There are no course outcomes available

PWS 411 : Watershed Management. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: BIO 350; or PWS 350

DESCRIPTION: Processes and management of the hydrologic cycle of forests and rangelands.

**Course Outcomes**

- Students will understand the history and policy that drives water management in the western US.
- Students will understand ecological and hydrological processes and concepts and apply them to watershed management actions such as harvesting, grazing, and restoration.
- Students will be able to apply assessment and classification tools to watersheds and their components to determine how management actions affect hydrologic responses.

PWS 416 : Rangeland Vegetation Improvement. (3:2:3)

WHEN TAUGHT: Fall

RECOMMENDED: PWS 330, 350.

DESCRIPTION: Habitat improvement for domestic and wild animals. Plant control by mechanical equipment, herbicides, and prescribed fire. Restoration of disturbed lands.

NOTE: Field trips required.

**Course Outcomes**

- Apply the historical and successional history of land to current rangeland vegetation conditions and treatments
- Describe and plan biological, chemical, mechanical methods, and fire to achieve land management goals.
- Assess site potential and fuels relative to potential vegetation changes with and without management.
- Apply and plan revegetation, fire rehabilitation, and restoration practices to rangelands.
- Integrate plant control, revegetation and other restoration practices to meet land management goals
- Become familiar with approaches, practices, and outcomes of rangeland vegetation improvements in actual field situations.

PWS 419 : Forest Management and Ecology. (3:2:3)

WHEN TAUGHT: Fall

DESCRIPTION: Managing forests, emphasizing ecosystem managment.

NOTE: Field trips required.

**Course Outcomes**

- 1. Articulate their role as stewards over forested environments.
- 2. Appreciate the diversity of forests world-wide and their importance to human populations.
- 3. Apply knowledge of forest structure, function, and process in making management decisions
- 4. Be able to quantify forest structure and production
- 5. Recognize forest pests and diseases and know appropriate control techniques.
- 6. Relate forests to wildlife habitat
- 7. Identify 75 tree species located in Utah and on BYU campus.

PWS 491R : Undergraduate Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Current information in the plant and wildlife sciences.

**Course Outcomes**

- Explain the importance of cross-discipline research for comprehensive scholarship and the importance of Gospel-centered stewardship and sustainability.
- Display fluency in the vocabulary and current research techniques in the four focal areas of the PWS Department: environmental science; genetics and biotechnology; landscape management; and wildlife and wildlands conservation

PWS 511 : Environmental Biophysics: Soil and Plant Water Relations. (4:3:2)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Phscs 105 and PWS 282; or equivalents.

DESCRIPTION: Integrating biological, physical, and chemical processes of water and solute movements through the soil-plant-atmosphere continuum.

**Course Outcomes**

- Students will take a pre- and post-semester exam and at least double their score to assess understanding of the importance of physics in biological systems.

PWS 514 : Soil Microbiology. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Chem 105 and 106; or equivalents.

DESCRIPTION: Ecology and role of soil microorganisms in biogeochemical cycles, decomposition of organic matter and waste materials, and bioremediation of contaminated soils and water.

**Course Outcomes**

- Ecology and role of soil microorganisms in nutrient cycling, decomposition of organic matter and waste materials, and degradation of agricultural chemicals in soils

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

## Show all Plant and Wildlife Sciences (PWS) Courses

College of Life Sciences Home

Plant and Wildlife Sciences Department Home

Majors

- BS in Environmental Science
- BS in Genetics and Biotechnology
- BS in Landscape Management
- BS in Wildlife and Wildlands Conservation

Minors

- Environmental Science
- Landscape Management

Course Information

- Plant and Wildlife Sciences (PWS) Courses

Faculty

# Minor in Landscape Management (17.5–18 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Complete the following:

PWS 103 : Residential Landscape Design. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Design and composition as applied to development of residential grounds.

**Course Outcomes**

- Design residential landscapes that are both funtional and beautiful
- Make better decisions when purchasing plants and landscape construction materials
- Discuss issues and challenges dealing with landscape planning and maintenance.
- Enjoy nature more
- Explain professional opportunities related to landscape design.

PWS 214 : Landscape Bidding and Estimating. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 103; Math 110 or equivalent.

DESCRIPTION: Competitive bidding strategies, quantity takeoffs, bid analyses for landscape construction and maintenance.

**Course Outcomes**

- Understand the different players in the landscape industry and how they interact with each other.
- Discuss and understand basic construction law and landscape construction and maintenance contracts.
- Create and accurately figure estimates for both landscape construction and landscape maintenance projects.
- Understand cost accounting and cash flow accounting for business.
- Be able to use a planimeter and other measuring instruments for estimating purposes.

PWS 282 : Introduction to Soil Science. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 283 or concurrent enrollment.

DESCRIPTION: Physical, chemical and microbiological properties of soils that affect plant growth in natural, agricultural, and urban environments.

**Course Outcomes**

- Enhance critically thinking skills as they apply to soil resource management and conservation
- Demonstrate a fundamental knowledge of soil chemistry, genesis, microbiology, physics, taxonomy, and nutrient and water relations
- Create a conceptual framework to help manage soil resources (i.e., animal habitat, plant nutrient fertility, salinity, soil and water quality, and wind and water erosion) in agricultural, urban, and ecological settings
- Understand the historical and current problems, and cultural concerns facing soils as a natural resource essential to human life

PWS 391 : Careers in Landscape Management. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Current information on internships, career options, and employment preparation skills in the landscape management/green industry.

**Course Outcomes**

There are no course outcomes available

2. Complete one course from the following:

PWS 198R : BYU Grounds Practicum. (.5:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent; concurrent employment with BYU Grounds Department.
DESCRIPTION: Multiple horticulture experiences through collaboration with BYU Grounds.

**Course Outcomes**

- To provide a practical outside of the classroom experience for students
- To introduce students to a diverse range of practical skills and on the job training.
- To expose students to the different aspects of the Green Industry through on campus grounds experience.
- To strengthen the relationship between the Landscape Management Program and the Grounds department on campus.
- To make campus part of the learning laboratory.

PWS 199R : Academic Internship. (.5-3:ARR:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Consent of both department chair and internship coordinator.
DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Students will find an entry level internship position with a high quality company and receive above average ratings from the employer.

3. After consulting with a faculty advisor, complete 8 hours from the following:

*Design*

PWS 105 : Landscape Design Graphics. (2:2:0)
WHEN TAUGHT: Winter; Spring
PREREQUISITE: PWS 103
DESCRIPTION: Communication through descriptive drawing and professional plan graphics: plan views, elevation, color, and computer-aided design.

**Course Outcomes**

- Feel comfortable and confident with the different methods of drawing as they relate to landscape design
- Have a clear and developed drawing style
- Be able to produce drawings using graphics that clearly communicate and portray the design intent.
- Develop drawing techniques that allow for quick design and those that allow for more professional design.

PWS 112 : Floral Design. (3:2:2)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: History and principles of floral design; identification, care, and handling of cut flowers; techniques of arranging flowers and other plant materials for home and professional use.
NOTE: Fee. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will take a pre- and post-test for foundational principles related to floral design and will show learning by an increase of at least double the average score.
- Students will learn how to build various floral arrangements and will successfully complete one design per week.

PWS 213 : Interior Plants and Landscapes. (2:2:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Identification and culture of plants used in the interior landscape industry; applying principles of design to the placement and use in interior landscapes.

**Course Outcomes**

- Students will take a pre- and post-test for foundational principles related to this course and will show learning by an increase of at least double the average score.
- Students will complete a class project that involves the use of foundation principles in this course and use this written project for their portfolio.

PWS 380 : Plant Community Design. (2:2:0)
WHEN TAUGHT: Fall
PREREQUISITE: PWS 103 & PWS 105 & BIO 235
DESCRIPTION: Design and ecology of thematic plant communities.

**Course Outcomes**

- Design a variety of landscapes and gardens with different contextual variables.
- Select plants, appropriate for a given design, based on correct horticultural and ecological knowledge (plant justification)
- Design better, design faster
- Further develop critiquing skills
- Prepare a landscape design portfolio for client interviews or graduate school applications.

*Installation*

PWS 211 : Landscape Structures. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 103

DESCRIPTION: Theory and mechanics of hardscape design and construction.

**Course Outcomes**

- To apply basic knowledge of common hardscape, irrigation, and similar materials learned in the landscape structures course.
- To be able to implement (construct) certain elements of landscape construction.
- To know how to think creatively and conceptually of a landscape design and be able to translate that into a construction document.

PWS 212 : Landscape Laboratory. (1:0:2)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 211 or concurrent enrollment.

DESCRIPTION: Working methods of the landscape industry: irrigation, equipment, and materials.

**Course Outcomes**

- To apply basic knowledge of common hardscape, irrigation, and similar materials learned in the landscape structures course.
- To be able to implement (construct) certain elements of landscape construction.
- To know how to think creatively and conceptually of a landscape design and be able to translate that into a construction document.

PWS 283 : Introduction to Soil Science Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 282 or concurrent enrollment.

DESCRIPTION: Laboratory techniques in determining soil physical, chemical, and fertility properties.

**Course Outcomes**

- Understand basic soil assessments related to soil chemistry, physics, biology, and nutrient fertility
- Apply laboratory techniques to determine problems associated with soil resource conservation and management
- Conduct basic soil methods in nutrient analysis; textural classification; and organic matter, cation exchange capacity, acidity, and alkalinity content

PWS 319 : Turf Science. (3:2:2)

WHEN TAUGHT: Fall

DESCRIPTION: Design, installation, and management of agricultural and urban turfgrass systems. Physiological and soil interaction principles of turfgrass management.

**Course Outcomes**

- Students will become compentant enough to pass a mock up of the Turfgrass Certification exam patterned after the industry standard.
- Students will be given a pre- and post-class attitude survey to access their understanding and appreciation of the importance of turfgrass in terms of aesthetics, environmental quality, and athlete/child safety with a goal of the score doubling (on average) at the end of semester.
- Students will conduct a research project to the point of having a written manuscript that is in draft form in order to show them the possibility of doing a graduate program. Also, students will write a short paper on how turfgrass science is important in their anticipated field of choice.

PWS 320 : Arboriculture. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 100 & PWS 282

RECOMMENDED: Bio 235.

DESCRIPTION: Biology and culture of woody plants for use in urban landscapes.

**Course Outcomes**

- Understand fundamental concepts dealing with the ecology, biology and culture of woody landscape plants
- become deeply interested in trees

*Maintenance*

PWS 210 : Herbaceous Plants. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Systematic study of nearly 170 ornamental herbaceous plant species emphasizing their desirable attributes and cultural requirements.

**Course Outcomes**

- Students will take a pre- and post-test for foundational principles related to growth of herbaceous

plants and will show learning by an increase of at least double the average score.
- Students will complete a class project that involves the use of foundation principles in this course and use this written project for their portfolio.

PWS 283 : Introduction to Soil Science Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 282 or concurrent enrollment.

DESCRIPTION: Laboratory techniques in determining soil physical, chemical, and fertility properties.

**Course Outcomes**

- Understand basic soil assessments related to soil chemistry, physics, biology, and nutrient fertility
- Apply laboratory techniques to determine problems associated with soil resource conservation and management
- Conduct basic soil methods in nutrient analysis; textural classification; and organic matter, cation exchange capacity, acidity, and alkalinity content

PWS 319 : Turf Science. (3:2:2)

WHEN TAUGHT: Fall

DESCRIPTION: Design, installation, and management of agricultural and urban turfgrass systems. Physiological and soil interaction principles of turfgrass management.

**Course Outcomes**

- Students will become compentant enough to pass a mock up of the Turfgrass Certification exam patterned after the industry standard.
- Students will be given a pre- and post-class attitude survey to access their understanding and appreciation of the importance of turfgrass in terms of aesthetics, environmental quality, and athlete/child safety with a goal of the score doubling (on average) at the end of semester.
- Students will conduct a research project to the point of having a written manuscript that is in draft form in order to show them the possibility of doing a graduate program. Also, students will write a short paper on how turfgrass science is important in their anticipated field of choice.

PWS 320 : Arboriculture. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 100 & PWS 282

RECOMMENDED: Bio 235.

DESCRIPTION: Biology and culture of woody plants for use in urban landscapes.

**Course Outcomes**

- Understand fundamental concepts dealing with the ecology, biology and culture of woody landscape plants
- become deeply interested in trees

PWS 431 : Plant Health Diagnostics. (3:2:3)

WHEN TAUGHT: Fall

DESCRIPTION: Diagnosing plant health problems; pest biology and identification (weed, insect, and disease).

**Course Outcomes**

There are no course outcomes available

**Note 1:** Electives need not be taken from the same emphasis to fill this requirement.

**Note 2:** PWS 100 will substitute for 3 hours under the elective requirement.

*Hours include courses that may fulfill university core requirements.

## Show all Plant and Wildlife Sciences (PWS) Courses

College of Life Sciences Home

Plant and Wildlife Sciences Department Home

Majors

- BS in Environmental Science
- BS in Genetics and Biotechnology
- BS in Landscape Management
- BS in Wildlife and Wildlands Conservation

Minors

- Environmental Science
- Landscape Management

Course Information

- Plant and Wildlife Sciences (PWS) Courses

Faculty

# Plant and Wildlife Sciences (PWS) Courses

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

PWS 100 : Living with Plants. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to principles of plant function and diversity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a fundamental knowledge of basic principles and concepts of plant biology (i.e., structure, function, and diversity)
- Cultivate an appreciation for the central importance of plants in the way our world and human society functions
- Provide a conceptual framework of how plants influence the environment
- Practice using the scientific method to better understand plant-environment interactions
- Improve verbal and written communication

PWS 101 : Cultural History of Medicinal Plants. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: A global perspective of how medicinal plants have shaped cultural history and how they are used to treat illness and disease. Issues relating to conservation, natural history, biodiversity, and cultural diversity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- 1. Explain and interpret a global history of how indigenous people can use plants to treat illnesses and disease.2. Understand and explain the differences between injurious, remedial, and psychoactive plants.3. Explain the difference between the Western philosophy of traditional medicine and local indigenous practices for treating illnesses and disease.4. Analyze and interpret a dose response curve.5. Define and explain the meaning of an LD-50 and LC-50.6. Diagram the history behind commercially available cancer chemotherapeutic drugs that are of plant origin, including the drug name, species of plant it was extracted from, acute and delayed toxicity, and major contraindications.7. Explain the limitations and myths associated with the herbal industry.8. Read and interpret peer reviewed literature on studies designed to show how human health has improved by using herbal remedies.9. Explain why it is important to preserve and protect sensitive habitat such as the tropical rainforests, which contain a wealth of biological information related to future drugs as yet undiscovered.10. Analyze the differences and similarities of how cultures of the world treat illnesses and disease

PWS 103 : Residential Landscape Design. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Design and composition as applied to development of residential grounds.

**Course Outcomes**

- Design residential landscapes that are both funtional and beautiful
- Make better decisions when purchasing plants and landscape construction materials
- Discuss issues and challenges dealing with landscape planning and maintenance.
- Enjoy nature more
- Explain professional opportunities related to landscape design.

PWS 105 : Landscape Design Graphics. (2:2:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: PWS 103

DESCRIPTION: Communication through descriptive drawing and professional plan graphics: plan views, elevation, color, and computer-aided design.

**Course Outcomes**

- Feel comfortable and confident with the different methods of drawing as they relate to landscape design
- Have a clear and developed drawing style
- Be able to produce drawings using graphics that clearly communicate and portray the design intent.

Develop drawing techniques that allow for quick design and those that allow for more professional design.

PWS 112 : Floral Design. (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: History and principles of floral design; identification, care, and handling of cut flowers; techniques of arranging flowers and other plant materials for home and professional use.

NOTE: Fee. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will take a pre- and post-test for foundational principles related to floral design and will show learning by an increase of at least double the average score.
- Students will learn how to build various floral arrangements and will successfully complete one design per week.

PWS 113 : Safety Certifications for Field Biologists. (1:2:0)

WHEN TAUGHT: Winter

DESCRIPTION: Certification modules promoting field safety to prepare students to be leaders in workplace safety. Specific trainings include first aid, CPR, hot and cold weather exposure, ATV and snowmobile operation, wild animal safety, and more.

**Course Outcomes**

There are no course outcomes available

PWS 115 : Introduction to Wildlife and Wildlands Conservation. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Assisting students in choosing individual professions and curricula.

**Course Outcomes**

- Student will be able to make an informed decision on majoring in Wildlife and Wildlands Conservation based on career opportunities and course work required to qualify for career positions.
- Students will be able to articulate stewardship responsibilities of managers to represent multiple uses of resources by multiple users with divergent opinions and perspectives.

PWS 150 : Environmental Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Conservation and management of natural resources concurrent with increasing socioeconomic and human population demands; factors such as soil, water, and air pollution, resources management, bioremediation, nutrient cycles, and global climate changes

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Gain a deep appreciation for the Lord's admonition to Adam and Eve regarding the Earth to dress it and keep it
- Engage others and participate in discussions about major environmental problems, movements, and solutions (e.g., desertification, invasive species, water pollution, green revolution, and renewable energy).
- Understand how “science” is conducted.
- Demonstrate a fundamental knowledge (i.e., scientific literacy) of the environment and current environmental problems facing us locally, regionally, and globally.
- Devise experiments with testable hypotheses based the scientific method—process of making observations and logically integrating those observations into a model of how the world works.
- Foster and promote environmental stewardship within your realm of influence and your community.

PWS 155 : Careers in Environmental Science. (1:1:0)

WHEN TAUGHT: Fall

**Course Outcomes**

There are no course outcomes available

PWS 188 : Introduction to Genetics and Biotechnology. (2:2:0)

WHEN TAUGHT: Winter

RECOMMENDED: PDBio 120 or concurrent enrollment.

DESCRIPTION: Orientation to the genetics and biotechnology major and introduction to the scientific field, including undergraduate mentored research, internships, extracurricular activities, professional careers, scientific literature, and applications of biotechnology in biomedicine, plant and animal improvement, and environmental remediation. Developing fluency in primary vocabulary of the discipline, familiarization with key technologies, writing reviews of primary literature and portfolio establishment, experiencing basic laboratory protocols.

**Course Outcomes**

- Students can understand and discuss basic concepts underlying genetics, biotechnology, and genomics.
- Students can explain basic operations and applications of existing and emerging technologies for applied genomics.
- Students can readily access primary literature in the discipline and draw upon these sources to compose appropriately formatted literature reviews.
- Students can identify and apply for undergraduate educational research opportunities (BYU mentored research and external internships).
- Students can describe a broad range of careers for geneticists and biotechnologists.

PWS 191 : Introduction to Landscape Management. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to the landscape management competency matrix and portfolio. Overview of professional opportunities presented by faculty and industry professionals.

**Course Outcomes**

- Understand the opportunities for learning and growth that are available in the landscape contracting profession
- identify and evaluate professional areas in which to pursue excellence
- Maximize your potential for professional success

PWS 198R : BYU Grounds Practicum. (.5:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent; concurrent employment with BYU Grounds Department.

DESCRIPTION: Multiple horticulture experiences through collaboration with BYU Grounds.

**Course Outcomes**

- To provide a practical outside of the classroom experience for students
- To introduce students to a diverse range of practical skills and on the job training.
- To expose students to the different aspects of the Green Industry through on campus grounds experience.
- To strengthen the relationship between the Landscape Management Program and the Grounds department on campus.
- To make campus part of the learning laboratory.

PWS 199R : Academic Internship. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Consent of both department chair and internship coordinator.

DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Students will find an entry level internship position with a high quality company and receive above average ratings from the employer.

**200-Level Courses**

PWS 210 : Herbaceous Plants. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Systematic study of nearly 170 ornamental herbaceous plant species emphasizing their desirable attributes and cultural requirements.

**Course Outcomes**

- Students will take a pre- and post-test for foundational principles related to growth of herbaceous plants and will show learning by an increase of at least double the average score.
- Students will complete a class project that involves the use of foundation principles in this course and use this written project for their portfolio.

PWS 211 : Landscape Structures. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 103

DESCRIPTION: Theory and mechanics of hardscape design and construction.

**Course Outcomes**

- To apply basic knowledge of common hardscape, irrigation, and similar materials learned in the landscape structures course.
- To be able to implement (construct) certain elements of landscape construction.
- To know how to think creatively and conceptually of a landscape design and be able to translate that into a construction document.

PWS 212 : Landscape Laboratory. (1:0:2)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 211 or concurrent enrollment.

DESCRIPTION: Working methods of the landscape industry: irrigation, equipment, and materials.

**Course Outcomes**

- To apply basic knowledge of common hardscape, irrigation, and similar materials learned in the landscape structures course.
- To be able to implement (construct) certain elements of landscape construction.
- To know how to think creatively and conceptually of a landscape design and be able to translate that into a construction document.

PWS 213 : Interior Plants and Landscapes. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Identification and culture of plants used in the interior landscape industry; applying principles of design to the

placement and use in interior landscapes.

**Course Outcomes**

- Students will take a pre- and post-test for foundational principles related to this course and will show learning by an increase of at least double the average score.
- Students will complete a class project that involves the use of foundation principles in this course and use this written project for their portfolio.

PWS 214 : Landscape Bidding and Estimating. (2:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 103; Math 110 or equivalent.

DESCRIPTION: Competitive bidding strategies, quantity takeoffs, bid analyses for landscape construction and maintenance.

**Course Outcomes**

- Understand the different players in the landscape industry and how they interact with each other.
- Discuss and understand basic construction law and landscape construction and maintenance contracts.
- Create and accurately figure estimates for both landscape construction and landscape maintenance projects.
- Understand cost accounting and cash flow accounting for business.
- Be able to use a planimeter and other measuring instruments for estimating purposes.

PWS 215 : Principles of Range Management. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Overview of rangeland resources and management principles, including rangeland classification, multiple use management, natural resource policy, and grazing management.

**Course Outcomes**

- Describe rangeland physical characteristics, types, physiology, and ecology
- To understand the principles of stewardship and how they apply to Rangelands
- To understand the importance of rangeland grazing, how it is managed, and nutrient needs of livestock and wildlife
- Describe multiple use management and its implications to wildlife and livestock
- To improve reading and writing skills relating to scientific research

PWS 225 : Principles of Wildlife and Fisheries Management. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: PWS 115.

DESCRIPTION: Basic principles of fish and wildlife management, their habitats, and their human users. Ecological concepts, population dynamics, nutrition, behavior, population assessment, management strategies, habitat sampling and management.

**Course Outcomes**

- Learning Outcome #1: Identify and articulate stewardship for the creation as a basis for professional judgment.This course not only provides an understanding of tools used by wildlife and fisheries managers to restore, revive, and maintain wildlife and fish populations, but also discusses our stewardship roles and responsibilities for those aspects of the creation.
- Learning Outcome #2: Identify wildland plants, soils, and wildlife species and understand how they function in the environment.This course introduces students to a number of wildlife and fish species, and basic ecological concepts as they relate to wildlife and fisheries. Students will understand the ecological roles, habitat needs, and interactions of fish and wildlife at various levels in an ecosystem
- Learning Outcome #3: Apply an understanding of ecological processes to wildlife management.This course includes an extensive overview of basic ecological processes and how to use them for fish and wildlife management.
- Learning Outcome #4: Demonstrate the ability to apply the scientific method and analytical thinking to ecological and management issues.In this course students will be rigorously taught the scientific method and given opportunities to demonstrate the understanding through fish and wildlife management problem solving. They will have writing assignments that provide opportunities for the synthesis and expression of the depth of their understanding. The term paper required in this course may be used for one of the “three written papers relating to stewardship ethics and management situations” that will be placed in the student’s portfolio required for graduation with a Wildlife and Wildlands Conservation BS degree.

PWS 270 : Animal Husbandry. (3:2:3)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction to animal husbandry and management techniques for domestic and wild animals.

**Course Outcomes**

- Integrate livestock husbandry and management practices with wildlife management.
- Learn important aspects of livestock stewardship through daily care and management.
- Understand how livestock production can and will impact wildlife ecology.

PWS 275 : Genetics and Reproduction. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Any general biology course.

DESCRIPTION: Principles of inheritance.

**Course Outcomes**

- Identify and articulate principles of stewardship as a basis for professional judgment.
- Apply knowledge of genetics to conservation and management of natural populations.
- Provide a foundation in the basic and applied principles of genetics for natural resource management

andconservation.

PWS 282 : Introduction to Soil Science. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 283 or concurrent enrollment.

DESCRIPTION: Physical, chemical and microbiological properties of soils that affect plant growth in natural, agricultural, and urban environments.

**Course Outcomes**

- Enhance critically thinking skills as they apply to soil resource management and conservation
- Demonstrate a fundamental knowledge of soil chemistry, genesis, microbiology, physics, taxonomy, and nutrient and water relations
- Create a conceptual framework to help manage soil resources (i.e., animal habitat, plant nutrient fertility, salinity, soil and water quality, and wind and water erosion) in agricultural, urban, and ecological settings
- Understand the historical and current problems, and cultural concerns facing soils as a natural resource essential to human life

PWS 283 : Introduction to Soil Science Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 282 or concurrent enrollment.

DESCRIPTION: Laboratory techniques in determining soil physical, chemical, and fertility properties.

**Course Outcomes**

- Understand basic soil assessments related to soil chemistry, physics, biology, and nutrient fertility
- Apply laboratory techniques to determine problems associated with soil resource conservation and management
- Conduct basic soil methods in nutrient analysis; textural classification; and organic matter, cation exchange capacity, acidity, and alkalinity content

PWS 288 : Mentored Laboratory Techniques. (2:.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105

DESCRIPTION: Mentored, systematic instruction in basic biotechnology techniques and their application in addressing molecular genetic research questions.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

PWS 301 : Plant Growth and Reproduction. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 100 or equivalent.

DESCRIPTION: Scientific principles of plant propagation by seeds, cuttings, budding and grafting, and tissue culture.

**Course Outcomes**

- Students will take a pre- and post-test for foundational principles related to this course and will show learning by an increase of at least double the average score.
- Students will complete a class project that involves the use of foundation principles in this course and use this written project for their portfolio.

PWS 303 : Soils Conservation and Resources. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 282 & CHEM 105; or PWS 282 & CHEM 101; PWS 100 or equivalent; Math 110 or equivalent.

RECOMMENDED: Geol 111.

DESCRIPTION: Taxonomy of world soils; conservation and management of agricultural, wildland, wetland, and urban soils.

**Course Outcomes**

- Understand soil physics, chemistry, taxonomy, and water movement to maintain natural resources.
- Apply soil conservation practices and principles to regions sensitive to soil degradation.
- Understand the history, development, and terminology associated with USDA Soil Taxonomy and be familiar with other soil taxonomic systems. Recognize soil orders and suborders from the physical and chemical characteristics of the soil

PWS 305 : Soils and Water Quality. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 282 & CHEM 105; or PWS 282 & CHEM 101; PWS 100 or equivalent; Math 110 or equivalent.

DESCRIPTION: Principles and practices of safe management of agricultural and urban wastes; amendments and nutrients including remediation methods for conservation of soils and water quality.

**Course Outcomes**

- Evaluate case studies in current topics soil and water quality
- Demonstrate a fundamental knowledge in water quality and water resource conservation as influenced by soil-water-atmosphere interactions

- Enhance critically thinking skills as it relates to issues in water quality management and resource conservation
- Improve mathematical and statistical skills related to nutrient, salinity, sodicity, and toxicity evaluation and management

PWS 306 : Soil and Water Quality Laboratory. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent enrollment in PWS 305.

DESCRIPTION: Principles of environmental soil and water quality in the context of a case-study watershed. Students will participate in environmental soil and water sampling, laboratory analysis, and data interpretation; synthesizing and creating written and oral reports identifying environmental concerns and proposing solutions.

**Course Outcomes**

There are no course outcomes available

PWS 315 : Conflict Resolution Management. (1:1:0)

WHEN TAUGHT: Winter

DESCRIPTION: Modern techniques associated with resolution of conflicts surrounding natural resources.

**Course Outcomes**

There are no course outcomes available

PWS 319 : Turf Science. (3:2:2)

WHEN TAUGHT: Fall

DESCRIPTION: Design, installation, and management of agricultural and urban turfgrass systems. Physiological and soil interaction principles of turfgrass management.

**Course Outcomes**

- Students will become compentant enough to pass a mock up of the Turfgrass Certification exam patterned after the industry standard.
- Students will be given a pre- and post-class attitude survey to access their understanding and appreciation of the importance of turfgrass in terms of aesthetics, environmental quality, and athlete/child safety with a goal of the score doubling (on average) at the end of semester.
- Students will conduct a research project to the point of having a written manuscript that is in draft form in order to show them the possibility of doing a graduate program. Also, students will write a short paper on how turfgrass science is important in their anticipated field of choice.

PWS 320 : Arboriculture. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 100 & PWS 282

RECOMMENDED: Bio 235.

DESCRIPTION: Biology and culture of woody plants for use in urban landscapes.

**Course Outcomes**

- Understand fundamental concepts dealing with the ecology, biology and culture of woody landscape plants
- become deeply interested in trees

PWS 324 : Wildlife Law Enforcement. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Bio 100 or equivalent.

DESCRIPTION: Current and historical principles of federal and state wildlife law enforcement, case development, evidence, evaluation, human rights, and testimony.

**Course Outcomes**

There are no course outcomes available

PWS 325 : Fisheries and Wetlands Management. (3:2:3)

WHEN TAUGHT: Fall

RECOMMENDED: PWS 225 or equivalent.

DESCRIPTION: Principles of fisheries and wetlands mangement, emphasizing managing fish populations and their diverse micro- and macro-habitats within the context of community and ecosystem dynamics. Case studies and models used to evaluate growth, recruitments, and mortality in age-structured populations in relationship to the dynamics of watershed and wetland landscapes.

**Course Outcomes**

- Understand ecological aspects of fisheries and wetland systems.
- Learn important aspects of fisheries and wetland management.
- Integrate concepts taught in class to other ecological systems.

PWS 330 : Rangeland Plant Identification and Ecology. (3:2:3)

WHEN TAUGHT: Winter

DESCRIPTION: Identification, characteristics, phenology, distribution, site adaptation, forage value, and response to management of

significant range and pasture plants.

**Course Outcomes**

- Students will be able to sight identify many common range plants of North America
- Students will be able to use a grass key to identify unknown grasses
- Students will be able to pair symptoms of sick animals with poisonous plants that may have been consumed

PWS 331 : Science of Plant Pest Control. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Management of plant health problems, namely weed, insect, and disease, through integrated pest management and proper pesticide management and safety.

**Course Outcomes**

- Enhance critical thinking skills.
- Develop a framework for decision-making and implementation in applied pest management and ecology.
- Recommend control options for plant pest management.
- Safely and accurately apply plant pesticides in urban and agricultural environments.
- Identify various plant pest control measures.
- Improve communication and interpersonal skills.

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

PWS 344 : Natural History of Wildlife. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: PWS 225 or equivalent.

DESCRIPTION: Wildlife species and their habitats, including ecology, life histories, adaptations, behavior, genetics and population viability variables, and the ethics of global stewardship. Field trips required.

**Course Outcomes**

- In this course, students will be rigorously taught the scientific method and given opportunities to demonstrate the understanding through wildlife ecology problem solving. They will have writing assignments that provide opportunities for the synthesis and expression of the depth of their understanding.
- This course introduces students to a number of wildlife and fish species, and basic ecological concepts as they relate to wildlife and fisheries. Students will understand the biology, ecological roles, habitat needs, ecological adaptations, and interactions of fish and wildlife at various levels in an ecosystem.
- Be able to define “natural history” and be able to describe basic concepts and principles that comprise the natural history of an organism
- Gain an appreciation for the diversity of lifestyles among vertebrates
- Develop critical reading and thinking skills
- Improve oral and written communication skills

PWS 345 : Air Quality and Pollution. (2:2:0)

WHEN TAUGHT: Winter

DESCRIPTION: Origin, effects, ecology, and management of major atmospheric pollutants - current topics in air quality, methods for quantifying pollutants and assessing air quality, and policy and management principles governing air as a natural resource.

**Course Outcomes**

There are no course outcomes available

PWS 350 : Rangeland Ecology. (3:2:3)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 150 or Bio 100 or Bio 130 or PDBio 120.

DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth emphasizing rangeland ecosystems.

**Course Outcomes**

- Demonstrate a fundamental knowledge of ecological principles and the multiple dimensions of biodiversity.
- Possess a working knowledge of the ecology relating to soil, water, and air conservation.
- Understand how global and geologic processes affect life on earth.
- See the connectivity and relevance of ecology to other fields of study.
- Understand the importance of ecology to issues regarding human well-being.

PWS 355 : Rangeland Vegetation Measurements and Analysis. (3:2:3)

WHEN TAUGHT: Fall

DESCRIPTION: Field methodologies for vegetation inventories and analysis (density, biomass, cover, frequency, utilization, etc.) in wildland settings.

**Course Outcomes**

- Students will be able to demonstrate, through lab exercises and write-ups, an understanding of ecological processes that drive secondary succession in wildland ecosystems which in turn impact management decisions.
- Students will be able to apply vegetation data collection techniques to quantify vegetation and make interpretations used in resource management decisions.

PWS 357 : Techniques for Wildlife Investigations and Management. (3:2:3)

WHEN TAUGHT: Fall

RECOMMENDED: PWS 350, 355.

DESCRIPTION: Investigatiion and management of fish and wildlife populations. Methods for population assessment, capture, handling, marking, radio-telemetry, behavioral studies, and human disturbance. Lab is required.

**Course Outcomes**

- The purpose of this course is to introduce students to a variety of methods used by wildlife biologists for the investigation and management of wildlife. Course content prepares students to observe wildlife, research wildlife literature, to rigorously apply the scientific method for problem solving, to evaluate data objectively, and to communicate research results effectively. This course is built upon principles of biodiversity, ecology, population dynamics, habitat, and conservation.

PWS 365 : Environmental Microbiology. (3:3:0)

WHEN TAUGHT: Fall

RECOMMENDED: Chem 101 or 105; PDBio 120; PWS 150.

DESCRIPTION: Environmental microbiology in aquatic and terrestrial systems. Detecting, enumerating, and identifying microorganisms. Bioremediation of organic and metal pollutants. Microbial-mediated transformations in nutrient cycling. Spread of pathogens.

**Course Outcomes**

- Demonstrate a fundamental knowledge of the environmental microbiology surrounding soil, water, and air conservation, quality, and pollution
- Understand the basic chemistry, biochemistry, and physics associated with the bioremediation, nutrient cycling, and pathogenesis
- Foster and promote environmental stewardship within yourself and your community
- Write and orally communicate more effectively and concisely

PWS 366 : Environmental Microbiology Lab. (1:0:3)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 365 or concurrent enrollment.

RECOMMENDED: Chem 101 or 105; PDBio 120; PWS 150.

DESCRIPTION: Laboratory and field techniques. Detecting, enumerating, and identifying microorganisms via microscopic and cultural assays. Microbial transformation and responses to pollutants. Detecting techniques evaluating coliforms and fecal coliforms, viruses, and parasites.

**Course Outcomes**

There are no course outcomes available

PWS 369 : Science of Plant Production. (4:4:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PWS 100, 282; or equivalents.

DESCRIPTION: Scientific principles of crop production related to agronomic and horticultural plants, including relationship of management principles and physiological processes in plants.

**Course Outcomes**

No outcomes are available at this time.

PWS 375 : Environmental Policies and Laws. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Inception, current state, and future directions of seminal environmental policies and laws established in the US to improve environmental quality. Application of policies and laws in resource conservation and management, including a National Environmental Policy Act certification program.

**Course Outcomes**

- Demonstrate a fundamental understanding of the inception, current state, and future needs of the five seminal developments in environmental policy and law (i.e., Clean Air Act; Clean Water Act; National Environmental Policy Act; Comprehensive Environmental Response, Compensation, and Liability Act or Superfund; and the Endangered Species Act)
- Create your own conceptual framework for analyzing policy change in the United States and abroad, and understand the role of government, society, and economics in shaping this framework
- Understand the formal institutional setting in which policy is developed, the major participants involved, and the

role of science in shaping policy
- Gain a basic understanding of how environmental laws (e.g., statutes, cases, and common laws) operate to regulate our interaction with the environment and one another
- Write more effectively and concisely

PWS 380 : Plant Community Design. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 103 & PWS 105 & BIO 235

DESCRIPTION: Design and ecology of thematic plant communities.

**Course Outcomes**

- Design a variety of landscapes and gardens with different contextual variables.
- Select plants, appropriate for a given design, based on correct horticultural and ecological knowledge (plant justification)
- Design better, design faster
- Further develop critiquing skills
- Prepare a landscape design portfolio for client interviews or graduate school applications.

PWS 390R : Special Topics in Plant and Wildlife Sciences. (1-3:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Current topics in plant and wildlife sciences.

**Course Outcomes**

- Students will gain knowledge from specialized instruction in focused area

PWS 391 : Careers in Landscape Management. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Current information on internships, career options, and employment preparation skills in the landscape management/green industry.

**Course Outcomes**

There are no course outcomes available

**400-Level Courses**

PWS 402 : Soils and Water in the Urban Environment. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 100 & PWS 282 & PWS 283

DESCRIPTION: Principles of water management, soil physics, and soil fertility used in a problem-solving environment addressing current challenges in managing soils and water in the urban landscape.

**Course Outcomes**

There are no course outcomes available

PWS 405 : Environmental Chemistry Lab 1. (1:0:2)

WHEN TAUGHT: Fall

PREREQUISITE: Chem 105, 106, 107; or equivalent.

RECOMMENDED: Chem 223; PWS 283, 306.

DESCRIPTION: Soil, water, biosolid, and biotic tissue sample preparation and analysis using chromatography, combustion, and spectroscopy.

**Course Outcomes**

There are no course outcomes available

PWS 406 : Environmental Chemistry Lab 2. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 105, 106, 107; or equivalent.

RECOMMENDED: Chem 223; PWS 283, 306.

DESCRIPTION: Soil, water, biosolid, and biotic tissue sample preparation and analysis using ICP-AES and AAS instrumentation.

**Course Outcomes**

There are no course outcomes available

PWS 411 : Watershed Management. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: BIO 350; or PWS 350

DESCRIPTION: Processes and management of the hydrologic cycle of forests and rangelands.

**Course Outcomes**

- Students will understand the history and policy that drives water management in the western US.
- Students will understand ecological and hydrological processes and concepts and apply them to watershed

management actions such as harvesting, grazing, and restoration.
- Students will be able to apply assessment and classification tools to watersheds and their components to determine how management actions affect hydrologic responses.

PWS 416 : Rangeland Vegetation Improvement. (3:2:3)

WHEN TAUGHT: Fall

RECOMMENDED: PWS 330, 350.

DESCRIPTION: Habitat improvement for domestic and wild animals. Plant control by mechanical equipment, herbicides, and prescribed fire. Restoration of disturbed lands.

NOTE: Field trips required.

**Course Outcomes**

- Apply the historical and successional history of land to current rangeland vegetation conditions and treatments
- Describe and plan biological, chemical, mechanical methods, and fire to achieve land management goals.
- Assess site potential and fuels relative to potential vegetation changes with and without management.
- Apply and plan revegetation, fire rehabilitation, and restoration practices to rangelands.
- Integrate plant control, revegetation and other restoration practices to meet land management goals
- Become familiar with approaches, practices, and outcomes of rangeland vegetation improvements in actual field situations.

PWS 417 : Rangeland Planning and GIS. (3:2:3)

WHEN TAUGHT: Winter

RECOMMENDED: PWS 215, 225, 350.

DESCRIPTION: Development of a multiple-use natural resource plan for watershed forestry, recreation, wildlife, and livestock. Policies that govern planning and conflict resolution.

**Course Outcomes**

- Identify and articulate stewardship for the creation as a basis for professional judgment.
- Apply an understanding of ecological processes to wildland management
- Demonstrate ability to apply the scientific method and analytical thinking to ecological and management issues.

PWS 419 : Forest Management and Ecology. (3:2:3)

WHEN TAUGHT: Fall

DESCRIPTION: Managing forests, emphasizing ecosystem managment.

NOTE: Field trips required.

**Course Outcomes**

- 1. Articulate their role as stewards over forested environments.
- 2. Appreciate the diversity of forests world-wide and their importance to human populations.
- 3. Apply knowledge of forest structure, function, and process in making management decisions
- 4. Be able to quantify forest structure and production
- 5. Recognize forest pests and diseases and know appropriate control techniques.
- 6. Relate forests to wildlife habitat
- 7. Identify 75 tree species located in Utah and on BYU campus.

PWS 431 : Plant Health Diagnostics. (3:2:3)

WHEN TAUGHT: Fall

DESCRIPTION: Diagnosing plant health problems; pest biology and identification (weed, insect, and disease).

**Course Outcomes**

There are no course outcomes available

PWS 440 : Plant Physiology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GE Biological Science requirement; college chemistry

RECOMMENDED: Chem 285; or 351, 352.

DESCRIPTION: Photosynthesis, respiration, water relations, mineral nutrition, growth of flowering plants.

**Course Outcomes**

- Students will be fluent in understanding plant function at the molecular, biochemical and whole plant levels
- Students will understand the connections between plant function and ecosystem processes
- Student will practice applying the scientific method in order to develop critical thinking and problem solving skills
- Student will engage in learning activities that increase there writing and speaking proficiency

PWS 446 : (PWS-Bio) Ornithology. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: Bio 100 or Bio 130 or PDBio 120 or PWS 100 or equivalent or instructor's consent.

DESCRIPTION: Avian systematics, evolution, distribution, identification, and natural history.

NOTE: One three-day field trip required.

**Course Outcomes**

- 1) Define ornithology and what it encompasses
- 2) Become proficient in bird identification (sight, sound, sign)
- 3) Develop an understanding of the unique characteristics of birds
- 4) Understand the current thinking regarding the evolution of birds

5) Describe the life history characteristics of birds and their annual cycle

PWS 468 : (PWS-Bio-MMBio) Genomics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & PWS 340

DESCRIPTION: Current analysis of genes and genomes; computational and statistical approaches for analyzing genomic data, including genome sequencing and annotation, gene expression and the transcriptome, proteomics and functional genomics, and genetic variation and SNPs.

**Course Outcomes**

- Students can describe the technology and process used to sequence genomes (de novo and re-sequencing)
- Students can complete a series of exercises with data representing genomic experiments (analyze and interpret)
- Students can outline techniques and concepts for assessing genomic parameters such as methylation, gene expression, DNA-binding motifs, metagenomics, and comparative genomics.

PWS 481 : Case Studies, Landscape Management Systems. (2:2:0)

WHEN TAUGHT: Fall

DESCRIPTION: Understanding and demonstrating competency with business systems used in landscape contracting companies.

**Course Outcomes**

There are no course outcomes available

PWS 488 : Readings in Biotechnology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 340 & PDBIO 360

RECOMMENDED: PWS 440 or PDBio 362.

DESCRIPTION: Capstone course for the genetics and biotechnology major focusing on scientific literature relating to the biotechnological improvement of plants, animals, and microbes.

NOTE: Course should be taken the last year before graduation.

**Course Outcomes**

- Students can describe a variety of techniques and experimental approaches used by biotechnologists to improve plants, animals, microbes and human health.
- Students can deliver an oral presentation summarizing a scientific paper related to the field of biotechnology.
- Students can produce a written review synthesizing scientific findings related to recent biotechnological advances.

PWS 490 : Case Studies. (2:1:2)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PWS 282

DESCRIPTION: Contemporary agricultural and environmental problems using decision case studies dealing with environmental technology issues and analysis.

**Course Outcomes**

There are no course outcomes available

PWS 491R : Undergraduate Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Current information in the plant and wildlife sciences.

**Course Outcomes**

- Explain the importance of cross-discipline research for comprehensive scholarship and the importance of Gospel-centered stewardship and sustainability.
- Display fluency in the vocabulary and current research techniques in the four focal areas of the PWS Department: environmental science; genetics and biotechnology; landscape management; and wildlife and wildlands conservation

PWS 492 : Wildlife and Wildlands Conservation Senior Seminar. (1:1:0)

WHEN TAUGHT: Winter

DESCRIPTION: Capstone course bringing together portfolios, student experiences, exams, and exercises necessary for completing and assessing wildlife and wildlands program learning outcomes.

**Course Outcomes**

- Students will understand how to take the next step toward permanent employment or post-graduate training.
- Students will pass plant, mammal, and bird ID competency exams as well as a comprehensive discipline exam.
- Students will build a professional portfolio that will demonstrate their specific training, experience, skills and abilities relative to Wildlife and Wildlands Conservation.

PWS 494R : Mentored Learning Experience. (1-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Topics vary.

NOTE: Registration required for mentored experiences.

**Course Outcomes**

- Design and/or participate in basic experiments attempting to answer questions in biochemistry, biotechnology, genetics, molecular biology, and soil science
- Generate and analyze experimental results for publications or presentations at professional meetings
- Learn how to be an effective and efficient mentor

: Biotechnology Laboratory.

**Course Outcomes**

: Plant Physiology Laboratory.

**Course Outcomes**

: Environmental Science Laboratory.

**Course Outcomes**

: Soil, Plant, and Water Science Laboratory.

**Course Outcomes**

: Environmental Science Field Techniques.

**Course Outcomes**

: Plant and Soil Science Field Techniques.

**Course Outcomes**

: Plant Breeding Field Techniques.

**Course Outcomes**

: Plant Tissue Culture and Transformation Techniques.

**Course Outcomes**

: Plant Cytogenetics Laboratory.

**Course Outcomes**

: Animal Cytogenetics Laboratory.

**Course Outcomes**

: Plant Cell Biology Laboratory.

**Course Outcomes**

: Analytical Techniques in Plant Biology.

**Course Outcomes**

: Environmental Science Computation Laboratory.

**Course Outcomes**

: Molecular Genetics and Gene Mapping Laboratory.

**Course Outcomes**

: Plant and Animal Genomics Laboratory.

**Course Outcomes**

: Analytical Techniques in Soil Science.

**Course Outcomes**

: Animal Genetics and Breeding Techniques.

**Course Outcomes**

: Soil Physical Properties Laboratory.

**Course Outcomes**

: Soil and Water Chemistry Laboratory.

**Course Outcomes**

: Animal Reproductive Research Laboratory.

**Course Outcomes**

: Field Techniques in Environmental Soil Research.

**Course Outcomes**

: Soil Microbiology Laboratory.

**Course Outcomes**

: Plant ID / URME Team.

**Course Outcomes**

## 500-Level Graduate Courses (available to advanced undergraduates)

PWS 505 : Ecosystem Ecology. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Bio 350 or equivalent.

DESCRIPTION: Theory and application of nutrient cycling, trophic dynamics, disturbance, and spatiotemporal patterns in terrestrial and acquatic ecosystems - methods in ecological research (e.g., field and analytical chemistry techniques, isotope geochemistry, molecular methods, and ecosystem simulation modeling).

**Course Outcomes**

No outcomes are available at this time.

PWS 511 : Environmental Biophysics: Soil and Plant Water Relations. (4:3:2)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Phscs 105 and PWS 282; or equivalents.

DESCRIPTION: Integrating biological, physical, and chemical processes of water and solute movements through the soil-plant-atmosphere continuum.

**Course Outcomes**

- Students will take a pre- and post-semester exam and at least double their score to assess understanding of the importance of physics in biological systems.

PWS 512 : Rangeland Landscape Ecology and Geographic Information Systems. (3:2:3)

WHEN TAUGHT: Fall Odd Yrs.

RECOMMENDED: PWS 215, Geog 212.

DESCRIPTION: Applying landscape ecology theory to evaluate, describe, and predict spatial patterns and processes within rangeland ecosystems using geographic information systems (GIS), remote sensing, and global positioning systems (GPS).

**Course Outcomes**

- Students will be able to apply landscape ecology theory to evaluate, describe, and predict spatial patterns and processes in wildlife ecosystems. This will be furthered by synthesis of the literature and current theory.

PWS 513 : Environmental Field Instrumentation. (4:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: Phscs 105 and PWS 282; or equivalents.

DESCRIPTION: Hands-on course and lab teaching students how to use instrumentation in the field and in controlled settings to measure key environmental parameters. Learning the physical principles underlying sensors.

**Course Outcomes**

There are no course outcomes available

PWS 514 : Soil Microbiology. (2:2:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Chem 105 and 106; or equivalents.

DESCRIPTION: Ecology and role of soil microorganisms in biogeochemical cycles, decomposition of organic matter and waste materials, and bioremediation of contaminated soils and water.

**Course Outcomes**

- Ecology and role of soil microorganisms in nutrient cycling, decomposition of organic matter and waste materials, and degradation of agricultural chemicals in soils

PWS 520 : Saline and Sodic Soils. (3:2:3)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: PWS 305, Chem 105, 106, 107; or equivalents.

DESCRIPTION: Physical and chemical properties of saline and sodic soils and irrigation waters--their diagnosis, reclamation, and management for sustainable crop production.

**Course Outcomes**

Physical and chemical properties of saline and sodic soils and irrigation waters-their diagnosis, reclamation, and management for sustainable crop production
- Demonstrate a fundamental knowledge in water quality and water resource conservation as influenced by soil water interactions
- Enhance critically thinking skills as it relates to issues in water quality management and soil conservation
- Improve mathematical and statistical skills related to salinity, sodicity, and toxicity evaluation and management

PWS 540 : Plant Response to the Environment. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: PWS 440 or equivalent; PWS 494R or concurrent enrollment.

DESCRIPTION: Advanced plant physiological ecology principles.

**Course Outcomes**

- Students will learn to apply the scientific method in order to become more proficient and independent learners
- Students will be able to conceptualize the physiological mechanisms by which plants sense and respond to their environment and how that impacts ecological systems.
- Students will participate in learning exercises that teaches them how to gather, interpret and communicate scientific information.
- Students will be exposed to the instrumentation and techniques commonly used to gather data in the field of plant physiological ecology.

PWS 547 : Ungulate Conservation and Management. (2:2:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: PWS or Bio 350; and Bio 447; or equivalents.

DESCRIPTION: Integrating principles of natural history, population ecology, behavior, and conservation biology of North American ungulates. Special emphasis on management and conservation applications.

**Course Outcomes**

- Will understand and be able to articulate current understanding concerning the role of ungulates in ecosystems
- students will develop the ability to critically think by reviewing and evaluating scientific articles or book chapters that examine ungulate ecology
- Students will develop presentation skills

PWS 551 : Quantitative Ecology. (3:2:3)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Bio 350 or equivalent; Stat 121 or 511 or concurrent enrollment.

DESCRIPTION: Quantitative methods for ecological sampling and data analysis.

**Course Outcomes**

- Demonstrate application of the scientific and analytical methods in ecological research.
- Learn how and when to use appropriate sampling and a data analysis techniques for ecological inquiry.
- Demonstrate ability to synthesize literature relevant to a research project.
- Demonstrate oral and written scientific communications skills.

PWS 552 : Terrestrial Ecosystems. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Theory and application of plant and animal distribution in terrestrial environments.

**Course Outcomes**

No outcomes are available at this time.

PWS 553 : Restoration Ecology. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: PWS 282, 416; Bio 350; or equivalents.

DESCRIPTION: Nature of ecosystem disturbance and plant succession; developing science and practice of ecological restoration; case studies of applied restoration.

**Course Outcomes**

- Students will understand the applications of plant population ecology, ecophysiology, and community ecology to restoration ecology.
- Students will understand the processes of plant succession as the foundation for restoration ecology.
- Students will be able to apply restoration ecology and techniques to practical problems such mined and other drastically-disturbed lands, disturbed terrestrial and riparian or wetland systems, and invasive species concerns

PWS 554 : Wildlife Behavioral Ecology. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Bio 100, 350; or equivalents.

DESCRIPTION: Integrating principles of ethology, sociobiology, and behavioral ecology using examples from wildlife resources; behavioral sampling methods.

NOTE: Field trips required.

**Course Outcomes**

- Students will become familiar with the basic principles of animal behavior including:An introduction to the basic principles of animal behaviorA review of natural selection and its role in shaping animal behaviorA study of

proximate factors which influence behaviorThe role of learningCooperationForagingAntipredator behaviorCommunicationHabitat selection, territoriality, and migrationAggressionPlayAging and diseaseAnimal personalities

PWS 559 : Molecular Plant Breeding. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: PWS 265, 340, 485, 586, PDBio 360; or equivalents; PWS 494R or concurrent enrollment.

DESCRIPTION: Molecular genetics methods applied to improvement of economically important plants. Theory and methods of plant transformations.

**Course Outcomes**

- Outline the history and uses of genetic molecular markers
- Discuss with proficiency the pros and cons of a minimum of seven different marker systems. Examples of these systems include RFLPs, RAPDs, AFLPs, SSRs, and SNPs
- Lead classroom discussions using current scientific literature as the basis for the discussion
- Prepare a manuscript for submission to a refereed scientific journal
- Explain scientific ethics, etiquette, and the underpinnings as to why it is important to publish scientific journals
- Discuss the differences between academic and industry-based science

PWS 560 : Soil and Plant Analysis. (2:1:3)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Chem 105, 106, 107; or equivalent.

RECOMMENDED: Chem 223 and/or PWS 283, 306, 405, 406

DESCRIPTION: Laboratory chemical analysis of soils and plant materials in soil and plant research.

**Course Outcomes**

There are no course outcomes available

PWS 575 : Plant Pathology. (3:2:3)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: PWS 100 or equivalent.

DESCRIPTION: Concepts associated with symptoms, development, control, and classification of plant diseases. Identification and classification of plant fungi, bacteria, and viruses.

**Course Outcomes**

- Diagnose and treat plant problems
- Identify major diseases that affect plants
- Culture and identify fungi and bacteria
- Employ problem solving skills, including enhanced ability to critically think and reason
- Display enhanced communication and interpersonal skills, including writing

PWS 586 : Plant Cell Biology. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: PDBio 360, PWS 340, 440; or equivalents.

DESCRIPTION: Molecular aspects of the structural and functional characteristics of plant cells, emphasizing characteristics of plant cells setting them apart from animal cells.

**Course Outcomes**

- Explain unique aspects of plant cell structure and function
- Read and explicate published research in plant cell biology
- Write coherently on topics related to plant cell biology
- Deliver an oral presentation of a topic related to plant cell biology

PWS 598R : Advanced Topics in the Plant and Wildlife Sciences. (1-3:ARR:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

- Give students a specific topic to increase their understanding of the scientific method as it relates to focused research objectives.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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**College of Life Sciences Home**

**Plant and Wildlife Sciences Department Home**

**Majors**

- BS in Environmental Science
- BS in Genetics and Biotechnology
- BS in Landscape Management
- BS in Wildlife and Wildlands Conservation

**Minors**

- Environmental Science
- Landscape Management

**Course Information**

- Plant and Wildlife Sciences (PWS) Courses

**Faculty**

# Plant and Wildlife Sciences Faculty

Show All
Hide All

## Professors

Allen, Phil S.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1983
MS, Brigham Young University, 1985
PhD, University of Minnesota, 1990

Anderson, Val Jo

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** AS, Snow College, 1980
BS, Utah State University, 1982
MS, Utah State University, 1985
PhD, Texas A&M University, 1988

Booth, Gary M.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** AS, College of Eastern Utah, 1961
BS, Utah State University, 1963
MS, Utah State University, 1966
PhD, University of California, Riverside, 1969

Crookston, R. Kent

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1968
MS, University of Minnesota, St. Paul, 1970
PhD, University of Minnesota, St. Paul, 1972

Hopkins, Bryan Gene

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** AAS, Ricks College, 1988
BS, Brigham Young University, 1990
MS, Brigham Young University, 1991
PhD, Kansas State University, 1995

Jellen, Eric Nathan

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, University of Minnesota, 1988
PhD, University of Minnesota, 1992

Jolley, Von Dale

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences

**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1970
MS, Iowa State University, 1974
PhD, Iowa State University, 1976

Maughan, Peter Jeff
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Brigham Young University, 1991
PhD, Virginia Polytechnic Institute and State University, 1994

McMillan, Brock
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** BS, Utah State University, ????
MS, Kansas State University, ????
PhD, Kansas State University, ????

Roundy, Bruce A.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** BA, University of Nevada, Reno, 1973
MS, University of Nevada, Reno, 1977
PhD, Utah State University, 1984

Stevens, Mikel Ross
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** AS, Snow College, 1975
BS, Brigham Young University, 1977
MS, Brigham Young University, 1983
PhD, University of Arkansas, 1993

Terry, Richard Ellis
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1972
MS, Purdue University, 1974
PhD, Purdue University, 1976

## Associate Professors

Coleman, Craig Eliot
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1985
MS, Brigham Young University, 1987
PhD, Pennsylvania State University, 1992

Geary, Bradley Dale
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1995
MS, Washington State University, 1997
PhD, Washington State University, 1999

Hansen, Neil C.
**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1994
PhD, University of Minnesota, 1998

Petersen, Steven L.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Brigham Young University, 1997
PhD, Oregon State Unversity, 2004

Robinson, Todd Fergus

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, Brigham Young University, 1988
PhD, Cornell University, 1996

Smith, Thomas

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, University of Alaska, Fairbanks, 1987
PhD, Brigham Young University, 1992

St. Clair, Sam

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1998
MS, Brigham Young University, 1999
PhD, Pennsylvania State University, 2004

Stewart, John Ryan

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1999
MS, Utah State University, 2001
PhD, Iowa State University, 2005

Udall, Joshua

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1995
MS, University of Idaho, 1997
PhD, University of Wisconsin, 2003

Woolstenhulme, Loreen Allphin

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MS, Brigham Young University, 1992
PhD, University of Utah, 1996

## Assistant Professors

Aanderud, Zachary Thomas

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1997
MS, University of California—Davis, 2003
PhD, University of California—Davis, 2006

Larsen, Randy T.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Assistant Professor

**DEGREES:** BS, Brigham Young University, 2004
MS, Brigham Young University, 2006
PhD, Utah State University, 2008

## Associate Teaching Professor

Jolley, Greg V.

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 1995
MLA, Kansas State University, 1999

## Senior Scientist

Webb, Bruce Lee

**COLLEGE:** Life Sciences
**DEPARTMENT:** Plant and Wildlife Sciences
**RANK:** Senior Scientist
**DEGREES:** BS, Brigham Young University, 1972
MS, Brigham Young University, 1978

- Education
- Engineering and Technology
- Family, Home, and Social Sciences
- Fine Arts and Communications
- Humanities
- Law School
- Life Sciences
- Management
- Nursing
- Physical and Mathematical Sciences
- Religious Education
- Undergraduate Education

**Departments/Schools/Programs**

- School of Accountancy
- Aerospace Studies (Air Force ROTC)
- Business Management
- Finance
- Information Systems
- Management Programs
- Military Science (Army ROTC)
- Organizational Leadership and Strategy
- Romney Institute of Public Management
- Recreation Management

# Marriott School of Management

730 TNRB
(801) 422-4121

**Dean:** Lee T. Perry, Professor, Organizational Leadership and Strategy
**Associate Dean:** Steven M. Glover, Professor, Accounting
**Associate Dean:** Michael P. Thompson, Associate Professor, Organizational Leadership and Strategy
**Associate Dean:** Keith P. Vorkink, Professor, Finance

## Academic Departments

School of Accountancy
Aerospace Studies (Air Force ROTC)
Business Management
Finance
Information Systems
Military Science (Army ROTC)
Organizational Leadership and Strategy
Romney Institute of Public Management
Recreation Management

## Management Advisement Center

Michael P. Thompson, Director and Associate Dean
460 TNRB
(801) 422-2794

Advisors are prepared to assist undergraduate students in successfully completing university, college, and major requirements. Students are encouraged to meet frequently with their advisors. Center personnel are available to help with registration, graduation requirements, fields of study, changes in major, and transfer evaluation, as well as to clarify policies and procedures.

## Undergraduate Programs

Five undergraduate degrees are offered by the Marriott School of Management. The first is a bachelor's degree in management, which provides a broad management education. The program is designed to assist students in acquiring knowledge, insight, maturity, competence, and a strong sense of moral and ethical character. An area of emphasis may be taken by students seeking specialization. These areas include marketing, global supply chain, strategy, organizational behavior/human resources, entrepreneurship, and general business.

The second bachelor's degree is offered by the School of Accountancy to students seeking to combine accounting skills with broad management education (see the School of Accountancy section of this catalog for details). Accounting students interested in acquiring in-depth specialization or seeking careers in public accounting are encouraged to apply to the Master of Accountancy Program.

The third bachelor's degree is offered by the Information Systems Department to students seeking to combine information systems skills with broad management education (see the Information Systems section of this catalog for details). Students interested in acquiring in-depth specialization in information systems are encouraged to apply to the Master of Information Systems Management Program.

The fourth bachelor's degree is offered by the Recreation Management Department to students desiring a service-oriented profession that strengthens individuals, families, and communities by providing quality recreation programs. Students can choose between an emphasis in experience management or therapeutic recreation. A minor in nonprofit management is also available. Courses prepare students in the areas of leadership skills, program development and management, budgeting and finance, facilities management, and current issues in the recreation profession.

The fifth bachelor's degree is offered by the Finance Department. The finance field deals with the control, management, and allocation of financial resources. Finance careers can be divided into two primary areas: 1) corporate finance, which deals with the financial problems of a business firm and 2) financial services, which focuses on solving financial problems for client firms. Finance is a high-demand, high-reward field with significant professional opportunities for motivated students.

## Graduation Application for Bachelor's Degree

When a student has completed 86–96 earned hours (usually during the junior year), he or she should apply for graduation at the Marriott School of Management Advisement Center.

## Graduate Programs

The Marriott School of Management offers the following graduate degrees:

| | |
|---|---|
| MAcc | Professional Accountancy |
| MAcc | Tax |
| MBA | Business Administration |
| MISM | Information Systems Management |
| MPA | Public Administration |

Individual program brochures are available from the Marriott School of Management, 730 TNRB, Brigham Young University, Provo, UT 84602-3113. Also, refer to the BYU 2014-2015 Graduate Catalog.

**Marriott School of Management Home**

**School of Accountancy Home**

**Majors**

- BS in Accounting

**Course Information**

- All Accounting Courses

**Faculty**

# School of Accountancy

T. Jeffrey Wilks, Director
540A TNRB, (801) 422-3930
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460 TNRB, (801) 422-4285
Internet: www.marriottschool.byu.edu/advisement/index/accounting

## Admission to Degree Program

The degree programs in the school carry special enrollment limitations. Please see the Marriott School of Management Advisement Center for specific details.

## The Discipline

Accounting has been called the language of business in which accountants control, analyze, and report the financial resources of an enterprise. A good understanding of accounting principles and practices can serve as the basis for a career in any business field.

## Career Opportunities

Accountants provide critical input and guidance in profit-seeking organizations, service and charitable organizations, educational institutions, government, public accounting firms—indeed, any organization that exists today.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- A major GPA of at least 2.5
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Accounting** (Program Outcomes)

For help or information on the undergraduate programs, please see the Marriott School of Management Advisement Center.

For information on management degrees, see Management section of this catalog.

## Graduate Programs and Degrees

MAcc in Professional Accountancy
MAcc in Tax

For more information see the current Marriott School of Management School of Accountancy website at http://marriottschool.byu.edu/macc and the BYU 2014–2015 Graduate Catalog.

## General Information

### Undergraduate Application Requirements

All new students entering the undergraduate accounting program commence their study at the beginning of the fall semester. Admission into the undergraduate accounting program is based on consideration of the following:

1. The applicant's overall GPA and GPA in the following prerequisite courses: Acc 200, Acc 310, Bus M 201, Bus M 241, IS 100/102, and IS 201
2. The applicant's personal statement
3. Comments from professors
4. A review of the overall academic record of the applicant

## Admission Policies

The following policies apply in making admission decisions for each fall semester cohort of students:

1. Admission to the undergraduate accounting program is by online application filed directly with the School of Accountancy. Applications are filed at http://marriottschool.byu.edu/bsacc/. Notice of admission decisions is given online.
2. Each year, the last day to apply to commence study in the fall semester is the last business day in June at 4:30 p.m. A student may, however, apply for fall semester admission as early as November 1 in the preceding year. In most cases admission decisions are made on a monthly basis.
3. Repeating the prerequisite courses (Acc 200, 310, Bus M 201, Bus M 241, and I Sys 201) to improve grades for purposes of admission is strongly discouraged. Repeated prerequisite grades from BYU are discounted one full letter grade (e.g., a repeated grade of A is calculated as a B for admission purposes only). No prerequisite course may be repeated more than once. A minimum overall 3.0 GPA is required across all prerequisite courses. A grade of B or better is required in Acc 200 and Acc 310.
4. The accounting program is designed for entry at the beginning of a student's junior year. Moreover, at the end of the junior year, many students immediately commence graduate studies. Therefore, a student entering the accounting program must have substantially completed general education requirements. It is also recommended that the student completes Econ 110 and MCom 320. These two courses must be completed before taking the Management Integrated Core or before entering the MAcc program.
5. Potential applicants who will transfer from other schools are strongly encouraged to take Acc 310 at BYU and include an ACT/SAT score with their application, if the test was taken. Grades transferred from other schools are discounted .3 in the application process.
6. The School of Accountancy reserves the right to allow exceptions in the admission process where it is deemed necessary to admit the most qualified students.

**Marriott School of Management Home**

**School of Accountancy Home**

**Majors**

- BS in Accounting

**Course Information**

- All Accounting Courses

**Faculty**

# BS in Accounting (64 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental acceptance. Please see the college advisement center for information regarding requirements for appliction to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. No more than 6 credit hours of transfer credit will be accepted toward the upper-division major requirements. No transfer credit will be accepted for the Junior Core or Integrated Management Core courses.

2. Demonstrate a knowledge of computer skills. Students may demonstrate spreadsheet skills with either a minimum grade of B in an equivalent transfer course or a P grade in the following:

   IS 110 : Spreadsheet Skills and Business Analysis. (1:1:0)

   WHEN TAUGHT: Fall; Winter; Spring; Summer

   DESCRIPTION: Basic spreadsheet skills focusing on features in MS Excel such as basic functions, logic and reference functions, statistical functions, what-if analysis, and charting to solve complex business problems. No technical background is necessary.

   **Course Outcomes**

   There are no course outcomes available

3. Complete the following prerequisite courses:

   ACC 200 : Principles of Accounting. (3:3:0)

   OFFERED: Independent Study also.

   WHEN TAUGHT: Fall; Winter; Spring

   DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

   **Course Outcomes**

   - Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
   - Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
   - Comfortably use accounting terms and concepts in business-related discussions.
   - Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
   - Write a brief, focused memo demonstrating basic understanding of background business reading material.
   - Use computer-aided learning tools and online learning resources.
   - Manage workload in a self-paced learning environment.

   ACC 310 : Principles of Accounting 2. (3:3:0)

   OFFERED: Available on BYU campus only.

   WHEN TAUGHT: Fall; Winter; Spring; Summer

   PREREQUISITE: ACC 200

   DESCRIPTION: Additional issues in financial and managerial accounting. Review of issues related to balance sheet accounts, performance evaluation and capital budgeting.

   **Course Outcomes**

   - Construct and interpret both a balance sheet and income statement that include elements more advanced than the basic items introduced in Acc 200.
   - Construct and interpret a statement of cash flows.
   - Apply the financial accounting rules that exist in the following areas:a. Revenue recognition (including SAB 101)b. Inventoryc. Long-term assets (including impairment)d. Bondse. Leases (including the financial ratio impact of operating leases)f. Stockholders' equity (including accumulated other comprehensive income)g. Investment securities (including use of the market adjustment account)
   - Employ the time value of money in a financial accounting context.
   - Apply managerial accounting concepts in the following areas:a. Use the concepts of financial leverage and operating leverage to assess a company's riskiness.b. Perform cost-volume-profit analysis using

regresssion to identify the fixed and variable components of a mixed cost and in multiple-product settings.c. Track product costs through a manufacturing process (including use of process costing).d. identify problems through the use of cost variance analysis.
- Construct and use simple Excel spreadsheets in a variety of business settings.
- Independently manage time and workload for a variety of tasks.

BUS M 201 : Financial Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Acc 200 or equivalent.

DESCRIPTION: Financial statement analysis, financial planning, sources of financing, working capital management, risk and return, and valuation.

**Course Outcomes**

There are no course outcomes available

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

IS 201 : Introduction to Management Information Systems. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IS 110.

DESCRIPTION: Using technology to solve business problems. Hands-on spreadsheet, database, and Internet software in a business context.

**Course Outcomes**

- Manipulate and analyze data to make appropriate recommendations for managerial decision-making.
- Design, build, and query a database to apply correct principles of data storage and extraction.
- Develop effective personal computer and Internet search skills.

**Note:** These courses are used in determining admission to the undergraduate accounting program.

4. Apply and be formally accepted into the program.
5. Complete the following required courses:

ACC 241 : Business Law in the Environment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Marriott School of Management major status.

DESCRIPTION: Introduction to legal principles and institutions affecting business.

**Course Outcomes**

- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for the following topics: sources of law, courts and their procedures, jurisdiction, crimes, and torts.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: contract formation, defects in agreement, the statute of frauds and the parole evidence rule, third party rights, and breach/remedies.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: agency formation and termination, partnerships, LLC's, and corporate formation and operation.
- Apply ethical principles to legal problems.

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.

WHEN Fall; Winter; Spring; Summer

TAUGHT:

PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.

DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.

NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

**Note:** It is recommended that Econ 110 and M Com 320 be taken before entering the junior core. Econ 110 and M Com 320 must be completed before starting the Integrated core or first year of the MAcc program.

6. Complete the following Junior Core courses:

ACC 401 : Business and Accounting Information Systems. (4:4:0)

PREREQUISITE: Admission to SOA.

DESCRIPTION: Inputs, processing, outputs, and files of several transaction-processing subsystems. Foundation for understanding internal control. Variety of tools used to design, create, or document accounting information systems (AIS) to achieve organizational objectives.

**Course Outcomes**

- Analyze a set of business processes and report control deficiencies
- Learn how to evaluate the appropriateness of various controls
- Model data relations required to support an accounting information system
- Communicate effectively both in writing and in presentations
- Use technology effectively in solving business problems.

ACC 402 : Cost and Managerial Accounting. (4:4:0)

PREREQUISITE: Admission to SOA.

DESCRIPTION: Cost and managerial accounting topics, including production processes, product costing, cost behavior analysis with regression, differential costing, capital budgeting, throughput accounting, performance measurement, and budgeting.

**Course Outcomes**

- Know how to use management accounting to plan, control, and evaluate business processes.
- Apply management accounting concepts to real-world settings.
- Demonstrate that an improved ability to function in a team setting.
- Use Excel effectively to analyze and solve business problems.

ACC 403 : Intermediate Financial Accounting 1. (4:4:0)

PREREQUISITE: Admission to SOA.

DESCRIPTION: Financial reporting issues for balance sheet, income statement, and cash-flow statement. Revenue recognition, accounting for long-term assets, investment securities, and derivative instruments; consolidation.

**Course Outcomes**

- Apply intermediate-level financial accounting procedures to the construction and interpretation of balance sheets, income statements, and statements of cash flows.
- Evaluate the ethical considerations of such accounting-related topics as earnings management and the strategic choice of accounting procedures.
- Understand the use of fair values in accounting.
- Use the structure of financial statements and an understanding of financial accounting standards and processes to analyze business issues in an unstructured, case-based setting.

ACC 404 : Financial Accounting 2. (4:4:0)

PREREQUISITE: Admission to SOA.

DESCRIPTION: Accounting for receivables and inventory. Major reporting issues associated with liabilities and stockholder's equity. Introduction to computing basic and diluted earnings per share.

**Course Outcomes**

- Demonstrate, through homework, quizzes and examinations that you can prepare journal entries and footnote disclosures required to account for and report in compliance with GAAP the following areas:LeasesDerivativesStock related transactionsEarnings per shareInvestmentsConsolidationsIncome taxes
- Demonstrate, through homework, quizzes and examinations, that you can apply the appropriate procedures for accounting for changes and error corrections.

ACC 405 : Fundamentals of Taxation. (4:4:0)

PREREQUISITE: Admission to SOA.

DESCRIPTION: Tax principles applicable to business entities and individuals; tax compliance issues; tax planning as part of overall strategic planning process for businesses and individuals.

**Course Outcomes**

- Demonstrate a working knowledge of taxation
- Work effectively in groups to solve unstructured tax problems related to taxation.
- Demonstrate an ability to communicate at a professional level in both writing and verbal presentations.
- Demonstrate working skills in using information technologies commonly expected of entry level professionals in taxation

ACC 406 : Financial Statement Auditing. (4:4:0)

PREREQUISITE: Admission to SOA.

DESCRIPTION: Introduction to framework providing financial statement assurance; integrating accounting and business knowledge with concepts from other disciplines such as statistics and law; framework applied to major business cycles, providing specific knowledge in financial statement auditing.

**Course Outcomes**

- be able to identify, define and apply the key concepts related to the financial statement auditing process and the audit of internal control
- be able to combine their knowledge of the auditing process with analytical reasoning to reach justifiable auditing decisions.
- be able to develop audit strategies for several of the major financial statement cycles
- be able to identify, define and apply the basic concepts underlying professional ethics
- be able to perform basic audit analyses using software used in audit practice
- be able to identify and define the primary components of the environment in which auditors operate

7. Complete the following Integrated Management Core courses:

BUS M 361 : Introduction to Supply Chain and Operations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Acceptance into the Marriott School.

DESCRIPTION: Managing and designing processes and people along the value chain.

**Course Outcomes**

There are no course outcomes available

BUS M 390 : Ethics for Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Premanagement and Management 1 cores and full acceptance into the Marriott School upper-division major.

DESCRIPTION: Analyzing ethical dilemmas and understanding ethical theories as they apply to decision making in management.

**Course Outcomes**

There are no course outcomes available

ORG B 321 : Organizational Effectiveness. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department

PREREQUISITE: For Marriott School of Management majors only.

DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

**Course Outcomes**

- Students will know how to explain and discuss the characteristics of an effective organization and how to create them, how to attract and train an effective workforce, how to motivate employees to accomlish the organization's goals, and how to create a productive work environment.
- Students will be able to effectively work in a team.
- The students will learn how to manage change effectively.

**Note:** If completing the MAcc, these courses will be replaced by the MSM Core.

8. Complete the following after Acc 401, 402, 403, 404, 405, 406:

FIN 402 : Managerial Finance for Non-Finance Majors. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: FIN 201; or BUS M 201; or ACC 401; Major status.

DESCRIPTION: Overview of financial management issues including capital budgeting, cost of capital, capital structure/dividends, and long-term financial planning.

NOTE: For non-finance majors.

**Course Outcomes**

There are no course outcomes available

BUS M 498 : Strategic Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status; Management Integrated Core.

DESCRIPTION: Concepts, tools, and approaches to understand competitive forces and to systematically and consistently develop sustainable competitive advantages.

**Course Outcomes**

There are no course outcomes available

**Note:** If completing the MAcc, these courses will be replaced by the MAcc courses.

9. Complete Marriott School exit survey online.

*Hours include courses that may fulfill university core requirements.

## Show all Accounting Courses

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**School of Accountancy Home**

**Majors**

- BS in Accounting

**Course Information**

- All Accounting Courses

**Faculty**

# Accounting (Acc)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

**Note 1:** Students enrolled in nonbusiness programs requiring or recommending Acc 201 or 202 should enroll in 200.

**Note 2:** All 400-level classes (except 440 and 453) are limited to accounting SOA majors.

### 200-Level Courses

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

ACC 201 : Principles of Financial Accounting. (3:3:1)

OFFERED: Independent Study only.
DESCRIPTION: First course in concepts and methods underlying financial statements.

**Course Outcomes**

There are no course outcomes available

ACC 202 : Principles of Managerial Accounting. (3:3:1)

OFFERED: Independent Study only.
PREREQUISITE: ACC 201
DESCRIPTION: Second course in the elementary series covering managerial problems and control of business operations.

**Course Outcomes**

- Construct and interpret a statement of cash flows, including operating cash flows, investing cash flows, and financing cash flows.
- Construct and use internal accounting tools such as budgets, product cost reports, breakeven analysis, and nonroutine decision analyses.
- Analyze transactions, record those transactions, and then use the accounting cycle to generate accounting reports.
- Apply the financial accounting rules that exist in the area of inventory for a manufacturing company.
- Intelligently discuss the ethical dimensions of a variety of accounting-related business problems.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

ACC 241 : Business Law in the Environment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Marriott School of Management major status.
DESCRIPTION: Introduction to legal principles and institutions affecting business.

**Course Outcomes**

- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for the following topics: sources of law, courts and their procedures, jurisdiction, crimes, and torts.

- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: contract formation, defects in agreement, the statute of frauds and the parole evidence rule, third party rights, and breach/remedies.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: agency formation and termination, partnerships, LLC's, and corporate formation and operation.
- Apply ethical principles to legal problems.

### 300-Level Courses

ACC 300 : Introduction to Accounting 2. (3:3:0)

OFFERED: Available as Independent Study only.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: ACC 200
DESCRIPTION: Additional issues in financial and managerial accounting. Review of issues related to balance sheet accounts, performance evaluation and capital budgeting.
NOTE: For non-business majors.

**Course Outcomes**

There are no course outcomes available

ACC 310 : Principles of Accounting 2. (3:3:0)

OFFERED: Available on BYU campus only.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: ACC 200
DESCRIPTION: Additional issues in financial and managerial accounting. Review of issues related to balance sheet accounts, performance evaluation and capital budgeting.

**Course Outcomes**

- Construct and interpret both a balance sheet and income statement that include elements more advanced than the basic items introduced in Acc 200.
- Construct and interpret a statement of cash flows.
- Apply the financial accounting rules that exist in the following areas:a. Revenue recognition (including SAB 101)b. Inventoryc. Long-term assets (including impairment)d. Bondse. Leases (including the financial ratio impact of operating leases)f. Stockholders' equity (including accumulated other comprehensive income)g. Investment securities (including use of the market adjustment account)
- Employ the time value of money in a financial accounting context.
- Apply managerial accounting concepts in the following areas:a. Use the concepts of financial leverage and operating leverage to assess a company's riskiness.b. Perform cost-volume-profit analysis using regresssion to identify the fixed and variable components of a mixed cost and in multiple-product settings.c. Track product costs through a manufacturing process (including use of process costing).d. identify problems through the use of cost variance analysis.
- Construct and use simple Excel spreadsheets in a variety of business settings.
- Independently manage time and workload for a variety of tasks.

### 400-Level Courses

ACC 401 : Business and Accounting Information Systems. (4:4:0)

PREREQUISITE: Admission to SOA.
DESCRIPTION: Inputs, processing, outputs, and files of several transaction-processing subsystems. Foundation for understanding internal control. Variety of tools used to design, create, or document accounting information systems (AIS) to achieve organizational objectives.

**Course Outcomes**

- Analyze a set of business processes and report control deficiencies
- Learn how to evaluate the appropriateness of various controls
- Model data relations required to support an accounting information system
- Communicate effectively both in writing and in presentations
- Use technology effectively in solving business problems.

ACC 402 : Cost and Managerial Accounting. (4:4:0)

PREREQUISITE: Admission to SOA.
DESCRIPTION: Cost and managerial accounting topics, including production processes, product costing, cost behavior analysis with regression, differential costing, capital budgeting, throughput accounting, performance measurement, and budgeting.

**Course Outcomes**

- Know how to use management accounting to plan, control, and evaluate business processes.
- Apply management accounting concepts to real-world settings.
- Demonstrate that an improved ability to function in a team setting.
- Use Excel effectively to analyze and solve business problems.

ACC 403 : Intermediate Financial Accounting 1. (4:4:0)

PREREQUISITE: Admission to SOA.
DESCRIPTION: Financial reporting issues for balance sheet, income statement, and cash-flow statement. Revenue recognition, accounting for long-term assets, investment securities, and derivative instruments; consolidation.

**Course Outcomes**

- Apply intermediate-level financial accounting procedures to the construction and interpretation of balance sheets, income statements, and statements of cash flows.
- Evaluate the ethical considerations of such accounting-related topics as earnings management and the strategic choice of accounting procedures.
- Understand the use of fair values in accounting.
- Use the structure of financial statements and an understanding of financial accounting standards and processes to analyze business issues in an unstructured, case-based setting.

ACC 404 : Financial Accounting 2. (4:4:0)

PREREQUISITE: Admission to SOA.

DESCRIPTION: Accounting for receivables and inventory. Major reporting issues associated with liabilities and stockholder's equity. Introduction to computing basic and diluted earnings per share.

**Course Outcomes**

- Demonstrate, through homework, quizzes and examinations that you can prepare journal entries and footnote disclosures required to account for and report in compliance with GAAP the following areas:LeasesDerivativesStock related transactionsEarnings per shareInvestmentsConsolidationsIncome taxes
- Demonstrate, through homework, quizzes and examinations, that you can apply the appropriate procedures for accounting for changes and error corrections.

ACC 405 : Fundamentals of Taxation. (4:4:0)

PREREQUISITE: Admission to SOA.

DESCRIPTION: Tax principles applicable to business entities and individuals; tax compliance issues; tax planning as part of overall strategic planning process for businesses and individuals.

**Course Outcomes**

- Demonstrate a working knowledge of taxation
- Work effectively in groups to solve unstructured tax problems related to taxation.
- Demonstrate an ability to communicate at a professional level in both writing and verbal presentations.
- Demonstrate working skills in using information technologies commonly expected of entry level professionals in taxation

ACC 406 : Financial Statement Auditing. (4:4:0)

PREREQUISITE: Admission to SOA.

DESCRIPTION: Introduction to framework providing financial statement assurance; integrating accounting and business knowledge with concepts from other disciplines such as statistics and law; framework applied to major business cycles, providing specific knowledge in financial statement auditing.

**Course Outcomes**

- be able to identify, define and apply the key concepts related to the financial statement auditing process and the audit of internal control
- be able to combine their knowledge of the auditing process with analytical reasoning to reach justifiable auditing decisions.
- be able to develop audit strategies for several of the major financial statement cycles
- be able to identify, define and apply the basic concepts underlying professional ethics
- be able to perform basic audit analyses using software used in audit practice
- be able to identify and define the primary components of the environment in which auditors operate

ACC 440 : Corporate Financial Reporting. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ACC 200 & BUS M 301; or ACC 200 & BUS M 201; or ACC 200 & FIN 201

DESCRIPTION: Accounting principles of corporate financial reporting. Judgments managers make preparing financial statement information. How complexities, alternatives, and impacts affect completed financial statements.

NOTE: For nonaccounting majors.

**Course Outcomes**

- Identify financial statement areas where managers can exercise significant judgment and identify how managers choices in these areas impact earnings reported in financial statements. Specific areas addressed include the following:Financial ForecastsPrimary Financial StatementsEarnings ManagementLeasesPensionsFinancial statement footnotesLong-lives AssetsInventory accountingIncome Taxes
- Demonstrate the proficiency to address CFA exam questions over the topic areas covered in this course.
- Apply ethical considerations to earnings management issues.

ACC 453 : Money, the Financial System, and the Economy. (3:3:0)

DESCRIPTION: Applications of industry analysis and microeconomic principles in the macroeconomic environment that influences individuals and financial intermediaries that transact in money and credit markets.

**Course Outcomes**

- Understand interest rates, rate determination and discounted present value.
- Understand differential spot, forward & derivatives, futures and options markets, with specific application to stocks and US Treasuries.
- Understand the function and management of financial intermediaries.
- Understand basic aggregate economics: actual and potential supply and actual demand and their implication for growth, employment and inflation.
- Understand trade and exchange rates.

## Graduate Courses

For 500- and 600-level courses, see the current Marriott School of Management School of Accountancy website at http://marriottschool.byu.edu/macc and the BYU 2014–2015 Graduate Catalog.

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**Majors**

- BS in Accounting

**Course Information**

- All Accounting Courses

**Faculty**

# School of Accountancy Faculty

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## Professors

Albrecht, W. Steve
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
MBA, University of Wisconsin, Madison, 1973
PhD, University of Wisconsin, Madison, 1975

Black, Ervin L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1981
MBA, Brigham Young University, 1984
PhD, University of Washington, 1995

Budd, Cassy
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Teaching Professor
**DEGREES:** BS, Brigham Young University, 1990
MA, Utah State University, 2002

Burton, F. Greg
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BA, Utah State University, 1984
MAcc, Utah State University, 1987
PhD, University of South Carolina, Columbia, 1994

Christensen, Theodore (Ted) E.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, San Jose State University, 1989
MS, Brigham Young University, 1991
PhD, University of Georgia, 1995

Cottrell, David M.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1984
BS, Brigham Young University, 1985
MHA, Brigham Young University, 1985
PhD, Ohio State University, 1992

Gardner, Robert L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1969
MBA, University of Utah, 1975

BS, University of Utah, 1976
PhD, University of Texas, Austin, 1979

Glover, Steven M.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** AA, Brigham Young University—Idaho, 1983
BA, University of Washington, 1987
PhD, University of Washington, 1994

Hobson, L. Scott
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Teaching Professor
**DEGREES:** BS, Brigham Young University, 1983
MAcc, Brigham Young University, 1983

Prawitt, Douglas F.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1988
MAcc, Brigham Young University, 1988
PhD, University of Arizona, 1993

Spilker, Brian C.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1987
MAcc, Brigham Young University, 1987
PhD, University of Texas, Austin, 1993

Stewart, Dave N.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MAcc, Brigham Young University, 1977
PhD, University of Florida, 1980

Stice, Earl K.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
MAcc, Brigham Young University, 1982
MS, Cornell University, 1986
PhD, Cornell University, 1988

Stice, James D.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1984
MAcc, Brigham Young University, 1984
PhD, University of Washington, 1988

Stocks, Kevin D.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
MAcc, Brigham Young University, 1978
PhD, Oklahoma State University, 1981

Summers, Scott L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
MAcc, Brigham Young University, 1990
PhD, Texas A&M University, 1995

Swain, Monte R.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1987
MAcc, Brigham Young University, 1987
PhD, Michigan State University, 1991

Wilks, T. Jeffrey

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1995
MS, Cornell University, 1999
PhD, Cornell University, 2000

Zimbelman, Mark F.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1984
PhD, University of Arizona, 1996

## Associate Professors

Barrick, John A.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MAcc, Brigham Young University, 1991
PhD, University of Nebraska, Lincoln, 1998

Heninger, William G.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1989
MAcc, Brigham Young University, 1989
PhD, University of Georgia, 1997

Smith, Steven D.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
MAcc, Brigham Young University, 1999
MS, Cornell University, 2004
PhD, Cornell University, 2005

Tayler, William B.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 2002
MAcc, Brigham Young University, 2002
MS, Cornell University, 2006
PhD, Cornell University, 2007

Worsham, Ronald G.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1985
MAcc, Brigham Young University, 1985
PhD, University of Florida, 1994

# Assistant Professors

Drake, Michael S.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MAcc, Brigham Young University, 2003
PhD, Texas A&M University, 2009

Larson, Melissa P.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 1998
MAcc, Brigham Young University, 1998

Stewart, Bryan W.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Assistant Professor
**DEGREES:** BS, Utah State University, 2002
MA, University of Notre Dame, 2003
PhD, University of South Carolina, 2013

Wood, David A.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** School of Accountancy
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2005
MA, Brigham Young University, 2005
PhD, Indiana University, 2009

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**Aerospace Studies Home**

**Minor**

- Aerospace Studies (Air Force ROTC)

**Course Information**

- Aerospace Studies Courses

# Aerospace Studies (Air Force ROTC)

Colonel Paul M. Kucharek, Chair
380 ROTC, (801) 422-2671

## Admission to Degree Program

Students must be accepted by the department into the program.

## The Discipline

The Air Force Reserve Officer Training Corps (AFROTC) is an educational program designed to provide students the opportunity to become Air Force officers while completing requirements for an undergraduate or graduate degree. Four-year and three-year programs are available for both men and women.

## Career Opportunities

Officer in the United States Air Force.

## General Information

**Textbooks, Uniforms, and Allowance.** All textbooks, uniforms, and uniform accessories are furnished by the Air Force, in addition to the tax-free allowance of $450 to $500 per month furnished to those in the Professional Officer Course (POC) program.

**Air Force ROTC Scholarship Program.** All current scholarship information can be found at http://afrotc.com/scholarships/.

**Field Training.** All cadets must attend a field training camp in order to enter the Professional Office Corps (last two years). Cadets in the full four-year program will attend field training after the completion of their second (AS 200) year. Cadets who begin the program with less than 4 years remaining before graduation will attend Field Training after their first year in the program.

This training gives an increased understanding of the Air Force mission, and operations to include expeditionary (deployed) operations. Cadets receive practical experience in leadership and management while residing on an Air Force base. Additionally, cadets are provided hands-on training in combatives, weapons qualifications, squad tactics, and contingency operations. Medical care, housing, food, and uniforms, as well as transportation to and from the training base, are provided.

**Extracurricular Activities.** Each Air Force ROTC student will be able to participate in a variety of extracurricular activities, including the Arnold Air Society, the color guard, and the honor guard. Selected cadets may also participate in summer programs such as the career-field shadow program or airborne training (parachute jump school).

**LDS Missions.** Students who are accepted in to the program and who desire to serve a Church mission must consult with department staff. This will facilitate entrance into the Professional Officer Course program. Scholarship students may have their scholarship deferred while they fulfill a mission.

**Fifth-Year Cadets.** Four-year program students in Air Force ROTC who are in a five-year university program are allowed a year of completed status after their senior AFROTC courses. Out-of-phase students and those who will be student teaching should consult with the department chair.

**Discipline.** Disciplinary training in the cadet corps is formulated and administered by the student officers. Air Force ROTC students are civilians and are not subject to military law.

**Veterans.** A veteran seeking a commission through Air Force ROTC may have part or all of the freshman and sophomore program waived. Allowances are paid in addition to G.I. Bill benefits.

## Program Requirements

### Four-Year Program

The more popular and preferred program is the traditional Four-Year Program. Interested freshmen register for aerospace studies in the fall semester, enrolling in aerospace studies courses in the same manner as for other college courses. There is *no military obligation* for the first two years of Air Force ROTC unless on an Air Force ROTC scholarship. During this time students learn more about the Air Force and the historical development of air power. After completing the first two years, known as the General Military Course (GMC), students may *compete* for entry into the last two years, the Professional Officer Course (POC). If accepted, students will attend a four-week summer field training encampment between their sophomore and junior years before entering the POC. Cadets in the POC study leadership, management, and national defense policy while receiving a nontaxable subsistence allowance of $450 for juniors and $500 for seniors each month.

### Three-Year Program

Students entering the program as sophomores can "dual enroll" in both the Aeros 100 and 200 academics simultaneously. If accepted, students will attend a four-week field training the next summer.

### Qualifications

1. Be a United States citizen.
2. Be a full-time student.
3. Be eighteen years of age, or seventeen years of age with parent's or legal guardian's consent.
4. Be physically qualified.
5. Be of good moral character.
6. Be in good academic standing.
7. Be interviewed and selected by a board of Air Force officers.
8. Complete all commissioning requirements as follows:
    a. Pilot or navigator candidate: Complete before age twenty-nine so as to enter undergraduate pilot/navigator training before age thirty.
    b. Scholarship recipient: Complete before age thirty-one in eligible year of commissioning.
    c. Nonscholarship recipient: Complete before age thirty-five.
    d. Successfully pass the Air Force Officer Qualifying Test.

## Required Courses

1. General Military Courses: complete the following:
   Aeros 100, 101, 110, 111, 200, 201, 210, 211.
2. Professional Officer Courses: complete the following:
   Aeros 300, 301, 310, 311, 400R, 401R, 410, 411.

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**Aerospace Studies Home**

**Minor**

- Aerospace Studies (Air Force ROTC)

**Course Information**

- Aerospace Studies Courses

# Minor in Aerospace Studies (16 hours)

## Program Requirements

1. Complete the following:

AEROS 110 : The Air Force Today. (1:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Aeros 100.

DESCRIPTION: Development, organization, and core values of the U.S. Air Force, emphasizing the foundations of officership.

**Course Outcomes**

- Know the history of the Air Force, how it is organized and what it does for the country
- Know what career opportunities are available as an Air Force officer
- Know the benefits afforded members of the military
- Know and develop productive life skills
- Demonstrate basic oral and written communications skills

AEROS 111 : Aerospace Defense, General Purpose, and Support Forces. (1:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent enrollment in Aeros 101.

DESCRIPTION: U.S. Air Force Major Command structure and the origins of the Air Force.

**Course Outcomes**

- Know the history of the Air Force, how it is organized and what it does for the country
- Know what career opportunities are available as an Air Force officer
- Know the benefits afforded members of the military
- Know and develop productive life skills
- Demonstrate basic oral and written communications skills

AEROS 210 : The Developmental Growth of Air Power. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Aeros 200.

DESCRIPTION: Development of various concepts of air power employment, emphasizing factors that have prompted research and technological change through the early 1960's.

**Course Outcomes**

- Know the key terms and definitions used to describe air and space power
- Comprehend the events, leaders, and technical developments that surrounded the evolution of USAF air and space power
- Demonstrate basic verbal and written communication skills
- Comprehend the Air Force Core Values and examples of their use throughout the evolution of USAF air and space power

AEROS 211 : The Developmental Growth of Air Power. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent enrollment in Aeros 201.

DESCRIPTION: Development of various concepts of air power employment, emphasizing factors that have prompted research and technological change from Vietnam to the present.

**Course Outcomes**

There are no course outcomes available

AEROS 310 : Management and Leadership. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Aeros 300.

DESCRIPTION: Writing, speaking, and listening as communication skills; management concepts; responsibilities and ethics for an Air Force junior officer.

**Course Outcomes**

- Define the concept of leadership
- Explain the relationship between leadership and management
- Explain the ways of determining leadership effectiveness
- Identify the major research theories of leadership and its processes
- Explain the interactional framework of leadership

AEROS 311 : Management and Leadership. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent enrollment in Aeros 301.

DESCRIPTION: Principles of leadership, problem solving, decisions, discipline, and human relations. Emphasis on career planning as an Air Force junior officer.

**Course Outcomes**

- Define the concept of leadership.
- Explain the relationship between leadership and management.
- Explain the ways of determining leadership effectiveness.
- Identify the major research theories of leadership and its processes.
- Explain the Interactional Framework of Leadership.

AEROS 410 : National Security Affairs. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Aeros 400R.

DESCRIPTION: Civilian control of military, civil-military interaction, the forming of defense strategy. Military profession; Russia, Europe, and East Asia regional studies.

**Course Outcomes**

- Know the basic elements of national security policy and process
- Know the air and space power functions and capabilities
- Understand selected roles of the military in society
- Understand current issues affecting the military profession
- Understand the military justice system
- Comprehend the responsibility, authority, and functions of an Air Force commander
- Apply listening, speaking, and writing skills in Air Force particular formats and situations with accuracy, clarity, and appropriate style
- Understand the factors that facilitate a smooth transition from civilian to military life

AEROS 411 : National Security Affairs. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent enrollment in Aeros 401R.

DESCRIPTION: Africa, Middle East, and Latin American regional studies; military operation other than war; military justice system; officer professional development.

**Course Outcomes**

- Be able to explain the basic elements of national security policy and process.
- Know the air and space power functions and capabilities.
- Differentiate between selected roles of the military in society.
- Be able to discuss current issues affecting the military profession.
- Know how the military justice system operates.
- Comprehend the responsibility, authority, and functions of an Air Force commander.
- Apply listening, speaking, and writing skills in Air Force particular formats and situations with accuracy, clarity, and appropriate style.
- Be capable of applying the factors that facilitate a smooth transition from civilian to military life.

**Note**: The requirements listed here are designed for university students interested in Aerospace Studies who are **not** in the Air Force ROTC or seeking a commission. Those who **are** in the Air Force ROTC and are seeking a commission should meet with advisors to discuss requirements.

## Show Aerospace Courses

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**Aerospace Studies Home**

**Minor**

- Aerospace Studies (Air Force ROTC)

**Course Information**

- Aerospace Studies Courses

# Aerospace Studies (Aeros)

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## Undergraduate Courses

### 100-Level Courses

AEROS 100 : Leadership Laboratory--Freshmen. (.5:0:2)

WHEN TAUGHT: Fall

DESCRIPTION: Basic fundamentals of military leadership--drill, courtesy, planning, and organizing at various levels of responsibility.

**Course Outcomes**

- Know and apply basic military skills
- Know and apply basic field training skills
- Know and apply advanced field training skills
- Be physically fit

AEROS 101 : Leadership Laboratory--Freshmen. (.5:0:2)

WHEN TAUGHT: Winter

DESCRIPTION: Basic fundamentals of military leadership--drill, courtesy, planning, and organizing at various levels of responsibility.

**Course Outcomes**

- Know and apply basic military skills
- Know and apply basic field training skills
- Know and apply advanced field training skills
- Be physically fit

AEROS 110 : The Air Force Today. (1:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Aeros 100.

DESCRIPTION: Development, organization, and core values of the U.S. Air Force, emphasizing the foundations of officership.

**Course Outcomes**

- Know the history of the Air Force, how it is organized and what it does for the country
- Know what career opportunities are available as an Air Force officer
- Know the benefits afforded members of the military
- Know and develop productive life skills
- Demonstrate basic oral and written communications skills

AEROS 111 : Aerospace Defense, General Purpose, and Support Forces. (1:2:0)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent enrollment in Aeros 101.

DESCRIPTION: U.S. Air Force Major Command structure and the origins of the Air Force.

**Course Outcomes**

- Know the history of the Air Force, how it is organized and what it does for the country
- Know what career opportunities are available as an Air Force officer
- Know the benefits afforded members of the military
- Know and develop productive life skills
- Demonstrate basic oral and written communications skills

### 200-Level Courses

AEROS 200 : Leadership Laboratory--Sophomores. (.5:0:2)

WHEN TAUGHT: Fall

DESCRIPTION: As listed for Aeros 100/101. Increased emphasis on performance level.

**Course Outcomes**

- Know and apply basic military skills
- Know and apply basic field training skills

- Know and apply advanced field training skills
- Be physically fit

AEROS 201 : Leadership Laboratory--Sophomores. (.5:0:2)

WHEN TAUGHT: Winter

DESCRIPTION: As listed for Aeros 100/101. Increased emphasis on performance level.

**Course Outcomes**

- Know and apply basic field training skills
- Know and apply basic field training skills
- Know and apply advanced field training skills
- Be physically fit

AEROS 210 : The Developmental Growth of Air Power. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Aeros 200.

DESCRIPTION: Development of various concepts of air power employment, emphasizing factors that have prompted research and technological change through the early 1960's.

**Course Outcomes**

- Know the key terms and definitions used to describe air and space power
- Comprehend the events, leaders, and technical developments that surrounded the evolution of USAF air and space power
- Demonstrate basic verbal and written communication skills
- Comprehend the Air Force Core Values and examples of their use throughout the evolution of USAF air and space power

AEROS 211 : The Developmental Growth of Air Power. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent enrollment in Aeros 201.

DESCRIPTION: Development of various concepts of air power employment, emphasizing factors that have prompted research and technological change from Vietnam to the present.

**Course Outcomes**

There are no course outcomes available

**300-Level Courses**

AEROS 300 : Leadership Laboratory--Juniors. (.5:0:2)

WHEN TAUGHT: Fall

DESCRIPTION: As listed for Aeros 100/101. Students perform as cadet officers. Emphasis on leadership development.

**Course Outcomes**

- Know and apply basic military skills
- Know and apply basic filed training skills
- Know and apply advanced field training skills
- Be physically fit

AEROS 301 : Leadership Laboratory--Juniors. (.5:0:2)

WHEN TAUGHT: Winter

DESCRIPTION: As listed for Aeros 100/101. Students perform as cadet officers. Emphasis on leadership development.

**Course Outcomes**

- Know and apply Basic Military Skills.
- Know and apply Basic Field Training Skills.
- Know and apply Advanced Field Training Skills.
- Be physically fit.

AEROS 305R : Leadership Laboratory--Honor Guard. (2:2.0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Instructor's consent.

DESCRIPTION: Fundamentals of military leadership and M-1 rifle drill; emphasizes need for response to vested authority, with opportunity to develop confidence, military bearing, and other interpersonal skills; students perform as cadet leaders.

**Course Outcomes**

- Know and apply basic military skills
- Know and apply Air Force traditions, ceremonies and customs

AEROS 310 : Management and Leadership. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Aeros 300.

DESCRIPTION: Writing, speaking, and listening as communication skills; management concepts; responsibilities and ethics for an Air Force junior officer.

**Course Outcomes**

- Define the concept of leadership
- Explain the relationship between leadership and management
- Explain the ways of determining leadership effectiveness
- Identify the major research theories of leadership and its processes
- Explain the interactional framework of leadership

AEROS 311 : Management and Leadership. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent enrollment in Aeros 301.

DESCRIPTION: Principles of leadership, problem solving, decisions, discipline, and human relations. Emphasis on career planning as an Air Force junior officer.

**Course Outcomes**

- Define the concept of leadership.
- Explain the relationship between leadership and management.
- Explain the ways of determining leadership effectiveness.
- Identify the major research theories of leadership and its processes.
- Explain the Interactional Framework of Leadership.

AEROS 399R : Academic Internship: Leadership Intern Program. (4:0:0)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: Department chair's consent.

DESCRIPTION: Air Force ROTC field leadership training course. Provides advanced fundamentals of military leadership, planning, organizing, and team building at various levels of responsibility.

NOTE: Enrollment limited to Air Force ROTC cadets.

**Course Outcomes**

- Understand and implement in theoretical situations Air Force core values
- Explain Air Force leadership principles
- Recognize the traits and methods of effective leadership in the military

**400-Level Courses**

AEROS 400R : Leadership Laboratory--Seniors. (.5:0:2)

WHEN TAUGHT: Fall

DESCRIPTION: As listed for Aeros 100/101. Senior cadets perform in leadership positions in planning and conducting all activities of the cadet corps.

**Course Outcomes**

- Know and apply basic military skills
- Know and apply basic field training skills
- Know and apply advanced field training skills
- Be physically fit

AEROS 401R : Leadership Laboratory--Seniors. (.5:0:2)

WHEN TAUGHT: Winter

DESCRIPTION: As listed for Aeros 100/101. Senior cadets perform in leadership positions in planning and conducting all activities of the cadet corps.

**Course Outcomes**

- Know and apply basic military skills
- Know and apply basic field training skills
- Know and apply advanced field training skills
- Be physically fit

AEROS 410 : National Security Affairs. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Aeros 400R.

DESCRIPTION: Civilian control of military, civil-military interaction, the forming of defense strategy. Military profession; Russia, Europe, and East Asia regional studies.

**Course Outcomes**

- Know the basic elements of national security policy and process
- Know the air and space power functions and capabilities
- Understand selected roles of the military in society
- Understand current issues affecting the military profession
- Understand the military justice system

Comprehend the responsibility, authority, and functions of an Air Force commander
- Apply listening, speaking, and writing skills in Air Force particular formats and situations with accuracy, clarity, and appropriate style
- Understand the factors that facilitate a smooth transition from civilian to military life

AEROS 411 : National Security Affairs. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Concurrent enrollment in Aeros 401R.

DESCRIPTION: Africa, Middle East, and Latin American regional studies; military operation other than war; military justice system; officer professional development.

**Course Outcomes**

- Be able to explain the basic elements of national security policy and process.
- Know the air and space power functions and capabilities.
- Differentiate between selected roles of the military in society.
- Be able to discuss current issues affecting the military profession.
- Know how the military justice system operates.
- Comprehend the responsibility, authority, and functions of an Air Force commander.
- Apply listening, speaking, and writing skills in Air Force particular formats and situations with accuracy, clarity, and appropriate style.
- Be capable of applying the factors that facilitate a smooth transition from civilian to military life.

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**Business Management Department Home**

**Course Information**

- Business Management (Bus M) Courses

**Faculty**

# Business Management

Tom Foster, Chair
660A TNRB, (801) 422-2444

## Accessibility of Business Management Courses

1. Bus M 200-level courses are open to all students.
2. Bus M 371R, 372, 380, 382, and 430 are open to all students. All other Bus M 300-level courses are closed except to students who have been formally accepted into the Marriott School, the School of Accountancy, or the Department of Information Systems or who have written approval from the undergraduate management director.
3. Non-Marriott School students may take 400-level courses for which they have proper prerequisites and the undergraduate management director's written permission.

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**Business Management Department Home**

**Course Information**

- Business Management (Bus M) Courses

**Faculty**

# Business Management (Bus M)

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Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

BUS M 170 : Introduction to Entrepreneurship. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Is entrepreneurship for you? Basics of entrepreneurship, its importance to society, opportunities to pursue a startup company, and impact on future careers.

**Course Outcomes**
There are no course outcomes available

BUS M 180 : Business Career Lecture Series. (.5:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Lecture series exploring various business career alternatives.

**Course Outcomes**
There are no course outcomes available

BUS M 199R : Academic Internship. (1-3:ARR:ARR)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Consent of internship coordinator.
DESCRIPTION: Supervised experience for nonbusiness students either in service or business-related work.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

BUS M 201 : Financial Management. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Acc 200 or equivalent.
DESCRIPTION: Financial statement analysis, financial planning, sources of financing, working capital management, risk and return, and valuation.

**Course Outcomes**
There are no course outcomes available

BUS M 205R : Planning for Financial Security at Retirement. (1:1:0)
DESCRIPTION: Fundamentals of good financial management necessary for successful retirement.

**Course Outcomes**
There are no course outcomes available

BUS M 241 : Marketing Management. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

BUS M 260 : Introduction to Supply Chain and Operations. (3:3:0)

DESCRIPTION: Introduces operations management (how firms produce goods and services) and supply chain management (how first work with other firms to deliver value to customers). Topics include process design, quality assurance, purchasing, inventory management, and more.

NOTE: For nonmanagement majors.

**Course Outcomes**

There are no course outcomes available

BUS M 277 : Legal Issues in Entrepreneurship. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Legal risks faced by entrepreneurs. How to plan for and avoid legal problems including forming the business, legal liability, and protecting assets.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

BUS M 320 : Career Orientation and Preparation. (.5:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance into Marriott School.

DESCRIPTION: Student orientation and preparation for careers in management.

NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

BUS M 321 : Mentor Program. (.5:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance into Marriott School.

DESCRIPTION: Discussions with outside mentor about career opportunities.

NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

BUS M 341 : Marketing Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Acceptance into the Marriott School.

DESCRIPTION: Market segmentation, product service, promotion, channel, pricing strategies. Marketing principles in consumer and industrial markets, profit and nonprofit organizations, domestic and international companies, and small and large firms.

**Course Outcomes**

There are no course outcomes available

BUS M 361 : Introduction to Supply Chain and Operations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Acceptance into the Marriott School.

DESCRIPTION: Managing and designing processes and people along the value chain.

**Course Outcomes**

There are no course outcomes available

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**

There are no course outcomes available

BUS M 372 : Basic Entrepreneurship Skills. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Practical aspects of business formation and growth; key skills and principles needed to successfully start up and grow a business.

NOTE: For non-Marriott School of Management students.

**Course Outcomes**

There are no course outcomes available

BUS M 375 : Social Innovation: Do Good Better. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Focuses on the most prominent approaches used in social innovation and entrepreneurship. Students develop skills in analyzing social ventures, including root cause analysis, solution evaluation, and social impact measurement; and leave with the confidence to pursue a life of purpose.

**Course Outcomes**

There are no course outcomes available

BUS M 380 : Executive Lectures. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by top executives on subjects significant to executive leadership.

**Course Outcomes**

There are no course outcomes available

BUS M 382 : Financial Services Lecture Series. (1:1:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Lectures by executives on financial services topics.

**Course Outcomes**

No outcomes are available at this time.

BUS M 387 : Economics of Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major or strategy minor status.

DESCRIPTION: Economic tools influencing the success of strategy (creation and appropriation of value) emphasizing application of economic theory to management of practice.

**Course Outcomes**

There are no course outcomes available

BUS M 390 : Ethics for Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Premanagement and Management 1 cores and full acceptance into the Marriott School upper-division major.

DESCRIPTION: Analyzing ethical dilemmas and understanding ethical theories as they apply to decision making in management.

**Course Outcomes**

There are no course outcomes available

**400-Level Courses**

BUS M 430 : Introduction to International Business. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Complexities confronting U.S. firms and their management in international environments. Emphasizes functional and planning areas, including organization, market research, financial analysis.

**Course Outcomes**

There are no course outcomes available

BUS M 431 : International Marketing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

RECOMMENDED: Bus m 430.

DESCRIPTION: International market entry strategies, export marketing, joint ventures, and other market entry modes. Regional/National markets; cultural, political, legal environments. Negotiations, trade financing, marketing mix.

**Course Outcomes**

There are no course outcomes available

BUS M 440 : Database Marketing: Mining and Analysis. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BUS M 241; Major status.

DESCRIPTION: Key issues in managing and developing online marketing databases for segmenting markets and developing marketing tactics. In-depth development of data mining techniques and advanced statistical analysis

**Course Outcomes**

No outcomes are available at this time.

BUS M 442 : Marketing Research. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

DESCRIPTION: Concepts and methodology for conducting marketing research. Emphasis on solving problems faced by the marketing manager. Consulting research project required.

**Course Outcomes**

There are no course outcomes available

BUS M 444 : Consumer Behavior. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

DESCRIPTION: Mental and emotional processes and physical actions that people engage in when selecting, purchasing, using, and discarding products and services to satisfy consumer needs and desires.

**Course Outcomes**

There are no course outcomes available

BUS M 450 : Global Business Negotiations. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

DESCRIPTION: Developing an effective negotiation framework for cross-national/cultural negotiation techniques relative to business and other life situations.

**Course Outcomes**

There are no course outcomes available

BUS M 454 : Professional Selling and Sales Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

DESCRIPTION: Concepts of professional selling and sales management including personal selling skills; strategic role of personal selling; organizing, directing, controlling, and evaluating the sales force.

**Course Outcomes**

There are no course outcomes available

BUS M 455 : Advertising and Promotion Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

DESCRIPTION: Strategies in promoting business and nonbusiness products, services, and institutions, including the role of advertising, promotion, target selection, media and copy decisions, and marketing research.

**Course Outcomes**

There are no course outcomes available

BUS M 456 : Retailing Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

DESCRIPTION: Selection, location, and management of retail stores and systems, emphasizing profitability and integration of accounting, finance, and economic concepts and tools.

**Course Outcomes**

No outcomes are available at this time.

BUS M 457 : Internet Marketing of Products and Services. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

DESCRIPTION: Integrates product, research, sales, and promotional strategy and concepts into an overall marketing plan for developing an Internet business. Term project developing an Internet business required.

**Course Outcomes**

There are no course outcomes available

BUS M 459 : Marketing Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer, Contact Department

PREREQUISITE: BUS M 241 & BUS M 442; Major status.

DESCRIPTION: Integration of finance, marketing, and case studies in economic concepts and techniques in marketing decision making and planning.

**Course Outcomes**

There are no course outcomes available

BUS M 461 : Operations Analytics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: BUS M 361; Major status.

DESCRIPTION: Methods and tools necessary for analyzing and solving problems associated with global supply chain management.

**Course Outcomes**

There are no course outcomes available

BUS M 462 : Customer Relationship Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Methods and principles for effective management of customer relationships within service businesses. Analyzing customer-interactive processes with regard to strategic innovation, performance measurement and improvement, process efficiency, interactive job design, service marketing, and service quality assurance.

**Course Outcomes**

There are no course outcomes available

BUS M 463 : Quality Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Bus M 361; major status.

DESCRIPTION: Concepts of quality management, strategic issues, philosophies, and tools such as Six Sigma and SQC used to control quality.

**Course Outcomes**

There are no course outcomes available

BUS M 465 : Global Supply Chain. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BUS M 361; Major status.

DESCRIPTION: The emerging rules of a global marketplace and their influence on key supply chain activities and processes.

**Course Outcomes**

There are no course outcomes available

BUS M 466 : Purchasing and Supply Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Major status.

DESCRIPTION: Focuses on upstream supply chain activities of supplier selection, management, and development. Negotiation, costing, product development, and commodity analysis.

**Course Outcomes**

There are no course outcomes available

BUS M 468 : Supply Chain Logistics. (3:3.0:0.0)

WHEN TAUGHT: Fall

PREREQUISITE: Major status.

DESCRIPTION: Integration of materials management (inbound transportation), physical distribution (outbound transportation), inventory, warehousing, facility location, customer service, packaging, and materials handling.

**Course Outcomes**

There are no course outcomes available

BUS M 469 : Global Supply Chain Strategy. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BUS M 361; Major status.
DESCRIPTION: Integrative and creative problem solving in designing and managing cohesive value-added conversion/transformation systems in a global environment.

**Course Outcomes**

There are no course outcomes available

BUS M 470 : Entrepreneurial Innovation. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Major status.
DESCRIPTION: Finding and validating ideas for innovative new ventures with a focus on customer pain, elegant solutions, and markets.

**Course Outcomes**

There are no course outcomes available

BUS M 471 : Creating New Ventures. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: BUS M 470
DESCRIPTION: Learning the critical skills to create a successful new venture by validating an initial idea and business model in the field.

**Course Outcomes**

There are no course outcomes available

BUS M 472 : Entrepreneurial Marketing. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: BUS M 341; or BUS M 241; Major status.
DESCRIPTION: Marketing strategies for start-up companies. Topics include marketing to investors, internal marketing, and how to market products/services without a marketing budget.

**Course Outcomes**

There are no course outcomes available

BUS M 475 : Financing New Ventures. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Business management core; major status.
DESCRIPTION: Concepts and skills of entrepreneurship, emphasizing how new and emerging companies are financed. Applying functional tools to case situations.

**Course Outcomes**

There are no course outcomes available

BUS M 476 : New Venture LaunchPad. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Major status.
DESCRIPTION: Launching actual new ventures. Mentored learning of idea validation, business models, minimum viable products, and financing plans. Good preparations for participating in BYU's entrepreneurial competitions.

**Course Outcomes**

There are no course outcomes available

BUS M 478A : Crocker Fellows, Part 1. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: Instructor's consent.
DESCRIPTION: Interdisciplinary perspectives and practice in innovation emphasizing discovering and commercializing new ideas in interdisciplinary teams.

**Course Outcomes**

No outcomes are available at this time.

BUS M 478B : Crocker Fellows, Part 2. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: BUS M 478A
DESCRIPTION: Interdisciplinary perspectives and practice in innovation emphasizing discovering and commercializing new ideas in interdisciplinary teams.

**Course Outcomes**

No outcomes are available at this time.

BUS M 480 : Strategy 1. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Major status.

DESCRIPTION: Structured problem solving, strategic thinking, and basic strategy concepts to prepare students to analyze and understand the sources of competitive advantage and superior firm performance.

**Course Outcomes**

There are no course outcomes available

BUS M 481 : Strategy 2. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BUS M 480

DESCRIPTION: Advanced strategy topics such as growth and diversification strategy, pricing strategy, game theory and competitor analysis, strategy as real options, and strategic flexibility and commitment.

**Course Outcomes**

There are no course outcomes available

BUS M 482 : Strategy Implementation. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: BUS M 481

DESCRIPTION: Integrative course on strategy formulation and implementation, including a field study. Topics include organizational alignment (structure and processes that fit the stragety), change management, and strategic leadership.

**Course Outcomes**

There are no course outcomes available

BUS M 483R : Topics in Strategy. (3:3:0)

PREREQUISITE: Major status.

DESCRIPTION: Topics and instructors vary.

**Course Outcomes**

No outcomes are available at this time.

BUS M 488 : Agribusiness Management 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ACC 200 & BUS M 201 & ECON 110; or ACC 200 & FIN 201 & ECON 110

DESCRIPTION: Concepts, tools, and approaches to understanding competitive forces and the development of sustainable competitive advantage for firms in the food, fiber, and horticulture industries.

**Course Outcomes**

There are no course outcomes available

BUS M 489 : Agribusiness Management 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ACC 200 & BUS M 201 & ECON 110; or ACC 200 & FIN 201 & ECON 110

DESCRIPTION: Developing and implementing marketing plans and programs for companies participating in the value chain of agribusiness industries.

**Course Outcomes**

There are no course outcomes available

BUS M 490R : Topics in Business Management. (.5-3:Arr:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Current business-related topics varying by semester and section.

**Course Outcomes**

There are no course outcomes available

BUS M 491R : Social Innovation Projects. (1-3:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Instructor's consent.

DESCRIPTION: Direct, practical on-campus (not in the field) and off-campus experience consulting with established and recognized

social innovators and their social ventures. Students are accepted to work on specific projects based on their skills. Students apply to be involved in specific projects. Credit offered will depending upon the project's scope and intensity.

**Course Outcomes**

There are no course outcomes available

BUS M 494R : On-Campus Experiential Projects. (3:1:Arr)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Direct, practical on-campus (not in the field) professional experience consulting with established and startup companies and organizations. Students are accepted to work on specific projects based on their skills, interests, and major emphasis. Students apply to be involved in specific projects.

**Course Outcomes**

There are no course outcomes available

BUS M 495R : E-Business Projects. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Consulting/Field studies projects in e-business.

**Course Outcomes**

No outcomes are available at this time.

BUS M 496R : Academic Internship. (1-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Consent of internship coordinator.

DESCRIPTION: Supervised experience for business majors either in service or business-related work. Opportunity to link learning with practical field applications.

**Course Outcomes**

There are no course outcomes available

BUS M 498 : Strategic Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status; Management Integrated Core.

DESCRIPTION: Concepts, tools, and approaches to understand competitive forces and to systematically and consistently develop sustainable competitive advantages.

**Course Outcomes**

There are no course outcomes available

## 500-Level Graduate Courses (available to advanced undergraduates)

BUS M 509 : Communication in Professional Service Firms. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: MAcc or MISM major status.

DESCRIPTION: Theory and application of written and oral communication for professional service firms.

**Course Outcomes**

No outcomes are available at this time.

BUS M 530 : Operations Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MAcc or MISM major status.

DESCRIPTION: Examining issues and tools in production and operations management. Specific tools for forecasting, planning, inventory control, and project management presented and developed.

**Course Outcomes**

There are no course outcomes available

BUS M 538 : Managing Entrepreneurial Firms and Family Businesses. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Issues and problems facing managers of entrepreneurial enterprises and leaders of family-owned businesses. Includes start-up, growth, and exit strategies. Consulting project required.

**Course Outcomes**

No outcomes are available at this time.

BUS M 540 : Organizational Behavior. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MAcc or MISM major status.

DESCRIPTION: Analysis of individual, group, and organizational variables that inhibit or facilitate effective organizational functioning. Topics include motivation, rewards, leadership, conflict, decision making, structure, evaluation, and change.

**Course Outcomes**

There are no course outcomes available

BUS M 550 : Marketing Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MAcc or MISM major status.

DESCRIPTION: Development of analytical marketing tools and techniques; their utilization in case analysis and decision making in marketing management.

**Course Outcomes**

There are no course outcomes available

BUS M 571 : Entrepreneurial Perspective. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Developing awareness of and ability to apply existing knowledge about entrepreneurship to make better decisons when starting, growing, and harvesting business ventures.

**Course Outcomes**

No outcomes are available at this time.

BUS M 581 : Strategic Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MAcc or MISM major status.

DESCRIPTION: Top-management approach to problems of determining corporate strategy. Structured for accounting and information systems students.

**Course Outcomes**

There are no course outcomes available

BUS M 582 : Managerial Ethics. (3:3:0)

PREREQUISITE: Marriott School of Management graduate school status.

DESCRIPTION: Introduction to ethical theory and its application to managerial issues.

**Course Outcomes**

There are no course outcomes available

BUS M 596R : Business Language. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: For experienced speakers of the language being taught. Emphasizes business concepts; practice and case study including conversation, reading,and presenting, while enriching business vocabulary.

**Course Outcomes**

No outcomes are available at this time.

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**Business Management Department Home**

**Course Information**

- Business Management (Bus M) Courses

**Faculty**

# Business Management Faculty

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Hide All

## Professors

Foster, Jr., S. Thomas
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1984
MBA, University of Missouri, 1989
PhD, University of Missouri, Columbia, 1993

Money, R. Bruce
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1983
MBA, Harvard Business School, 1988
PhD, University of California, Irvine, 1995

Rhoads, Gary K.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Professor
**DEGREES:** BS, Idaho State University, 1978
MBA, Idaho State University, 1982
PhD, Texas Tech University, 1988

Sampson, Scott E.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1988
MBA, University of Virginia, 1991
PhD, University of Virginia, 1993

Swenson, Michael J.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MBA, University of Utah, 1981
PhD, University of Oregon, 1989

Whitlark, David B.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1978
MBA, Cornell University, 1985
PhD, University of Virginia, 1989

## Associate Professors

Christensen, Glenn L.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1994
MBA, Brigham Young University, 1997
PhD, Pennsylvania State University, 2002

DeRosia, Eric
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
PhD, University of Michigan Business School, 2003

Dotson, Jeff
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Professor
**DEGREES:** BS, Southern Utah University, 2002
MBA, University of Utah, 2003
M.Stat, University of Utah, 2005
PhD, The Ohio State University, 2009

Hatch, Nile W.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1988
MS, Brigham Young University, 1989
PhD, University of California, Berkeley, 1995

Seawright, Kristie
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1977
BS, University of Utah, 1987
MBA, University of Utah, 1989
PhD, University of Utah, 1994

Snow, Daniel C.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1996
MBA, Brigham Young University, 1998
PhD, University of California at Berkeley, 2004

Wallin, Cynthia
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1989
MBA, Brigham Young University, 1994
PhD, Arizona State University, 2006

## Assistant Professors

Billeter, Darron
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Northwestern University, 1998
MS, Carnegie Mellon University, 2004
PhD, Carnegie Mellon University, 2004

Carlos, Chad
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Professor

**DEGREES:** BS, Brigham Young University, 2003
MA, Brigham Young University, 2003
MS, Johnson Graduate School of Management, 2011

Elder, Ryan S.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 2004
PhD, University of Michigan, 2011

Furr, Nathan
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1998
MA, Brigham Young University, 2000
MBA, Brigham Young University, 2004

Gardner, John
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1999
MBA, Brigham Young University, 2003
PhD, Ohio State University, 2012

Larson, Jeff
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2002
MS, Wharton School of Business, 2005
PhD, Wharton School of Business, 2006

Masters, Tamara
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 1983
MBA, University of Utah, 1988
PhD, University of Utah, 2012

## Associate Teaching Professors

Daniels, Lee A
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1981
MA, Sophia University, 1991

Lindorf, Ron S.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1982
MA, Brigham Young University, 1991

## Assistant Teaching Professors

Bond, Michael Gregg
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 1998
MBA, Indiana University, 2003

Greathead, Simon

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 2003
MBA, University of Reading Henley Business School, 2009

Webb, Scott

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Business Management
**RANK:** Assistant Teaching Professor
**DEGREES:** BA, College of Idaho, 1994
MS, Air Force Institute of Technology, 1999
PhD, Michigan State University, 2011

**Marriott School of Management Home**

**Finance Department Home**

**Majors**

- BS in Finance

**Course Information**

- Finance Courses

**Faculty**

# Finance

Andrew L. Holmes, Chair
640A TNRB, (801) 422-3762
E-mail: andrew_holmes@byu.edu

Colby Wright, Associate Chair
610A TNRB, (801) 422-1224
E-mail: colbrin.wright@byu.edu

Marriott School of Management Advisement Center
460 TNRB, (801) 422-4285
Internet: www.marriottschool.byu.edu/bsmgt/advisement

## Admission to Degree Program

The degree program carries special enrollment limitations. Please see the Marriott School of Management Advisement Center for specific details.

## The Discipline

The finance field deals with the control, management, and allocation of financial resources. Primary functions include project evaluation, asset allocation, security analysis, and cash flow estimation.

## Career Opportunities

Finance careers can be divided into two primary areas: 1) corporate finance, which deals with the internal financial issues of a business firm, and 2) financial services, which focuses on solving financial problems for client firms. Finance is a high-demand, high-reward field with significant professional opportunities for motivated students.

## Undergraduate Programs and Degrees

**BS in Finance** (Program Outcomes)

For help or information on the undergraduate program, please see the Marriott School of Management Advisement Center.

For information on management degrees, see the Management section of this catalog.

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**Finance Department Home**

**Majors**

- BS in Finance

**Course Information**

- Finance Courses

**Faculty**

# BS in Finance (64 hours*)

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*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. No more than 12 semester hours of upper-division transfer credit will be accepted toward the major and only 6 hours beyond the Integrated Management Core. No transfer courses will be accepted for the Finance Junior Core or Integrated Management Core courses.

2. Complete the following prerequisite courses:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Acc 200.
DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

MATH 118 : Finite Mathematics. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110.
DESCRIPTION: Language of set theory, counting and combinations. Probability theory, elementary stochastic processes, conditional probabilities. Repeated experiments, random variables, expectation, variance, linear equations, matrix algebra, application to economics or similar. Linear programming. Markov chains including applications.

**Course Outcomes**

- Prepares students for a broad range of applications in business, the life sciences, and the social sciences.For more detailed information visit the Math 118 Wiki page.

**Note:** Based on student performance to date, permission may be granted to take some restricted major-only courses.

3. Apply and be formally accepted into the program.
4. Complete the following required courses before the finance junior core:
   IS 110 : Spreadsheet Skills and Business Analysis. (1:1:0)
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   DESCRIPTION: Basic spreadsheet skills focusing on features in MS Excel such as basic functions, logic and reference functions, statistical functions, what-if analysis, and charting to solve complex business problems. No technical background is necessary.

   **Course Outcomes**

   There are no course outcomes available

   MATH 116 : Essentials of Calculus. (1:2:0)
   WHEN TAUGHT: Spring; Summer
   PREREQUISITE: Math 110.
   DESCRIPTION: Review of algebra, graph of line, slope. Limits and derivatives (standard functions, compositions of such functions), derivative for polynomials, exponentials, logarithms. Product, quotient and chain rule. Optimization (extrema), application to business problems. Newton's method.

   **Course Outcomes**

   - Students receive a brief overview of differential calculus. Topics covered include limits, derivatives, and applications of differentiation to optimization of functions.For more detailed information visit the Math 116 Wiki page.

   STAT 121 : Principles of Statistics. (3:3:1)
   OFFERED: Independent Study also; Honors also.
   WHEN TAUGHT: Fall; Winter; Spring; Summer
   RECOMMENDED: MATH 110 or equivalent.
   DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

   **Course Outcomes**

   - Differentiate between observational studies and experiments
   - Identify three sampling designs: simple random sample, stratified, and multi-stage
   - Identify three designs of experiments: completely randomized, randomized block and matched-pairs
   - Interpret and make appropriate conclusions from plots of data
   - Calculate and interpret measures of center and spread
   - Determine potential association between two quantitative and two categorical variables
   - Communicate using technical language about probability and variation
   - Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
   - Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
   - Determine the appropriate statistical procedure to use for a given research problem or data set

   : Honors Principles of Statistics.

   **Course Outcomes**

5. Complete the following courses during your first year admitted to the major:
   FIN 320 : Finance Career Orientation and Planning. (.5:1:0)
   WHEN TAUGHT: Fall

PREREQUISITE: Acceptance into the Finance major.
DESCRIPTION: Student orientation and preparation for careers in finance.
NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

FIN 321 : Finance Mentor Program. (.5:0:0)

WHEN TAUGHT: Winter
PREREQUISITE: Acceptance into the Finance major.
DESCRIPTION: Discussions with outside finance mentors about career opportunities.
NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

6. Complete the following finance junior core courses in the junior year:

ACC 440 : Corporate Financial Reporting. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: ACC 200 & BUS M 301; or ACC 200 & BUS M 201; or ACC 200 & FIN 201
DESCRIPTION: Accounting principles of corporate financial reporting. Judgments managers make preparing financial statement information. How complexities, alternatives, and impacts affect completed financial statements.
NOTE: For nonaccounting majors.

**Course Outcomes**

- Identify financial statement areas where managers can exercise significant judgment and identify how managers choices in these areas impact earnings reported in financial statements. Specific areas addressed include the following:Financial ForecastsPrimary Financial StatementsEarnings ManagementLeasesPensionsFinancial statement footnotesLong-lives AssetsInventory accountingIncome Taxes
- Demonstrate the proficiency to address CFA exam questions over the topic areas covered in this course.
- Apply ethical considerations to earnings management issues.

FIN 401 : Advanced Financial Management. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Major status.
DESCRIPTION: Capital budgeting, cost of capital, capital structure/dividends, mergers and acquisitions, and current financial problems.

**Course Outcomes**

There are no course outcomes available

FIN 410 : Investments. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: BUS M 301; or FIN 201; or BUS M 201; Finance major status.
DESCRIPTION: Security markets, security analysis, and portfolio management.

**Course Outcomes**

There are no course outcomes available

FIN 411 : Financial Derivatives. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: FIN 410
DESCRIPTION: Current investment literature, efficient markets, modern portfolio theory, capital assets pricing, options pricing theory with a focus on derivatives and fixed income strategies.

**Course Outcomes**

There are no course outcomes available

FIN 453 : Money, Banking, and Business. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Major status.
DESCRIPTION: Economic analysis of effects of money, banking, and financial institutions on business decisions and aggregate economic activity.

**Course Outcomes**

There are no course outcomes available

7. During the senior year, complete one additional finance elective course from the following:

FIN 413 : Real Estate Finance and Investment. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 401 & ACC 440; or FIN 401 & ACC 440; Finance junior core.

DESCRIPTION: Terminology, concepts, principles, and analytical techniques related to financing of and investment in real estate.

**Course Outcomes**

There are no course outcomes available

FIN 415 : Portfolio Management. (1.5:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 409; or FIN 409

DESCRIPTION: Team management of actual investment portfolio. Responsibility for economic forecasts, security selection, and portfolio strategy.

**Course Outcomes**

There are no course outcomes available

FIN 417 : Analysis for Investment Bankers. (3:3:0)

WHEN TAUGHT: Fall, Contact Department; Winter

PREREQUISITE: Finance junior core.

DESCRIPTION: Exploring the skills used by investment bankers including industry analysis, financial statement analysis, and valuation; the underwriting issues such as security characteristics, embedded options, swaps, convertibles, and other hybrid securities.

**Course Outcomes**

There are no course outcomes available

FIN 432 : International Corporate Finance. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 401 & ACC 440; or FIN 401 & ACC 440; Finance junior core.

DESCRIPTION: Financial aspects of multinational corporations operating within an international environment; direct foreign investment, foreign exchange regulations, capital markets, etc.

**Course Outcomes**

There are no course outcomes available

**Note:** If FIN 415 is chosen, it must be taken for 1.5 credit hours in Fall and 1.5 credit hours in Winter. Fin 409 must be taken before Fin 415.

8. Complete the following Integrated Management Core courses:

BUS M 361 : Introduction to Supply Chain and Operations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Acceptance into the Marriott School.

DESCRIPTION: Managing and designing processes and people along the value chain.

**Course Outcomes**

There are no course outcomes available

BUS M 387 : Economics of Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major or strategy minor status.

DESCRIPTION: Economic tools influencing the success of strategy (creation and appropriation of value) emphasizing application of economic theory to management of practice.

**Course Outcomes**

There are no course outcomes available

BUS M 390 : Ethics for Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Premanagement and Management 1 cores and full acceptance into the Marriott School upper-division major.

DESCRIPTION: Analyzing ethical dilemmas and understanding ethical theories as they apply to decision making in management.

**Course Outcomes**

There are no course outcomes available

ORG B 321 : Organizational Effectiveness. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department

PREREQUISITE: For Marriott School of Management majors only.

DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

**Course Outcomes**

- Students will know how to explain and discuss the characteristics of an effective organization and how to create them, how to attract and train an effective workforce, how to motivate employees to accomlish the organization's goals, and how to create a productive work environment.
- Students will be able to effectively work in a team.
- The students will learn how to manage change effectively.

9. Complete the following courses:

ACC 241 : Business Law in the Environment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Marriott School of Management major status.

DESCRIPTION: Introduction to legal principles and institutions affecting business.

**Course Outcomes**

- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for the following topics: sources of law, courts and their procedures, jurisdiction, crimes, and torts.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: contract formation, defects in agreement, the statute of frauds and the parole evidence rule, third party rights, and breach/remedies.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: agency formation and termination, partnerships, LLC's, and corporate formation and operation.
- Apply ethical principles to legal problems.

IS 201 : Introduction to Management Information Systems. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IS 110.

DESCRIPTION: Using technology to solve business problems. Hands-on spreadsheet, database, and Internet software in a business context.

**Course Outcomes**

- Manipulate and analyze data to make appropriate recommendations for managerial decision-making.
- Design, build, and query a database to apply correct principles of data storage and extraction.
- Develop effective personal computer and Internet search skills.

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.

DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.

NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

10. Complete one course from the following:

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**

There are no course outcomes available

BUS M 380 : Executive Lectures. (1:1:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Lectures by top executives on subjects significant to executive leadership.

**Course Outcomes**
There are no course outcomes available

BUS M 382 : Financial Services Lecture Series. (1:1:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Lectures by executives on financial services topics.

**Course Outcomes**
No outcomes are available at this time.

11. Complete the following after the Integrated Management Core:
BUS M 498 : Strategic Management. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Major status; Management Integrated Core.
DESCRIPTION: Concepts, tools, and approaches to understand competitive forces and to systematically and consistently develop sustainable competitive advantages.

**Course Outcomes**
There are no course outcomes available

12. Complete Marriott School exit survey online.

*Hours include courses that may fulfill university core requirements.

## Show all Business Management (Bus M) Courses

## Show all Finance (Fin) Courses

## Show all Management Communication (M Com) Courses

## Show all Organizational Behavior (Org B) Courses

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**Majors**

- BS in Finance

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# Department of Finance

## Undergraduate Courses

Show All Course Descriptions
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### 200-Level Courses

FIN 200 : Personal Finance. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Practical course in money management and utilizing savings.

**Course Outcomes**
There are no course outcomes available

FIN 201 : Principles of Finance. (3:3:1.5)
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Acc 200.
DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**
There are no course outcomes available

### 300-Level Courses

FIN 320 : Finance Career Orientation and Planning. (.5:1:0)
WHEN TAUGHT: Fall
PREREQUISITE: Acceptance into the Finance major.
DESCRIPTION: Student orientation and preparation for careers in finance.
NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**
There are no course outcomes available

FIN 321 : Finance Mentor Program. (.5:0:0)
WHEN TAUGHT: Winter
PREREQUISITE: Acceptance into the Finance major.
DESCRIPTION: Discussions with outside finance mentors about career opportunities.
NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**
There are no course outcomes available

### 400-Level Courses

FIN 401 : Advanced Financial Management. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: Major status.
DESCRIPTION: Capital budgeting, cost of capital, capital structure/dividends, mergers and acquisitions, and current financial problems.

**Course Outcomes**
There are no course outcomes available

FIN 402 : Managerial Finance for Non-Finance Majors. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: FIN 201; or BUS M 201; or ACC 401; Major status.
DESCRIPTION: Overview of financial management issues including capital budgeting, cost of capital, capital structure/dividends, and long-term financial planning.
NOTE: For non-finance majors.

**Course Outcomes**

There are no course outcomes available

FIN 407 : Risk Management. (3:3:0)

PREREQUISITE: Major status.
DESCRIPTION: Management of risk exposures in a business setting. The process of identifying, measuring, and dealing with risk. Coverage includes both traditional insurable risks and financial risks.

**Course Outcomes**

No outcomes are available at this time.

FIN 409 : Equity Financial Modeling and Valuation. (3:1:2)

WHEN TAUGHT: Fall, Contact Department; Winter
PREREQUISITE: FIN 410
DESCRIPTION: Hands-on opportunity to work with security markets and perform security analysis. Builds on theory of investment development in Fin 410.

**Course Outcomes**

There are no course outcomes available

FIN 410 : Investments. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: BUS M 301; or FIN 201; or BUS M 201; Finance major status.
DESCRIPTION: Security markets, security analysis, and portfolio management.

**Course Outcomes**

There are no course outcomes available

FIN 411 : Financial Derivatives. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: FIN 410
DESCRIPTION: Current investment literature, efficient markets, modern portfolio theory, capital assets pricing, options pricing theory with a focus on derivatives and fixed income strategies.

**Course Outcomes**

There are no course outcomes available

FIN 412 : Investments Academy. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Finance major status.
RECOMMENDED: Fin 410.
DESCRIPTION: Applying financial principles to practical investment problems; insights into the investment banking profession.

**Course Outcomes**

There are no course outcomes available

FIN 413 : Real Estate Finance and Investment. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: BUS M 401 & ACC 440; or FIN 401 & ACC 440; Finance junior core.
DESCRIPTION: Terminology, concepts, principles, and analytical techniques related to financing of and investment in real estate.

**Course Outcomes**

There are no course outcomes available

FIN 414 : Real Estate Development. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Major status.
RECOMMENDED: Fin 413.
DESCRIPTION: Applying financial and real estate principles to practical property investments; insights into the real estate profession.

**Course Outcomes**

No outcomes are available at this time.

FIN 415 : Portfolio Management. (1.5:1:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 409; or FIN 409

DESCRIPTION: Team management of actual investment portfolio. Responsibility for economic forecasts, security selection, and portfolio strategy.

**Course Outcomes**

There are no course outcomes available

FIN 417 : Analysis for Investment Bankers. (3:3:0)

WHEN TAUGHT: Fall, Contact Department; Winter

PREREQUISITE: Finance junior core.

DESCRIPTION: Exploring the skills used by investment bankers including industry analysis, financial statement analysis, and valuation; the underwriting issues such as security characteristics, embedded options, swaps, convertibles, and other hybrid securities.

**Course Outcomes**

There are no course outcomes available

FIN 418 : Financial Planning. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 201; or FIN 201; or BUS M 520; Any business major status.

DESCRIPTION: Applying financial principles to household decision making, stressing integration between areas. Income tax and estate planning, retirement, investments, portfolio management, and risk management.

**Course Outcomes**

There are no course outcomes available

FIN 432 : International Corporate Finance. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 401 & ACC 440; or FIN 401 & ACC 440; Finance junior core.

DESCRIPTION: Financial aspects of multinational corporations operating within an international environment; direct foreign investment, foreign exchange regulations, capital markets, etc.

**Course Outcomes**

There are no course outcomes available

FIN 453 : Money, Banking, and Business. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Major status.

DESCRIPTION: Economic analysis of effects of money, banking, and financial institutions on business decisions and aggregate economic activity.

**Course Outcomes**

There are no course outcomes available

FIN 485 : Pre-PhD Finance Seminar. (3:3.0:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to asset pricing theory using both analytical and numerical methods. Coverage includes the Capital Asset Pricing Model and Stochastic Discount Factor models. The empirical method of Generalized Method of Moments (GMM) is also introduced.

**Course Outcomes**

There are no course outcomes available

FIN 487R : Capital Markets Academy. (3:1:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Teams work on live, market-sensitive projects for financial services organizations, including private equity, private wealth, insurance companies, and asset management.

**Course Outcomes**

There are no course outcomes available

FIN 490R : Topics in Finance. (.5-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Current finance-related topics varying by semester and section.

**Course Outcomes**

There are no course outcomes available

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**Majors**

- BS in Finance

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# Finance Faculty

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## Professors

Brau, James C.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BS, United States Military Academy, West Point, 1991
PhD, Florida State University, 1999

Heaton, Hal B.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1975
MBA, Brigham Young University, 1977
MA, Stanford University, 1981
PhD, Stanford University, 1983

Hill, Ned C.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1969
MS, Cornell University, 1971
PhD, Cornell University, 1976

McQueen, Grant R.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1981
MBA, Brigham Young University, 1984
PhD, University of Washington, 1989

Merrill, Craig B.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1989
MA, University of Pennsylvania, 1992
PhD, University of Pennsylvania, 1994

Mitton, Todd
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1990
MBA, Brigham Young University, 1993
PhD, Massachusetts Institute of Technology, 2000

Pinegar, J. Michael
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1973
MBA, University of Utah, 1979

PhD, University of Utah, 1982

Slade, Barrett A.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1983
MS, Brigham Young University, 1989
PhD, University of Georgia, 1997

Thorley, Steven
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1979
MBA, Brigham Young University, 1982
PhD, University of Washington, 1991

Vorkink, Keith P.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1994
MS, University of Rochester, 1996
PhD, University of Rochester, 1999

## Associate Professors

Boyer, Brian H.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1996
PhD, University of Michigan, 2004

Diether, Karl
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1998
PhD, University of Chicago, 2004

Holmes, Andrew L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Associate Professor
**DEGREES:** BA, Texas A&M University, 1986
MS, Texas A&M University, 1988
PhD, University of Houston, 1992

## Assistant Professors

Nadauld, Taylor
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2002
PhD, Ohio State University, 2009

Page, Jeremy
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Assistant Professor
**DEGREES:** BS, U.S. Air Force Academy, 2002
MPP, Harvard University, 2004
PhD, University of Texas at Austin, 2011

Pratt, Ryan

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Assistant Professor
**DEGREES:** BS, University of Utah, 2004
PhD, Duke University, 2012

Schonlau, Robert

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
MBA, Brigham Young University, 2004
MSBA, University of Washington, 2008
PhD, University of Washington, 2010

## Associate Teaching Professor

Sudweeks, Bryan Lorin

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1980
MBA, Brigham Young University, 1982
PhD, George Washington University, 1987

## Assistant Teaching Professor

Wright, Colbrin

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Finance
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 2001
PhD, Florida State University, 2007

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**Information Systems Department Home**

**Majors**

- BS in Information Systems

**Course Information**

- Information Systems (IS) Courses

**Faculty**

# Information Systems

Marshall B. Romney, Chair
790A TNRB, (801) 422-5704

Marriott School of Management Advisement Center
460 TNRB, (801) 422-4285

## Admission to Degree Program

The degree program in the department carries special enrollment limitations. Please see the Marriott School of Management Advisement Center for specific details.

## The Discipline

Computer-based information systems have become a critical part of the products, services, operations, and management of all organizations. The effective and efficient use of information and communications technologies is an important element in achieving competitive advantage for business organizations as well as achieving excellence in service for government and non-profit organizations. The twenty-first century has seen the rapid growth of the Internet, eCommerce, and purely electronic enterprises. These organizations would not even exist without the technology provided by computer-based information systems. The importance of information systems to organizations and the need for well-educated professionals in the field is the basis for strong educational programs and the development of a professional community of information systems (IS) practitioners.

Information systems involves two broad areas: (1) the acquisition, deployment, and management of an organization's information systems resources and services and (2) the development of computer-based systems and technology infrastructures for use in organization processes. Information systems professionals provide services ranging from the managerial to the highly technical. Information systems and technology skills are critical to the success of virtually all modern organizations, including small business, corporations, government, and educational institutions.

## Career Opportunities

Information systems graduates work in large and small organizations of all types, helping maintain existing technology infrastructure and specifying technology solutions to business needs. They serve as the bridge between an organization's technical personnel and its business side. Well-educated information systems graduates are in high demand in accounting firms, consulting firms, large corporations, midsized companies, technical companies, government agencies, and smaller entrepreneurial concerns. Challenging career opportunities embrace a wide range of interests. The variety of employment prospects includes opportunities for everyone from those who are primarily interested in people and organizations to those who enjoy very technical activities such as database and network administration or software development.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Information Systems** (Program Outcomes)

For help or information on the undergraduate program, please see the Marriott School of Management Advisement Center or visit http://isd.byu.edu.

For information on management degrees, see the Management section of this catalog.

## Graduate Programs and Degrees

MISM in Information Systems Management

For more information see the current website for the Master of Information Systems Management program at http://mism.byu.edu and the BYU 2014–2015 Graduate Catalog.

## General Information

## Undergraduate Application Requirements

Admitted applicants to the information systems program begin major coursework each fall semester. The following items are taken into consideration for all applicants during the admission process:

1. Average GPA of prerequisite courses and cumulative GPA.
2. Review of academic transcript.
3. Applicant essay.
4. Comments from Information Systems professors.

## Application Guidelines

Beginning Fall 2012:

1. Completion of the following prerequisite courses: IS 201, IS 303 (or CS 142), ACC 200, FIN 201, and BUS M 241. **Note**: A minimum 3.0 average GPA in the prerequisite courses is required, with no less than a B grade in IS 201 and IS 303 (or CS 142).
2. Repeating courses to improve a grade is strongly discouraged. Repeated and transfer courses are discounted 0.3 of a grade for admission purposes only (e.g. an A- grade would be discounted to a B+ during the admission process).
3. Completion and submission of the online application, including the applicant essay. The deadline to submit the application is the last working day of June at 4:30 pm.
4. Meeting or exceeding admission criteria does not guarantee admission. The Information Systems Department reserves the right to make exceptions to admission policies as deemed necessary to admit the most qualified applicants.

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- Information Systems (IS) Courses

**Faculty**

# BS in Information Systems (64 hours*)

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*This is a limited-enrollment program requiring departmental acceptance. Please see the college advisement center for information regarding requirements for application to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. No more than 6 credit hours of transfer credit will be accepted toward the upper-division major requirements. No transfer credit will be accepted for the Junior Core or Integrated Management Core courses.
2. Demonstrate a knowledge of computer skills. Students may demonstrate spreadsheet skills with either a minimum grade of B in an equivalent transfer course or a P grade in the following:

   IS 110 : Spreadsheet Skills and Business Analysis. (1:1:0)

   WHEN TAUGHT: Fall; Winter; Spring; Summer

   DESCRIPTION: Basic spreadsheet skills focusing on features in MS Excel such as basic functions, logic and reference functions, statistical functions, what-if analysis, and charting to solve complex business problems. No technical background is necessary.

   **Course Outcomes**

   There are no course outcomes available

3. Complete the following prerequisite courses:

   ACC 200 : Principles of Accounting. (3:3:0)

   OFFERED: Independent Study also.

   WHEN TAUGHT: Fall; Winter; Spring

   DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

   **Course Outcomes**

   - Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
   - Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
   - Comfortably use accounting terms and concepts in business-related discussions.
   - Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
   - Write a brief, focused memo demonstrating basic understanding of background business reading material.
   - Use computer-aided learning tools and online learning resources.
   - Manage workload in a self-paced learning environment.

   FIN 201 : Principles of Finance. (3:3:1.5)

   WHEN TAUGHT: Fall; Winter; Spring; Summer

   RECOMMENDED: Acc 200.

   DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

   **Course Outcomes**

   There are no course outcomes available

   BUS M 241 : Marketing Management. (3:3:0)

   OFFERED: Independent Study also.

   WHEN TAUGHT: Fall; Winter; Spring; Summer

   DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

IS 201 : Introduction to Management Information Systems. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IS 110.

DESCRIPTION: Using technology to solve business problems. Hands-on spreadsheet, database, and Internet software in a business context.

**Course Outcomes**

- Manipulate and analyze data to make appropriate recommendations for managerial decision-making.
- Design, build, and query a database to apply correct principles of data storage and extraction.
- Develop effective personal computer and Internet search skills.

IS 303 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Master essential programming concepts and Java syntax.
- Develop critical thinking skills through using programming logic to solve business processing problems.
- Written communication: Learn the standard syntax for Java programs.

**Note:** These courses are used in determining admission to the undergraduate Information Systems program.

4. Apply and be formally accepted into the program.
5. Complete the following required courses:

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.

DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.

NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

**Note:** It is recommended that Econ 110 and M Com 320 be taken before entering the junior core, and must be completed before starting the integrated business core. Econ 110, M Com 320 **and** Stat 121 must be completed before starting the first year of the MISM program.

6. Complete the following Information Systems Junior Core 1 courses (taught fall only):

IS 401 : Systems Analysis. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to information systems major, concurrent enrollment in same section of IS 402, 403, and 414.

DESCRIPTION: Early phases of systems development life cycle, including project management, planning, investigation, requirements definition, systems specifications, alternative selection. Tools and techniques of object-oriented analysis.

**Course Outcomes**

- Learn to work in groups and be part of an effective team. Demonstrate your skills by delivering a semester-long systems analysis and design project, followed by a week-long, intensive integrative exercise.
- Learn to communicate effectively, both orally and in writing. Learn the standard symbols and notation for expressing systems as UML diagrams. Learn to make a professional presentation to management regarding the artifacts you produce.
- Develop a sense of ethical values that translate into the business community, especially with regard to the ethics expected of an information systems professional.
- Course content: Master the essential subject matter of object-oriented systems analysis and design.
- Further your technology skills by learning to use tools that support the fundamental tasks of a systems analyst. This semester we will use a new online collaborative diagramming tool, LucidChart, to create UML diagrams. We will also learn to use Microsoft products such as Visio and Project.

IS 402 : Database Systems. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to information systems major; concurrent enrollment in same section of IS 401, 403, and 414.

DESCRIPTION: Concepts and techniques of database system development, focusing on object-oriented modeling and its implementation methods.

**Course Outcomes**

- Master essential database concepts.
- Develop critical thinking skills through producing conceptual data models and solving relational algebra and SQL query problems.
- Learn the standard symbols and notation for data modeling and relational database design. Demonstrate this knowledge in conceptual and relational data models.
- Learn to work well with one or more partners on a major data modeling assignment. On a larger team, complete a major project in the integrative exercise (INTEX).

IS 403 : Principles of Business Programming. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to information systems major; concurrent enrollment in same section of IS 401, 402, and 414.

DESCRIPTION: Programming business systems. Algorithms, data structures, programming patterns, and interfaces.

**Course Outcomes**

- Read current events and think critically about them as an IS professional. You'll be given a weekly quiz on current events, and we'll routinely discuss them in class.
- Create clear and elegant programs to solve IS problems. As the primary programming class in the Information Systems program, you'll practice your programming skills this semester. We'll focus on efficient, clear, and elegant solutions to the problems.
- Become proficient in using Internet resources to solve development problems. One of the most important skills in Information Systems is knowing how to find solutions in Internet groups, discussion boards, blogs, tutorials, and other online documentation sources. We'll practice this skill throughout the semester.
- Learn object-oriented programming principles, data structures, and libraries. The subject matter of the course is object-oriented programming in the Java language. Java is an excellent teaching/learning language because it's compiler is picky and its language constructs are common in many other

languages.
- Understand how to read and effectively use technical documentation. We'll explore the Javadoc documentation for the Java libraries.

IS 414 : Business Processes and Controls. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Information systems majors status; concurrent enrollment in same section of IS 401, 402, and 403.

RECOMMENDED: Acc 210.

DESCRIPTION: Enterprise-level systems that support basic business processes, information systems control and security issues, systems integration and deployment.

**Course Outcomes**

- Analyze a set of business processes and report control deficiencies -- Evaluated through a cycle report, homework, quizzes, and exams.
- Evaluate the appropriateness of various controls -- Evaluated through homework, quizzes, and exams.
- Communicate effectively both in writing and in presentations -- Evaluated through the cycle report.

7. Complete the following Information Systems Junior Core 2 courses (taught winter only):

IS 404 : Data Communications. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to information systems major; concurrent enrollment in same section of IS 411, 413, and 415.

DESCRIPTION: Principles of data communications, local- and wide-area networks, hardware, software, media, standards, management, and business applications. Lab required.

**Course Outcomes**

- Develop an understanding of data communications and network systems in general and specifically be able to:Set up and configure basic network components including systems and firewalls.Understand basic protocols in TCP/IP network stack.Understand and be able to setup and configure basic network services.
- Ability to solve specific problems using their understanding gained during the course.
- Converse competently with IT professionals who specialize in data communications. Understand and debate current data communications issues.

IS 411 : Systems Design and Implementation. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: IS 401 & IS 402 & IS 403

DESCRIPTION: Later phases of systems development life cycle. System architecture, user interfaces, system interface, and application design. Testing and integration. Object-oriented development.

**Course Outcomes**

- Master essential system design concepts and patterns.
- Develop critical thinking skills through producing sound system designs to solve specific business systems processing problems.
- Learn the standard UML symbols and notation for system design.
- Learn to work well as a member and leader of a team in developing designs on multiple projects.

IS 413 : Enterprise Application Development. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: IS 401 & IS 402 & IS 403

DESCRIPTION: Client- and server-side programming. Internet and Web-based applications. Enterprise systems and architectures.

**Course Outcomes**

- Read current events and think critically about them as an IS professional. You'll be given a weekly quiz on current events, and we'll routinely discuss them in class.
- Learn to develop information systems within group settings. The entire semester is based around INTEX II, an intense, group project. You'll need to develop a complex information system clear through implementation and testing.
- Work as leaders and as group members in development teams. You should have opportunity during the semester to work as leader of your team as well as a regular group member. For each phase of the project, pick a leader who will make sure things happen as they should.
- Develop time management expertise within intense development projects. The project this semester will be intense--just like projects are in the real world. The semester will give you a chance to further develop your time management skills.
- Learn enterprise system development principles and patterns. We'll use best practices models and methods of enterprise development, such as business objects, data layers, and object-relational mappings to develop the project.

IS 415 : Information Systems Capstone Project. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: IS 401 & IS 402 & IS 403

DESCRIPTION: Applying concepts, principles, and methods of enterprise-level information systems by designing and developing a full-scale system including hardware, software, and network.

**Course Outcomes**

- Master essential analysis, design, and programming concepts.
- Develop critical thinking skills through solving project problems individually and with a group.
- Produce project and system documentation at technical and management levels.
- Learn to work well as a member of a team in developing a functioning business processing system.

8. Complete the following Integrated Management Core courses:

BUS M 361 : Introduction to Supply Chain and Operations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Acceptance into the Marriott School.
DESCRIPTION: Managing and designing processes and people along the value chain.

**Course Outcomes**

There are no course outcomes available

BUS M 387 : Economics of Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Major or strategy minor status.
DESCRIPTION: Economic tools influencing the success of strategy (creation and appropriation of value) emphasizing application of economic theory to management of practice.

**Course Outcomes**

There are no course outcomes available

BUS M 390 : Ethics for Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Premanagement and Management 1 cores and full acceptance into the Marriott School upper-division major.
DESCRIPTION: Analyzing ethical dilemmas and understanding ethical theories as they apply to decision making in management.

**Course Outcomes**

There are no course outcomes available

ORG B 321 : Organizational Effectiveness. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department
PREREQUISITE: For Marriott School of Management majors only.
DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

**Course Outcomes**

- Students will know how to explain and discuss the characteristics of an effective organization and how to create them, how to attract and train an effective workforce, how to motivate employees to accomlish the organization's goals, and how to create a productive work environment.
- Students will be able to effectively work in a team.
- The students will learn how to manage change effectively.

9. Complete the following after IS 401, 402, 403, 404, 411, 413, 414, 415:

BUS M 498 : Strategic Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Major status; Management Integrated Core.
DESCRIPTION: Concepts, tools, and approaches to understand competitive forces and to systematically and consistently develop sustainable competitive advantages.

**Course Outcomes**

There are no course outcomes available

10. Complete Marriott School exit survey online.

Recommended:

ACC 241 : Business Law in the Environment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Marriott School of Management major status.
DESCRIPTION: Introduction to legal principles and institutions affecting business.

**Course Outcomes**

- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for the following topics: sources of law, courts and their procedures, jurisdiction, crimes, and torts.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: contract formation, defects in agreement, the statute of frauds and the parole evidence rule, third party rights, and breach/remedies.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: agency formation and termination, partnerships, LLC's, and corporate formation and operation.
- Apply ethical principles to legal problems.

MATH 118 : Finite Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110.

DESCRIPTION: Language of set theory, counting and combinations. Probability theory, elementary stochastic processes, conditional probabilities. Repeated experiments, random variables, expectation, variance, linear equations, matrix algebra, application to economics or similar. Linear programming. Markov chains including applications.

**Course Outcomes**

- Prepares students for a broad range of applications in business, the life sciences, and the social sciences.For more detailed information visit the Math 118 Wiki page.

*Hours include courses that may fulfill university core requirements.

## Show all Information Systems (IS) Courses

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- BS in Information Systems

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- Information Systems (IS) Courses

**Faculty**

# Information Systems (IS)

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## Undergraduate Courses

### 100-Level Courses

IS 100 : Computer Spreadsheet Skills. (.5:0:1)

WHEN TAUGHT: Spring; Summer

DESCRIPTION: Basic computer skills, focusing on spreadsheet and database programs. No technical background necessary.

**Course Outcomes**

- Students will be able to construct an Excel Spreadsheet with appropriate formulas, functions, labels, charts, media inserts, hyperlinks, and data base functions – and output the report.

IS 102 : Business Analysis Using Spreadsheets. (.5:1:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: IS 100.

DESCRIPTION: Basic computer skills focusing on features in MS Excel such as Scenario Manager, Solver, Pivot Tables, and Macros to solve complex business problems.

**Course Outcomes**

- Build robust spreadsheet models of business problems to make rational, data-driven managerial recommendations effectively solving those problems.
- Manipulate spreadsheet models of business problems to examine the robustness of proposed solutions to those problems.
- Implement macro programming techniques for automating spreadsheets to create flexible and powerful spreadsheet models of business problems.

IS 110 : Spreadsheet Skills and Business Analysis. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic spreadsheet skills focusing on features in MS Excel such as basic functions, logic and reference functions, statistical functions, what-if analysis, and charting to solve complex business problems. No technical background is necessary.

**Course Outcomes**

There are no course outcomes available

IS 199R : Academic Internship: Information Systems. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Selection of information systems emphasis in Marriott School of Management.

DESCRIPTION: Approved on-the-job experience. Applying classroom theory and technology to actual problems; exploring career opportunities; learning role of information systems in business environment.

NOTE: P/F grade.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

IS 201 : Introduction to Management Information Systems. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IS 110.

DESCRIPTION: Using technology to solve business problems. Hands-on spreadsheet, database, and Internet software in a business context.

**Course Outcomes**

- Manipulate and analyze data to make appropriate recommendations for managerial decision-making.
- Design, build, and query a database to apply correct principles of data storage and extraction.
- Develop effective personal computer and Internet search skills.

### 300-Level Courses

IS 303 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Master essential programming concepts and Java syntax.
- Develop critical thinking skills through using programming logic to solve business processing problems.
- Written communication: Learn the standard syntax for Java programs.

### 400-Level Courses

IS 401 : Systems Analysis. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to information systems major, concurrent enrollment in same section of IS 402, 403, and 414.

DESCRIPTION: Early phases of systems development life cycle, including project management, planning, investigation, requirements definition, systems specifications, alternative selection. Tools and techniques of object-oriented analysis.

**Course Outcomes**

- Learn to work in groups and be part of an effective team. Demonstrate your skills by delivering a semester-long systems analysis and design project, followed by a week-long, intensive integrative exercise.
- Learn to communicate effectively, both orally and in writing. Learn the standard symbols and notation for expressing systems as UML diagrams. Learn to make a professional presentation to management regarding the artifacts you produce.
- Develop a sense of ethical values that translate into the business community, especially with regard to the ethics expected of an information systems professional.
- Course content: Master the essential subject matter of object-oriented systems analysis and design.
- Further your technology skills by learning to use tools that support the fundamental tasks of a systems analyst. This semester we will use a new online collaborative diagramming tool, LucidChart, to create UML diagrams. We will also learn to use Microsoft products such as Visio and Project.

IS 402 : Database Systems. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to information systems major; concurrent enrollment in same section of IS 401, 403, and 414.

DESCRIPTION: Concepts and techniques of database system development, focusing on object-oriented modeling and its implementation methods.

**Course Outcomes**

- Master essential database concepts.
- Develop critical thinking skills through producing conceptual data models and solving relational algebra and SQL query problems.
- Learn the standard symbols and notation for data modeling and relational database design. Demonstrate this knowledge in conceptual and relational data models.
- Learn to work well with one or more partners on a major data modeling assignment. On a larger team, complete a major project in the integrative exercise (INTEX).

IS 403 : Principles of Business Programming. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Admission to information systems major; concurrent enrollment in same section of IS 401, 402, and 414.

DESCRIPTION: Programming business systems. Algorithms, data structures, programming patterns, and interfaces.

**Course Outcomes**

- Read current events and think critically about them as an IS professional. You'll be given a weekly quiz on current events, and we'll routinely discuss them in class.
- Create clear and elegant programs to solve IS problems. As the primary programming class in the Information Systems program, you'll practice your programming skills this semester. We'll focus on efficient, clear, and elegant solutions to the problems.
- Become proficient in using Internet resources to solve development problems. One of the most important skills in Information Systems is knowing how to find solutions in Internet groups, discussion boards, blogs, tutorials, and other online documentation sources. We'll practice this skill throughout the semester.
- Learn object-oriented programming principles, data structures, and libraries. The subject matter of the course is object-oriented programming in the Java language. Java is an excellent teaching/learning language because it's compiler is picky and its language constructs are common in many other languages.
- Understand how to read and effectively use technical documentation. We'll explore the Javadoc documentation for the Java libraries.

IS 404 : Data Communications. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: Admission to information systems major; concurrent enrollment in same section of IS 411, 413, and 415.

DESCRIPTION: Principles of data communications, local- and wide-area networks, hardware, software, media, standards, management, and business applications. Lab required.

**Course Outcomes**

- Develop an understanding of data communications and network systems in general and specifically be able to:Set up and configure basic network components including systems and firewalls.Understand basic protocols in TCP/IP network stack.Understand and be able to setup and configure basic network services.
- Ability to solve specific problems using their understanding gained during the course.
- Converse competently with IT professionals who specialize in data communications. Understand and debate current data communications issues.

IS 411 : Systems Design and Implementation. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: IS 401 & IS 402 & IS 403

DESCRIPTION: Later phases of systems development life cycle. System architecture, user interfaces, system interface, and application design. Testing and integration. Object-oriented development.

**Course Outcomes**

- Master essential system design concepts and patterns.
- Develop critical thinking skills through producing sound system designs to solve specific business systems processing problems.
- Learn the standard UML symbols and notation for system design.
- Learn to work well as a member and leader of a team in developing designs on multiple projects.

IS 413 : Enterprise Application Development. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: IS 401 & IS 402 & IS 403

DESCRIPTION: Client- and server-side programming. Internet and Web-based applications. Enterprise systems and architectures.

**Course Outcomes**

- Read current events and think critically about them as an IS professional. You'll be given a weekly quiz on current events, and we'll routinely discuss them in class.
- Learn to develop information systems within group settings. The entire semester is based around INTEX II, an intense, group project. You'll need to develop a complex information system clear through implementation and testing.
- Work as leaders and as group members in development teams. You should have opportunity during the semester to work as leader of your team as well as a regular group member. For each phase of the project, pick a leader who will make sure things happen as they should.
- Develop time management expertise within intense development projects. The project this semester will be intense--just like projects are in the real world. The semester will give you a chance to further develop your time management skills.
- Learn enterprise system development principles and patterns. We'll use best practices models and methods of enterprise development, such as business objects, data layers, and object-relational mappings to develop the project.

IS 414 : Business Processes and Controls. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Information systems majors status; concurrent enrollment in same section of IS 401, 402, and 403.

RECOMMENDED: Acc 210.

DESCRIPTION: Enterprise-level systems that support basic business processes, information systems control and security issues, systems integration and deployment.

**Course Outcomes**

- Analyze a set of business processes and report control deficiencies -- Evaluated through a cycle report, homework, quizzes, and exams.
- Evaluate the appropriateness of various controls -- Evaluated through homework, quizzes, and exams.
- Communicate effectively both in writing and in presentations -- Evaluated through the cycle report.

IS 415 : Information Systems Capstone Project. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: IS 401 & IS 402 & IS 403

DESCRIPTION: Applying concepts, principles, and methods of enterprise-level information systems by designing and developing a full-scale system including hardware, software, and network.

**Course Outcomes**

- Master essential analysis, design, and programming concepts.
- Develop critical thinking skills through solving project problems individually and with a group.
- Produce project and system documentation at technical and management levels.
- Learn to work well as a member of a team in developing a functioning business processing system.

## Graduate Courses

For 500- and 600-level courses, see the current Marriott School of Management Information Systems Department Web site at http://mism.byu.edu and the BYU 2014–2015 Graduate Catalog.

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**Majors**

- BS in Information Systems

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- Information Systems (IS) Courses

**Faculty**

# Information Systems Faculty

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## Professors

Albrecht, Conan C.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1997
MAcc, Brigham Young University, 1997
PhD, University of Arizona, 2000

Liddle, Stephen W.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1989
PhD, Brigham Young University, 1995

Romney, Marshall B.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
MA, Brigham Young University, 1972
PhD, University of Texas, Austin, 1977

## Associate Professors

Allen, Gove N.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MAcc, Brigham Young University, 1994
PhD, University of Minnesota, 2001

Anderson, Bonnie Brinton
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1995
MAcc, Brigham Young University, 1995
MPhil, Carnegie Mellon University, 2001
PhD, Carnegie Mellon University, 2001

Dean, Douglas L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Associate Professor
**DEGREES:** BS, University of Utah, 1987
MA, Brigham Young University, 1989
PhD, University of Arizona, 1995

Meservy, Rayman D.

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1977
MAcc, Brigham Young University, 1977
PhD, University of Minnesota, 1985

## Assistant Professors

Anderson, Gregory S.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Assistant Professor
**DEGREES:** BS, Weber State College, 1989
MBA, University of Colorado-Colorado Springs, 2002
PhD, Indiana State University, 2010

Ball, Nicholas
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Assistant Professor
**DEGREES:** BS, Idaho State University, 1999
MBA, Idaho State University, 2000
PhD, University of Minnesota, 2005

Jenkins, Jeffrey L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2009
MISM, Brigham Young University, 2009
PhD, University of Arizona, 2013

Keith, Mark J.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MISM, Brigham Young University, 2004
PhD, Arizona State University, 2009

Gaskin, James E.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2008
MISM, Brigham Young University, 2008
PhD, Case Western Reserve University, 2012

Meservy, Thomas O.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
MISM, Brigham Young University, 2001
PhD, University of Arizona, 2007

Vance, Anthony O.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Information Systems
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MISM, Brigham Young University, 2004
PhD, Georgia State University, 2008
PhD, Université Paris, Dauphine, 2008

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**Management Programs Home**

**Majors**

BS in Management:
Emphases:
- Entrepreneurship
- General Business
- Global Supply Chain Management
- Marketing Management
- Organizational Behavior/HR Management
- Strategy

**Minors**
- Global Business and Literacy
- Management
- Strategy

**Certificate**
- Global Management

**Course Information**
- Business Management (Bus M) Courses
- Management Communication (M Com) Courses
- Organizational Behavior (Org B) Courses
- Public Management (P Mgt) Courses

# Marriott School of Management

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Marriott School of Management Advisement Center
460 TNRB, (801) 422-4285
Website: http://marriottschool.byu.edu/advisement/

## Admission to Degree Program

Most of the degree programs in the Marriott School of Management carry special enrollment limitations. Please see the advisement center for specific details.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Management**
- **Entrepreneurship Emphasis** (Program Outcomes)
- **General Business Emphasis** (Program Outcomes)
- **Global Supply Chain Management Emphasis** (Program Outcomes)
- **Marketing Management Emphasis** (Program Outcomes)
- **Organizational Behavior/HR Management Emphasis** (Program Outcomes)
- **Strategy Emphasis** (Program Outcomes)

**Minor in Global Business and Literacy**
**Minor in Management**
**Minor in Strategy**

**Certificate in Global Management**

For information on accounting, finance, information systems, or recreation management degrees, see School of Accountancy, Finance Department, Information Systems, or Recreation Management departments.

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MAcc in Professional Accountancy
MAcc in Tax
MBA in Business Administration
MISM in Information Systems Management
MPA in Public Administration

Individual program brochures are available from the Marriott School of Management, 730 TNRB, Brigham Young University, Provo, UT 84602-3113. Also refer to the BYU 2014-2015 Graduate Catalog.

## Engineering/Technology Management Degree Program

See Marriott School of Management in the BYU 2015-2015 Graduate Catalog and the Ira A. Fulton College of Engineering and Technology Advisement Center.

## The Discipline

Courses are designed to create opportunities for students to develop and apply their analytical and decision-making abilities. For this reason, the Marriott School programs make extensive use of faculty expertise, case studies, student projects, and internships.

## Career Opportunities

Specific job descriptions are many and varied. Some examples are: banker, consultant, financial analyst, credit analyst, real estate developer, financial planner, human resource specialist, employee benefit specialist, personnel officer, business systems consultant/analyst, sales representative, account executive, research specialist, marketing analyst, management trainee, buyer, merchandiser, production manager, technical sales person, inventory manager, logistics manager, materials supervisor.

## Application Information

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this major.*

Students are encouraged to apply to the Marriott School of Management during their sophomore year, as soon as they have completed the pre-management core courses.

Because of controlled enrollments in management programs, the competition for acceptance is keen. Those choosing to enter these majors should decide early, plan their schedules carefully, be aware of all the requirements, and stay informed about any changes by checking often with the Marriott School of Management Advisement Center.

Students interested in management as a major must make application for the management major. A separate application to the School of Accountancy, Finance Department, or Information Systems Department is necessary for those seeking an accounting, finance, or information systems major. Students not accepted into the program should work closely with advisement personnel to select a new major outside the Marriott School.

To be eligible for admission, cumulative GPA must be at least 3.0 in the pre-management courses, with no more than one repeat for each class. No grade lower than a C– will be acceptable.

Not every student meeting the minimum requirements is guaranteed acceptance into the undergraduate program.

To see application information, see the college advisement center.

**Marriott School of Management Home**

**Management Programs Home**

**Majors**

BS in Management:
Emphases:
- Entrepreneurship
- General Business
- Global Supply Chain Management
- Marketing Management
- Organizational Behavior/HR Management
- Strategy

**Minors**
- Global Business and Literacy
- Management
- Strategy

**Certificate**
- Global Management

**Course Information**
- Business Management (Bus M) Courses
- Management Communication (M Com) Courses
- Organizational Behavior (Org B) Courses
- Public Management (P Mgt) Courses

# BS in Management: Entrepreneurship Emphasis (64 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

The entrepreneurship emphasis is designed to acquaint students with the problems commonly encountered when starting, growing, and harvesting business ventures. Emphasis is on the entrepreneurial career and perspective, not on one-shot ventures.

## Program Requirements | View MAP | View Program Outcomes

1. No more than 12 semester hours of upper-division transfer credit will be accepted toward the major and only 6 hours beyond the Integrated Management Core. No transfer courses will be accepted for the Integrated Management Core courses.
2. Only courses sufficient for a single emphasis are permitted.
3. Complete the following prerequisite courses:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**
- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**
There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Acc 200.

DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

**Note:** Based on student performance to date, permission may be granted to take some restricted major-only courses.

4. Apply and be formally accepted into the program.
5. Complete the following courses during your first semester admitted to the Marriott School of Management:

BUS M 320 : Career Orientation and Preparation. (.5:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance into Marriott School.

DESCRIPTION: Student orientation and preparation for careers in management.

NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

BUS M 321 : Mentor Program. (.5:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance into Marriott School.

DESCRIPTION: Discussions with outside mentor about career opportunities.

NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

6. Complete the following required courses before the integrated core:

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.

DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.

NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

MATH 116 : Essentials of Calculus. (1:2:0)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: Math 110.

DESCRIPTION: Review of algebra, graph of line, slope. Limits and derivatives (standard functions, compositions of such functions), derivative for polynomials, exponentials, logarithms. Product, quotient and chain rule. Optimization (extrema), application to business problems. Newton's method.

**Course Outcomes**

- Students receive a brief overview of differential calculus. Topics covered include limits, derivatives, and applications of differentiation to optimization of functions.For more detailed information visit the Math 116 Wiki page.

MATH 118 : Finite Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110.

DESCRIPTION: Language of set theory, counting and combinations. Probability theory, elementary stochastic processes, conditional probabilities. Repeated experiments, random variables, expectation, variance, linear equations, matrix algebra, application to economics or similar. Linear programming. Markov chains including applications.

**Course Outcomes**

- Prepares students for a broad range of applications in business, the life sciences, and the social sciences.For more detailed information visit the Math 118 Wiki page.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

7. Complete the following Integrated Management Core courses plus entrepreneurship course:

BUS M 361 : Introduction to Supply Chain and Operations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Acceptance into the Marriott School.
DESCRIPTION: Managing and designing processes and people along the value chain.

**Course Outcomes**

There are no course outcomes available

BUS M 387 : Economics of Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Major or strategy minor status.
DESCRIPTION: Economic tools influencing the success of strategy (creation and appropriation of value) emphasizing application of economic theory to management of practice.

**Course Outcomes**

There are no course outcomes available

BUS M 390 : Ethics for Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Premanagement and Management 1 cores and full acceptance into the Marriott School upper-division major.
DESCRIPTION: Analyzing ethical dilemmas and understanding ethical theories as they apply to decision making in management.

**Course Outcomes**

There are no course outcomes available

BUS M 470 : Entrepreneurial Innovation. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Major status.
DESCRIPTION: Finding and validating ideas for innovative new ventures with a focus on customer pain, elegant solutions, and markets.

**Course Outcomes**

There are no course outcomes available

ORG B 321 : Organizational Effectiveness. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department

PREREQUISITE: For Marriott School of Management majors only.

DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

**Course Outcomes**

- Students will know how to explain and discuss the characteristics of an effective organization and how to create them, how to attract and train an effective workforce, how to motivate employees to accomlish the organization's goals, and how to create a productive work environment.
- Students will be able to effectively work in a team.
- The students will learn how to manage change effectively.

8. Complete one of the following courses:

ACC 241 : Business Law in the Environment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Marriott School of Management major status.

DESCRIPTION: Introduction to legal principles and institutions affecting business.

**Course Outcomes**

- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for the following topics: sources of law, courts and their procedures, jurisdiction, crimes, and torts.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: contract formation, defects in agreement, the statute of frauds and the parole evidence rule, third party rights, and breach/remedies.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: agency formation and termination, partnerships, LLC's, and corporate formation and operation.
- Apply ethical principles to legal problems.

BUS M 277 : Legal Issues in Entrepreneurship. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Legal risks faced by entrepreneurs. How to plan for and avoid legal problems including forming the business, legal liability, and protecting assets.

**Course Outcomes**

There are no course outcomes available

9. Complete the following courses:

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**

There are no course outcomes available

IS 110 : Spreadsheet Skills and Business Analysis. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic spreadsheet skills focusing on features in MS Excel such as basic functions, logic and reference functions, statistical functions, what-if analysis, and charting to solve complex business problems. No technical background is necessary.

**Course Outcomes**

There are no course outcomes available

IS 201 : Introduction to Management Information Systems. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IS 110.

DESCRIPTION: Using technology to solve business problems. Hands-on spreadsheet, database, and Internet software in a business context.

**Course Outcomes**

- Manipulate and analyze data to make appropriate recommendations for managerial decision-making.
- Design, build, and query a database to apply correct principles of data storage and extraction.
- Develop effective personal computer and Internet search skills.

10. Complete the following after the Integrated Management Core has been completed:

BUS M 498 : Strategic Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status; Management Integrated Core.

DESCRIPTION: Concepts, tools, and approaches to understand competitive forces and to systematically and consistently develop sustainable competitive advantages.

**Course Outcomes**

There are no course outcomes available

11. Complete the following emphasis course:

BUS M 471 : Creating New Ventures. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 470

DESCRIPTION: Learning the critical skills to create a successful new venture by validating an initial idea and business model in the field.

**Course Outcomes**

There are no course outcomes available

12. Complete four additional entrepreneurship courses from the following:

BUS M 454 : Professional Selling and Sales Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

DESCRIPTION: Concepts of professional selling and sales management including personal selling skills; strategic role of personal selling; organizing, directing, controlling, and evaluating the sales force.

**Course Outcomes**

There are no course outcomes available

BUS M 457 : Internet Marketing of Products and Services. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

DESCRIPTION: Integrates product, research, sales, and promotional strategy and concepts into an overall marketing plan for developing an Internet business. Term project developing an Internet business required.

**Course Outcomes**

There are no course outcomes available

BUS M 462 : Customer Relationship Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Methods and principles for effective management of customer relationships within service businesses. Analyzing customer-interactive processes with regard to strategic innovation, performance measurement and improvement, process efficiency, interactive job design, service marketing, and service quality assurance.

**Course Outcomes**

There are no course outcomes available

BUS M 472 : Entrepreneurial Marketing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 341; or BUS M 241; Major status.

DESCRIPTION: Marketing strategies for start-up companies. Topics include marketing to investors, internal marketing, and how to market products/services without a marketing budget.

**Course Outcomes**

There are no course outcomes available

BUS M 475 : Financing New Ventures. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Business management core; major status.

DESCRIPTION: Concepts and skills of entrepreneurship, emphasizing how new and emerging companies are financed. Applying functional tools to case situations.

**Course Outcomes**

There are no course outcomes available

BUS M 476 : New Venture LaunchPad. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major status.
DESCRIPTION: Launching actual new ventures. Mentored learning of idea validation, business models, minimum viable products, and financing plans. Good preparations for participating in BYU's entrepreneurial competitions.

**Course Outcomes**

There are no course outcomes available

BUS M 538 : Managing Entrepreneurial Firms and Family Businesses. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Issues and problems facing managers of entrepreneurial enterprises and leaders of family-owned businesses. Includes start-up, growth, and exit strategies. Consulting project required.

**Course Outcomes**

No outcomes are available at this time.

FIN 413 : Real Estate Finance and Investment. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: BUS M 401 & ACC 440; or FIN 401 & ACC 440; Finance junior core.
DESCRIPTION: Terminology, concepts, principles, and analytical techniques related to financing of and investment in real estate.

**Course Outcomes**

There are no course outcomes available

13. Complete Marriott School exit survey online.

*Hours include courses that may fulfill university core requirements.

## Show all Business Management (Bus M) Courses

## Show all Managerial Economics (ManEc) Courses

## Show all Management Communication (M Com) Courses

## Show all Organizational Behavior (Org B) Courses

## Show all Public Management (P Mgt) Courses

**Marriott School of Management Home**

**Management Programs Home**

**Majors**

BS in Management:
Emphases:
- Entrepreneurship
- General Business
- Global Supply Chain Management
- Marketing Management
- Organizational Behavior/HR Management
- Strategy

**Minors**
- Global Business and Literacy
- Management
- Strategy

**Certificate**
- Global Management

**Course Information**
- Business Management (Bus M) Courses
- Management Communication (M Com) Courses
- Organizational Behavior (Org B) Courses
- Public Management (P Mgt) Courses

# BS in Management: General Business Emphasis (64 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

The general business, or open, emphasis is available to students wishing to design their own program to meet specific goals such as working in a family business or preparing for a graduate program.

## Program Requirements | View MAP | View Program Outcomes

1. No more than 12 semester hours of upper-division transfer credit will be accepted toward the major and only 6 hours beyond the Integrated Management Core. No transfer courses will be accepted for the Integrated Management Core courses.
2. Only courses sufficient for a single emphasis are permitted.
3. Complete the following prerequisite courses:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**
- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**
There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Acc 200.

DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

**Note:** Based on student performance to date, permission may be granted to take some restricted major-only courses.

4. Apply and be formally accepted into the program.
5. Complete the following courses during your first semester admitted to the Marriott School of Management:

BUS M 320 : Career Orientation and Preparation. (.5:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance into Marriott School.

DESCRIPTION: Student orientation and preparation for careers in management.

NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

BUS M 321 : Mentor Program. (.5:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance into Marriott School.

DESCRIPTION: Discussions with outside mentor about career opportunities.

NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

6. Complete the following required courses before the integrated core:

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.

DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.

NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

MATH 116 : Essentials of Calculus. (1:2:0)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: Math 110.

DESCRIPTION: Review of algebra, graph of line, slope. Limits and derivatives (standard functions, compositions of such functions), derivative for polynomials, exponentials, logarithms. Product, quotient and chain rule. Optimization (extrema), application to business problems. Newton's method.

**Course Outcomes**

- Students receive a brief overview of differential calculus. Topics covered include limits, derivatives, and applications of differentiation to optimization of functions.For more detailed information visit the Math 116 Wiki page.

MATH 118 : Finite Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110.

DESCRIPTION: Language of set theory, counting and combinations. Probability theory, elementary stochastic processes, conditional probabilities. Repeated experiments, random variables, expectation, variance, linear equations, matrix algebra, application to economics or similar. Linear programming. Markov chains including applications.

**Course Outcomes**

- Prepares students for a broad range of applications in business, the life sciences, and the social sciences.For more detailed information visit the Math 118 Wiki page.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

7. Complete the following Integrated Management Core courses:

BUS M 361 : Introduction to Supply Chain and Operations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Acceptance into the Marriott School.

DESCRIPTION: Managing and designing processes and people along the value chain.

**Course Outcomes**

There are no course outcomes available

BUS M 387 : Economics of Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major or strategy minor status.

DESCRIPTION: Economic tools influencing the success of strategy (creation and appropriation of value) emphasizing application of economic theory to management of practice.

**Course Outcomes**

There are no course outcomes available

BUS M 390 : Ethics for Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Premanagement and Management 1 cores and full acceptance into the Marriott School upper-division major.

DESCRIPTION: Analyzing ethical dilemmas and understanding ethical theories as they apply to decision making in management.

**Course Outcomes**

There are no course outcomes available

ORG B 321 : Organizational Effectiveness. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department

PREREQUISITE: For Marriott School of Management majors only.

DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

**Course Outcomes**

- Students will know how to explain and discuss the characteristics of an effective organization and how to create them, how to attract and train an effective workforce, how to motivate employees to accomlish the organization's goals, and how to create a productive work environment.

Students will be able to effectively work in a team.
- The students will learn how to manage change effectively.

8. Complete the following courses:

ACC 241 : Business Law in the Environment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Marriott School of Management major status.

DESCRIPTION: Introduction to legal principles and institutions affecting business.

**Course Outcomes**

- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for the following topics: sources of law, courts and their procedures, jurisdiction, crimes, and torts.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: contract formation, defects in agreement, the statute of frauds and the parole evidence rule, third party rights, and breach/remedies.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: agency formation and termination, partnerships, LLC's, and corporate formation and operation.
- Apply ethical principles to legal problems.

IS 110 : Spreadsheet Skills and Business Analysis. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic spreadsheet skills focusing on features in MS Excel such as basic functions, logic and reference functions, statistical functions, what-if analysis, and charting to solve complex business problems. No technical background is necessary.

**Course Outcomes**

There are no course outcomes available

IS 201 : Introduction to Management Information Systems. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IS 110.

DESCRIPTION: Using technology to solve business problems. Hands-on spreadsheet, database, and Internet software in a business context.

**Course Outcomes**

- Manipulate and analyze data to make appropriate recommendations for managerial decision-making.
- Design, build, and query a database to apply correct principles of data storage and extraction.
- Develop effective personal computer and Internet search skills.

**And** complete one course from the following:

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**

There are no course outcomes available

BUS M 380 : Executive Lectures. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by top executives on subjects significant to executive leadership.

**Course Outcomes**

There are no course outcomes available

BUS M 382 : Financial Services Lecture Series. (1:1:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Lectures by executives on financial services topics.

**Course Outcomes**

No outcomes are available at this time.

9. Complete the following after the Integrated Management Core:

BUS M 498 : Strategic Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status; Management Integrated Core.

DESCRIPTION: Concepts, tools, and approaches to understand competitive forces and to systematically and consistently develop sustainable competitive advantages.

**Course Outcomes**
There are no course outcomes available

10. Complete six 400-level approved Marriott School of Management courses.
11. Complete Marriott School exit survey online.

*Hours include courses that may fulfill university core requirements.

**Show all Business Management (Bus M) Courses**

**Show all Managerial Economics (ManEc) Courses**

**Show all Management Communication (M Com) Courses**

**Show all Organizational Behavior (Org B) Courses**

**Show all Public Management (P Mgt) Courses**

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**Management Programs Home**

**Majors**

BS in Management:
Emphases:
- Entrepreneurship
- General Business
- Global Supply Chain Management
- Marketing Management
- Organizational Behavior/HR Management
- Strategy

**Minors**
- Global Business and Literacy
- Management
- Strategy

**Certificate**
- Global Management

**Course Information**
- Business Management (Bus M) Courses
- Management Communication (M Com) Courses
- Organizational Behavior (Org B) Courses
- Public Management (P Mgt) Courses

# BS in Management: Global Supply Chain Management Emphasis (63–64 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

Supply chain management involves the control and coordination of materials and services from the original point of origin to the final point of consumption. Increasing competitiveness through higher quality, lower cost, greater responsiveness, and unique innovation is a critical aspect of supply chain management. Likewise, managing across boundaries within the firm and throughout the channel is emphasized. Course work is designed to prepare students for managerial positions in manufacturing and service industries in the areas of purchasing, operations, logistics, customer service, and supply chain management.

## Program Requirements | View MAP | View Program Outcomes

1. No more than 12 semester hours of upper-division transfer credit will be accepted toward the major and only 6 hours beyond the Integrated Management Core. No transfer courses will be accepted for the Integrated Management Core courses.
2. Only courses sufficient for a single emphasis are permitted.
3. Complete the following prerequisite courses:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**
- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Acc 200.
DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

**Note:** Based on student performance to date, permission may be granted to take some restricted major-only courses.

4. Apply and be formally accepted into the program.
5. Complete the following courses during your first semester admitted to the Marriott School of Management:

BUS M 320 : Career Orientation and Preparation. (.5:1:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Acceptance into Marriott School.
DESCRIPTION: Student orientation and preparation for careers in management.
NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

BUS M 321 : Mentor Program. (.5:0:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Acceptance into Marriott School.
DESCRIPTION: Discussions with outside mentor about career opportunities.
NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

6. Complete the following required courses before the integrated core:

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.
DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.
NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

MATH 116 : Essentials of Calculus. (1:2:0)

WHEN TAUGHT: Spring; Summer
PREREQUISITE: Math 110.
DESCRIPTION: Review of algebra, graph of line, slope. Limits and derivatives (standard functions, compositions of such functions), derivative for polynomials, exponentials, logarithms. Product, quotient and chain rule. Optimization (extrema), application to business problems. Newton's method.

**Course Outcomes**

- Students receive a brief overview of differential calculus. Topics covered include limits, derivatives, and applications of differentiation to optimization of functions.For more detailed information visit the Math 116 Wiki page.

MATH 118 : Finite Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110.
DESCRIPTION: Language of set theory, counting and combinations. Probability theory, elementary stochastic processes, conditional probabilities. Repeated experiments, random variables, expectation, variance, linear equations, matrix algebra, application to economics or similar. Linear programming. Markov chains including applications.

**Course Outcomes**

- Prepares students for a broad range of applications in business, the life sciences, and the social sciences.For more detailed information visit the Math 118 Wiki page.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

7. Complete the following Integrated Management Core courses:

BUS M 361 : Introduction to Supply Chain and Operations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Acceptance into the Marriott School.
DESCRIPTION: Managing and designing processes and people along the value chain.

**Course Outcomes**

There are no course outcomes available

BUS M 387 : Economics of Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Major or strategy minor status.
DESCRIPTION: Economic tools influencing the success of strategy (creation and appropriation of value) emphasizing application of economic theory to management of practice.

**Course Outcomes**

There are no course outcomes available

BUS M 390 : Ethics for Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Premanagement and Management 1 cores and full acceptance into the Marriott School upper-division major.
DESCRIPTION: Analyzing ethical dilemmas and understanding ethical theories as they apply to decision making in management.

**Course Outcomes**

There are no course outcomes available

ORG B 321 : Organizational Effectiveness. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department
PREREQUISITE: For Marriott School of Management majors only.
DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

**Course Outcomes**

- Students will know how to explain and discuss the characteristics of an effective organization and how to create them, how to attract and train an effective workforce, how to motivate employees to accomlish the organization's goals, and how to create a productive work environment.
- Students will be able to effectively work in a team.
- The students will learn how to manage change effectively.

8. Complete the following courses:

ACC 241 : Business Law in the Environment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Marriott School of Management major status.

DESCRIPTION: Introduction to legal principles and institutions affecting business.

**Course Outcomes**

- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for the following topics: sources of law, courts and their procedures, jurisdiction, crimes, and torts.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: contract formation, defects in agreement, the statute of frauds and the parole evidence rule, third party rights, and breach/remedies.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: agency formation and termination, partnerships, LLC's, and corporate formation and operation.
- Apply ethical principles to legal problems.

IS 110 : Spreadsheet Skills and Business Analysis. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic spreadsheet skills focusing on features in MS Excel such as basic functions, logic and reference functions, statistical functions, what-if analysis, and charting to solve complex business problems. No technical background is necessary.

**Course Outcomes**

There are no course outcomes available

IS 201 : Introduction to Management Information Systems. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IS 110.

DESCRIPTION: Using technology to solve business problems. Hands-on spreadsheet, database, and Internet software in a business context.

**Course Outcomes**

- Manipulate and analyze data to make appropriate recommendations for managerial decision-making.
- Design, build, and query a database to apply correct principles of data storage and extraction.
- Develop effective personal computer and Internet search skills.

**And** complete one course from the following:

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**

There are no course outcomes available

BUS M 380 : Executive Lectures. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by top executives on subjects significant to executive leadership.

**Course Outcomes**

There are no course outcomes available

BUS M 382 : Financial Services Lecture Series. (1:1:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Lectures by executives on financial services topics.

**Course Outcomes**

No outcomes are available at this time.

9. Complete the following after the Integrated Management Core has been completed:

BUS M 498 : Strategic Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status; Management Integrated Core.
DESCRIPTION: Concepts, tools, and approaches to understand competitive forces and to systematically and consistently develop sustainable competitive advantages.

**Course Outcomes**

There are no course outcomes available

10. Complete the following emphasis courses:

BUS M 463 : Quality Management. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Bus M 361; major status.
DESCRIPTION: Concepts of quality management, strategic issues, philosophies, and tools such as Six Sigma and SQC used to control quality.

**Course Outcomes**

There are no course outcomes available

BUS M 466 : Purchasing and Supply Management. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Major status.
DESCRIPTION: Focuses on upstream supply chain activities of supplier selection, management, and development. Negotiation, costing, product development, and commodity analysis.

**Course Outcomes**

There are no course outcomes available

BUS M 468 : Supply Chain Logistics. (3:3.0:0.0)

WHEN TAUGHT: Fall
PREREQUISITE: Major status.
DESCRIPTION: Integration of materials management (inbound transportation), physical distribution (outbound transportation), inventory, warehousing, facility location, customer service, packaging, and materials handling.

**Course Outcomes**

There are no course outcomes available

BUS M 469 : Global Supply Chain Strategy. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: BUS M 361; Major status.
DESCRIPTION: Integrative and creative problem solving in designing and managing cohesive value-added conversion/transformation systems in a global environment.

**Course Outcomes**

There are no course outcomes available

11. Complete one additional emphasis course from the following:

BUS M 450 : Global Business Negotiations. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: BUS M 241; or BUS M 341; Major status.
DESCRIPTION: Developing an effective negotiation framework for cross-national/cultural negotiation techniques relative to business and other life situations.

**Course Outcomes**

There are no course outcomes available

BUS M 462 : Customer Relationship Management. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Methods and principles for effective management of customer relationships within service businesses. Analyzing customer-interactive processes with regard to strategic innovation, performance measurement and improvement, process efficiency, interactive job design, service marketing, and service quality assurance.

**Course Outcomes**

There are no course outcomes available

BUS M 465 : Global Supply Chain. (3:3:0)

WHEN Fall

TAUGHT:
PREREQUISITE: BUS M 361; Major status.
DESCRIPTION: The emerging rules of a global marketplace and their influence on key supply chain activities and processes.

**Course Outcomes**

There are no course outcomes available

12. Complete one additional 3 credit hour Marriott School course.
13. Complete Marriott School exit survey online.

*Hours include courses that may fulfill university core requirements.

**Show all Business Management (Bus M) Courses**

**Show all Managerial Economics (ManEc) Courses**

**Show all Management Communication (M Com) Courses**

**Show all Organizational Behavior (Org B) Courses**

**Show all Public Management (P Mgt) Courses**

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**Majors**

BS in Management:
Emphases:
- Entrepreneurship
- General Business
- Global Supply Chain Management
- Marketing Management
- Organizational Behavior/HR Management
- Strategy

**Minors**
- Global Business and Literacy
- Management
- Strategy

**Certificate**
- Global Management

**Course Information**
- Business Management (Bus M) Courses
- Management Communication (M Com) Courses
- Organizational Behavior (Org B) Courses
- Public Management (P Mgt) Courses

# BS in Management: Marketing Management Emphasis (64 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

The marketing emphasis is designed to prepare students for marketing management responsibilities, product/brand management, industrial and consumer products sales management, market analysis, and entrepreneurial activities both in the U.S. and in other areas of the world.

## Program Requirements | View MAP | View Program Outcomes

1. No more than 12 semester hours of upper-division transfer credit will be accepted toward the major and only 6 hours beyond the Integrated Management Core. No transfer courses will be accepted for the Integrated Management Core courses.
2. Only courses sufficient for a single emphasis are permitted.
3. Complete the following prerequisite courses:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**
- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**
There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Acc 200.
DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

**Note:** Based on student performance to date, permission may be granted to take some restricted major-only courses.

4. Apply and be formally accepted into the program.
5. Complete the following courses during your first semester admitted to the Marriott School of Management:

BUS M 320 : Career Orientation and Preparation. (.5:1:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Acceptance into Marriott School.
DESCRIPTION: Student orientation and preparation for careers in management.
NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

BUS M 321 : Mentor Program. (.5:0:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Acceptance into Marriott School.
DESCRIPTION: Discussions with outside mentor about career opportunities.
NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

6. Complete the following required courses before the integrated core:

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.
DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.
NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

MATH 116 : Essentials of Calculus. (1:2:0)

WHEN TAUGHT: Spring; Summer
PREREQUISITE: Math 110.
DESCRIPTION: Review of algebra, graph of line, slope. Limits and derivatives (standard functions, compositions of such functions), derivative for polynomials, exponentials, logarithms. Product, quotient and chain rule. Optimization (extrema), application to business problems. Newton's method.

**Course Outcomes**

- Students receive a brief overview of differential calculus. Topics covered include limits, derivatives, and applications of differentiation to optimization of functions.For more detailed information visit the Math 116 Wiki page.

MATH 118 : Finite Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110.
DESCRIPTION: Language of set theory, counting and combinations. Probability theory, elementary stochastic processes, conditional probabilities. Repeated experiments, random variables, expectation, variance, linear equations, matrix algebra, application to economics or similar. Linear programming. Markov chains including applications.

**Course Outcomes**

- Prepares students for a broad range of applications in business, the life sciences, and the social sciences.For more detailed information visit the Math 118 Wiki page.

STAT 121 : Principles of Statistics. (3:3:1)
OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

7. Complete the following Integrated Management Core courses:

BUS M 361 : Introduction to Supply Chain and Operations. (3:3:0)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Acceptance into the Marriott School.
DESCRIPTION: Managing and designing processes and people along the value chain.

**Course Outcomes**

There are no course outcomes available

BUS M 387 : Economics of Strategy. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Major or strategy minor status.
DESCRIPTION: Economic tools influencing the success of strategy (creation and appropriation of value) emphasizing application of economic theory to management of practice.

**Course Outcomes**

There are no course outcomes available

BUS M 390 : Ethics for Management. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Premanagement and Management 1 cores and full acceptance into the Marriott School upper-division major.
DESCRIPTION: Analyzing ethical dilemmas and understanding ethical theories as they apply to decision making in management.

**Course Outcomes**

There are no course outcomes available

ORG B 321 : Organizational Effectiveness. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring, Contact Department
PREREQUISITE: For Marriott School of Management majors only.
DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

**Course Outcomes**

- Students will know how to explain and discuss the characteristics of an effective organization and how to create them, how to attract and train an effective workforce, how to motivate employees to accomlish

the organization's goals, and how to create a productive work environment.
- Students will be able to effectively work in a team.
- The students will learn how to manage change effectively.

8. Complete the following courses:

ACC 241 : Business Law in the Environment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Marriott School of Management major status.

DESCRIPTION: Introduction to legal principles and institutions affecting business.

**Course Outcomes**

- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for the following topics: sources of law, courts and their procedures, jurisdiction, crimes, and torts.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: contract formation, defects in agreement, the statute of frauds and the parole evidence rule, third party rights, and breach/remedies.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: agency formation and termination, partnerships, LLC's, and corporate formation and operation.
- Apply ethical principles to legal problems.

IS 110 : Spreadsheet Skills and Business Analysis. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic spreadsheet skills focusing on features in MS Excel such as basic functions, logic and reference functions, statistical functions, what-if analysis, and charting to solve complex business problems. No technical background is necessary.

**Course Outcomes**

There are no course outcomes available

IS 201 : Introduction to Management Information Systems. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IS 110.

DESCRIPTION: Using technology to solve business problems. Hands-on spreadsheet, database, and Internet software in a business context.

**Course Outcomes**

- Manipulate and analyze data to make appropriate recommendations for managerial decision-making.
- Design, build, and query a database to apply correct principles of data storage and extraction.
- Develop effective personal computer and Internet search skills.

**And** complete one course from the following:

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**

There are no course outcomes available

BUS M 380 : Executive Lectures. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by top executives on subjects significant to executive leadership.

**Course Outcomes**

There are no course outcomes available

BUS M 382 : Financial Services Lecture Series. (1:1:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Lectures by executives on financial services topics.

**Course Outcomes**

No outcomes are available at this time.

9. Complete the following after the Integrated Management Core:

BUS M 498 : Strategic Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status; Management Integrated Core.

DESCRIPTION: Concepts, tools, and approaches to understand competitive forces and to systematically and

consistently develop sustainable competitive advantages.

**Course Outcomes**

There are no course outcomes available

10. Complete the following marketing emphasis courses:

BUS M 442 : Marketing Research. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

DESCRIPTION: Concepts and methodology for conducting marketing research. Emphasis on solving problems faced by the marketing manager. Consulting research project required.

**Course Outcomes**

There are no course outcomes available

BUS M 444 : Consumer Behavior. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

DESCRIPTION: Mental and emotional processes and physical actions that people engage in when selecting, purchasing, using, and discarding products and services to satisfy consumer needs and desires.

**Course Outcomes**

There are no course outcomes available

BUS M 455 : Advertising and Promotion Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

DESCRIPTION: Strategies in promoting business and nonbusiness products, services, and institutions, including the role of advertising, promotion, target selection, media and copy decisions, and marketing research.

**Course Outcomes**

There are no course outcomes available

BUS M 459 : Marketing Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer, Contact Department

PREREQUISITE: BUS M 241 & BUS M 442; Major status.

DESCRIPTION: Integration of finance, marketing, and case studies in economic concepts and techniques in marketing decision making and planning.

**Course Outcomes**

There are no course outcomes available

11. Complete one additional marketing course from the following:

BUS M 431 : International Marketing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

RECOMMENDED: Bus m 430.

DESCRIPTION: International market entry strategies, export marketing, joint ventures, and other market entry modes. Regional/National markets; cultural, political, legal environments. Negotiations, trade financing, marketing mix.

**Course Outcomes**

There are no course outcomes available

BUS M 450 : Global Business Negotiations. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

DESCRIPTION: Developing an effective negotiation framework for cross-national/cultural negotiation techniques relative to business and other life situations.

**Course Outcomes**

There are no course outcomes available

BUS M 454 : Professional Selling and Sales Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.
DESCRIPTION: Concepts of professional selling and sales management including personal selling skills; strategic role of personal selling; organizing, directing, controlling, and evaluating the sales force.

**Course Outcomes**

There are no course outcomes available

BUS M 456 : Retailing Management. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: BUS M 241; or BUS M 341; Major status.
DESCRIPTION: Selection, location, and management of retail stores and systems, emphasizing profitability and integration of accounting, finance, and economic concepts and tools.

**Course Outcomes**

No outcomes are available at this time.

BUS M 457 : Internet Marketing of Products and Services. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: BUS M 241; or BUS M 341; Major status.
DESCRIPTION: Integrates product, research, sales, and promotional strategy and concepts into an overall marketing plan for developing an Internet business. Term project developing an Internet business required.

**Course Outcomes**

There are no course outcomes available

BUS M 463 : Quality Management. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Bus M 361; major status.
DESCRIPTION: Concepts of quality management, strategic issues, philosophies, and tools such as Six Sigma and SQC used to control quality.

**Course Outcomes**

There are no course outcomes available

BUS M 469 : Global Supply Chain Strategy. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: BUS M 361; Major status.
DESCRIPTION: Integrative and creative problem solving in designing and managing cohesive value-added conversion/transformation systems in a global environment.

**Course Outcomes**

There are no course outcomes available

BUS M 472 : Entrepreneurial Marketing. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: BUS M 341; or BUS M 241; Major status.
DESCRIPTION: Marketing strategies for start-up companies. Topics include marketing to investors, internal marketing, and how to market products/services without a marketing budget.

**Course Outcomes**

There are no course outcomes available

12. Complete one additional 3 credit hour Marriott School course.
13. Complete Marriott School exit survey online.

*Hours include courses that may fulfill university core requirements.

## Show all Business Management (Bus M) Courses

## Show all Managerial Economics (ManEc) Courses

## Show all Management Communication (M Com) Courses

**Show all Organizational Behavior (Org B) Courses**

**Show all Public Management (P Mgt) Courses**

**Marriott School of Management Home**

**Management Programs Home**

**Majors**

BS in Management:
Emphases:
- Entrepreneurship
- General Business
- Global Supply Chain Management
- Marketing Management
- Organizational Behavior/HR Management
- Strategy

**Minors**
- Global Business and Literacy
- Management
- Strategy

**Certificate**
- Global Management

**Course Information**
- Business Management (Bus M) Courses
- Management Communication (M Com) Courses
- Organizational Behavior (Org B) Courses
- Public Management (P Mgt) Courses

# BS in Management: Organizational Behavior/Human Resource Management Emphasis (64 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

## Program Requirements | View MAP | View Program Outcomes

1. No more than 12 semester hours of upper-division transfer credit will be accepted toward the major and only 6 hours beyond the Integrated Management Core. No transfer courses will be accepted for the Integrated Management Core courses.
2. Only courses sufficient for a single emphasis are permitted.
3. Complete the following prerequisite courses:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**
- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**
There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Acc 200.

DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

**Note:** Based on student performance to date, permission may be granted to take some restricted major-only courses.

4. Apply and be formally accepted into the program.
5. Complete the following courses during your first semester admitted to the Marriott School of Management:

BUS M 320 : Career Orientation and Preparation. (.5:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance into Marriott School.

DESCRIPTION: Student orientation and preparation for careers in management.

NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

BUS M 321 : Mentor Program. (.5:0:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance into Marriott School.

DESCRIPTION: Discussions with outside mentor about career opportunities.

NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

6. Complete the following required courses before the integrated core:

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.

DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.

NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

MATH 116 : Essentials of Calculus. (1:2:0)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: Math 110.

DESCRIPTION: Review of algebra, graph of line, slope. Limits and derivatives (standard functions, compositions of such functions), derivative for polynomials, exponentials, logarithms. Product, quotient and chain rule. Optimization (extrema), application to business problems. Newton's method.

**Course Outcomes**

- Students receive a brief overview of differential calculus. Topics covered include limits, derivatives, and applications of differentiation to optimization of functions.For more detailed information visit the Math 116 Wiki page.

MATH 118 : Finite Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110.

DESCRIPTION: Language of set theory, counting and combinations. Probability theory, elementary stochastic processes, conditional probabilities. Repeated experiments, random variables, expectation,

variance, linear equations, matrix algebra, application to economics or similar. Linear programming. Markov chains including applications.

**Course Outcomes**

- Prepares students for a broad range of applications in business, the life sciences, and the social sciences.For more detailed information visit the Math 118 Wiki page.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

7. Complete the following Integrated Management Core courses:

BUS M 361 : Introduction to Supply Chain and Operations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Acceptance into the Marriott School.
DESCRIPTION: Managing and designing processes and people along the value chain.

**Course Outcomes**

There are no course outcomes available

BUS M 387 : Economics of Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Major or strategy minor status.
DESCRIPTION: Economic tools influencing the success of strategy (creation and appropriation of value) emphasizing application of economic theory to management of practice.

**Course Outcomes**

There are no course outcomes available

BUS M 390 : Ethics for Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Premanagement and Management 1 cores and full acceptance into the Marriott School upper-division major.
DESCRIPTION: Analyzing ethical dilemmas and understanding ethical theories as they apply to decision making in management.

**Course Outcomes**

There are no course outcomes available

ORG B 321 : Organizational Effectiveness. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department
PREREQUISITE: For Marriott School of Management majors only.
DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

**Course Outcomes**

- Students will know how to explain and discuss the characteristics of an effective organization and how to create them, how to attract and train an effective workforce, how to motivate employees to accomlish the organization's goals, and how to create a productive work environment.
- Students will be able to effectively work in a team.
- The students will learn how to manage change effectively.

8. Complete the following courses:

ACC 241 : Business Law in the Environment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Marriott School of Management major status.

DESCRIPTION: Introduction to legal principles and institutions affecting business.

**Course Outcomes**

- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for the following topics: sources of law, courts and their procedures, jurisdiction, crimes, and torts.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: contract formation, defects in agreement, the statute of frauds and the parole evidence rule, third party rights, and breach/remedies.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: agency formation and termination, partnerships, LLC's, and corporate formation and operation.
- Apply ethical principles to legal problems.

IS 110 : Spreadsheet Skills and Business Analysis. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic spreadsheet skills focusing on features in MS Excel such as basic functions, logic and reference functions, statistical functions, what-if analysis, and charting to solve complex business problems. No technical background is necessary.

**Course Outcomes**

There are no course outcomes available

IS 201 : Introduction to Management Information Systems. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IS 110.

DESCRIPTION: Using technology to solve business problems. Hands-on spreadsheet, database, and Internet software in a business context.

**Course Outcomes**

- Manipulate and analyze data to make appropriate recommendations for managerial decision-making.
- Design, build, and query a database to apply correct principles of data storage and extraction.
- Develop effective personal computer and Internet search skills.

9. Complete the following after the Integrated Management Core has been completed:

BUS M 498 : Strategic Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Major status; Management Integrated Core.

DESCRIPTION: Concepts, tools, and approaches to understand competitive forces and to systematically and consistently develop sustainable competitive advantages.

**Course Outcomes**

There are no course outcomes available

10. Complete the following emphasis courses:

BUS M 494R : On-Campus Experiential Projects. (3:1:Arr)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Direct, practical on-campus (not in the field) professional experience consulting with established and startup companies and organizations. Students are accepted to work on specific projects based on their skills, interests, and major emphasis. Students apply to be involved in specific projects.

**Course Outcomes**

There are no course outcomes available

ORG B 327 : Human Resource Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Functions of human resource management: employee selection, wage and salary administration, training and development, employee relations, and human resource planning.

**Course Outcomes**

- Discuss the purpose, roles, frameworks, and activities of HRM within various types of organizations.
- Explain important strategies and methods of effective recruitment, selection, and retention.
- Discuss the primary purposes, criteria, approaches, advantages and disadvantages, issues, and evaluation of performance management.

ORG B 330 : Organizational Development and Change. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Macro topics in organizational behavior, including organizational structure, culture, design, change management, strategic implementation, and HR training and development.

**Course Outcomes**

- Students will show evidence of their ability to read and grasp change concepts and theories.
- Students will be able to effectively synthesize and communicate various OD concepts, tools and methods about each day's readings, showing evidence they understand, can articulate and evaluate core principles in the classroom through the quantity and quality of their participation.
- At the end of the semester, there will be a final comprehensive exam that will include objective questions from the text, short essay questions, and brief case analyses. It will test one's ability to justify and communicate what has been learned. It will require students to integrate consulting information covered throughout the course and apply OD concepts and methodology to various organization problems.
- Students will individually or as a team (2-3 people) utilize core principles of OD to design a consulting strategy with an organization in need of change. This will be the major evidence for demonstrating students' capacity to practice what they study by taking action. It will show how OD tools and ideas have been critically examined, as well as how they have been assessed for their feasibility through practical applications. Evidence of building a logical approach and strong writing skills will be required. This learning outcome will be a synthesis of the semester's experience. This will be not only be a written deliverable, but an oral presentation to one's peers in which OD projects are made public and class criticisms are shared through feedback after each presentation.

ORG B 347 : Managerial Leadership Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Principles and practices needed to serve as effective leaders in families, church, community, and work settings -- planning, decision making, self-awareness, effective human influence, and community building.

**Course Outcomes**

There are no course outcomes available

ORG B 429 : Compensation, Benefits, and Performance Management. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Org B 327 or instructor's consent.

DESCRIPTION: Wage and salary administration, incentives, employee benefits, grievance and discipline systems, performance appraisal.

**Course Outcomes**

- Explain how to use financial incentives to motivate employees through such programs as merit pay, individual or group bonuses, piece-rate incentives, bonuses, and profit sharing plans.
- Explain how wage levels are determined and demonstrate how wage surveys are used to assign fair wage rates.
- Use a job evaluation program, such as the point method, to create a wage structure in an organization.
- Explain how to develop and use a performance appraisal program to evaluate employee performance and describe the strengths and weaknesses of different appraisal methods.
- Explain how to administer a pay system, such as calculating take-home and overtime pay, creating executive compensation packages, and adjusting pay levels for inflation.
- Describe the common elements of employee benefits programs and explain how they are administered.

ORG B 490R : Professional Development Seminar. (.5-3:ARR:0)

DESCRIPTION: Special topics in organizational behavior. Course content varies from year to year.

**Course Outcomes**

- Help students decide whether to pursue a PhD.

**Note:** Org B 490R must be taken twice, for .5 hours each time.

11. Complete one additional 3 credit hour Marriott School course.
12. Complete Marriott School exit survey online.

*Hours include courses that may fulfill university core requirements.

## Show all Business Management (Bus M) Courses

## Show all Managerial Economics (ManEc) Courses

## Show all Management Communication (M Com) Courses

## Show all Organizational Behavior (Org B) Courses

**Show all Public Management (P Mgt) Courses**

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**Management Programs Home**

**Majors**

BS in Management:
Emphases:
- Entrepreneurship
- General Business
- Global Supply Chain Management
- Marketing Management
- Organizational Behavior/HR Management
- Strategy

**Minors**
- Global Business and Literacy
- Management
- Strategy

**Certificate**
- Global Management

**Course Information**
- Business Management (Bus M) Courses
- Management Communication (M Com) Courses
- Organizational Behavior (Org B) Courses
- Public Management (P Mgt) Courses

# BS in Management: Strategy Emphasis (64 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the college advisement center for information regarding requirements for admission to this emphasis.*

## Program Requirements | View MAP | View Program Outcomes

1. No more than 12 semester hours of upper-division transfer credit will be accepted toward the major and only 6 hours beyond the Integrated Management Core. No transfer courses will be accepted for the Integrated Management Core courses.
2. Only courses sufficient for a single emphasis are permitted.
3. Complete the following prerequisite courses:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**
- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Acc 200.
DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

**Note:** Based on student performance to date, permission may be granted to take some restricted major-only courses.

4. Apply and be formally accepted into the program.

5. Complete the following courses during your first semester admitted to the Marriott School of Management:

BUS M 320 : Career Orientation and Preparation. (.5:1:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Acceptance into Marriott School.
DESCRIPTION: Student orientation and preparation for careers in management.
NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

BUS M 321 : Mentor Program. (.5:0:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Acceptance into Marriott School.
DESCRIPTION: Discussions with outside mentor about career opportunities.
NOTE: Must be taken first semester in Marriott School.

**Course Outcomes**

There are no course outcomes available

6. Complete the following required courses before the integrated core:

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.
DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.
NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

MATH 116 : Essentials of Calculus. (1:2:0)

WHEN TAUGHT: Spring; Summer
PREREQUISITE: Math 110.
DESCRIPTION: Review of algebra, graph of line, slope. Limits and derivatives (standard functions, compositions of such functions), derivative for polynomials, exponentials, logarithms. Product, quotient and chain rule. Optimization (extrema), application to business problems. Newton's method.

**Course Outcomes**

- Students receive a brief overview of differential calculus. Topics covered include limits, derivatives, and applications of differentiation to optimization of functions.For more detailed information visit the Math 116 Wiki page.

MATH 118 : Finite Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110.
DESCRIPTION: Language of set theory, counting and combinations. Probability theory, elementary stochastic processes, conditional probabilities. Repeated experiments, random variables, expectation, variance, linear equations, matrix algebra, application to economics or similar. Linear programming. Markov chains including applications.

**Course Outcomes**

- Prepares students for a broad range of applications in business, the life sciences, and the social sciences.For more detailed information visit the Math 118 Wiki page.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

7. Complete the following Integrated Management Core courses:

BUS M 361 : Introduction to Supply Chain and Operations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Acceptance into the Marriott School.

DESCRIPTION: Managing and designing processes and people along the value chain.

**Course Outcomes**

There are no course outcomes available

BUS M 387 : Economics of Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major or strategy minor status.

DESCRIPTION: Economic tools influencing the success of strategy (creation and appropriation of value) emphasizing application of economic theory to management of practice.

**Course Outcomes**

There are no course outcomes available

BUS M 390 : Ethics for Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Premanagement and Management 1 cores and full acceptance into the Marriott School upper-division major.

DESCRIPTION: Analyzing ethical dilemmas and understanding ethical theories as they apply to decision making in management.

**Course Outcomes**

There are no course outcomes available

ORG B 321 : Organizational Effectiveness. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department

PREREQUISITE: For Marriott School of Management majors only.

DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

**Course Outcomes**

- Students will know how to explain and discuss the characteristics of an effective organization and how to create them, how to attract and train an effective workforce, how to motivate employees to accomlish the organization's goals, and how to create a productive work environment.
- Students will be able to effectively work in a team.
- The students will learn how to manage change effectively.

8. Complete the following additional courses:

ACC 241 : Business Law in the Environment. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Marriott School of Management major status.

DESCRIPTION: Introduction to legal principles and institutions affecting business.

**Course Outcomes**

- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for the following topics: sources of law, courts and their procedures, jurisdiction, crimes, and torts.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: contract formation, defects in agreement, the statute of frauds and the parole evidence rule, third party rights, and breach/remedies.
- Demonstrate a working knowledge of and the ability to analyze issues of law applied to relevant facts for: agency formation and termination, partnerships, LLC's, and corporate formation and operation.
- Apply ethical principles to legal problems.

IS 110 : Spreadsheet Skills and Business Analysis. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic spreadsheet skills focusing on features in MS Excel such as basic functions, logic and reference functions, statistical functions, what-if analysis, and charting to solve complex business problems. No technical background is necessary.

**Course Outcomes**

There are no course outcomes available

IS 201 : Introduction to Management Information Systems. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IS 110.

DESCRIPTION: Using technology to solve business problems. Hands-on spreadsheet, database, and Internet software in a business context.

**Course Outcomes**

- Manipulate and analyze data to make appropriate recommendations for managerial decision-making.
- Design, build, and query a database to apply correct principles of data storage and extraction.
- Develop effective personal computer and Internet search skills.

**And** complete one course from the following:

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**

There are no course outcomes available

BUS M 380 : Executive Lectures. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Lectures by top executives on subjects significant to executive leadership.

**Course Outcomes**

There are no course outcomes available

BUS M 382 : Financial Services Lecture Series. (1:1:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Lectures by executives on financial services topics.

**Course Outcomes**

No outcomes are available at this time.

9. Complete the following:

BUS M 480 : Strategy 1. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Major status.

DESCRIPTION: Structured problem solving, strategic thinking, and basic strategy concepts to prepare students to analyze and understand the sources of competitive advantage and superior firm performance.

**Course Outcomes**

There are no course outcomes available

BUS M 481 : Strategy 2. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BUS M 480

DESCRIPTION: Advanced strategy topics such as growth and diversification strategy, pricing strategy, game theory and competitor analysis, strategy as real options, and strategic flexibility and commitment.

**Course Outcomes**

There are no course outcomes available

BUS M 482 : Strategy Implementation. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: BUS M 481

DESCRIPTION: Integrative course on strategy formulation and implementation, including a field study. Topics include organizational alignment (structure and processes that fit the stragety), change management, and strategic leadership.

**Course Outcomes**

There are no course outcomes available

10. Complete two courses from the following:

BUS M 470 : Entrepreneurial Innovation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major status.

DESCRIPTION: Finding and validating ideas for innovative new ventures with a focus on customer pain, elegant solutions, and markets.

**Course Outcomes**

There are no course outcomes available

BUS M 471 : Creating New Ventures. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 470

DESCRIPTION: Learning the critical skills to create a successful new venture by validating an initial idea and business model in the field.

**Course Outcomes**

There are no course outcomes available

BUS M 475 : Financing New Ventures. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Business management core; major status.

DESCRIPTION: Concepts and skills of entrepreneurship, emphasizing how new and emerging companies are financed. Applying functional tools to case situations.

**Course Outcomes**

There are no course outcomes available

BUS M 483R : Topics in Strategy. (3:3:0)

PREREQUISITE: Major status.

DESCRIPTION: Topics and instructors vary.

**Course Outcomes**

No outcomes are available at this time.

FIN 402 : Managerial Finance for Non-Finance Majors. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: FIN 201; or BUS M 201; or ACC 401; Major status.

DESCRIPTION: Overview of financial management issues including capital budgeting, cost of capital, capital structure/dividends, and long-term financial planning.

NOTE: For non-finance majors.

**Course Outcomes**

There are no course outcomes available

IS 520 : Business Programming and Spreadsheet Automation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: IS 201 or equivalent or instructor's consent.

DESCRIPTION: Programming in Excel Visual Basic; automating common tasks; retrieving data from web servers; building optimization models and user forms.

**Course Outcomes**

There are no course outcomes available

11. Complete two additional 3 credit hour Marriott School courses.
12. Complete Marriott School exit survey online.

*Hours include courses that may fulfill university core requirements.

## Show all Business Management (Bus M) Courses

## Show all Managerial Economics (ManEc) Courses

## Show all Management Communication (M Com) Courses

## Show all Organizational Behavior (Org B) Courses

## Show all Public Management (P Mgt) Courses

**Marriott School of Management Home**

**Management Programs Home**

**Majors**

BS in Management:

Emphases:

- Entrepreneurship
- General Business
- Global Supply Chain Management
- Marketing Management
- Organizational Behavior/HR Management
- Strategy

**Minors**

- Global Business and Literacy
- Management
- Strategy

**Certificate**

- Global Management

**Course Information**

- Business Management (Bus M) Courses
- Management Communication (M Com) Courses
- Organizational Behavior (Org B) Courses
- Public Management (P Mgt) Courses

# Minor in Global Business and Literacy (21 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

BUS M 430 : Introduction to International Business. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
DESCRIPTION: Complexities confronting U.S. firms and their management in international environments. Emphasizes functional and planning areas, including organization, market research, financial analysis.

**Course Outcomes**

There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Acc 200.

DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

2. Complete one language course from the following:

BUS M 596R : Business Language. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: For experienced speakers of the language being taught. Emphasizes business concepts; practice and case study including conversation, reading,and presenting, while enriching business vocabulary.

**Course Outcomes**

No outcomes are available at this time.

A language course approved by the College of Humanities Advisement Center.

3. Oral Proficiency: Score at least at the *Intermediate-High* level on the ACTFL Oral Proficiency Exam.

4. Complete one literature or civilization course from the following:

*Literature Courses*

ARAB 424R : Modern Arabic Literature. (2:2:0)

WHEN TAUGHT: Winter

DESCRIPTION: Readings in modern Arabic literature.

**Course Outcomes**

- Students will demonstrate their knowledge and understanding of major works and genres in verbal and written forms.
- Students will demonstrate their understanding of the major issues of Modern Arabic Literature.
- Students will demonstrate an ability to understand and analyze the linguistic features of important Arabic literary texts.

ARAB 425R : Classical Arabic Texts. (2:2:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Quran, Hadith, Sira, Adab.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of premodern literature.
- Students will demonstrate their knowledge and understanding of major works and genres.
- Students will be able to analyze and discuss the influence of the pre-modern language on present-day Arabic.

CHIN 343 : Chinese Literature in Translation--Poetry. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: All readings in English; topics vary.

**Course Outcomes**

- Outline the basic facts of early Chinese poetry: authors, genres, titles (see Chinese major expected learning outcome 3).
- Utilize the basic approaches to analyzing and appreciating literature (see Chinese major expected learning outcome 3).
- Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

CHIN 344 : Chinese Literature in Translation--Prose. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: All readings in English; topics vary.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Acquire and apply knowledge of literary terminology and frameworks for literary analysis (see Chinese major expected learning outcome 3).
- Analyze and discuss classical and modern Chinese narrative literature and its relations to Chinese cultural traditions (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

DANSH 340 : Danish Literature. (3:3:.5)

WHEN TAUGHT: Winter Odd Yrs.
RECOMMENDED: Dansh 321 or equivalent experience.
DESCRIPTION: Readings in Danish literature; introduction to basic literary concepts. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

FINN 340 : Finnish Literature. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
RECOMMENDED: Finn 321 or equivalent experience.
DESCRIPTION: Readings in Finnish literature; introduction to basic literary concepts. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

FREN 340 : Introduction to Literary Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Fren 321 or concurrent enrollment.
DESCRIPTION: How to read French prose, drama, and poetry and apply methods of literary criticism.
NOTE: Capstone course for GE Languages of Learning requirement for returned missionaries

**Course Outcomes**

- Contextualize and analyze French literature of various periods and genres.
- Write analytically about the literature in well-formatted essays.
- Identify basic terms of literary analysis. (The specific list is available on the syllabus.)

GERM 343 : Introduction to Literary Analysis. (3:3:.5)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
RECOMMENDED: Germ 302, 303, 330, 340.
DESCRIPTION: Close reading of texts; examining various critical theories and their application to German prose, drama, poetry, and film. Preparation for 440R - 445R sequence. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

HEB 432R : Ancient Hebrew Texts. (2:2:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: HEB 331

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Define the top 600 vocabulary words from the Hebrew Bible.2. Analyze and discuss the fundamental elements of Hebrew grammar.3. Analyze and categorize the verbal system: pa'al, piel, hiphil, hophal, niphal, pual, and hithpael.

ICLND 429 : Old Icelandic Language and Literature. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
PREREQUISITE: Iclnd 201 or equivalent experience.
DESCRIPTION: Readings and exercises in Old Icelandic; introduction to Old Icelandic literature and its influence on later Icelandic culture.
NOTE: Entry course for returned missionaries or others with equivalent Icelandic language experience. Required course for obtaining language credit by examination (Iclnd 101, 102, 201, 211R). Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

ITAL 340 : Introduction to Italian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter
RECOMMENDED: Ital 321 and 322.
DESCRIPTION: Basic literary concepts and terms coupled with readings of Italian works from various genres and periods.
NOTE: Capstone course for GE Languages of Learning requirement for returned missionaries.

**Course Outcomes**

- Read, understand, and analyze the Italian literary texts in the syllabus
- Identify the poetic devices included in the "poetry section" of the syllabus and describe their function within the texts discussed in class
- Acquire and implement research skills for the study of Italian literature in order to create two original

analytical papers
- Write and speak clearly and effectively in Italian to the Advanced-level range on the ACTFL scale

KOREA 340 : Korean Literature to 1900. (3:4:0)

WHEN TAUGHT: Fall
PREREQUISITE: KOREA 302
DESCRIPTION: Korean literature from the earliest times to 1900. Emphasis on basic literary concepts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will learn of the wide range of literary genre available in Korea prior to the 20th century.
- Students will learn at least five styles of poetry common in Korea from the Silla period to the late Joseon period, including hyangga, Chinese (Tang) poetry, sijo, gasa, and the poetry of the Yongbi-eo cheon'ga.
- Fiction, in the form of tales, legends, fables, and uniquely Korean "pansori" novels will become familiar to students in this course.

NORWE 340 : Norwegian Literature. (3:3:.5)

WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Readings in Norwegian literature; introduction to basic literary concepts. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

PORT 339 : Introduction to Portuguese and Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Port 321.
DESCRIPTION: Readings in modern literature; formal literary analysis.

**Course Outcomes**

- Contextualize and analyze literature written in Portuguese from various genres and periods.
- Acquire and apply the fundamental tools for literary analysis, appreciation, and interpretation through a study of a balanced selection of foundational works from Portugal and Brazil and some areas of Lusophone Africa.
- Demonstrate through written exercises mastery of the basic terms of literary analysis and the formal patterns of fiction (narration, plot, characterization, structure, etc.) drama (tragedy, comedy, dialogue, structure, staging, etc.), and poetry (meter, rhyme, syllabification, figurative language, including tropes and figures).
- Produce several interpretive essays that demonstrate mastery of the formal components of fiction, drama, and poetry, and that reveal competence in library research skills, appropriate use of secondary sources, and proper adherence to MLA bibliographic style.

RUSS 340 : Masterpieces of the Russian Novel in English. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
DESCRIPTION: Survey of Russian novels by such authors as Pushkin, Tolstoy, Dostoevsky, and Pasternak.

**Course Outcomes**

There are no course outcomes available

SPAN 339 : Introduction to Spanish Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Readings in modern Hispanic literatures, focusing on formal literary analysis.
NOTE: Course is prerequisite to 400-level literature courses.

**Course Outcomes**

- Demonstrate a working knowledge of the most salient elements of the most important literary genres, including, for example, short story, novel, poetry, theater, essay, and film.
- Students will demonstrate a mastery of basic tools of literary analysis, including versification and basic elements of narratology, and interpretation through the study of a variety of works from authors from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstrate the ability to speak and write in Spanish about literature with a reasonable degree of grammatical correctness and fluency.

SWED 340 : Swedish Literature. (3:3:.5)

WHEN TAUGHT: Winter
RECOMMENDED: Swed 321 or equivalent experience.
DESCRIPTION: Readings in Swedish literature: introduction to basic literary concepts. Includes International Cinema.
NOTE: Culminating course for GE Foreign Language requirement.

**Course Outcomes**

- Students should better know how to understand, interpret, and thoughtfully reflect upon the literature

and art they will encounter in later life.
- Students should be able to insightfully analyze important literary and artistic works from Swedish cultural history and be able to communicate this analysis through articulate and well-organized written and oral presentations in Swedish. Students will also develop basic research skills.
- Students should understand key historical trends and works from Swedish culture, recognize connections between these works, and be able to relate them to the development of contemporary cultural developments.
- Students will be able to relate the ideas and issues raised by the works studied in class to their own cultural situation as well as to their experience with contemporary Swedish culture. They will reflect upon and develop an appreciation for the expression of ideas that make up Swedish cultural history and even value the expression of perspectives and opinions they do not necessarily share.

*Civilization Courses*

ARAB 423R : Current Events in Arabic. (2:2:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Current events from online oral and written news sources, including high-level discussions of causes and context with written analyses and oral presentations.

**Course Outcomes**

- Demonstrate an ability to speak and write fluently in Arabic about current events in the Middle East, expressing and supporting opinion, and giving detailed descriptions and analyses of the events.

CHIN 345R : Chinese Culture. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Selected topics in traditional, modern, and contemporary Chinese culture.

**Course Outcomes**

- Demonstrate cultural literacy of the foundations of Chinese civilization: geography, history, philosophy, thought, political systems and social structures (see Chinese major expected learning outcome 3).
- Explain how cultural factors and institutions have shaped and continue to shape allied disciplines in Chinese studies including language, literature, linguistics, and the visual arts (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

FREN 361 : French Civilization from the Beginning to 1715. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Fren 321.

RECOMMENDED: Fren 322.

DESCRIPTION: Historical survey of institutions, fine arts, and social conditions to the death of Louis XIV.

NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 362 : French Civilization from 1715 to the Present. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Fren 321.

RECOMMENDED: Fren 322.

DESCRIPTION: Historical survey of institutions, fine arts, and social conditions.

NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 363 : Contemporary French Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Fren 321.

RECOMMENDED: Fren 322.

DESCRIPTION: Current cultural, political, and social trends and issues in France as well as the francophone world.

NOTE: Fulfills GE Global and Cultural Awareness requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Locate and evaluate resources relevant to course assignments.
- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

GERM 330 : Cultural History of German-Speaking Peoples. (3:3:1.5)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Germ 202 or equivalent experience.
DESCRIPTION: Culture, with listening, speaking, reading, writing, and grammar as secondary emphases. Includes International Cinema.
NOTE: Entry course for returned missionaries or others with equivalent German language experience. Required course for obtaining language credit by examination (Germ 101, 102, 201, 311R). Prerequisite to all 400-level courses. Culminating course for Languages of Learning requirement.

**Course Outcomes**

There are no course outcomes available

ITAL 420 : Italian Civilization from the Beginning to 1600. (3:3:0)

WHEN TAUGHT: Winter
RECOMMENDED: Ital 340.
DESCRIPTION: Survey of history, music, architecture, literature, and arts that shaped the Italian culture and civilization from the beginning through the Renaissance.
NOTE: Fulfills GE Arts elective.

**Course Outcomes**

- Become familiar with the major intellectual and artistic traditions of Italy from the Etruscan period to the Renaissance by identifying the chronology and main characteristics of each period listed in the syllabus.
- Apply vocabulary, grammar, theory, and history to the texts, music, artifacts, and works of art listed in the syllabus to discover, interpret, and evaluate multiple meanings.
- Develop critical skills and informed aesthetic judgment to discuss and analyze the music, architecture, and works of art listed in the syllabus, paying particular attention to their historical or social setting and their place in shaping culture.
- Locate and evaluate resources relevant to course assignments and apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations, and communicate findings coherently both orally and in writing).

ITAL 421 : Italian Civilization from 1600 to the Modern Era. (3:3:0)

WHEN TAUGHT: Winter
RECOMMENDED: Ital 340.
DESCRIPTION: Survey of institutions, fine arts, and great writers that shaped the history of Italy from the Baroque period to the modern era.
NOTE: Fulfills GE Arts elective.

**Course Outcomes**

- Become familiar with the major intellectual and artistic traditions of Italy from the Baroque Period to modern times by identifying the chronology and main characteristics of each period listed in the syllabus.
- Apply critical concepts, theory, and history to the texts, music, artifacts, and works of art listed in the syllabus to discover, interpret, and evaluate their multiple meanings.
- Develop critical skills and informed aesthetic judgment to discuss and analyze the music, architecture, and works of art listed in the syllabus, paying particular attention to their historical or social setting and their place in shaping culture.
- Locate and evaluate resources relevant to course assignments and apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations), and communicate findings coherently both orally and in writing).

JAPAN 345 : Traditional Japanese Culture. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department
DESCRIPTION: General survey emphasizing aesthetics, religion, and value systems. All readings in English.

**Course Outcomes**

- Students will be able to speak and write about such features of culture as language, literature, thought, religion, aesthetics, art and music. A writing sample will be included in the individual student portfolio.

KOREA 345 : Korean Culture. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Selected topics in traditional, modern, and contemporary Korean culture. All readings in English.

**Course Outcomes**

- -- become familiar with the historical framework of Korea, the major dynasties and historic events.-- become familiar with major religions including shamanism, Buddhism, Confucianism, and Christianity as well as some "new religions".-- learn basic concepts of lineage and family structure, organization and

activities, including ancestor veneration ceremonies.-- learn the political structure of South Korea and North Korea

PORT 345 : Portuguese Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department
PREREQUISITE: Port 321.
DESCRIPTION: Culture, history, art, music, and traditions of Portugal.

**Course Outcomes**

- Describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe the linear progression of historical periods that might include important political, social, and artistic events.
- Recognize and describe important cultural products such as art, literature, architecture, and music, including important works and individuals.
- Describe important cultural institutions that might include family, religion, education and government.
- Discuss important cultural practices, including customs related to birth, marriage and death, as well as traditions and holidays.
- Analyze recent developments, including political, social, religious, and artistic activities.
- Interpret cultural products and practices within the framework of historical, geographic, religious, and social factors that influence them.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced awareness of cultural and historical knowledge
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

PORT 355 : Brazilian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Port 321.
DESCRIPTION: Culture, history, art, music, and traditions of Brazil.

**Course Outcomes**

There are no course outcomes available

RUSS 330 : Cultural History of Russia. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Russ 202 or foreign residence experience.
NOTE: Required course for obtaining language credit by examination (Russ 101, 102, 201, 211R). Culminating course for Languages of Learning requirement. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

SPAN 345 : Iberian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spain.

**Course Outcomes**

- Students will be able to describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe and analyze historical periods and current events (e.g., political, social, artistic, and religious developments).
- Recognize and describe important cultural products (e.g., art, literature, architecture, and music, including important works and individuals), cultural institutions (e.g., family, religion, education, and government), and cultural practices (e.g., customs related to birth, marriage, death, holidays, and traditions).
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

SPAN 355 : Spanish American Culture and Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spanish America.

**Course Outcomes**

There are no course outcomes available

**Note**: Give attention to prerequisites for all courses.

*Hours include courses that may fulfill university core requirements.

## Show all Business Management (Bus M) Courses

**Show all Managerial Economics (ManEc) Courses**

**Show all Management Communication (M Com) Courses**

**Show all Organizational Behavior (Org B) Courses**

**Show all Public Management (P Mgt) Courses**

**Marriott School of Management Home**

**Management Programs Home**

**Majors**

BS in Management:

Emphases:

- Entrepreneurship
- General Business
- Global Supply Chain Management
- Marketing Management
- Organizational Behavior/HR Management
- Strategy

**Minors**

- Global Business and Literacy
- Management
- Strategy

**Certificate**

- Global Management

**Course Information**

- Business Management (Bus M) Courses
- Management Communication (M Com) Courses
- Organizational Behavior (Org B) Courses
- Public Management (P Mgt) Courses

# Minor in Management (22 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following courses:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Acc 200.
DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

MATH 118 : Finite Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110.

DESCRIPTION: Language of set theory, counting and combinations. Probability theory, elementary stochastic processes, conditional probabilities. Repeated experiments, random variables, expectation, variance, linear equations, matrix algebra, application to economics or similar. Linear programming. Markov chains including applications.

**Course Outcomes**

- Prepares students for a broad range of applications in business, the life sciences, and the social sciences.For more detailed information visit the Math 118 Wiki page.

Or

MATH 110 : College Algebra. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 97 or equivalent (see Independent Study).

DESCRIPTION: Functions, polynomials, theory of equations, exponential and logarithmic functions, matrices, systems of linear equations, permutations, combinations, binomial theorem.

**Course Outcomes**

- Graph functions using horizontal and vertical shiftsGraph functions using compressions and stretchesGraph functions using reflections about the x-axis or y-axisForm composite functions and find the domainDetermine the inverse of a function and graph an inverse function from the graph of a function
- This course prepares students to take courses in calculus, statistics, mathematics for elementary education majors, and other areas where algebra skills are required. Fluent skills in algebra are necessary for success in any area that uses mathematical analysis. The mastery of college algebra requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. College Algebra develops the concepts of graphing functions, polynomial and rational functions, exponential and logarithmic functions, conic sections, solving systems of equations, the binomial theorem, permutations, combinations, and probability. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information, visit the Math 110 Wiki page.
- Quadratic functionsPolynomial functionsRational functionsPolynomial and rational inequalitiesThe real zeros of a polynomial functionComplex zeros and the Fundamental Theorem of Algebra
- Exponential functionsLogarithmic functionsProperties of LogarithmsLogarithmic and exponential equationsCompound interestExponential growth and decay
- Graph parabolas, ellipses, and hyperbolasFind the equation of parabolas, ellipses, and hyperbolasDiscuss the equation of conic sections to find vertices, foci, asymptotes, and the directrixWork with conic sections that are not centered at the origin
- Solve systems of linear equations using substitution and eliminationSolve systems of non-linear equations using substitution and eliminationDecompose rational functions using partial fractions
- Find terms in a sequence using a formula and a recursive definitionFind a formula for terms in an arithmetic sequence and be able to add the terms of a finite arithmetic sequenceFind a formula for the terms in a geometric sequence and be able to find the sum of finite and infinite geometric seriesProve statements using mathematical induction
- Work with operations on sets such as union, intersection and complement and count the number of elements in a setCompute permutations and combinationsEvaluate binomial coefficients and expand binomials using the Binomial TheoremCompute probabilities of equally likely outcomes

Or

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

ORG B 320 : Organizational Effectiveness. (3:Arr:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and

performance management.
NOTE: Taught online.

**Course Outcomes**
There are no course outcomes available

STAT 121 : Principles of Statistics. (3:3:1)
OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**
- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

2. Complete one course from the following:

BUS M 371R : Entrepreneurship Lecture Series. (1:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Lectures by successful entrepreneurs on subjects significant to entrepreneur-type opportunities.

**Course Outcomes**
There are no course outcomes available

BUS M 380 : Executive Lectures. (1:1:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Lectures by top executives on subjects significant to executive leadership.

**Course Outcomes**
There are no course outcomes available

BUS M 382 : Financial Services Lecture Series. (1:1:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Lectures by executives on financial services topics.

**Course Outcomes**
No outcomes are available at this time.

3. No more than one transfer class will be accepted as a substitute for Bus M 241, Fin 201.
4. D– credit will be allowed in courses for the management minor, although a 2.25 GPA in minor courses is required.

*Hours include courses that may fulfill university core requirements.

## Show all Business Management (Bus M) Courses

## Show all Managerial Economics (ManEc) Courses

## Show all Management Communication (M Com) Courses

## Show all Organizational Behavior (Org B) Courses

## Show all Public Management (P Mgt) Courses

**Marriott School of Management Home**

**Management Programs Home**

**Majors**

BS in Management:
Emphases:
- Entrepreneurship
- General Business
- Global Supply Chain Management
- Marketing Management
- Organizational Behavior/HR Management
- Strategy

**Minors**
- Global Business and Literacy
- Management
- Strategy

**Certificate**
- Global Management

**Course Information**
- Business Management (Bus M) Courses
- Management Communication (M Com) Courses
- Organizational Behavior (Org B) Courses
- Public Management (P Mgt) Courses

# Minor in Strategy (27–28 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete one of the following:

MATH 110 : College Algebra. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 97 or equivalent (see Independent Study).

DESCRIPTION: Functions, polynomials, theory of equations, exponential and logarithmic functions, matrices, systems of linear equations, permutations, combinations, binomial theorem.

**Course Outcomes**

- Graph functions using horizontal and vertical shiftsGraph functions using compressions and stretchesGraph functions using reflections about the x-axis or y-axisForm composite functions and find the domainDetermine the inverse of a function and graph an inverse function from the graph of a function
- This course prepares students to take courses in calculus, statistics, mathematics for elementary education majors, and other areas where algebra skills are required. Fluent skills in algebra are necessary for success in any area that uses mathematical analysis. The mastery of college algebra requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. College Algebra develops the concepts of graphing functions, polynomial and rational functions, exponential and logarithmic functions, conic sections, solving systems of equations, the binomial theorem, permutations, combinations, and probability. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information, visit the Math 110 Wiki page.
- Quadratic functionsPolynomial functionsRational functionsPolynomial and rational inequalitiesThe real zeros of a polynomial functionComplex zeros and the Fundamental Theorem of Algebra
- Exponential functionsLogarithmic functionsProperties of LogarithmsLogarithmic and exponential equationsCompound interestExponential growth and decay
- Graph parabolas, ellipses, and hyperbolasFind the equation of parabolas, ellipses, and hyperbolasDiscuss the equation of conic sections to find vertices, foci, asymptotes, and the directrixWork with conic sections that are not centered at the origin
- Solve systems of linear equations using substitution and eliminationSolve systems of non-linear equations using substitution and eliminationDecompose rational functions using partial fractions
- Find terms in a sequence using a formula and a recursive definitionFind a formula for terms in an arithmetic sequence and be able to add the terms of a finite arithmetic sequenceFind a formula for the terms in a geometric sequence and be able to find the sum of finite and infinite geometric seriesProve statements using mathematical induction
- Work with operations on sets such as union, intersection and complement and count the number of elements in a setCompute permutations and combinationsEvaluate binomial coefficients and expand binomials using the Binomial TheoremCompute probabilities of equally likely outcomes

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 116 : Essentials of Calculus. (1:2:0)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: Math 110.

DESCRIPTION: Review of algebra, graph of line, slope. Limits and derivatives (standard functions, compositions of such functions), derivative for polynomials, exponentials, logarithms. Product, quotient and chain rule. Optimization (extrema), application to business problems. Newton's method.

**Course Outcomes**

- Students receive a brief overview of differential calculus. Topics covered include limits, derivatives, and applications of differentiation to optimization of functions.For more detailed information visit the Math 116 Wiki page.

**And**

MATH 118 : Finite Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110.

DESCRIPTION: Language of set theory, counting and combinations. Probability theory, elementary stochastic processes, conditional probabilities. Repeated experiments, random variables, expectation, variance, linear equations, matrix algebra, application to economics or similar. Linear programming. Markov chains including applications.

**Course Outcomes**

- Prepares students for a broad range of applications in business, the life sciences, and the social sciences.For more detailed information visit the Math 118 Wiki page.

2. Complete the following:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 387 : Economics of Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major or strategy minor status.

DESCRIPTION: Economic tools influencing the success of strategy (creation and appropriation of value) emphasizing application of economic theory to management of practice.

**Course Outcomes**

There are no course outcomes available

BUS M 480 : Strategy 1. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Major status.

DESCRIPTION: Structured problem solving, strategic thinking, and basic strategy concepts to prepare students to analyze and understand the sources of competitive advantage and superior firm performance.

**Course Outcomes**

There are no course outcomes available

BUS M 481 : Strategy 2. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BUS M 480

DESCRIPTION: Advanced strategy topics such as growth and diversification strategy, pricing strategy, game theory and competitor analysis, strategy as real options, and strategic flexibility and commitment.

**Course Outcomes**

There are no course outcomes available

BUS M 482 : Strategy Implementation. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: BUS M 481

DESCRIPTION: Integrative course on strategy formulation and implementation, including a field study. Topics include organizational alignment (structure and processes that fit the stragety), change management, and strategic leadership.

**Course Outcomes**

There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Acc 200.

DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

## Recommended Courses

BUS M 470 : Entrepreneurial Innovation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major status.

DESCRIPTION: Finding and validating ideas for innovative new ventures with a focus on customer pain, elegant solutions, and markets.

**Course Outcomes**

There are no course outcomes available

BUS M 471 : Creating New Ventures. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 470

DESCRIPTION: Learning the critical skills to create a successful new venture by validating an initial idea and business model in the field.

**Course Outcomes**

There are no course outcomes available

FIN 402 : Managerial Finance for Non-Finance Majors. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: FIN 201; or BUS M 201; or ACC 401; Major status.

DESCRIPTION: Overview of financial management issues including capital budgeting, cost of capital, capital structure/dividends, and long-term financial planning.

NOTE: For non-finance majors.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.


**Show all Business Management (Bus M) Courses**

**Show all Managerial Economics (ManEc) Courses**

**Show all Management Communication (M Com) Courses**

**Show all Organizational Behavior (Org B) Courses**

**Show all Public Management (P Mgt) Courses**

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**Majors**

BS in Management:

Emphases:

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**Minors**

- Global Business and Literacy
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- Strategy

**Certificate**

- Global Management

**Course Information**

- Business Management (Bus M) Courses
- Management Communication (M Com) Courses
- Organizational Behavior (Org B) Courses
- Public Management (P Mgt) Courses

# Certificate in Global Management (12 hours)

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Hide All Course Descriptions

## Program Requirements

The global management certificate is intended to provide a theoretical and practical understanding of global business issues and enhance international career opportunities. The certificate is available to students admitted to the Marriott School of Management.

1. Complete the following:

BUS M 430 : Introduction to International Business. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Complexities confronting U.S. firms and their management in international environments. Emphasizes functional and planning areas, including organization, market research, financial analysis.

**Course Outcomes**

There are no course outcomes available

2. Complete one course from the following:

ACC 545 : International Accounting and Multinational Enterprises. (3:3:0)

WHEN TAUGHT: Spring

DESCRIPTION: Accounting from an international perspective: flow of information in multiple currencies, complying with reporting requirements, setting budgets and monitoring performance, and controlling corporate assets through reports and audits.

**Course Outcomes**

- Identify the major reasons accounting differs around the world.
- Describe the forces of convergence of accounting standards
- Evaluate the pros and cons of adopting IFRS for financial reporting in capital markets worldwide.
- Compare U.S. GAAP and IFRS for the following accounting issues: intangibles, consolidation, segment reporting, and foreign currency transactions and translation.
- Explain how MNEs deal with the issue of foreign exchange risk management, corporate governance, performace evaluation and control, auditing, and taxation.

BUS M 431 : International Marketing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

RECOMMENDED: Bus m 430.

DESCRIPTION: International market entry strategies, export marketing, joint ventures, and other market entry modes. Regional/National markets; cultural, political, legal environments. Negotiations, trade financing, marketing mix.

**Course Outcomes**

There are no course outcomes available

BUS M 450 : Global Business Negotiations. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: BUS M 241; or BUS M 341; Major status.

DESCRIPTION: Developing an effective negotiation framework for cross-national/cultural negotiation techniques relative to business and other life situations.

**Course Outcomes**

There are no course outcomes available

BUS M 465 : Global Supply Chain. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: BUS M 361; Major status.
DESCRIPTION: The emerging rules of a global marketplace and their influence on key supply chain activities and processes.

**Course Outcomes**

There are no course outcomes available

BUS M 490R : Topics in Business Management. (.5-3:Arr:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Current business-related topics varying by semester and section.

**Course Outcomes**

There are no course outcomes available

BUS M 495R : E-Business Projects. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Instructor's consent.
DESCRIPTION: Consulting/Field studies projects in e-business.

**Course Outcomes**

No outcomes are available at this time.

FIN 432 : International Corporate Finance. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: BUS M 401 & ACC 440; or FIN 401 & ACC 440; Finance junior core.
DESCRIPTION: Financial aspects of multinational corporations operating within an international environment; direct foreign investment, foreign exchange regulations, capital markets, etc.

**Course Outcomes**

There are no course outcomes available

ORG B 490R : Professional Development Seminar. (.5-3:ARR:0)
DESCRIPTION: Special topics in organizational behavior. Course content varies from year to year.

**Course Outcomes**

- Help students decide whether to pursue a PhD.

3. Complete the following business language course:
   BUS M 596R : Business Language. (3:3:0)
   WHEN TAUGHT: Fall; Winter
   DESCRIPTION: For experienced speakers of the language being taught. Emphasizes business concepts; practice and case study including conversation, reading,and presenting, while enriching business vocabulary.

**Course Outcomes**

No outcomes are available at this time.

   (available in Arabic, Chinese, English, French, German, Italian, Japanese, Korean, Portuguese, Russian, or Spanish).
4. Complete the international business experience in the form of an international internship, international field study, or business Study Abroad program.

## Show all Business Management (Bus M) Courses

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**Organizational Leadership and Strategy Department Home**

**Course Information**

- Management Communication (M Com) Courses
- Organizational Behavior (Org B) Courses

**Faculty**

# Management Communication (M Com)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 300-Level Courses

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.
DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.
NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

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**Course Information**

- Management Communication (M Com) Courses
- Organizational Behavior (Org B) Courses

**Faculty**

# Organizational Behavior (Org B)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 300-Level Courses

ORG B 320 : Organizational Effectiveness. (3:Arr:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.
NOTE: Taught online.

**Course Outcomes**

There are no course outcomes available

ORG B 321 : Organizational Effectiveness. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department
PREREQUISITE: For Marriott School of Management majors only.
DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

**Course Outcomes**

- Students will know how to explain and discuss the characteristics of an effective organization and how to create them, how to attract and train an effective workforce, how to motivate employees to accomlish the organization's goals, and how to create a productive work environment.
- Students will be able to effectively work in a team.
- The students will learn how to manage change effectively.

ORG B 327 : Human Resource Management. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Functions of human resource management: employee selection, wage and salary administration, training and development, employee relations, and human resource planning.

**Course Outcomes**

- Discuss the purpose, roles, frameworks, and activities of HRM within various types of organizations.
- Explain important strategies and methods of effective recruitment, selection, and retention.
- Discuss the primary purposes, criteria, approaches, advantages and disadvantages, issues, and evaluation of performance management.

ORG B 330 : Organizational Development and Change. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: Macro topics in organizational behavior, including organizational structure, culture, design, change management, strategic implementation, and HR training and development.

**Course Outcomes**

- Students will show evidence of their ability to read and grasp change concepts and theories.
- Students will be able to effectively synthesize and communicate various OD concepts, tools and methods about each day's readings, showing evidence they understand, can articulate and evaluate core principles in the classroom through the quantity and quality of their participation.
- At the end of the semester, there will be a final comprehensive exam that will include objective questions from the text, short essay questions, and brief case analyses. It will test one's ability to justify and communicate what has been learned. It will require students to integrate consulting information covered throughout the course and apply OD concepts and methodology to various organization problems.
- Students will individually or as a team (2-3 people) utilize core principles of OD to design a consulting strategy with an organization in need of change. This will be the major evidence for demonstrating students' capacity to practice what they study by taking action. It will show how OD tools and ideas have been critically examined, as well as how they have been assessed for their feasibility through practical applications. Evidence of building

a logical approach and strong writing skills will be required. This learning outcome will be a synthesis of the semester's experience. This will be not only be a written deliverable, but an oral presentation to one's peers in which OD projects are made public and class criticisms are shared through feedback after each presentation.

ORG B 347 : Managerial Leadership Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Principles and practices needed to serve as effective leaders in families, church, community, and work settings -- planning, decision making, self-awareness, effective human influence, and community building.

**Course Outcomes**

There are no course outcomes available

### 400-Level Courses

ORG B 400 : Business Ethics. (2:2:0)

OFFERED: Independent Study only.

DESCRIPTION: Moral leadership, character development, and multiple perspectives for making ethical decisions in organizations.

**Course Outcomes**

- Describe how honesty and integrity are crucial elements of one's personal character and explain a theory regarding how character develops.
- Explain how ethical leadership contributes to creating a culture of integrity in organizations.
- Identify and describe five ethical criteria for making ethical decisions in organizations and explain how to use them to resolve ethical dilemmas.

ORG B 429 : Compensation, Benefits, and Performance Management. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Org B 327 or instructor's consent.

DESCRIPTION: Wage and salary administration, incentives, employee benefits, grievance and discipline systems, performance appraisal.

**Course Outcomes**

- Explain how to use financial incentives to motivate employees through such programs as merit pay, individual or group bonuses, piece-rate incentives, bonuses, and profit sharing plans.
- Explain how wage levels are determined and demonstrate how wage surveys are used to assign fair wage rates.
- Use a job evaluation program, such as the point method, to create a wage structure in an organization.
- Explain how to develop and use a performance appraisal program to evaluate employee performance and describe the strengths and weaknesses of different appraisal methods.
- Explain how to administer a pay system, such as calculating take-home and overtime pay, creating executive compensation packages, and adjusting pay levels for inflation.
- Describe the common elements of employee benefits programs and explain how they are administered.

ORG B 431 : International Human Resources. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Org B 327 or instructor's consent.

DESCRIPTION: International policies and practices in organizational behavior and human resource management.

**Course Outcomes**

- Describe ways in which national cultures vary.
- Use the Hofstede and Globe models to understand cultural dimensions.
- Describe how cultural differences alter work organizations.
- Develop personal communication skills that will be effective in different cultures.
- Gather information and analyze descriptions of business environments located throughout the world.
- Improve ability to present results of personal research, both written and oral.
- Withhold judgments when interacting with cultures that are not your own.

ORG B 432 : Microfinance. (3:3.0:0)

WHEN TAUGHT: Winter

DESCRIPTION: Theories and practice of designing and implementing grassroots strategies for empowering the global poor. Topics include micro-entrepreneurship skills, microcredit loan tools, and how to build sustainable microenterprises from the ground up.

**Course Outcomes**

There are no course outcomes available

ORG B 490R : Professional Development Seminar. (.5-3:ARR:0)

DESCRIPTION: Special topics in organizational behavior. Course content varies from year to year.

**Course Outcomes**

- Help students decide whether to pursue a PhD.

## Graduate Courses

For 500-, 600-, and 700-level courses, see Business Administration in the BYU 2014–2015 Graduate Catalog.

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**Romney Institute of Public Management Home**

**Course Information**

- Public Management (P Mgt) Courses

**Faculty**

# Public Management (P Mgt)

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## Undergraduate Courses

### 400-Level Courses

P MGT 490 : Health Care Executive Lecture Series. (.5:0.5:0)

WHEN TAUGHT: Fall

DESCRIPTION: Top executives share insights about the health care industry and related career opportunities.

**Course Outcomes**

There are no course outcomes available

## Graduate Courses

For 500-, 600-, and 700-level courses, see George W. Romney Institute of Public Management in the BYU 2014–2015 Graduate Catalog.

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**Military Science (Army ROTC) Department Home**

**Minor**

- Minor in Military Science

**Course Information**

- Military Science (Army ROTC) (Mil S) Courses

**Faculty**

# Military Science (Army ROTC)

LTC Marc E. Boberg, Chair
320 ROTC, (801) 422-3601

## Admission to Degree Program

Students must be accepted by the Department of Military Science into the program.

## The Discipline

The Army Reserve Officer Training Corps (ROTC) Leadership Excellence Program is designed to produce highly qualified commissioned officers in the U.S. Regular Army, the U.S. Army Reserve, or the U.S. Army National Guard. Students specialize in the major field of their choice and graduate with the ability to function as a junior executive.

## Career Opportunities

Officer in the U.S. Army in the career field of:

Adjutant General's Corps (Human Resource Administration)
Air Defense Artillery
Armor
Aviation (Pilots)
Chemical Corps
Engineers
Field Artillery
Finance Corps
Infantry
Judge Advocate General's Corps (Legal)
Medical Corps (dentists, doctors)
Medical Service Corps (health care administrators)
Military Intelligence
Military Police (Law Enforcement)
Nurse Corps
Ordnance Corps (Logistics)
Quartermaster Corps (Logistics)
Signal Corps (Information Technology)
Transportation Corps (Logistics)

## General Information

**Textbooks, Uniforms, and Allowances.** All textbooks, uniforms, and training materials are furnished by the U.S. Army. Those in the advanced course receive a $450 to $500 monthly allowance and approximately $900 for participation in the national Leadership Development and Assessment Course for five weeks during the summer between the junior and senior year.

**Army ROTC Scholarship Program.** Scholarships are available on a competitive basis. Senior students in high school may qualify for a four-year scholarship. College students may also qualify for a four-, three-, or two-year scholarship. The scholarship provides for tuition and fees or room and board, a textbook allowance, and from $300 to $500 per month (up to ten months per year) for the period of the scholarship. Students who qualify must complete their degree program prior to their thirty-second birthday. Contact the Military Science Department for application procedures and specifics.

**SMP Program** (Simultaneous Membership Program). Students already members of the Army Reserve or National Guard may concurrently participate in ROTC and qualify for additional pay and benefits, to include tuition assistance.

**Extracurricular Activities.** Army ROTC cadets extend academic and laboratory associations into a variety of extracurricular ROTC activities. Among these are the Ranger Challenge team, Army Color Guard, Cannon Crew, marksmanship team, annual Military Ball, and many school service projects performed by the corps of cadets.

**LDS Missions.** Students, including scholarship recipients, who wish to serve a two-year LDS mission can do so most conveniently between their freshman and sophomore years. This allows students to be on campus during the spring of their sophomore year to facilitate their selection for the advanced course. Interruptions of the program at other times for a mission may be arranged by obtaining individual approval from the professor of military science.

**Leadership Laboratory.** Each course requires a corresponding leadership lab, which meets on Thursdays for three hours. The labs require physical activity, including: land navigation, mountaineering, rope bridging, marksmanship, and tactical training. Students are also expected to attend physical fitness training three times a week and one field training exercise per semester.

**Program of Instruction.** The ROTC Leadership Excellence Program is designed to produce commissioned officers for the United States Army. It has been described as the best leadership program in the nation. Training is experiential and demands that students practice leadership skills while completing their baccalaureate degree in their chosen course of study. Ultimately, students become qualified to serve as commissioned officers in the Regular Army, National Guard, or Army Reserve. Upon graduation and follow-on training, these officers immediately become the leaders of soldiers deployed abroad or at home in defense of the United States and her values. After graduation, it is possible for Reserve or Guard officers to fulfill their military obligation and pursue a civilian career simultaneously. Following the completion of service, BYU ROTC graduates often become effective leaders in their community,

business, and church endeavors and are actively recruited for Fortune 500 companies.

## Program Requirements

1. The traditional Army ROTC Leadership Excellence Program extends over a four-year period compatible with normal progression through four years of college. It consists of two phases: a two-year basic course during the freshman and sophomore years and an advanced course designed for completion during the junior and senior years. Also included is a five-week Leadership Development and Assessment Course normally attended in the summer before the senior year. Students may receive academic credit for the first two years of ROTC by attending the month-long Leaders' Training Course, (LTC) during the summer before the start of the advanced course. Basic course students are required to complete eligibility paperwork during the first two weeks of class.

   Scholarship students and students wishing to participate in the advance course must pass the Army Physical Fitness Test with a score of 60 points in each event. See an Army ROTC faculty member for more information.

   **Two-year program:** Qualified veterans or students with placement credit for the basic course or LTC with requirements for the advanced course. Applicants for this two-year program may be upper-division or graduate students, provided a minimum of four semesters remain at BYU at the time of entry into the program. Students must complete a physical examination and other associated requirements. The professor of military science must approve any exceptions for those seeking to accelerate the advance course and earn an officer's commission in less than two years.

2. Non-scholarship freshman and sophomore students incur no military obligation. Upon entering the advanced course, students agree to enlist in the U.S. Army Reserve Control Group for a period of eight years; they are then sworn into the reserve and begin to receive the monthly $450 to $500 subsistence allowance.

3. Non-U.S. citizens may participate in the basic course provided they obtain approval from their consulate and the BYU international student division and their travel documents are in order. International students apply for enrollment on a case-by-case basis but cannot participate in the advanced course unless they are pending citizenship. They may not be commissioned as officers until they are U.S. citizens.

4. To receive a commission as a second lieutenant in the U.S. Army, students must earn a baccalaureate degree and complete the advanced course. Those who are in a five-year academic program, such as engineering, may complete their Army ROTC courses at any point before graduation.

5. Upon commissioning, the new second lieutenant incurs an obligation to the U.S. Army, which may be filled by serving on Active Duty, in the U.S. Army Reserve, National Guard, Individual Ready Reserve (IRR), or various combinations of the above.

6. The basic course comprises the following:
   Mil S 120, 121, 220, 221.

7. The advanced course comprises the following:
   Mil S 320, 321, 420, 421.

8. Professional Military Education (PME): Before being commissioned, each cadet must complete one of the following military history courses during their course of study at BYU:
   Hist 220, 221, 293, 371, 372, 373, 374, 376, 391.

9. All contracted cadets are required to enroll in STAC 143R each semester or Mil S 425R for the physical training requirement.

**Note:** Courses not specified above may satisfy the requirement but only if approved by the professor of military science prior to enrollment.

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**Military Science (Army ROTC) Department Home**

**Minor**

- Minor in Military Science

**Course Information**

- Military Science (Army ROTC) (Mil S) Courses

**Faculty**

# Minor in Military Science (16 hours)

Show All Course Descriptions
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## Program Requirements

1. Complete the following:

MIL S 320 : Adaptive Team Leadership. (4:3:3)

WHEN TAUGHT: Fall

DESCRIPTION: Adaptive leadership skills; demands of leadership in tactical and garrison situations. Cadets have multiple opportunities to lead one another and receive feedback on leadership abilities. Lab included.

**Course Outcomes**

- Outcome 1 – Member of a TeamWillingly subordinates self-interest to the needs of the teamCadet will have to spend several hours outside of the classroom to ensure that junior Cadets are prepared for leadership labs and various other ROTC functionsCDTs understand that he must put the needs of his Squad/Platoon before the needs of himself/herself to ensure overall mission successContinued evaluation and feedback during practical exercises in field as well as “garrison operations”
- Outcome 2 – Tactical Problem SolverCommunicates plans effectivelyCadet will be given tactical scenarios in which they will have to develop a plan for their team and communicate that plan to their teammatesCDTs will receive real time feedback on if they had a solid plan and how well others understood that plan during leadership labsThis may lead to expanding either the Operations Order Process or further review of tactics based on the CDTs performance
- Outcome 3 – Understands the roles of officers and NCOs in the ArmyKnows enough about the various branches to make an informed decision when selecting oneEach CDT will choose a branch and research, then present a five minute “Military Information Brief” on what they learned about the branch they chose to the other CDTs in the classCDTs overall understand most Army branches, particularly those that were of initial interest to themNo change
- Outcome 4 – LeadershipLeads by exampleWill have multiple opportunities to lead junior CDTs as well as peers both during leadership lab and other eventsCDT realizes that setting the example in what they do and how they conduct themselves has a larger impact on their ability to lead rather than by simply giving guidance to othersThis will be continually reinforced throughout the school year, no change needed
- Outcome 5 – LeadershipAccepts accountability for self and unitCDT will be given multiple leadership opportunities in which they are responsible not only for their success or failures but those of their team as wellCadets will take ownership of teams actions, will give praise to their team for mission success but will take ownership of team failures and attempt to correct what when wrongPlace a large emphasis on this during end of semester counseling
- Outcome 6- LeadershipEnsures subordinates and unit are prepared for the missionCDT will receive orders concerning upcoming events from higher level leadership and ensure that order is passed down to other team membersCDT will effectively conduct the orders process and brief his team. He will also conduct back briefs and inspections to ensure his/her team members are preparedAdditional one on one counseling as necessary
- Outcome 7- LeadershipCoaches subordinates effectively and provides them with useful feedbackWhile in leadership roles, CDTs will have multiple opportunities to coach, teach, and mentor junior level CDTsCDT will conduct after action reviews of leadership labs with team as well as counseling team members on a consistent basis
- Outcome 8- CharacterCommitted to physical fitnessCDT will take multiple physical fitness tests and conduct other physically demanding eventsCDT will understand that physical fitness is more than an event you conduct but a lifestyle changeAdditional physical training as necessary
- Outcome 9- CharacterLives the Army ValuesCDT will be continually assessed on living his life in accordance with the Army Values which are: Loyalty, Duty, Respect, Selfless Service, Honor, Integrity, and Personal CourageCDT realizes that Army values are not just what is done while on “Army Time” but a code in which you live your lifeAdditional counseling as needed. Cadet me be removed from the program for “serious” infractions of these values
- Outcome 10- CharacterDemonstrates Self ConfidenceCDT will have multiple opportunities during leadership labs and class work in which he/she can project self-confidenceCDTs will demonstrate more confidence as the semester goes on and they have an opportunity to be placed in leadership roles in a myriad of different situationsAdditional one on one counseling as necessary
- Outcome 11- Individual ProficiencyProficient at land navigationCDT will be given multiple opportunities to conduct land navigation at local coursesCDT will demonstrate proficiency at land navigation by the end of the semester in both day and night time conditionsAdditional volunteer land navigation courses will be offered that CDTs who are lacking at this skill will be strongly encouraged to attend
- Outcome 12- Individual ProficiencyProficient with tactical communicationsCDT will communicate via radio to higher level leadership with various military reports in a tactical situationCDT will follow proper formatting of tactical communications and send reports in a timely mannerAdditional one on one instruction will be given as needed

MIL S 321 : Leadership in Changing Environments. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: Must be contracted in ROTC program.

DESCRIPTION: Using intense real-world leadership situations to build skills in leading small units, decision-making, persuasion, and motivation when "under fire." Final preparation and evaluation prior to attendance at Leader Development and Assessment Course (LDAC). Lab included.

**Course Outcomes**

- Outcome 1 – Member of a TeamUnderstands, can explain, and takes appropriate actions on contactCDT will make “enemy” contact during leadership labs on a weekly basisCDT acts appropriately given the size of the enemy force, their location, the rules of engagement, and the terrain around themCDT will receive feedback after every lab and proper techniques as well as errors will be highlighted
- Outcome 2 – Tactical Problem SolverSolve tactical problems using principles that underlie doctrine and war fightingQuizzes and multiple tactical problems at leadership labsCDT utilizes proper Army doctrine for several different tactical problems that he/she will faceCDT will receive feedback after every lab and proper techniques as well as errors will be highlighted
- Outcome 3 – Understands the roles of officers and NCOs in the ArmyAccepts sacrifices required as a servant to the NationCDT will take a quiz on selfless-service and perform local community service during the semesterCDT understands that as a leader you are truly a servant to those you lead as well as to the Nation as a wholeAdditional one on one counseling as necessary
- Outcome 4 – LeadershipLeads by exampleWill have multiple opportunities to lead junior CDTs as well as peers both during leadership lab and other eventsCDT realizes that setting the example in what they do and how they conduct themselves has a larger impact on their ability to lead rather than by simply giving guidance to othersThis will be continually reinforced throughout the school year, no change needed
- Outcome 5 – LeadershipCares for and is actively involved in the success of subordinatesCDT will have multiple opportunities to help and assist subordinates in ROTC, academic, and life successCDT understands that individual achievement truly mean very little if those that work for you are unable to complete necessary tasks in numerous aspects of lifeThis will be continually reinforced throughout the school year, no change needed
- Outcome 6- LeadershipJudged by subordinates as capable, confident, and trustworthyCDT will lead subordinates through multiple tactical and garrison events throughout the semester in which subordinates will react to their leaders ability to lead them successfullyCDT realizes that leadership and management are two very different things and that if you aren’t capable, confident, and trustworthy no one will want to followAdditional one on one counseling as necessary
- Outcome 7- LeadershipAllows subordinates latitude in how to accomplish a mission and holds them accountableCDT will have multiple teams work for him at a time in which he will have to issue general guidance rather than direct instructionCDT will understand that micromanagement leads to decreased productivity and does very little to develop subordinatesAdditional one on one counseling as necessary
- Outcome 8- CharacterDemonstrates self-disciplineCDT will have multiple opportunities to show self-discipline during physical training, leadership labs, and other ROTC eventsCDT will understand that you are not self-disciplined in a few aspects of your life, but rather either you are a self-disciplined individual or you are notAdditional one on one counseling as necessary
- Outcome 9- CharacterPerforms successfully under stressCDT will be placed in a multitude of “controlled” stressful environments during labs and a field training exerciseCDT is able to rely on training and a solid knowledge base to know what actions must be takenCDT will receive feedback after every lab and proper techniques as well as errors will be highlighted
- Outcome 10- CharacterDemonstrates commitment to personal and professional growthCDTs will talk one on one with instructor at the beginning of the semester to lay out plans on how the CDT plans on growing both personally and professionally throughout the semesterCDT will take the additional out of classroom time necessary to ensure their success with those they lead as well as other academic, physical, and spiritual needsCDTs will talk one on one with instructor at the end of the semester to asses if plan worked and what still needs to set new goals
- Outcome 11- Individual ProficiencyDemonstrates the fundamentals of the assault rifleCDT will load, shoot, change magazines, correct malfunctions, disassemble and reassemble an Army type assault rifle in a safe mannerCDT understands the importance in handling firearms in a safe manner and gains confidence in doing soNo Change
- Outcome 12- Individual ProficiencyProficient at maintaining self and equipment in a field environmentCDT will spend 2-4 days in a “field” environment towards the end of the semesterCDT will perform the necessary steps to take care of themselves in addition to all equipment that they are responsible for in an austere environmentSupervised heavily by instructors, CDTs will receive guidance and “on the spot” corrections as necessary

MIL S 420 : Developing Adaptive Leaders. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: Must be contracted in ROTC program.

DESCRIPTION: Developing proficiency in planning, executing, and assessing operations; functioning on a staff; and providing feedback to subordinates with situational real-world opportunities to assess risk, make decisions, and coach others. Emphasizes leadership ethics. Lab included.

**Course Outcomes**

- Outcome 1 – LeadershipApply Army leadership dimensions and core competencies as cadet battalion leadersEvaluated CDT assigned positions in the cadet chain of commandLeadership Philosophy paper and presentationCDTs understand the simple definition of each dimension and core competency; however they lack examples of them in everyday leadershipContinued evaluation and feedback during practical exercises in field environment
- Outcome 2 – LeadershipAssess fellow cadets using the (LDP) Leadership Development ProgramCadets are assigned underclass cadets to assess – feedback is provided verbally and collected via card systemCDTs are readily able to provide feedback; but need to be holistic in their evaluationsProvide LDP class and one of the first lessons and then follow up throughout the semester
- Outcome 3 – Values and EthicsApply military professional ethics in decision makingQuizDemonstrate application during Practical Exercises at Leadership labs and FTXApply in Leadership PhilosophyCDTs demonstrate good mastery of these outcomes in PEsNo change
- Outcome 4 – Values and EthicsRelate the Law of Land Warfare and rules of engagement (ROE) to Army OperationsApplication to Leadership Lab PEs and FTXIntegrate into daily performance assessmentsBasic understanding is mastered – need continued examples in PEsIntroduce additional variables to Leadership Labs and FTX to challenge cadets ethical decision making

- Outcome 5 – Values and EthicsExplain your obligations as a US service member under the code of conductMid-TermLeadership PhilosophyCadets generally master this outcomeNeed to add emphasis regarding the importance of oaths and codes to ensure they are applied for the rest of their professional careers
- Outcome 6 – Values and EthicsUnderstand your role in the UCMJ process and explain the types of administrative discipline and separationsQuizNeed constant re-enforcement and additional dedication to master this outcomeUse Army JAG guest speaker to further develop the topic in future coursesIntegrate into cadet battalion discipline PEs through the Chain of command
- Outcome 7 – Personal DevelopmentIdentify resiliency training skills in the Comprehensive Soldier Fitness program (CSF)Leader Challenge Practical ExerciseCounseling PELeadership Philosophy12 O'Clock High Final ExamCritical skill which we continue to develop and must consistently be developed throughout a cadet and officer's careerContinue to reinforce resiliency training at every opportunity
- Outcome 8 – Personal DevelopmentIdentify methods to reduce and manage stress as a leaderLeader Challenge Practical ExerciseCounseling PELeadership Philosophy12 O'Clock High Final Ex.Critical skill which we continue to develop and must consistently be developed throughout a cadet and officer's careerIntegrate stress reduction, positive visual imagery, and relaxation techniques to future courses
- Outcome 9 – Personal DevelopmentWrite and brief effectivelyLDP EvaluationsLeadership Philosophy presentationsMDMP and Cadet Chain of command responsibilitiesMost understand the basic tenants of the Army writing style; however they need to apply it in all written communication.Continue to work verbal communication and briefing skillsInclude additional short written requirements as well as briefings to further develop command presence and effective communication skills
- Outcome 10 – OfficershipExplain the profession of arms and officership as it relates to civilian professionsQuizPresentationGenerally good masteryNo change
- Outcome 11 – OfficershipPlan, conduct, and evaluate ROTC training and other programs as a member of the chain of command or staff (Army Training Management)Chain of command and staff positionsLDP evaluationsLeadership PhilosophyLeadership Labs and FTXGeneral understanding is good – however cadets need to learn to plan further in advance and use all 8 steps of the process to include MDMPRefined weekly cadet training meeting format will facilitate understanding accountability for training and facilitate planning further into advance
- Outcome 12 – OfficershipUnderstand the duties of staff organization roles and responsibilitiesChain of command and staff positionsMid-termLeadership PhilosophyLeadership Labs and FTXNeed to continue working on delegation and task managementGeneral understanding of staff roles exists – but need to develop trust that all members will accomplish assigned tasksContinued empowerment of cadet chain of command to understand scope of responsibilities and then hold cadets accountable for mission accomplishment
- Outcome 13 – OfficershipCounsel underclass cadets to improve performanceChain of command and staff positionsCadet mentorship programConcept of being responsible for others is clear – but cadets need to formalize their mentorship and counselingDevelop leader books and check every 3 weeks to ensure compliance. Additional accountability for development of MS 320/321 cadets
- Outcome 14 – Explain the importance of actively managing your career as an Army officerPersonal Leadership PhilosophyCounseling with PMSCDTs understand what they see on a re-occurring basis; however they need additional exposure to options early in their cadet careersIntegrate this outcome into MS 220 and MS 320 courses
- Outcome 16 – Tactics and TechniquesMentor and evaluate underclass cadets during tactical operationsLDP Cadet EvaluationsCadet mentorship programChain of command and staff responsibilitiesMS 420 cadets do a good job coaching and teaching tactics to underclassmen – but need to work on providing quality written feedback to go with the verbal feedbackWritten evaluations with each verbal evaluation
- Outcome 17 – Tactics and TechniquesApply training management process using the 8 step training modelChain of command and staff positionsLDP evaluationsLeadership PhilosophyLeadership Labs and FTXGeneral understanding is good – however cadets need to learn to plan further in advance and use all 8 steps of the process to include MDMPRefined weekly cadet training meeting format will facilitate understanding accountability for training and facilitate planning further into advance
- Outcome 18 – Tactics and TechniquesEffectively use Troop Leading Procedures and the Military Decision Making Procedure (MDMP)Demonstrate through planning, coordination and execution of 8 step training modelChain of command and staff positionsLeadership Labs and FTXCadets utilize TLPs effectively; however need additional practice with MDMP to make effective recommendations to the commanderUse MDMP for major staff projects to include the FTX, military ball etc.

MIL S 421 : Leadership in a Complex World. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: Must be contracted in ROTC program.

DESCRIPTION: Dynamics of leading military operations. Subjects include military law, principles of war, operations, training, and logistics. Presented in context of modern battlefield. Culminates with commission as an officer in the U.S. Army. Lab included.

**Course Outcomes**

- 1. Character and Accountability. Synthesizes all aspects of Army Values and Warrior Ethos and demonstrates the courage, character, physical and mental toughness and values required to succeed as an Army OfficerWarrior Ethos QuizBattle Analysis PresentationBattle of Bear River Presentations and Staff RideDemonstrate personal example while in leadership positionsStudents can define, understand and demonstrate the Army values and Warrior ethos in their daily lives. Some struggle to demonstrate commitment as the semester continues as demonstrated by inconsistent meeting of suspenses / attendanceClearly articulate expectations in writing and verbally during initial counseling to include a commitment resulting in at least cheerful cooperation leading to heartfelt commitment and creative excitement
- 2. Professional competence. Demonstrates the ability to plan, prepare, and execute platoon-level training strategies including individual and collective tasks to enable mission accomplishment.Application of 8 step training model during weekly Company training meetingsPE – Assistant S3 as Lab OICPlan and execute Leadership Lab, FTX, MS III FTX, PTCadets demonstrate significant improvement in this area during the course of the yearSustain current method
- 3. Critical Thinking & Problem Solving. Recognizes and analyzes ambiguous situations, and develops solutions to tactical, ethical, and leadership problems facing a newly commissioned officer.Leader Challenge exercisesProfessional Reading ReflectionsBattle AnalysisBear River Battlefield Staff Ride PEPlan, coordinate, execute, assess, and provide feedback during tactical training events (FTX, leadership lab, PT)Cadets demonstrate critical thinking through analysis of problems, however lack creativity in their solutions, instead focusing on traditional proven solutionsIncrease the use of leader challenges and more detailed battle analysis and analysis of professional reading to expose students to a greater variety of moral / ethical / tactical situations resulting in more creative solutions

- 4. Adaptability & initiative. Able to apply agile and adaptive decisions in a complex and ambiguous environment.Plan, coordinate, execute, assess, and provide feedback during tactical training events (FTX, leadership lab, PT)Battle Analysis Over the course of the semester and multiple iterations approx. 75% of Cadets demonstrate adaptability to changing situations and 80% demonstrate initiative within the commanders intentStart each MON class with a leader challenge designed to have students apply initiative and adaptability in a real world situation and then discuss various ways to accomplish the mission
- 5. Team Building and Collaboration. Demonstrates the ability to build and sustain multi-functional teams in a complex, uncertain environment and able to accomplish the mission within the commander's intent.Demonstrate personal example while in leadership positionsGroup projects: Battle Analysis and present Army training in classroom settingGenerally Cadets demonstrate this outcome by the end of the course.Sustain
- 6. Cultural Competence. Assess the impacts of cultural differences on military operations and anticipate the consequences of the Army's interaction with disparate stake holdersProfessional Reading reflectionsBattle AnalysisBear River Battlefield Staff RideCultural application to various real world situations (current events discussions)PE at Leadership LabCadets generally recognize the importance of understanding foundational cultural concepts and cross cultural competency.Continue to use leadership challenges which require application of local cultural conceptsReinforce foreign language and foreign cultural understanding through the order of merit list and CULP integrationRequire participation in multi-cultural center event
- 7. Communication & Engagement (oral, written, and negotiation). Analyzes and synthesizes the communication process in order to use effectively as a leader.Professional Reading reflectionsCombat Leadership Seminar participation and reflectionsOPORDs and FRAGOs as part of 8 step training modelPresent Army standard training in classBattlefield Staff Ride presentationsBattle AnalysisCadets in general produce a minimum of 6 Army memorandums, 2-4 tactical orders in writing and conduct a minimum of 5 oral presentations. The number of products is generally about right to correct bad habits and gain confidence in oral presentation capability. They still lack quality after action reviews (feedback) in writing and orally to assessed CadetsSustain current requirements with expanded feedback sessions to produce leaders who are focused on developing others without beating them down. PE on AARs in class followed by weekly exercises after leadership labs and PT class sessions to improve quality of AARs
- 8. Lifelong Learning. Applies the principles of lifelong learning and continued education ensuring personal, professional, and organizational improvement.Professional reading reflectionsLeadership Seminar participation and reflectionsNCO and Officer ForumsPerformance counseling – set goals in all areas of fitness, track progress and assess including incorporating peer feedbackCadets demonstrate good habits of personal lifelong learning and development through consistent setting and achieving goals in all areas over the course of the AY.Add alumni follow up assessments on lifelong learning habits carried over from MS 420 and MS 421 into their professional lives as officers in the US Army 1 year after commissioning
- 9. Comprehensive Fitness. Demonstrate leader responsibilities in the Comprehensive Soldier Fitness program to reduce and manage stress (spiritual, psychological, physical).Plan, coordinate, execute, assess and provide feedback for a unit physical fitness programPerformance counseling – set goals in all areas of fitness, track progress and assess including incorporating peer feedbackCadets generally demonstrate consistent improvement in the 5 dimensions of Comprehensive Soldier Fitness, stress management techniques, physical fitness improvement and resiliencySustain current programs especially in stress management, spiritual and physical fitness. Continue to focus on resiliency and toughness through regularly challenging Cadets to push themselves to their limits

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**Minor**

- Minor in Military Science

**Course Information**

- Military Science (Army ROTC) (Mil S) Courses

**Faculty**

# Military Science (Army ROTC) (Mil S)

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## Undergraduate Courses

### 100-Level Courses

MIL S 120 : Leadership and Personal Development. (2:1:3)

WHEN TAUGHT: Fall

DESCRIPTION: Developing comprehension of Army leadership dimensions, focusing on critical thinking, time management, and fitness. Introduction to the corps of cadets; building courage and self-confidence. Lab included.

**Course Outcomes**

- O1 – Individual ProficiencyProficient at Land NavigationIn-Class Land Navigation Quiz and a practical exercise (graded) during LabCadets must score 80% or higher on the quiz and find at least 75% of the Land Nav points at LabCadets who fail to achieve the standards will be partnered up with more proficient Cadets and be retested during our FTX
- O2 – Individual ProficiencyProficient at maintaining self and equipment in the fieldWeekly pre-lab inspection of equipment and self, conducted by peersDeficiencies will be identified and reported up the chain of commandDeficient Cadets will be counselled by peer and faculty
- O3 – Member of a TeamSubordinates self-interest to the needs of the teamCadets will be put into tactical situations weekly enabling leadership to identify selfless service to othersCadets displaying selfless service (aka putting needs of others above their own) will be recognized during the AARsCadets who are observed showing signs of only caring about themselves will be counselled by faculty
- O4 – Member of a TeamUnderstands, can explain and takes proper actions on contactIn-class quiz on actions on contact as well as tactical operations during weekly labs that will require reacting to direct and indirect enemy contactCadets must score 80% or higher on the quiz and will need to react properly during tactics lab or risk being “shot” by the enemyCadets who fail to achieve the standards will receive one on one training by their Cadets peers and or their Cadet mentors
- O5 – Tactical Problem SolverUnderstands the roles and capabilities of a brigade combat team in combatIn-class quiz on small team organization and proper movement techniques as well as practical app during LABCadets must score 80% or higher and physically demonstrate moving as part of a team during LABCadets who fail to achieve the standard will be counselled and retested at LAB by their peers and Cadet mentors/ evaluators
- O6 – Tactical Problem SolverCommunicates plans effectivelyCadets will each get to brief an operational plan/ order in-class and be evaluated by their peersCadets must score 80% or higherCadets who score below 80% will receive counselling and receive a second chance to brief
- O7 – Roles of NCOs OsCan discuss critically the role of the Army officer as trainer and leaderWritten book review on an Army officer of their choice, highlighting both good and bad leadership traits Cadets must score 80% or higher on the book review, which will be read and graded by their instructor Cadets who fail to achieve the standard will receive their graded book review back and be asked to rewrite it
- O7 – Roles of NCOs OsCan discuss critically the role of the Army officer as trainer and leaderWritten book review on an Army officer of their choice, highlighting both good and bad leadership traits Cadets must score 80% or higher on the book review, which will be read and graded by their instructor Cadets who fail to achieve the standard will receive their graded book review back and be asked to rewrite itO8 – Roles of NCOs OsAccepts sacrifices required as a servant to the nation
- O9 – LeadershipLeads by exampleCadets will receive leadership opportunities and be observed weekly during tactics Lab and recognized during After Action ReviewsCadets must demonstrate basic leadership skills while working as a member of a team, squad or platoonCadets who fail to lead in positive ways will be counselled by their Cadet evaluators and on-scene faculty members
- O10 - LeadershipJudged by subordinates as capable, confident and trustworthyCadets will conduct written peer evaluations on each other as part of their midterm and final examsCadets must receive an overall peer evaluation rating of 70% or higherCadets who fail to reach 70% will be counselled by their MS instructor and plan a course of action for the rest of the semester
- O11 – CharacterLives the Army ValuesWill write a comparative essay on one of their personal heroes and how they demonstrated the Army ValuesCadets must score 80% on their essay, which will be read, marked up and returned to them by their instructorCadets who fail to achieve the standard will be asked to rewrite their essay and resubmit it to their instructor
- O12 – CharacterDemonstrate ResilienceCadets will conduct a multi-day Field Training Exercise during which they will asked to conduct graded tactical operations on little or no sleep and in austere mountainous conditionsCadets must demonstrate the ability to stay positive, work as a member of a team and complete (or at least attempt) each task or mission despite poor eating and sleeping conditionsCadets who fail to demonstrate resilience during training will be counselled and asked to continue training with a new perspective. If they refuse to complete training they will not get full credit for the FTX

MIL S 121 : Introduction to Tactical Leadership. (2:1:3)

WHEN TAUGHT: Winter

DESCRIPTION: Leadership fundamentals; setting direction, problem solving, listening, presentation skills, and providing feedback. Integration into the corps of cadets through tactical field training. Lab included.

**Course Outcomes**

- Demonstrate lessons learned in class to basic Team Leader roles in a Lab EnvironmentAs a Team Leader, show working knowledge of Basic Army Leadership traits
- Demonstrate a working knowledge of the Army's Programs on Equal Opportunity (EO), Prevention of Sexual Harassment (POSH), and Sexual Assault Prevention and Response (SAPR)
- Prepare a discussion paper through research of an Army Officer in history who held and displayed values one would like to emulateDemonstrate a dedication to personal professional development through writing a self-critiquing journal based on one's leadership sucesses and failures
- Show working knowledge of Army Customs and Courtesies by correctly wearing the Army battle and dress uniforms, speaking to senior officers and NCOs, and attending the Army Ball adhering to all rules and regulations set forth
- Show a working knowledge of basic Terrain Analysis and how it applies to battlefield environmentsUnderstand the basic format of the Army's 8 step training model and how they are infused in that process

### 200-Level Courses

MIL S 220 : Innovative Team Leadership. (3:2:3)

WHEN TAUGHT: Fall

DESCRIPTION: Creative leadership strategies and styles; team dynamics; leadership theory; the Army leadership framework. Includes basics of land navigation and squad tactics. Lab included.

**Course Outcomes**

- Recall and describe the three stages of team developmentIllustrate significant traits and behaviors of historical military leaders
- Explain the historical basis of Army valuesIllustrate the four tenets of the Warrior Ethos
- Deliver a formal information briefingList the types and elements of interpersonal communication
- Distinguish and Describe rank, structure, duties, and traditionsExplain the nine Principles of War
- Practice and demonstrate land navigation techniquesExplain the six problem solving stepsList and know the eight troop leading procedures

MIL S 221 : Foundations of Tactical Leadership. (3:2:3)

WHEN TAUGHT: Winter

DESCRIPTION: Challenges of leading tactical teams in contemporary operations environment of the U.S. Army, focusing on Army Orders process, terrain analysis, and adaptive leadership. Lab included.

**Course Outcomes**

- Explain the situational, transformational, and adaptive leadership theories and their relationship to the Army Leadership Requirements ModelIllustrate dimensions of transformational and situational leadershipDescribe methods of assessing leadership stylesExplain your personal approach to leadership
- Explain the Army Values and the Army's Consideration of Others (CO2) programIdentify and asses the goals of the Army CO2 program (eight areas)Analyze the relationship between Army values, leadership, and CO2
- Practice effective writing techniques in accordance with the Army standard for effective writingExplain how to set goals and manage time at the team levelDevelop team mission statement and goalsExplain and know ways to establish priorities and avoid distracters
- Describe the history of terrorism and the basic US antiterrorism policyExplain and state the relationship between leadership, values, and officership
- Distinguish between the different types of Army plans and ordersDemonstrate terrain analysis and route planning skillsExplain and remember the five-paragraph format for an operations orderDescribe the characteristics and techniques of defensive operationsExplain how squads and platoons plan for and conduct patrolsList and describe the five aspects of military terrain using (OAKOC)Interpret and formulate an operation order

### 300-Level Courses

MIL S 320 : Adaptive Team Leadership. (4:3:3)

WHEN TAUGHT: Fall

DESCRIPTION: Adaptive leadership skills; demands of leadership in tactical and garrison situations. Cadets have multiple opportunities to lead one another and receive feedback on leadership abilities. Lab included.

**Course Outcomes**

- Outcome 1 – Member of a TeamWillingly subordinates self-interest to the needs of the teamCadet will have to spend several hours outside of the classroom to ensure that junior Cadets are prepared for leadership labs and various other ROTC functionsCDTs understand that he must put the needs of his Squad/Platoon before the needs of himself/herself to ensure overall mission successContinued evaluation and feedback during practical exercises in field as well as "garrison operations"
- Outcome 2 – Tactical Problem SolverCommunicates plans effectivelyCadet will be given tactical scenarios in which they will have to develop a plan for their team and communicate that plan to their teammatesCDTs will receive real time feedback on if they had a solid plan and how well others understood that plan during leadership labsThis may lead to expanding either the Operations Order Process or further review of tactics based on the CDTs performance
- Outcome 3 – Understands the roles of officers and NCOs in the ArmyKnows enough about the various branches to make an informed decision when selecting oneEach CDT will choose a branch and research, then present a five minute "Military Information Brief" on what they learned about the branch they chose to the other CDTs in the classCDTs overall understand most Army branches, particularly those that were of initial interest to themNo change
- Outcome 4 – LeadershipLeads by exampleWill have multiple opportunities to lead junior CDTs as well as peers both during leadership lab and other eventsCDT realizes that setting the example in what they do and how they conduct themselves has a larger impact on their ability to lead rather than by simply giving guidance to othersThis will be continually reinforced throughout the school year, no change needed

- Outcome 5 – LeadershipAccepts accountability for self and unitCDT will be given multiple leadership opportunities in which they are responsible not only for their success or failures but those of their team as wellCadets will take ownership of teams actions, will give praise to their team for mission success but will take ownership of team failures and attempt to correct what when wrongPlace a large emphasis on this during end of semester counseling
- Outcome 6- LeadershipEnsures subordinates and unit are prepared for the missionCDT will receive orders concerning upcoming events from higher level leadership and ensure that order is passed down to other team membersCDT will effectively conduct the orders process and brief his team. He will also conduct back briefs and inspections to ensure his/her team members are preparedAdditional one on one counseling as necessary
- Outcome 7- LeadershipCoaches subordinates effectively and provides them with useful feedbackWhile in leadership roles, CDTs will have multiple opportunities to coach, teach, and mentor junior level CDTsCDT will conduct after action reviews of leadership labs with team as well as counseling team members on a consistent basis
- Outcome 8- CharacterCommitted to physical fitnessCDT will take multiple physical fitness tests and conduct other physically demanding eventsCDT will understand that physical fitness is more than an event you conduct but a lifestyle changeAdditional physical training as necessary
- Outcome 9- CharacterLives the Army ValuesCDT will be continually assessed on living his life in accordance with the Army Values which are: Loyalty, Duty, Respect, Selfless Service, Honor, Integrity, and Personal CourageCDT realizes that Army values are not just what is done while on “Army Time” but a code in which you live your lifeAdditional counseling as needed. Cadet me be removed from the program for “serious” infractions of these values
- Outcome 10- CharacterDemonstrates Self ConfidenceCDT will have multiple opportunities during leadership labs and class work in which he/she can project self-confidenceCDTs will demonstrate more confidence as the semester goes on and they have an opportunity to be placed in leadership roles in a myriad of different situationsAdditional one on one counseling as necessary
- Outcome 11- Individual ProficiencyProficient at land navigationCDT will be given multiple opportunities to conduct land navigation at local coursesCDT will demonstrate proficiency at land navigation by the end of the semester in both day and night time conditionsAdditional volunteer land navigation courses will be offered that CDTs who are lacking at this skill will be strongly encouraged to attend
- Outcome 12- Individual ProficiencyProficient with tactical communicationsCDT will communicate via radio to higher level leadership with various military reports in a tactical situationCDT will follow proper formatting of tactical communications and send reports in a timely mannerAdditional one on one instruction will be given as needed

MIL S 321 : Leadership in Changing Environments. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: Must be contracted in ROTC program.

DESCRIPTION: Using intense real-world leadership situations to build skills in leading small units, decision-making, persuasion, and motivation when "under fire." Final preparation and evaluation prior to attendance at Leader Development and Assessment Course (LDAC). Lab included.

**Course Outcomes**

- Outcome 1 – Member of a TeamUnderstands, can explain, and takes appropriate actions on contactCDT will make “enemy” contact during leadership labs on a weekly basisCDT acts appropriately given the size of the enemy force, their location, the rules of engagement, and the terrain around themCDT will receive feedback after every lab and proper techniques as well as errors will be highlighted
- Outcome 2 – Tactical Problem SolverSolve tactical problems using principles that underlie doctrine and war fightingQuizzes and multiple tactical problems at leadership labsCDT utilizes proper Army doctrine for several different tactical problems that he/she will faceCDT will receive feedback after every lab and proper techniques as well as errors will be highlighted
- Outcome 3 – Understands the roles of officers and NCOs in the ArmyAccepts sacrifices required as a servant to the NationCDT will take a quiz on selfless-service and perform local community service during the semesterCDT understands that as a leader you are truly a servant to those you lead as well as to the Nation as a wholeAdditional one on one counseling as necessary
- Outcome 4 – LeadershipLeads by exampleWill have multiple opportunities to lead junior CDTs as well as peers both during leadership lab and other eventsCDT realizes that setting the example in what they do and how they conduct themselves has a larger impact on their ability to lead rather than by simply giving guidance to othersThis will be continually reinforced throughout the school year, no change needed
- Outcome 5 – LeadershipCares for and is actively involved in the success of subordinatesCDT will have multiple opportunities to help and assist subordinates in ROTC, academic, and life successCDT understands that individual achievement truly mean very little if those that work for you are unable to complete necessary tasks in numerous aspects of lifeThis will be continually reinforced throughout the school year, no change needed
- Outcome 6- LeadershipJudged by subordinates as capable, confident, and trustworthyCDT will lead subordinates through multiple tactical and garrison events throughout the semester in which subordinates will react to their leaders ability to lead them successfullyCDT realizes that leadership and management are two very different things and that if you aren’t capable, confident, and trustworthy no one will want to followAdditional one on one counseling as necessary
- Outcome 7- LeadershipAllows subordinates latitude in how to accomplish a mission and holds them accountableCDT will have multiple teams work for him at a time in which he will have to issue general guidance rather than direct instructionCDT will understand that micromanagement leads to decreased productivity and does very little to develop subordinatesAdditional one on one counseling as necessary
- Outcome 8- CharacterDemonstrates self-disciplineCDT will have multiple opportunities to show self-discipline during physical training, leadership labs, and other ROTC eventsCDT will understand that you are not self-disciplined in a few aspects of your life, but rather either you are a self-disciplined individual or you are notAdditional one on one counseling as necessary
- Outcome 9- CharacterPerforms successfully under stressCDT will be placed in a multitude of “controlled” stressful environments during labs and a field training exerciseCDT is able to rely on training and a solid knowledge base to know what actions must be takenCDT will receive feedback after every lab and proper techniques as well as errors will be highlighted
- Outcome 10- CharacterDemonstrates commitment to personal and professional growthCDTs will talk one on one with instructor at the beginning of the semester to lay out plans on how the CDT plans on growing both personally and professionally throughout the semesterCDT will take the additional out of classroom time necessary to ensure their success with those they lead as well as other academic, physical, and spiritual needsCDTs will talk one on one with instructor at the end of the semester to asses if plan worked and what still needs to set new goals
- Outcome 11- Individual ProficiencyDemonstrates the fundamentals of the assault rifleCDT will load, shoot, change magazines, correct malfunctions, disassemble and reassemble an Army type assault rifle in a safe mannerCDT understands the importance in handling firearms in a safe manner and gains confidence in doing soNo Change

- Outcome 12- Individual ProficiencyProficient at maintaining self and equipment in a field environmentCDT will spend 2-4 days in a “field” environment towards the end of the semesterCDT will perform the necessary steps to take care of themselves in addition to all equipment that they are responsible for in an austere environmentSupervised heavily by instructors, CDTs will receive guidance and “on the spot” corrections as necessary

MIL S 325R : Staff Organization and Operations. (1-2:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Must be contracted in ROTC program.

DESCRIPTION: Seminar in Army Staff Operations. Various opportunities for leadership and organiztional experience. Lab included.

**Course Outcomes**

- Outcome 1 – Values and EthicsExplore military professional ethics and ethical decision making facing an Officer in peacetime and wartimeCase studies of wartime scenarios from history with classroom discussion.Students complete monthly professional readings – at least one during the year detailing ethical decision making and dilemmas on the battlefield for leadersCDTs understand the complexities of military professional ethics when applied to peacetime and wartime and learn they must use wisdom when making decisions. Demonstrated through discussion and paper.Include a challenging ethical decision making scenario on the final exam that the cadets must describe what they would do if found in the same situation.
- Outcome 2 – LeadershipGain Practical experience in cadet battalion leadership rolesChain of command and staff positionsLeadership Labs and FTXGeneral understanding is good – however cadets need to learn to plan further in advance and use all 8 steps of the process to include MDMPRefined weekly cadet training meeting format will facilitate understanding accountability for training and facilitate planning further into advance
- Outcome 3 – LeadershipExpand and demonstrate skills as a member of an organizational staffChain of command and staff positionsMDMP Practical ExerciseStaff Position PresentationsMDMP is complicated and challenging for the cadets to understand. Greater focus needs to be shifted to staff roles and understanding of military staff integrationWill assign cadets to study a specific staff function and how it integrates into the greater military method.
- Outcome 4 – Values and EthicsPrepare for the transition to a career as an Army OfficerApplication to Leadership Lab PEs and FTXBasic understanding is mastered – need continued examples in PEsIntroduce additional variables to Leadership Labs and FTX to challenge cadets ethical decision making

**400-Level Courses**

MIL S 420 : Developing Adaptive Leaders. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: Must be contracted in ROTC program.

DESCRIPTION: Developing proficiency in planning, executing, and assessing operations; functioning on a staff; and providing feedback to subordinates with situational real-world opportunities to assess risk, make decisions, and coach others. Emphasizes leadership ethics. Lab included.

**Course Outcomes**

- Outcome 1 – LeadershipApply Army leadership dimensions and core competencies as cadet battalion leadersEvaluated CDT assigned positions in the cadet chain of commandLeadership Philosophy paper and presentationCDTs understand the simple definition of each dimension and core competency; however they lack examples of them in everyday leadershipContinued evaluation and feedback during practical exercises in field environment
- Outcome 2 – LeadershipAssess fellow cadets using the (LDP) Leadership Development ProgramCadets are assigned underclass cadets to assess – feedback is provided verbally and collected via card systemCDTs are readily able to provide feedback; but need to be holistic in their evaluationsProvide LDP class and one of the first lessons and then follow up throughout the semester
- Outcome 3 – Values and EthicsApply military professional ethics in decision makingQuizDemonstrate application during Practical Exercises at Leadership labs and FTXApply in Leadership PhilosophyCDTs demonstrate good mastery of these outcomes in PEsNo change
- Outcome 4 – Values and EthicsRelate the Law of Land Warfare and rules of engagement (ROE) to Army OperationsApplication to Leadership Lab PEs and FTXIntegrate into daily performance assessmentsBasic understanding is mastered – need continued examples in PEsIntroduce additional variables to Leadership Labs and FTX to challenge cadets ethical decision making
- Outcome 5 – Values and EthicsExplain your obligations as a US service member under the code of conductMid-TermLeadership PhilosophyCadets generally master this outcomeNeed to add emphasis regarding the importance of oaths and codes to ensure they are applied for the rest of their professional careers
- Outcome 6 – Values and EthicsUnderstand your role in the UCMJ process and explain the types of administrative discipline and separationsQuizNeed constant re-enforcement and additional dedication to master this outcomeUse Army JAG guest speaker to further develop the topic in future coursesIntegrate into cadet battalion discipline PEs through the Chain of command
- Outcome 7 – Personal DevelopmentIdentify resiliency training skills in the Comprehensive Soldier Fitness program (CSF)Leader Challenge Practical ExerciseCounseling PELeadership Philosophy12 O’Clock High Final ExamCritical skill which we continue to develop and must consistently be developed throughout a cadet and officer’s careerContinue to reinforce resiliency training at every opportunity
- Outcome 8 – Personal DevelopmentIdentify methods to reduce and manage stress as a leaderLeader Challenge Practical ExerciseCounseling PELeadership Philosophy12 O’Clock High Final Ex.Critical skill which we continue to develop and must consistently be developed throughout a cadet and officer’s careerIntegrate stress reduction, positive visual imagery, and relaxation techniques to future courses
- Outcome 9 – Personal DevelopmentWrite and brief effectivelyLDP EvaluationsLeadership Philosophy presentationsMDMP and Cadet Chain of command responsibilitiesMost understand the basic tenants of the Army writing style; however they need to apply it in all written communication.Continue to work verbal communication and briefing skillsInclude additional short written requirements as well as briefings to further develop command presence and effective communication skills
- Outcome 10 – OfficershipExplain the profession of arms and officership as it relates to civilian professionsQuizPresentationGenerally good masteryNo change
- Outcome 11 – OfficershipPlan, conduct, and evaluate ROTC training and other programs as a member of the chain of command or staff (Army Training Management)Chain of command and staff positionsLDP evaluationsLeadership PhilosophyLeadership Labs and FTXGeneral understanding is good – however cadets need to learn to plan further in advance and use all 8 steps of the process to include MDMPRefined weekly cadet training meeting format will facilitate understanding accountability for training and facilitate planning

further into advance
- Outcome 12 – OfficershipUnderstand the duties of staff organization roles and responsibilitiesChain of command and staff positionsMid-termLeadership PhilosophyLeadership Labs and FTXNeed to continue working on delegation and task managementGeneral understanding of staff roles exists – but need to develop trust that all members will accomplish assigned tasksContinued empowerment of cadet chain of command to understand scope of responsibilities and then hold cadets accountable for mission accomplishment
- Outcome 13 – OfficershipCounsel underclass cadets to improve performanceChain of command and staff positionsCadet mentorship programConcept of being responsible for others is clear – but cadets need to formalize their mentorship and counselingDevelop leader books and check every 3 weeks to ensure compliance. Additional accountability for development of MS 320/321 cadets
- Outcome 14 – Explain the importance of actively managing your career as an Army officerPersonal Leadership PhilosophyCounseling with PMSCDTs understand what they see on a re-occurring basis; however they need additional exposure to options early in their cadet careersIntegrate this outcome into MS 220 and MS 320 courses
- Outcome 16 – Tactics and TechniquesMentor and evaluate underclass cadets during tactical operationsLDP Cadet EvaluationsCadet mentorship programChain of command and staff responsibilitiesMS 420 cadets do a good job coaching and teaching tactics to underclassmen – but need to work on providing quality written feedback to go with the verbal feedbackWritten evaluations with each verbal evaluation
- Outcome 17 – Tactics and TechniquesApply training management process using the 8 step training modelChain of command and staff positionsLDP evaluationsLeadership PhilosophyLeadership Labs and FTXGeneral understanding is good – however cadets need to learn to plan further in advance and use all 8 steps of the process to include MDMPRefined weekly cadet training meeting format will facilitate understanding accountability for training and facilitate planning further into advance
- Outcome 18 – Tactics and TechniquesEffectively use Troop Leading Procedures and the Military Decision Making Procedure (MDMP)Demonstrate through planning, coordination and execution of 8 step training modelChain of command and staff positionsLeadership Labs and FTXCadets utilize TLPs effectively; however need additional practice with MDMP to make effective recommendations to the commanderUse MDMP for major staff projects to include the FTX, military ball etc.

MIL S 421 : Leadership in a Complex World. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: Must be contracted in ROTC program.

DESCRIPTION: Dynamics of leading military operations. Subjects include military law, principles of war, operations, training, and logistics. Presented in context of modern battlefield. Culminates with commission as an officer in the U.S. Army. Lab included.

**Course Outcomes**

- 1. Character and Accountability. Synthesizes all aspects of Army Values and Warrior Ethos and demonstrates the courage, character, physical and mental toughness and values required to succeed as an Army OfficerWarrior Ethos QuizBattle Analysis PresentationBattle of Bear River Presentations and Staff RideDemonstrate personal example while in leadership positionsStudents can define, understand and demonstrate the Army values and Warrior ethos in their daily lives. Some struggle to demonstrate commitment as the semester continues as demonstrated by inconsistent meeting of suspenses / attendanceClearly articulate expectations in writing and verbally during initial counseling to include a commitment resulting in at least cheerful cooperation leading to heartfelt commitment and creative excitement
- 2. Professional competence. Demonstrates the ability to plan, prepare, and execute platoon-level training strategies including individual and collective tasks to enable mission accomplishment.Application of 8 step training model during weekly Company training meetingsPE – Assistant S3 as Lab OICPlan and execute Leadership Lab, FTX, MS III FTX, PTCadets demonstrate significant improvement in this area during the course of the yearSustain current method
- 3. Critical Thinking & Problem Solving. Recognizes and analyzes ambiguous situations, and develops solutions to tactical, ethical, and leadership problems facing a newly commissioned officer.Leader Challenge exercisesProfessional Reading ReflectionsBattle AnalysisBear River Battlefield Staff Ride PEPlan, coordinate, execute, assess, and provide feedback during tactical training events (FTX, leadership lab, PT)Cadets demonstrate critical thinking through analysis of problems, however lack creativity in their solutions, instead focusing on traditional proven solutionsIncrease the use of leader challenges and more detailed battle analysis and analysis of professional reading to expose students to a greater variety of moral / ethical / tactical situations resulting in more creative solutions
- 4. Adaptability & initiative. Able to apply agile and adaptive decisions in a complex and ambiguous environment.Plan, coordinate, execute, assess, and provide feedback during tactical training events (FTX, leadership lab, PT)Battle Analysis Over the course of the semester and multiple iterations approx. 75% of Cadets demonstrate adaptability to changing situations and 80% demonstrate initiative within the commanders intentStart each MON class with a leader challenge designed to have students apply initiative and adaptability in a real world situation and then discuss various ways to accomplish the mission
- 5. Team Building and Collaboration. Demonstrates the ability to build and sustain multi-functional teams in a complex, uncertain environment and able to accomplish the mission within the commander's intent.Demonstrate personal example while in leadership positionsGroup projects: Battle Analysis and present Army training in classroom settingGenerally Cadets demonstrate this outcome by the end of the course.Sustain
- 6. Cultural Competence. Assess the impacts of cultural differences on military operations and anticipate the consequences of the Army's interaction with disparate stake holdersProfessional Reading reflectionsBattle AnalysisBear River Battlefield Staff RideCultural application to various real world situations (current events discussions)PE at Leadership LabCadets generally recognize the importance of understanding foundational cultural concepts and cross cultural competency.Continue to use leadership challenges which require application of local cultural conceptsReinforce foreign language and foreign cultural understanding through the order of merit list and CULP integrationRequire participation in multi-cultural center event
- 7. Communication & Engagement (oral, written, and negotiation). Analyzes and synthesizes the communication process in order to use effectively as a leader.Professional Reading reflectionsCombat Leadership Seminar participation and reflectionsOPORDs and FRAGOs as part of 8 step training modelPresent Army standard training in classBattlefield Staff Ride presentationsBattle AnalysisCadets in general produce a minimum of 6 Army memorandums, 2-4 tactical orders in writing and conduct a minimum of 5 oral presentations. The number of products is generally about right to correct bad habits and gain confidence in oral presentation capability. They still lack quality after action reviews (feedback) in writing and orally to assessed CadetsSustain current requirements with expanded feedback sessions to produce leaders who are focused on developing others without beating them down. PE on AARs in class followed by weekly exercises after leadership labs and PT class sessions to improve quality of AARs
- 8. Lifelong Learning. Applies the principles of lifelong learning and continued education ensuring personal, professional, and organizational improvement.Professional reading reflectionsLeadership Seminar participation

and reflectionsNCO and Officer ForumsPerformance counseling – set goals in all areas of fitness, track progress and assess including incorporating peer feedbackCadets demonstrate good habits of personal lifelong learning and development through consistent setting and achieving goals in all areas over the course of the AY.Add alumni follow up assessments on lifelong learning habits carried over from MS 420 and MS 421 into their professional lives as officers in the US Army 1 year after commissioning

- 9. Comprehensive Fitness. Demonstrate leader responsibilities in the Comprehensive Soldier Fitness program to reduce and manage stress (spiritual, psychological, physical).Plan, coordinate, execute, assess and provide feedback for a unit physical fitness programPerformance counseling – set goals in all areas of fitness, track progress and assess including incorporating peer feedbackCadets generally demonstrate consistent improvement in the 5 dimensions of Comprehensive Soldier Fitness, stress management techniques, physical fitness improvement and resiliencySustain current programs especially in stress management, spiritual and physical fitness. Continue to focus on resiliency and toughness through regularly challenging Cadets to push themselves to their limits

MIL S 425R : Tactical Leadership (Ranger Challenge). (2:3:16)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Current enrollment in AROTC program.

DESCRIPTION: Emphasis on fitness and tactical proficiency. Participation on University Ranger Challenge Team. Requires commitment and endurance. Provides insight into advanced Army professional training.

**Course Outcomes**

- Outcome 1:Leader DevelopmentStudents are given training guidance, mandatory training/class timeline, and expected outcomes from the instructor (CPT Young). From there it becomes the responsibility of the students to asses their available resources, identify their key training tasks, and build a detailed event timeline with a comprehensive training outline. Classes/training for each block of instruction/skill-set is supervised by class leadership and delegated to other students to become subject mater experts for their respective skill-sets and train the other students in the class.The students demonstrated solid leadership, good work ethic, and developed quality training. However, their training was not always nested within the initial guidance given by the instructor (CPT Young). This resulted in inefficiencies in lines of effort that were not focused on intended outcomes.Instructors' (CPT Young) initial guidance needs to be more specific and focused. Execution needs more supervision without crossing the threshold of diminishing an active learning environment.
- Outcome 2:Show-casing Military Skills and ExcellenceThe Ranger Challenge class (425R) allows students to enhance their military skills and show-case their efforts in high visibility culminating and evaluated events.Students enrolled in 425R demonstrate a greater understanding of leadership, tactics, and techniques by practical application throughout all classes, training exercises, and events within the BYU ROTC organization.BYU ROTC public affairs need to synchronize more effectively with campus and local media in order to not only show-case the achievements of the Ranger Challenge team within the ROTC organization, but also extend visibility to other student organizations across campus and the local community.
- Outcome 3:Building Relationships and CamaraderieDuring the class students work through the dynamics of peer leadership, working together as a team, competition with other teams, and professional interaction/coordination with foreign nations.The BYU Ranger Challenge team organized, synchronized, panned, and executed within the organization with effective conflict management and communication. During the Sandhurst Cup, an International competition at West Point Military Academy, the BYU Ranger Challenge team built lasting relationships with other US military organizations and foreign nations.
- Outcome 4:WinningThe Ranger Challenge Team, selected from the top 11 enrolled in the class, placed 1st overall in the Brigade Ranger Challenge Competition in Colorado. As the winner of the Brigade Competition, the team was selected to participate in the Sandhurst Cup at West Point Military Academy. The BYU Ranger Challenge team placed 14 out of 54 Participating teams from all over the world at the Sandhurst Cup.Competition is one of the key drivers for active learning in this tactical leadership class. The students are more focused, they work harder, and they put in more hours in order to achieve higher standards on individual and collective skill-sets for the benefit of the team.

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**Course Information**

- Military Science (Army ROTC) (Mil S) Courses

**Faculty**

# Military Science Faculty

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# Organizational Leadership and Strategy

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**Course Information**

- Management Communication (M Com) Courses
- Organizational Behavior (Org B) Courses

**Faculty**

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MA, Rensselaer Polytechnic Institute, 1978
PhD, Rensselaer Polytechnic Institute, 1985

## Assistant Professors

Bednar, Jeffrey
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2007
MAcc, Brigham Young University, 2007
PhD, University of Michigan, 2013

Hansen, Mark H.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1990
MBA, Brigham Young University, 1990
PhD, Texas A&M University, 1996

Hendron, Michael Greg
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1996
MBA, University of Virginia, 2000

Kryscynski, David
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BSE, University of Michigan, 2003
PhD, Emory University, 2011

Lewis, Ben
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2008
MAcc, Brigham Young University, 2008
PhD, Cornell University, 2014

Liljenquist, Katie
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BA, Arizona State University, 2000
MA, Northwestern University, 2004
PhD, Northwestern University, 2007

Morris, Shad
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1998
MA/MOB, Brigham Young University, 2000
PhD, Cornell University, 2006

Sillito-Walker, Sheli
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Organizational Leadership and Strategy
**RANK:** Assistant Professor

**DEGREES:** BS, Brigham Young University, 1995
MOB, Brigham Young University, 2000

**Marriott School of Management Home**

**Romney Institute of Public Management Home**

**Course Information**

- Public Management (P Mgt) Courses

**Faculty**

# Romney Institute of Public Management

Jeffery Thompson, Director
760 TNRB, (801) 422-7064

**Marriott School of Management Home**

**Romney Institute of Public Management Home**

**Course Information**

- Public Management (P Mgt) Courses

**Faculty**

# Romney Institute of Public Management Faculty

Show All
Hide All

## Professors

Agle, Brad
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1986
PhD, University of Washington, 1993

Walters, Lawrence C.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1981
PhD, University of Pennsylvania, 1987

## Associate Professors

Facer, Rex L.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1991
MPA, Brigham Young University, 1993
PhD, University of Georgia, 2002

Hart, David W.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1989
MPA, Brigham Young University, 1991
PhD, State University of New York, Albany, 1997

Nelson, Ray
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1975
MA, University of California, Berkeley, 1978
MS, University of California, Berkeley, 1978
PhD, University of California, Berkeley, 1981

Thompson, Jeffery A.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MBA, Brigham Young University, 1995
PhD, University of Minnesota, 1999

Wadsworth, Lori L.
**COLLEGE:** Marriott School of Management

**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Associate Professor
**DEGREES:** AS, West Valley College, 1980
BS, Brigham Young University, 1982
MPA, Brigham Young University, 1995
PhD, University of Utah, 2003

## Assistant Professors

Miller, Aaron
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2002
JD, Brigham Young University, 2006
MPA, Brigham Young University, 2006

Owens, Bradley
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2002
MPA, Brigham Young University, 2004
MOB, University of Washington, 2007
PhD, University of Washington, 2009

Silva, Chris E.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Assistant Professor
**DEGREES:** BS, Boston University, 1996
MS, University of Utah, 2000
MPA, Brigham Young University, 2004
PhD, Indiana University-Bloomington, 2010

Turley, Ty W.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2005
MSc, London School of Economics and Political Science, 2007
MA, University of Chicago, 2009
PhD, University of Chicago, 2013

Witesman, Eva
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Romney Institute of Public Management
**RANK:** Assistant Professor
**DEGREES:** BUS, University of Utah, 2000
MPA, Indiana University, Bloomington, 2004
PhD, Indiana University, Bloomington, 2008

**Marriott School of Management Home**

**Recreation Management Department Home**

**Major**

BS in Recreation Management
Emphases
- Experience Industry Mangement
- Therapeutic Recreation

**Minor**

- Nonprofit Management

**Course Information**

- Recreation Management (RecM) Courses

**Faculty**

# Recreation Management

Patti A. Freeman, Chair
W453 TNRB, (801) 422-3163

Marriott School of Management Advisement Center
460 TNRB, (801) 422-4285
Internet: www.marriottschool.byu.edu/bsmgt/advisement

## Admission to Degree Program

The degree program in the Department of Recreation Management is limited. Please see the Marriott School of Management Advisement Center for specific details.

## The Discipline

Students in the Department of Recreation Management may complete accredited emphases in Experience Industry Management (EIM) or Therapeutic Recreation (TR). The two emphases share a commitment to providing recreation opportunities, programs, and experiences focused on strengthening individuals, families, and communities. Therapeutic recreation and experience industry management, however, represent diverse approaches and opportunities for students. A minor in nonprofit management is also available.

Courses common to the two emphases prepare students in the areas of leadership and management skills, accounting and finance, marketing, human resources, and current societal issues and trends related to recreation choices and behaviors. The interdisciplinary nature of the profession allows students the opportunity to complete coursework beyond the Recreation Management Department. Students in both emphases take Marriott School courses and Therapeutic Recreation coursework also includes classes in the behavioral and life sciences.

### Experience Industry Management

The focus of the Experience Industry Management emphasis is on preparing students for the recreation, venue, and experience management professions in private, public, and nonprofit venues. The EIM curriculum is designed with the recognition that providing and managing recreation experiences and venues have emerged as an important factor of economic activity for communities, cities, states, and countries.

### Therapeutic Recreation

Therapeutic Recreation students learn how to use recreation as a treatment modality to help people with illnesses and disabilities improve functional behavior, develop skills and abilities related to leisure and well-being, and improve quality of life. Graduates are eligible for state licensure and national certification, and work in a variety of healthcare and community-based settings. Therapists help individuals reduce depression, stress, and anxiety; overcome addictions and other emotional and behavioral problems, recover basic motor functioning and reasoning abilities, and socialize effectively so they can enjoy greater independence and reduce or eliminate the effects of their illness or disability. They accomplish this through interventions using arts and crafts, outdoor recreation, sports, games, dance, drama, music, or community outings. Therapists also help integrate people with disabilities into society by teaching them how to use community resources and recreational activities.

## Career Opportunities

See specific career information under Experience Industry Management and Therapeutic Recreation options.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Recreation Management**
**Experience Industry Management Emphasis** (Program Outcomes)
**Therapeutic Recreation Emphasis** (Program Outcomes)

**Minor in Nonprofit Management**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Youth and Family Recreation

For more information see the BYU 2014–2015 Graduate Catalog.

**Marriott School of Management Home**

**Recreation Management Department Home**

**Major**

BS in Recreation Management Emphases
- Experience Industry Mangement
- Therapeutic Recreation

**Minor**
- Nonprofit Management

**Course Information**
- Recreation Management (RecM) Courses

**Faculty**

# BS in Recreation Management: Experience Industry Management Emphasis (64 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## The Discipline

The Experience Industry Management emphasis is comprised of a 21-credit Experience Management core and two specialization tracks—Venue and Event Management, and Youth and Community Development. Majors will select one of these tracks and complete a minimum of 9 credit hours in the chosen track. Students will also complete 31 credits of Marriott School management classes.

Venue and Event Management applies leadership and management expertise as well as experience staging skills to recreation activities and events. Venues are the locale in which recreation experiences and events occur.

Youth and Community Development studies the environmental, societal, and psychological influences recreation experiences can have on communities and their citizens across the lifespan. Effective recreation experiences are intentionally designed to foster positive community environments and citizen interactions as well as contribute to positive youth development.

## Career Opportunities

The Experience Industry Management emphasis prepares students to provide recreation experiences to diverse populations and manage a variety of recreation venues: public, private, or nonprofit.

Varied career opportunities exist and include venue management; managing departments within sporting arenas, conference centers, expo centers, performing arts facilities; event management; meeting planning; hospitality; hotels; resorts; food and beverage; sports management; tourism marketing; outdoor recreation; public land management; military recreation; campus recreation; public parks and recreation; youth development; military recreation; and non-profit organizations.

## General Information

Students are advised to take Stat 121 to fulfill their Languages of Learning general education requirement.

*This is a limited-enrollment program requiring departmental acceptance. Please see the college advisement center for information regarding requirements for application to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following prerequisite management courses:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**
- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Acc 200.

DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

RECM 300 : Creating a Good Life through Recreation. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Considering foundational recreation concepts and contemporary issues. Exploring professional opportunities in recreation.

**Course Outcomes**

There are no course outcomes available

2. Apply and be formally accepted to the program.

3. Complete the following Recreation Management Core courses:

RECM 404 : Foundations of Recreation Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 201 & BUS M 241 & RECM 300; or FIN 201 & BUS M 241 & RECM 300

DESCRIPTION: Overview of theories, philosophies, and rationale for recreation, experience, and venue management.

NOTE: If you are taking this course to satisfy the Nonprofit Management minor requirement, you do not need to have the prerequisites completed.

**Course Outcomes**

There are no course outcomes available

RECM 420 : Events and Experience Management. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 201 & BUS M 241 & RECM 300; or FIN 201 & BUS M 241 & RECM 300

DESCRIPTION: Equipping students with a variety of program planning methods and skills, emphasizing designing and implementing recreation programs and experiences; the fundamental concepts of event planning.

**Course Outcomes**

There are no course outcomes available

RECM 430 : Venue Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 201 & BUS M 241 & RECM 300; or FIN 201 & BUS M 241 & RECM 300

DESCRIPTION: Understanding skills needed to manage and operate recreation venues. These include general management principles as well as venue specific principles (e.g., crowd management, customer service, media relations); applying to public and private venues.

**Course Outcomes**

There are no course outcomes available

RECM 486 : Risk Management in Recreation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Overview of the legal process, legal issues, and risk management considerations regarding the jurisprudence to U.S. civil law as they relate to recreational experiences and venues.

**Course Outcomes**

There are no course outcomes available

RECM 487 : Evaluation for Recreation Managers. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Acquiring and applying evaluation knowledge and skills to manage quality and effectiveness of recreation services and experiences.

**Course Outcomes**

There are no course outcomes available

RECM 490 : Experience Industry Management Capstone. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 361 & BUS M 387 & BUS M 390; Org B 321.

DESCRIPTION: Synthesizing business and recreation coursework applying to case analysis solving problems for recreation, venue, and experience organizations; developing business plans and establishing nonprofit organization plans; encouraging innovation.

**Course Outcomes**

There are no course outcomes available

RECM 496R : Senior Internship. (.5-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: RECM 486 & RECM 487

DESCRIPTION: Full-time work experience in a recreation or therapeutic recreation agency under the supervision of a recreation or venue management professional or a certified therapeutic recreation specialist. Applying academic skills and knowledge to solve problems and stimulate innovation.

**Course Outcomes**

There are no course outcomes available

**Note**: 3 hours of RecM 496R are required.

4. Complete the following Management Core courses:

BUS M 361 : Introduction to Supply Chain and Operations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Acceptance into the Marriott School.

DESCRIPTION: Managing and designing processes and people along the value chain.

**Course Outcomes**

There are no course outcomes available

BUS M 387 : Economics of Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major or strategy minor status.

DESCRIPTION: Economic tools influencing the success of strategy (creation and appropriation of value) emphasizing application of economic theory to management of practice.

**Course Outcomes**

There are no course outcomes available

BUS M 390 : Ethics for Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Premanagement and Management 1 cores and full acceptance into the Marriott School upper-division major.

DESCRIPTION: Analyzing ethical dilemmas and understanding ethical theories as they apply to decision making in management.

**Course Outcomes**

There are no course outcomes available

IS 110 : Spreadsheet Skills and Business Analysis. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic spreadsheet skills focusing on features in MS Excel such as basic functions, logic and reference functions, statistical functions, what-if analysis, and charting to solve complex business problems. No technical background is necessary.

**Course Outcomes**

There are no course outcomes available

IS 201 : Introduction to Management Information Systems. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IS 110.

DESCRIPTION: Using technology to solve business problems. Hands-on spreadsheet, database, and Internet software in a business context.

**Course Outcomes**

- Manipulate and analyze data to make appropriate recommendations for managerial decision-making.
- Design, build, and query a database to apply correct principles of data storage and extraction.
- Develop effective personal computer and Internet search skills.

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.

DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.

NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

ORG B 321 : Organizational Effectiveness. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department

PREREQUISITE: For Marriott School of Management majors only.

DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

**Course Outcomes**

- Students will know how to explain and discuss the characteristics of an effective organization and how to create them, how to attract and train an effective workforce, how to motivate employees to accomlish the organization's goals, and how to create a productive work environment.
- Students will be able to effectively work in a team.
- The students will learn how to manage change effectively.

5. Complete one of the following tracks:

*Venue and Event Management*

a. Complete 9 hours from the following:

BUS M 372 : Basic Entrepreneurship Skills. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Practical aspects of business formation and growth; key skills and principles needed to successfully start up and grow a business.

NOTE: For non-Marriott School of Management students.

**Course Outcomes**

There are no course outcomes available

CFM 110 : Fundamentals of Facility and Property Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of the profession of facility and property managaement, including space regulations, finance, project management, and other current practices.

**Course Outcomes**

There are no course outcomes available

RECM 330 : Hospitality Management. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introducing hospitality management; integrating with venue and experience management; considering foundational principles, best professional practices; exploring professional opportunities.

**Course Outcomes**

There are no course outcomes available

RECM 425 : Advanced Event and Experience Management. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Advanced understanding and application of event and experience management principles; designing, planning, implementing and evaluating a special event.

**Course Outcomes**

There are no course outcomes available

RECM 435 : Advanced Venue Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Examining aspects of venue management specific to arenas, stadiums, and convention centers.

**Course Outcomes**

There are no course outcomes available

RECM 489 : Careers in Recreation. (1:1:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Exploring careers available in recreation, experience, and venue management, therapeutic recreation, and nonprofit organizations.

NOTE: Fee.

**Course Outcomes**

There are no course outcomes available

RECM 497R : Special Topics and Research. (.5-4:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Special topics, mentored research, and learning experiences, including attending professional conferences, Study Abroad participation, and other learning experiences.

**Course Outcomes**

There are no course outcomes available

*Youth and Community Development*

a. Complete 9 hours from the following:

RECM 301 : Family Recreation. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Exploring the role of family recreation in building successful families.

**Course Outcomes**

There are no course outcomes available

RECM 306 : Introduction to Nonprofit Organizations. (3:3:0)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Leading in nonprofit organizations using effective administrative practices; financial issues; history and development of nonprofits; organizational structure; membership

requirements, fund raising, and marketing.

**Course Outcomes**

There are no course outcomes available

RECM 344 : Youth Development. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Basic youth development and leadership theories applied to understanding adolescents' behavior, programming healthy developmental activities, and providing meaningful learning experiences through recreation.

**Course Outcomes**

There are no course outcomes available

RECM 421 : Experiential and Outdoor Education. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Utilizing experiential and outdoor education practices to facilitate outcome-based programs for diverse populations.

**Course Outcomes**

There are no course outcomes available

RECM 485 : Community Recreation Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Managing community recreation services; application of management principles to public and nonprofit recreation agencies.

**Course Outcomes**

There are no course outcomes available

RECM 489 : Careers in Recreation. (1:1:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Exploring careers available in recreation, experience, and venue management, therapeutic recreation, and nonprofit organizations.

NOTE: Fee.

**Course Outcomes**

There are no course outcomes available

RECM 497R : Special Topics and Research. (.5-4:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Special topics, mentored research, and learning experiences, including attending professional conferences, Study Abroad participation, and other learning experiences.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

## Show all Recreation Management (RecM) Courses

**Marriott School of Management Home**

**Recreation Management Department Home**

**Major**

BS in Recreation Management Emphases
- Experience Industry Mangement
- Therapeutic Recreation

**Minor**
- Nonprofit Management

**Course Information**
- Recreation Management (RecM) Courses

**Faculty**

# BS in Recreation Management: Therapeutic Recreation Emphasis (64 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Career Opportunities

The foundational business courses provided by the Therapeutic Recreation program in the Marriott School of Management prepare our students for upward mobility into leadership positions, providing a unique competitive advantage over other programs across the country. Graduates of the TR program work in a variety of settings, including centers for physical rehabilitation, behavioral and emotional residential treatment, eating disorders, drug and alcohol rehabilitation, adaptive sports, and assisted living. They also work in spinal cord and head injury accredited facilities, corrections, wilderness and adventure therapy programs, parks and recreation programs, schools, community centers, long-term care facilities, youth programs, and community-based recreation programs for people with disabilities.

Therapeutic Recreation is also an excellent foundation for graduate studies. Graduates go on to complete advanced degrees in fields including therapeutic recreation, social work, marriage and family therapy, clinical psychology, public health, and youth and family recreation.

## General Information

1. The Theraputic Recreation program prepares graduates for certification through the National Council on Therapeutic Recreation Certification (NCTRC) and licensure in the State of Utah. Many jobs require certification and only hire candidates with a degree in Therapeutic Recreation. Students should consult the NCTRC candidate information at www.NCTRC.org to ensure eligibility to sit for the certification exam. To practice in the state of Utah, the law also requires professional licensure.
2. Students are advised to take Stat 121 to fulfill their Languages of Learning general education requirement.
3. First aid and CPR certification must be obtained before completing the RecM 496R internship experience.

*This is a limited-enrollment program requiring departmental acceptance. Please see the college advisement center for information regarding requirements for application to this major.*

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following prerequisite Management courses:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**
- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Acc 200.

DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

RECM 300 : Creating a Good Life through Recreation. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Considering foundational recreation concepts and contemporary issues. Exploring professional opportunities in recreation.

**Course Outcomes**

There are no course outcomes available

2. Apply and be formally accepted to the program.

3. Complete the following Management Core courses:

BUS M 361 : Introduction to Supply Chain and Operations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Acceptance into the Marriott School.

DESCRIPTION: Managing and designing processes and people along the value chain.

**Course Outcomes**

There are no course outcomes available

BUS M 387 : Economics of Strategy. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Major or strategy minor status.

DESCRIPTION: Economic tools influencing the success of strategy (creation and appropriation of value) emphasizing application of economic theory to management of practice.

**Course Outcomes**

There are no course outcomes available

BUS M 390 : Ethics for Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Premanagement and Management 1 cores and full acceptance into the Marriott School upper-division major.

DESCRIPTION: Analyzing ethical dilemmas and understanding ethical theories as they apply to decision making in management.

**Course Outcomes**

There are no course outcomes available

IS 110 : Spreadsheet Skills and Business Analysis. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic spreadsheet skills focusing on features in MS Excel such as basic functions, logic and

reference functions, statistical functions, what-if analysis, and charting to solve complex business problems. No technical background is necessary.

**Course Outcomes**

There are no course outcomes available

IS 201 : Introduction to Management Information Systems. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: IS 110.

DESCRIPTION: Using technology to solve business problems. Hands-on spreadsheet, database, and Internet software in a business context.

**Course Outcomes**

- Manipulate and analyze data to make appropriate recommendations for managerial decision-making.
- Design, build, and query a database to apply correct principles of data storage and extraction.
- Develop effective personal computer and Internet search skills.

M COM 320 : Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.

DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.

NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

: Honors Communication in Organizational Settings.

**Course Outcomes**

ORG B 321 : Organizational Effectiveness. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department

PREREQUISITE: For Marriott School of Management majors only.

DESCRIPTION: Theories and concepts for creating effective organizations, e.g., individual, group, and organizational processes and human resource functions, including selection, compensation, and performance management.

**Course Outcomes**

- Students will know how to explain and discuss the characteristics of an effective organization and how to create them, how to attract and train an effective workforce, how to motivate employees to accomlish the organization's goals, and how to create a productive work environment.
- Students will be able to effectively work in a team.
- The students will learn how to manage change effectively.

4. Complete the following Therapeutic Recreation courses:

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.

RECOMMENDED: A general biology course.

DESCRIPTION: Function of body organ systems.

NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

PSYCH 220 : Human Development: Life Span. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Interaction of psychological, biological, and social influences on behavior and psychological development through the life span.

**Course Outcomes**

- Students will understand and remember the basic developments that occur across the lifespan, the basic patterns of thought, emotion, and behavior characteristic of individuals at each stage of the lifespan, and the important individual and contextual influences on human development.Measurement: Multiple choice and short essay questions.
- Students will understand the key concepts and theories that are predominant in the literature on human development.Measurement: Multiple choice and short essay questions.
- Students will be able to more effectively communicate verbally and in writing about human development.Measurement: Research papers.
- Students will be able to analyze and critically evaluate ideas, arguments, and points of view about human development.Measurement: Research papers.
- Students will be able to apply knowledge of human development to addressing real-world issues.Measurement: Short writing assignments and in-class activities.

PSYCH 342 : Abnormal Psychology. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Dynamics of maladjustment; major psychological disorders and therapeutic procedures. Fieldwork required.

NOTE: Contains content featured in the Graduate Record Examination (GRE).

**Course Outcomes**

- Students will identify and describe the major forms of psychological disorders and the major theories regarding the classification, etiology, and treatment of psychological disorders,and current data relevant to such theories.Measurement: Multiple choice, short answer and essay exams; short writing assignments.
- Students will engage in service learning by serving persons diagnosed with psychological disorders.Measurement: Participation assessment/field work report
- Students will critically examine key concepts and theories in abnormal psychology.Measurement: Essay exams, short writing assignments, in-class debates
- Students will examine and critique a topic in abnormal psychology using the current research literature.Measurement: APA style paper

RECM 460 : Inclusion and Disabilities in Therapeutic Recreation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ACC 200 & BUS M 201 & BUS M 241; or ACC 200 & FIN 201 & BUS M 241

DESCRIPTION: Making recreation / leisure services available to all populations. Analyzing implications of the Americans with Disabilities Act in recreational settings. Preparing recreation providers with knowledge and practical experience to enable them to include people from populations that have historically been underserved.

**Course Outcomes**

There are no course outcomes available

RECM 470 : Introduction to Therapeutic Recreation. (3:3:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ACC 200 & BUS M 201 & BUS M 241; or ACC 200 & FIN 201 & BUS M 241

DESCRIPTION: Philosophy, agencies, professional organizations, services, programs, practices, and disability groups related to therapeutic recreation.

**Course Outcomes**

There are no course outcomes available

RECM 471 : Assessment in Therapeutic Recreation. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: RECM 460 & RECM 470

DESCRIPTION: Patient assessment techniques and program plan development.

**Course Outcomes**

There are no course outcomes available

RECM 472 : Program Dynamics in Therapeutic Recreation. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: RECM 471

DESCRIPTION: Comprehensive, specific, and individual program design; assessment interviewing; documentation of patient progress and facilitation techniques; intervention strategies.

**Course Outcomes**

There are no course outcomes available

RECM 473 : Issues in Administration of Therapeutic Recreation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: RECM 471

DESCRIPTION: Issues related to personnel/clinical supervision, standards of practice, ethical behavior, program evaluation, quality management, financing, organization, administration, leisure education, and credentialing in therapeutic recreation.

**Course Outcomes**

There are no course outcomes available

RECM 496R : Senior Internship. (.5-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: RECM 486 & RECM 487

DESCRIPTION: Full-time work experience in a recreation or therapeutic recreation agency under the supervision of a recreation or venue management professional or a certified therapeutic recreation specialist. Applying academic skills and knowledge to solve problems and stimulate innovation.

**Course Outcomes**

There are no course outcomes available

**Note**: 2 hours of RecM 496R are required.

*Hours include courses that may fulfill university core requirements.

## Show all Recreation Management (RecM) Courses

**Marriott School of Management Home**

**Recreation Management Department Home**

**Major**

BS in Recreation Management Emphases
- Experience Industry Mangement
- Therapeutic Recreation

**Minor**
- Nonprofit Management

**Course Information**
- Recreation Management (RecM) Courses

**Faculty**

# Minor in Nonprofit Management (21 hours)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**
- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

BUS M 241 : Marketing Management. (3:3:0)

OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Marketing's role in society and the firm, marketing opportunities, the consumer market, and management of marketing mix.

**Course Outcomes**

There are no course outcomes available

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: Acc 200.
DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

RECM 306 : Introduction to Nonprofit Organizations. (3:3:0)

WHEN TAUGHT: Winter; Spring
DESCRIPTION: Leading in nonprofit organizations using effective administrative practices; financial issues; history and development of nonprofits; organizational structure; membership requirements, fund raising, and marketing.

**Course Outcomes**

There are no course outcomes available

RECM 326 : Nonprofit Resource Development. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Understanding philanthropy and applying fundraising principles and techniques in a nonprofit organization.

**Course Outcomes**

There are no course outcomes available

RECM 336 : Nonprofit Management. (3:3:2)

WHEN TAUGHT: Winter

DESCRIPTION: Management practices in nonprofit setting; analyzing and evaluating personnel; measuring performance evaluations; articulating and appreciating volunteer motivations.

**Course Outcomes**

There are no course outcomes available

2. Complete one of the following:

ANTHR 412 : Museum Collections Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ANTHR 311 & ANTHR 314

DESCRIPTION: Instruction and practice in aspects of managing museum collections: writing catalogs, processing donations, preserving objects.

**Course Outcomes**

There are no course outcomes available

ANTHR 522 : Museum Practices and Technologies. (3:3:ARR)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Core museum disciplines: collections management, curation, education, exhibition, and conservation. Supporting technologies: database, digital photography, Web design, etc. Career paths.

**Course Outcomes**

- Students will have competency in a variety of computer software and technologies upon which museum practices are dependent.
- Students will learn how to work as leaders and/or team members in a museum setting.
- Students will be able to apply museum technologies effectively to ensure the success of various museum projects.
- Students will be familiar with career options in the museum field and understand what skills they need to develop to succeed.

EDLF 362 : Introduction to International Development Education. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Major concepts and research in educational aspects of poverty alleviation and human development. Role of education as foundation of poverty alleviation, expanding human capabilities, and for promoting national development.

**Course Outcomes**

- Develop basic literacy in the historical and current debates on the meaning and goals of education and development and a framework.
- Become aware of key theoretical concepts and different understandings on education and development, and the significance of human rights mainstreaming as a pillar in disciplinary and professional divide.
- Grasp the interdependence of socio-cultural, political, and economic systems in education and development.
- Understand development as a problem-solving process advanced through policies and programs at different levels by diverse actors.
- Examine strengths and weaknesses of development architectures--particularly in relation to key problems and issues like poverty, exclusion, gender, empowerment and dignity, sustainability, capabilities and functioning and human rights. Learn to question the "Washington Consensus" wisdom and existing systems, structures, and models are working and, if not, what might work instead.
- Begin the process of coming to a personal definition of poverty and development, in harmony with global guidelines and professional standards.
- Study development as part of the larger International Development community and integrate IDE framework into this professional learning community.

EDLF 363 : Education, Poverty, and Community Development. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Examines the nexus between education, poverty, and socioeconomic development challenges facing developing countries through the perspective of economics, religion, and the state.

**Course Outcomes**

- Identify and critically reflect upon issues and theories of poverty and human development causes, interrelations, feedback, and be able to offer possible solutions.
- Locate, understand, and critically review development theories and research within their respective disciplines and within the interdisciplinary field of Development Studies

- Analyze relevant development phenomena in a complex manner using key concepts and theories studied during the course.
- Formulate complex research questions regarding development.
- Communicate scientific issues and follow the development of knowledge.
- Develop a more effective understanding of the economics, social, and political dimensions of educational development within and across national boundaries.
- Compare the benefits and limitations of different policy construction and aggregation methods and the kinds of results that one might obtain in interventions.
- Improve critical thinking and reasoning, and writing skills.

HLTH 480 : International Health. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Identifying disease patterns in "developing" countries, exploring the social and cultural context of health, and reviewing behavior change strategies for improving well-being.

**Course Outcomes**

- Idenitfy behaviors that improve maternal and child health and how they may be specific for particular groups.
- Discuss the determinants of global diseases and why inequalities and inequities exist.
- Explain how culture, our own and others, facilitates or hinders practicing optimal health behaviors.
- Describe the leading causes of morbidity (sickness) and mortablity among women and children in the developing world.
- Discuss how undernutrition and overnutrition contribute to morbidity and mortality related to infectious and chronic disease.
- Using principles of epidemiology, identify the leading causes of morbidity (sickness) and mortablity among women and children in the developing world and compare the burden of disease across different regions of the world.
- Describe how monitoring, evaluation, and applied research improve health programs.
- Discuss successful, evidence-based strategies for changing behaviors and improving health.

NDFS 458 : Management in Dietetics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: NDFS 445

DESCRIPTION: Management cycle and theory applied to clinical and administrative dietetics.

**Course Outcomes**

- Explain dietetics management in the context of a system.
- Discuss group dynamics and work group formation and participate effectively in group tasks.
- Identify and use principles of effective communication and negotiation.
- Identify tools used and steps in the decision making and planning processes.
- Identify the management functions, including planning, organizing, staffing, leading, monitoring, and evaluating.
- Use financial planning, control, and budgeting tools.
- Identify principles of human resource management, including determining manpower needs, recruiting and interviewing, orientation and training, performance appraisal, diversity issues, conflict management, and labor relations laws.
- Describe theories of effective management and leadership.
- Identify theories of motivation and organizational change.
- Discuss concepts of disaster planning and risk management.
- Explain management information systems in dietetics

ORG B 327 : Human Resource Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Functions of human resource management: employee selection, wage and salary administration, training and development, employee relations, and human resource planning.

**Course Outcomes**

- Discuss the purpose, roles, frameworks, and activities of HRM within various types of organizations.
- Explain important strategies and methods of effective recruitment, selection, and retention.
- Discuss the primary purposes, criteria, approaches, advantages and disadvantages, issues, and evaluation of performance management.

RECM 344 : Youth Development. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Basic youth development and leadership theories applied to understanding adolescents' behavior, programming healthy developmental activities, and providing meaningful learning experiences through recreation.

**Course Outcomes**

There are no course outcomes available

RECM 453 : Grant Writing. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Oral and written communication skills; financial issues in the nonprofit field; grant writing history; writing successful grants; needs of foundations.

**Course Outcomes**

There are no course outcomes available

SOC 340 : Sociology of International Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Soc 111 or 112; IAS 220.

DESCRIPTION: Paradigms of development and poverty; international, national, and grass roots approaches to promote development and reduce poverty; and application in developing nations.

**Course Outcomes**

- Become familiar with different theories about development.
- Understand the relationship between development and major social insitutions.
- Learn about what different organizations are doing to promote beneficial development.
- Learn to apply what you have learned to a specific aspect of development.
- Integrate what you have learned to develop your own approach to development.

TMA 387 : Production Management: Advanced. (3:3:1)

WHEN TAUGHT: Fall, Contact Department; Winter, Contact Department

PREREQUISITE: TMA 187; media arts major status; media arts foundation courses.

DESCRIPTION: Overview of techniques for managing large arts projects, involving individual and team projects.

**Course Outcomes**

There are no course outcomes available

TMA 469 : Theatre Management. (3:4:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Basic philosophies of box office, front-of-house, and theatre marketing.

**Course Outcomes**

- Students will, recognize the key elements vital to the operation of organizations in various performing arts facilities such as scheduling, budgeting, and marketing.
- Students will demonstrate how to operate organizations in various performing arts facilities by creating budgets, marketing campaigns, and grant proposals.

A Nonprofit Management Minor advisor may approve other courses showing competency in a nonprofit industry skill.

## National Certification in Nonprofit Management and Leadership (formerly known as American Humanics Certification)

1. Register online with National Leadership Alliance at www.nonprofitleadershipalliance.org.
2. Complete Nonprofit Management minor and competencies.
3. Attend one Management/Leadership Institute (AHMI).
4. RecM 497R--AHMI prep course--1 credit--Fall.
5. Practicum - 300 hours working with nonprofits.
6. Pay $15 to join the Nonprofit Management Student Association.

## Show all Recreation Management (RecM) Courses

**Marriott School of Management Home**

**Recreation Management Department Home**

**Major**

BS in Recreation Management

Emphases

- Experience Industry Mangement
- Therapeutic Recreation

**Minor**

- Nonprofit Management

**Course Information**

- Recreation Management (RecM) Courses

**Faculty**

# Recreation Management (RecM)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

RECM 123 : Introduction to Outdoor Recreation Activities. (2:1:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Participation in a variety of outdoor activities.

**Course Outcomes**

There are no course outcomes available

RECM 199R : Academic Internship: Practicum. (.5-3:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Internship or cooperative education experience evaluated by supervisor and posted on student's transcript

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

RECM 223R : Outdoor Skills Leadership. (2:2:4)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: In-depth approach to leadership skills in selected outdoor specialty areas, including camping, hiking and survival, basic backpacking, winter camping, mountain biking, fly-fishing, sailing, river recreation, rock climbing, family outdoor recreation, and outdoor therapeutic recreation skills.

**Course Outcomes**

There are no course outcomes available

: Camping Skills.

**Course Outcomes**

: Basic Backpacking.

**Course Outcomes**

: Fly Fishing.

**Course Outcomes**

: Wilderness Trek.

**Course Outcomes**

: Winter Camping.

**Course Outcomes**

: Hiking and Survival.

**Course Outcomes**

: Mountain Biking.

**Course Outcomes**

: Family Outdoor Recreation.

**Course Outcomes**

: Sailing.

**Course Outcomes**

: River Recreation.

**Course Outcomes**

: Outdoor Therapeutic Recreation Skills.

**Course Outcomes**

: Rock Climbing.

**Course Outcomes**

: Ski Instructor.

**Course Outcomes**

### 300-Level Courses

RECM 300 : Creating a Good Life through Recreation. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Considering foundational recreation concepts and contemporary issues. Exploring professional opportunities in recreation.

**Course Outcomes**

There are no course outcomes available

RECM 301 : Family Recreation. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Exploring the role of family recreation in building successful families.

**Course Outcomes**

There are no course outcomes available

RECM 306 : Introduction to Nonprofit Organizations. (3:3:0)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Leading in nonprofit organizations using effective administrative practices; financial issues; history and development of nonprofits; organizational structure; membership requirements, fund raising, and marketing.

**Course Outcomes**

There are no course outcomes available

RECM 326 : Nonprofit Resource Development. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Understanding philanthropy and applying fundraising principles and techniques in a nonprofit organization.

**Course Outcomes**

There are no course outcomes available

RECM 330 : Hospitality Management. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introducing hospitality management; integrating with venue and experience management; considering foundational principles, best professional practices; exploring professional opportunities.

**Course Outcomes**

There are no course outcomes available

RECM 336 : Nonprofit Management. (3:3:2)

WHEN TAUGHT: Winter

DESCRIPTION: Management practices in nonprofit setting; analyzing and evaluating personnel; measuring performance evaluations; articulating and appreciating volunteer motivations.

**Course Outcomes**

There are no course outcomes available

RECM 344 : Youth Development. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Basic youth development and leadership theories applied to understanding adolescents' behavior, programming healthy developmental activities, and providing meaningful learning experiences through recreation.

**Course Outcomes**

There are no course outcomes available

### 400-Level Courses

RECM 404 : Foundations of Recreation Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 201 & BUS M 241 & RECM 300; or FIN 201 & BUS M 241 & RECM 300

DESCRIPTION: Overview of theories, philosophies, and rationale for recreation, experience, and venue management.

NOTE: If you are taking this course to satisfy the Nonprofit Management minor requirement, you do not need to have the prerequisites completed.

**Course Outcomes**

There are no course outcomes available

RECM 405 : Commercial Recreation. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Entrepreneurial strategies; economic concepts applied to commercial recreation; steps of feasibility study and operations management.

NOTE: For junior and senior students.

**Course Outcomes**

There are no course outcomes available

RECM 420 : Events and Experience Management. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 201 & BUS M 241 & RECM 300; or FIN 201 & BUS M 241 & RECM 300

DESCRIPTION: Equipping students with a variety of program planning methods and skills, emphasizing designing and implementing recreation programs and experiences; the fundamental concepts of event planning.

**Course Outcomes**

There are no course outcomes available

RECM 421 : Experiential and Outdoor Education. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Utilizing experiential and outdoor education practices to facilitate outcome-based programs for diverse populations.

**Course Outcomes**

There are no course outcomes available

RECM 425 : Advanced Event and Experience Management. (3:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Advanced understanding and application of event and experience management principles; designing, planning, implementing and evaluating a special event.

**Course Outcomes**

There are no course outcomes available

RECM 430 : Venue Management. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 201 & BUS M 241 & RECM 300; or FIN 201 & BUS M 241 & RECM 300

DESCRIPTION: Understanding skills needed to manage and operate recreation venues. These include general management principles as well as venue specific principles (e.g., crowd management, customer service, media relations); applying to public and private venues.

**Course Outcomes**

There are no course outcomes available

RECM 435 : Advanced Venue Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Examining aspects of venue management specific to arenas, stadiums, and convention centers.

**Course Outcomes**

There are no course outcomes available

RECM 453 : Grant Writing. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Oral and written communication skills; financial issues in the nonprofit field; grant writing history; writing successful grants; needs of foundations.

**Course Outcomes**

There are no course outcomes available

RECM 460 : Inclusion and Disabilities in Therapeutic Recreation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ACC 200 & BUS M 201 & BUS M 241; or ACC 200 & FIN 201 & BUS M 241

DESCRIPTION: Making recreation / leisure services available to all populations. Analyzing implications of the Americans with Disabilities Act in recreational settings. Preparing recreation providers with knowledge and practical experience to enable them to include people from populations that have historically been underserved.

**Course Outcomes**

There are no course outcomes available

RECM 470 : Introduction to Therapeutic Recreation. (3:3:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ACC 200 & BUS M 201 & BUS M 241; or ACC 200 & FIN 201 & BUS M 241

DESCRIPTION: Philosophy, agencies, professional organizations, services, programs, practices, and disability groups related to therapeutic recreation.

**Course Outcomes**

There are no course outcomes available

RECM 471 : Assessment in Therapeutic Recreation. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: RECM 460 & RECM 470

DESCRIPTION: Patient assessment techniques and program plan development.

**Course Outcomes**

There are no course outcomes available

RECM 472 : Program Dynamics in Therapeutic Recreation. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: RECM 471

DESCRIPTION: Comprehensive, specific, and individual program design; assessment interviewing; documentation of patient progress and facilitation techniques; intervention strategies.

**Course Outcomes**

There are no course outcomes available

RECM 473 : Issues in Administration of Therapeutic Recreation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: RECM 471

DESCRIPTION: Issues related to personnel/clinical supervision, standards of practice, ethical behavior, program evaluation, quality management, financing, organization, administration, leisure education, and credentialing in therapeutic recreation.

**Course Outcomes**

There are no course outcomes available

RECM 485 : Community Recreation Management. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Managing community recreation services; application of management principles to public and nonprofit recreation agencies.

**Course Outcomes**

There are no course outcomes available

RECM 486 : Risk Management in Recreation. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Overview of the legal process, legal issues, and risk management considerations regarding the jurisprudence to U.S. civil law as they relate to recreational experiences and venues.

**Course Outcomes**

There are no course outcomes available

RECM 487 : Evaluation for Recreation Managers. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Acquiring and applying evaluation knowledge and skills to manage quality and effectiveness of recreation services and experiences.

**Course Outcomes**

There are no course outcomes available

RECM 489 : Careers in Recreation. (1:1:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: RECM 404 & RECM 420 & RECM 430

DESCRIPTION: Exploring careers available in recreation, experience, and venue management, therapeutic recreation, and nonprofit organizations.

NOTE: Fee.

**Course Outcomes**

There are no course outcomes available

RECM 490 : Experience Industry Management Capstone. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: BUS M 361 & BUS M 387 & BUS M 390; Org B 321.

DESCRIPTION: Synthesizing business and recreation coursework applying to case analysis solving problems for recreation, venue, and experience organizations; developing business plans and establishing nonprofit organization plans; encouraging innovation.

**Course Outcomes**

There are no course outcomes available

RECM 491 : Recreation Facility Planning. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Developing facilities for public and private recreation programs.

**Course Outcomes**

There are no course outcomes available

RECM 496R : Senior Internship. (.5-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: RECM 486 & RECM 487

DESCRIPTION: Full-time work experience in a recreation or therapeutic recreation agency under the supervision of a recreation or venue management professional or a certified therapeutic recreation specialist. Applying academic skills and knowledge to solve problems and stimulate innovation.

**Course Outcomes**

There are no course outcomes available

RECM 497R : Special Topics and Research. (.5-4:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Special topics, mentored research, and learning experiences, including attending professional conferences, Study Abroad participation, and other learning experiences.

**Course Outcomes**

There are no course outcomes available

RECM 499R : Honors Thesis. (3:0:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Departmental approval.
DESCRIPTION: Thesis project representing independent work and reflecting highest standards of undergraduate achievement.
NOTE: Must receive both departmental and Honors Program approval.

**Course Outcomes**
No outcomes are available at this time.

### 500-Level Graduate Courses (available to advanced undergraduates)

RECM 599R : Academic Internship. (.5-8:1:40)
PREREQUISITE: Instructor's consent.
DESCRIPTION: Professional leadership practicum.

**Course Outcomes**
There are no course outcomes available

## Graduate Courses

For graduate courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Recreation Management Department Home**

**Marriott School of Management Home**

**Recreation Management Department Home**

**Major**

BS in Recreation Management
Emphases
- Experience Industry Mangement
- Therapeutic Recreation

**Minor**

- Nonprofit Management

**Course Information**

- Recreation Management (RecM) Courses

**Faculty**

# Recreation Management Faculty

Show All
Hide All

## Professors

Freeman, Patti Ann
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1988
MS, Western Illinois University, 1990
PhD, Indiana University, Bloomington, 1993

Hill, Brian Jack
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
PhD, Clemson University, 1994

Widmer, Mark Alan
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1988
MA, Brigham Young University, 1990
PhD, University of Utah, 1993

Zabriskie, Ramon B.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1989
MA, Brigham Young University, 1993
PhD, Indiana University, Bloomington, 2000

## Associate Professors

Lundberg, Neil R.
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1995
MS, Brigham Young University, 1997
PhD, Indiana University, 2006

Taniguchi, Stacy Tooru
**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Associate Professor
**DEGREES:** BA, University of Alaska, Anchorage, 1975
MS, University of Utah, 1981
PhD, Brigham Young University, 2004

Ward, Peter Joseph
**COLLEGE:** Marriott School of Management

**DEPARTMENT:** Recreation Management
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1997
MBA, University of Utah, 2003
PhD, University of Utah, 2007

## Assistant Professors

Duerden, Mathew David

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
MS, Brigham Young University, 2006
PhD, Texas A&M University, 2009

## Teaching Professor

Harris, Bradley Dean

**COLLEGE:** Marriott School of Management
**DEPARTMENT:** Recreation Management
**RANK:** Teaching Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 2007

- Education
- Engineering and Technology
- Family, Home, and Social Sciences
- Fine Arts and Communications
- Humanities
- Law School
- Life Sciences
- Management
- Nursing
- Physical and Mathematical Sciences
- Religious Education
- Undergraduate Education

**Program**

- Nursing

# College of Nursing

500 SWKT
(801) 422-4144

**Dean:** Patricia Ravert, Professor, Nursing
**Associate Dean for Undergraduate Studies:** Kent Blad, Teaching Professor, Nursing
**Associate Dean for Graduate Studies and Faculty:** Mary Williams, Associate Professor, Nursing

## College Advisement Center

Mark E. White, Supervisor
551 SWKT

For information regarding College of Nursing programs and admission application forms, contact the following:

Undergraduate students:

College of Nursing Undergraduate Advisement Center
551 SWKT, (801) 422-4173

Graduate students:

College of Nursing Graduate Advisement
400 SWKT, (801) 422-4142

## Study of Nursing at Brigham Young University

The College of Nursing at Brigham Young University, established in 1952, is accredited by the Utah State Board of Nursing and the Commission on Collegiate Nursing Education. The mission of the College of Nursing is to develop professional nurses who promote health, care for the suffering, engage in the scholarship of the discipline, invite the Spirit into health and healing, and lead with faith and integrity.

Baccalaureate graduates are prepared to function in generalist roles in hospital and community settings. They also have excellent preparation for entrance into graduate programs. Graduates of the MS program are prepared for a variety of advanced practice and leadership roles in the health care delivery system.

The college faculty are committed to creating a stimulating learning environment based on Christian principles. They maintain a broad range of research and clinical interests.

Student resources include a fully equipped learning resource center with audiovisual and computer learning aids, a research center, and a state-of-the-art clinical simulation laboratory. Clinical practice opportunities exist in a variety of urban and rural hospital, school, home, and community settings along the Wasatch Front. Students may also gain extended experiences with specialized national and international health programs.

## Scholarships and Awards

Scholarships are available for undergraduate and graduate students. Information about additional sources of funding for study are available in the College of Nursing Advisement Center. Research assistantships and teaching assistantships are also available.

College of Nursing Home

Nursing Program Home

Majors

- BS in Nursing

Course Information

- Nursing (Nurs) Courses

Faculty

# Nursing

Patricia Ravert, Dean
500A SWKT, (801) 422-1167

Kent Blad, Associate Dean for Undergraduate Studies
146 SWKT, (801) 422-1168

Mary Williams, Associate Dean for Graduate Studies and Faculty
444 SWKT, (801) 422-5626

College of Nursing Advisement Center
551 SWKT, (801) 422-4173

## Admission to Degree Program

The degree programs in the College of Nursing carry special enrollment limitations. Please see the college advisement center for specific details.

## The Discipline

Brigham Young University's baccalaureate nursing program prepares general clinicians with the knowledge, skills, leadership abilities, and values commensurate with professional nursing practice. Nursing education builds on the sciences, humanities, and religious studies to develop the strong theoretical and practical base necessary to understand and meet the needs of people in various health care settings.

Learning comes alive as students move from the classroom through the clinical simulation laboratory to actual patient care. Students assess, diagnose, and treat actual and potential human responses in an effort to promote, restore, or maintain health. Baccalaureate graduates develop their ability to be sensitive to the welfare of others, communicate effectively, evaluate research findings, think critically, solve problems, and utilize appropriate technology as they provide quality nursing care to people of all ages and from diverse backgrounds.

## Career Opportunities

Career positions are available in various health care settings.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

BS in Nursing

**Integration of Gospel Values**
Integrate the values of the Gospel of Jesus Christ as part of caring.

**Critical Thinking and Communication Skills**
Demonstrate effective critical thinking and communication.

**Critical Thinking and Communication Skills**
Demonstrate effective critical thinking and communication.

**Professional Nursing Care**
Design, provide, and evaluate professional nursing care for individuals, families, and communities.

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Design, provide, and evaluate professional nursing care for individuals, families, and communities.

**Professional Nursing Care**
Design, provide, and evaluate professional nursing care for individuals, families, and communities.

**Professional Nursing Care**

Design, provide, and evaluate nursing care for individuals, families, and communities.

**Understanding the Discipline of Nursing**
Practice and lead with an understanding of the discipline of nursing at the local, national, and global levels.

**Life-long Learning**
Exemplify life-long learning.

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Nursing

For more information see the BYU 2014–2015 Graduate Catalog.

## Undergraduate Admittance Requirements

The following criteria have been established for acceptance and progression in the baccalaureate program.

1. Be fully matriculated at BYU.
2. Acceptance into the nursing major is competitive and restricted to a limited number of openings each year. Not all students who meet the minimum requirements are guaranteed acceptance into the program.

   Applicants are evaluated on a variety of criteria using a point system. Admission criteria has included academic progression; overall college GPA; ACT/SAT; written communication skills; community, school, and church service; recommendations from employers and/or educators; and the professional judgment of the admissions committee. In the last three years, the average GPA of students accepted into the program has been from 3.71 to 3.89, with a range of 3.60 to 4.0.
3. Complete the following before beginning nursing courses:
   Chem 285.
   NDFS 100.
   Nurs 180.
   PDBio 220.
   SFL 210 or Psych 220.
   And an additional 16–20 hours from the university core.

   **Note:** Students may apply to the baccalaureate program during the semester they are completing BYU nursing prerequisite courses, if classes are taken at BYU.
4. Students with English as a second language: Take the English Proficiency Examination plus all ESL service courses as recommended by the examination outcome. Successfully complete Nurs 102. The college requires a TOEFL score of at least 580 (paper based) or 237 (computer based) or 93 (IBT).
5. Maintain a C grade or above in all nursing courses, including prerequisite and supporting courses. A grade of C– does not allow advancement to the next course in the sequence.

**Note:** Notify the college advisement center before dropping or interrupting course work.

**Note:** Transfer credit older than seven years will not apply to the major without prior approval of the Associate Dean for Undergraduate Studies.

**Note:** Students may repeat prerequisite courses only one time.

Applicants who meet the above criteria are eligible to be considered for acceptance. Students who have been admitted to BYU must apply for the nursing program through the College Advisement Center (551 SWKT). Students are accepted for fall and winter semesters. Application deadlines and requirements are available online at http://nursing.byu.edu/. Nursing applicants are required to have a current CPR certification (see advisement center for CPR requirements) when applying. Once accepted, students are required to have a physical examination, pass background checks and a drug screen, and submit immunization records to the Nursing Advisement Center. Students are responsible for the cost of these required elements.

Computers are used in all health care facilities; and students are expected to be computer literate when accepted into the College of Nursing.

## General Information

The college nursing program is accredited by the Commission on Collegiate Nursing Education.

### Clinical Assignments and Transportation.

Educational experiences are generally located in the Wasatch Front. Didactic courses are taught in Provo. Clinical experiences are generally in agencies throughout the Wasatch Front. Visits to agencies and client homes are also required. To achieve the best possible clinical education, students will need to travel throughout their course work. Access to a car is highly recommended. Students are responsible for their own transportation. Multicultural and international clinical experiences are also available during a specific spring term in the program.

**College of Nursing Home**

**Nursing Program Home**

**Majors**

- BS in Nursing

**Course Information**

- Nursing (Nurs) Courses

**Faculty**

# BS in Nursing (91 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring college admissions approval. Please see the college advisement center office for information regarding requirements for admission to this major.*

## Program Requirements | View MAP

1. A C grade or above must be maintained in all required courses.
2. Complete the following prerequisite courses:

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chem 101 or equivalent.
DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

NDFS 100 : Essentials of Human Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Food-oriented study of nutritional facts and principles as a basis for dietary choices; consequences of choices; scientifically examining controversial topics.

**Course Outcomes**

- Apply the scientific method to identify and interpret credible nutrition information.
- Identify, interpret, and apply nutrition information.
- Identify functions of nutrients and their major food sources.

NURS 180 : Preview of Nursing. (1:2:0)

WHEN TAUGHT: Spring
DESCRIPTION: Development of nursing as a profession; the issues and trends evident throughout nursing history, and their impact on nursing today.

**Course Outcomes**

- Demonstrate an understanding of the development of nursing as a profession.
- Demonstrate an understanding of nursing roles, expectations, and opportunities.
- Be able to formulate a personal definition of nursing and gain insight regarding nursing as a lifetime career.
- Be able to discover the uniqueness of the Brigham Young University's nursing program and program outcomes

**Note:** Chem 101 or an acceptable score on the Chemistry Placement Exam is prerequisite to Chem 285 if the student has completed no previous chemistry course work.

3. Complete the following prerequisite course:

PDBIO 220 : Human Anatomy (with lab). (3:2:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Structure and function of the human body. Lab included.

**Course Outcomes**

- Students will demonstrate an understanding of the basic microscopic underpinnings of tissue structures and be able to name them.
- Students will demonstrate a greater understanding and appreciation for the human body, it's overall design and connections to other living organisms, and what a marvelous creation it is.
- Students will be able to list the name, location, and function of each of the body's organs and organ systems.

4. Complete one course from the following prerequisite courses:

PSYCH 220 : Human Development: Life Span. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Interaction of psychological, biological, and social influences on behavior and psychological development through the life span.

**Course Outcomes**

- Students will understand and remember the basic developments that occur across the lifespan, the basic patterns of thought, emotion, and behavior characteristic of individuals at each stage of the lifespan, and the important individual and contextual influences on human development.Measurement: Multiple choice and short essay questions.
- Students will understand the key concepts and theories that are predominant in the literature on human development.Measurement: Multiple choice and short essay questions.
- Students will be able to more effectively communicate verbally and in writing about human development.Measurement: Research papers.
- Students will be able to analyze and critically evaluate ideas, arguments, and points of view about human development.Measurement: Research papers.
- Students will be able to apply knowledge of human development to addressing real-world issues.Measurement: Short writing assignments and in-class activities.

SFL 210 : Human Development. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Growth and development of the child from conception through adolescence; influences of family, peers, and schools.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Comprehend the dynamic and complex interaction among the domains of human development (e.g., biological, cognitive, emotional, social, etc.)Critically apply information learned in class to your own life.Provide knowledge and skills that will benefit the lives of the children for whom you will have stewardship in this life.Acquire a broad base of knowledge of human development.Be conversant with the major human development theories as well as their strengths and weaknesses.
- Improve your writing and critical thinking skills.
- Understand the research methodology utilized in the study of human development.

5. Be admitted to the program.

6. Complete the following supporting courses:

MMBIO 221 : General Microbiology. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Any biology course.

RECOMMENDED: Any chemistry course.

DESCRIPTION: Microbial world, emphasizing communicable diseases, their causes and control.

NOTE: Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses.

**Course Outcomes**

- Explain and discuss the ways by which microbiologists study microorganisms.
- Discuss the principle infectious diseases that affect mankind, including how they are transmitted, treated, controlled and prevented.
- Differentiate between the types of microorganisms by identifying relevant structure and their function in the biosphere.
- Propose microbial solutions to global problems.
- Describe how the human body defends itself against infectious agents.

MMBIO 222 : General Microbiology Laboratory. (1:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: MMBio 221 or concurrent enrollment.

**Course Outcomes**

- Use the bright field microscope to view and interpret microbiological specimens
- Use proper aseptic techniques int he handling and transfer of microbiological specimens
- Use standard microbiological media to culture and identify common microbiological specimens
- Use standard microbiology laboratory equipment correctly
- Follow an experimental protocol, collect and organize data, present data in an appropriate form, assess the validity of the data, and draw appropriate comclusions based on the results
- Integrate information and skills gained int eh course to make informed judgements about the role of microorganisms in everyday life
- Use accepted safety protocols when handling microbiological specimens and chemicals

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.
RECOMMENDED: A general biology course.
DESCRIPTION: Function of body organ systems.
NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

PDBIO 365 : Pathophysiology. (4:4:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: PDBIO 305; or PDBIO 362
DESCRIPTION: Variations in physiological mechanisms that account for development of common disturbances in normal control and activities of body's organs and organ systems.

**Course Outcomes**

- Students will exhibit an integrative understanding of the biochemistry, molecular biology, genetics, cell biology, microbiology, environmental biology, and physiology related to the prevention, development, and treatment of common diseases.
- Students will demonstrate through case study analysis a command of problem solving skills related to the diagnosis and treatment of pathophysiological conditions.
- Pupils will manifest a command of the physiology and pathophysiological vocabulary necessary to effectively communicate with other biomedical professionals and the general public.
- Students will be able to articulate the ethical issues related to the treatment and prevention of pathophysiological conditions.
- Students will manifest an increase in their respect for the human body and adopt a life style consistent with this respect.

PSYCH 111 : Introduction to Psychological Science. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Basic course in modern scientific psychology.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Objective: Apply psychological principles to personal and social issues and problems.Measurement:Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper.
- Objective: Demonstrate a broad knowledge of the basic theoretical perspectives that guide psychological inquiry.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Pyychology 111 sections.
- Objective: Understand the basic research methods used in psychology, including classical and current experiments.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper, participation as a subject in actual psychological research.

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

**Note:** Math 110 (or equivalent) may need to be taken prior to Stat 121.

7. Complete the following:

NURS 291 : Nursing Care of the Older Adult. (2.5:2.5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

DESCRIPTION: Theory and content in the nursing care optimizing the functional status of older adults through health promotion, risk reduction, and disease prevention strategies.

**Course Outcomes**

- Generate a knowledge base of the processes and issues associated with aging including the needs and functional capabilities of the older adult.
- Use knowledge concepts to solve aging issues recognizing that interdisciplinary care is essential for quality care.
- Compare and connect aging for the individual, caregiver, family, and friends recognizing ethical/legal issues and the importance of culture.
- Compose a personal perspective on aging
- Create a perspective on the aging of God's children that recognizes the potential and the possible and acknowledges that the aging process includes spiritual, physical and psychosocial perspectives
- Reflect on how personal development is connected to professional development as a life-long learner.

NURS 292 : Clinical Practicum for Nursing Care of the Older Adult. (1.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

DESCRIPTION: Clinical practicum for assessment, communication, critical thinking, and technical skills optimizing the functional status of older adults through health promotion, risk reduction, and disease prevention strategies.

NOTE: 6-hour clinical per week for 11 weeks.

**Course Outcomes**

- Generate a knowledge base of the processes and issues associated with aging including the needs and functional capabilities of the older adult.
- Use knowledge concepts to solve aging issues recognizing that interdisciplinary care is essential for quality care.
- Compare and connect aging for the individual, caregiver, family, and friends recognizing ethical/legal issues and the importance of culture.
- Compose a personal perspective on aging
- Create a perspective on the aging of God's children that recognizes the potential and the possible and acknowledges that the aging process includes spiritual, physical and psychosocial perspectives
- Reflect on how personal development is connected to professional development as a life-long learner.

NURS 293 : Communication Lab for Nursing Majors. (.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

NOTE: Lab is 1.5 hours per week for 10 weeks.

**Course Outcomes**

- Identify factors that affect interpersonal communication across the lifespan.
- Recognize cultural, gender and disabilities factors that can affect communication.
- Demonstrate appropriate communication skills utilized in nursing practice.
- Formulate strategies to enhance communication that incorporate respect for God's children.

NURS 294 : Health Assessment and Promotion. (3:2.25:1.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance into Nursing Program.

DESCRIPTION: Acquiring and applying health assessment knowledge and skills. Health promotion, health maintenance,and therapeutic communication.

**Course Outcomes**

- Perform a basic health history and assessment on the adult individual.
- Identify health problems or risks for health problems based on personal, family and social history.
- Identify health problems or risks for health problems based on physical assessment.
- Identify strategies for health promotion, risk reduction and disease preventions for adult clients.

NURS 295 : Fundamental Nursing Concepts and Care. (3:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

DESCRIPTION: Acquiring and applying basic nursing skills and concepts; utilizing the nursing process: assessment, diagnosis, planning, implementation, and evaluation.

NOTE: 2.25 hour per lab each week.

**Course Outcomes**

- Integrate the values of the gospel of Jesus Christ as part of caring.
- Demonstrate critical thinking as it relates to beginning nursing concepts.
- Demonstrate proficiency in performing basic nursing skills.
- Demonstrate knowledge of fundamental nursing concepts
- Communicate professionally with peers and faculty.

NURS 296 : Community Health Nursing. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

DESCRIPTION: Applying principles of community and public health nursing to the health of individuals, family, populations, and groups.

NOTE: Meets 2 hours every other week.

**Course Outcomes**

- Describe the function and practice of community health nursing.
- Discuss issues that affect access to health care for individuals, populations, and communities.
- Identify community resources to promote health.

NURS 300 : Pharmacology in Nursing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 2.

DESCRIPTION: Common categories of drugs: their action, use and desired and undesired effects; implications for nursing care.

**Course Outcomes**

- Name the common categories of drugs and their actions,uses, and desired effects.
- Identify the side effects and contraindications of various drugs.
- List the nursing implications for the administration of drugs.
- Plan client teaching and other nursing interventions.

NURS 320 : Scholarly Inquiry in Nursing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 2.

DESCRIPTION: Acquiring knowledge of the research process, identifying clinical problems, evaluating and using evidence, and engaging in advanced writing and oral communication in the discipline.

NOTE: Completion of both Nurs 320 and 339 fulfills GE Advanced Written and Oral Communication.

**Course Outcomes**

- Describe the research process.
- Write clearly, focus on a well-defined purpose, use APA conventions of structure, and adopt a voice, tone, and level of formality suited to the audience.
- Demonstrate productive writing processes, which includes organizing content to enhance logical flow of ideas; revising; editing grammar, word usage, spelling, and punctuation; proofreading; seeking and using peer review; properly citing sources to avoid plagiarism; and writing successive drafts of the same paper.
- Critically appraise published research for strength of evidence and potential contribution to clinical practice.
- Synthesize information from current evidence and disseminate through original written and oral communication.

NURS 339 : Ethics in Nursing. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NURS 300 & NURS 320 & NURS 341

DESCRIPTION: Overview of ethical principles and theories, emphasizing role of ethics in nursing; instruction and practice in advanced oral and written communication skills for professional nursing practice.

NOTE: Completion of both Nurs 320 and Nurs 339 fulfills GE Advanced Written and Oral Communication.

**Course Outcomes**

- Engage in reflective thinking to clarify personal moral and ethical values.
- Communicate one's personal bias on difficult health care decisions that are in conflict with one's moral beliefs.
- Demonstrate professional behavior, including academic honesty in all course work, written and oral.
- Analyze ethical dilemmas faced by nurses in clinical practice; identify ethical principles, ethical theories, and common fallacies in thought; provide rationale for possible decisions through thinking and writing critically.
- Use knowledge of ethics and communication skills to resolve ethical dilemmas with an interdisciplinary team.
- Use written, oral, and emerging technology methods to communicate effectively.
- Engage in ethical reasoning and actions to promote social justice, advocacy, collaboration, and understanding across cultures.
- Engage in reflective thinking to clarify personal moral and ethical values.

NURS 341 : Nursing Care of Adults with Acute and Chronic Illnesses. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 2.

DESCRIPTION: Theory and content in the nursing care of acutely and chronically ill adults; professional behavior; illness implications for patients and families.

**Course Outcomes**

- Design, provide, and evaluate professional nursing care for individuals, families, and communities.Differentiate pathophysiology, risk factors, diagnostic procedures, assessment findings and nursing interventions of common acute and chronic illnesses as well as surgical or procedural interventions.Identify treatment and rationale for each illness and surgical or procedural intervention.Articulate and understand the implications of acute and chronic illness for patients and their families.Correlate laboratory, procedure, treatments and other patient results to the effects of the disease process or treatments.Identify effects of chronic illness on the patient and their significant others (SO).
- Integrate the values of the Gospel of Jesus Christ as part of caring.Value the importance of spirituality in the nursing process.Respect religious beliefs of the client.Utilize personal inspiration in clinical decisions as well as the learning process.
- Demonstrate effective critical thinking and communication.Demonstrate professional behavior when communicating with instructors, other health care providers, patients and families.In practice case studies given in the didactic class, demonstrate critical thinking skills and is able to calculate priority nursing care interventions for various types of medical surgical hospitalized patientIdentify situations where skills and knowledge beyond their scope is needed and accurately seeks assistance.
- Exemplify life-long learning.Participate in activities that contribute to the ongoing development of personal knowledge as well as the Nursing profession's body of knowledge.

NURS 342 : Clinical Practicum for Nursing Care of Adults with Acute and Chronic Illnesses. (3.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 2.

DESCRIPTION: Clinical practicum in the nursing care of acutely and chronically ill adults in inpatient settings; professional behavior; illness implications for patients and families.

NOTE: 10.5 clinical hours per week for 14 weeks (includes pre-assessment).

**Course Outcomes**

- Integrate the values of the Gospel of Jesus Christ as part of caring.Value the importance of spirituality in the nursing process.Respect religious beliefs of the client.Utilize personal inspiration in clinical decisions as well as the learning process.
- Demonstrate effective critical thinking and communication.Demonstrate professional behavior when communicating with instructors, other health care providers, patients and families.Provide safe, competent, professional nursing care of adults in inpatients settings experiencing acute or chronic illnesses.
- Design, provide, and evaluate professional nursing care for individuals, families, and communities.Participate in the peri-operative process as well as perform routines in aseptic and sterile technique.Articulate and understand the implications of acute and chronic illness for patients and their families.Demonstrate proficiency in the performance of given technical skills.

NURS 343 : Lab/Simulation for Nursing Care of Adults with Acute and Chronic Illnesses. (1:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 2.

DESCRIPTION: Lab/simulation experience in nursing care of acutely/chronically ill adults.

NOTE: 4 hours lab per week in first 2 weeks, then 2 hours lab or simulation per week for 12 weeks.

**Course Outcomes**

- Integrate the values of the Gospel of Jesus Christ as part of caring.Value the importance of spirituality in the nursing process.Respect religious beliefs of the client.
- Demonstrate effective critical thinking and communication.Demonstrate professional behavior when communicating with instructors, other students.
- Design, provide, and evaluate professional nursing care for individuals, families, and communities.Demonstrate proficiency in the performance of given technical skills.Articulate and understand the implications of acute and chronic illness for patients and their families.Discusses rationale for each technical procedure/skillIdentifies the impact of the procedure on the patientCompletes the procedure in a satisfactory mannerReports and documents procedure and patient resultsExplains procedure and performs patient teaching to patient and SO

NURS 351 : Nursing Care of Women and Newborns. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 3.

DESCRIPTION: Theory and content in the nursing care of childbearing families from diverse backgrounds. Health promotion, assessment, and interventions relating to complicated and uncomplicated pregnancy and birth.

**Course Outcomes**

- Demonstrate compassion within the nursing role regarding patient's healthcare experience regardless of race, religion, values, experiences, or life choices.
- Demonstrate appropriate interpersonal communication and collaboration with clients, families, peers, coworkers, and faculty in varied settings.
- Demonstrate competent nursing care by performing assessment and management of normal antepartum, intrapartum, postpartum, and newborn patients.
- Recognize professional responsibility to educate society regardless of future practice based on wealth of knowledge achieved by each student within this program and each nurse within the profession.

- Retrieve current research and compare and contrast current practice with research and be able to evaluate “Best Practice” within healthcare systems throughout lifetime.

NURS 352 : Clinical Practicum for Nursing Care of Women and Newborns. (1.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 3.

DESCRIPTION: Clinical practicum in the nursing care of childbearing families from diverse backgrounds. Health promotion, assessment, and interventions related to complicated and uncomplicated pregnancy and birth. Includes lab and simulation experiences.

NOTE: 6-12 hours clinical per week for 7 weeks.

**Course Outcomes**

- Use nursing knowledge and critical thinking to provide care to diverse childbearing families.
- Demonstrate beginning competency in assessment techniques and technology specific to pregnancy, birth, and well infants.
- Demonstrate appropriate interpersonal communication and collaboration with clients, families, peers, co-workers, and faculty in varied settings.
- Demonstrate ability to evaluate evidence –based practice in the care of childbearing families.

NURS 361 : Nursing Care of Children and Families. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 3.

DESCRIPTION: Theory and content in the nursing care of children and their families from diverse backgrounds. Health promotion, disease prevention, care of acute and chronic illness, and growth development.

**Course Outcomes**

- Use nursing knowledge and critical thinking to provide developmentally appropriate care to child-rearing families from diverse backgrounds as evidenced by successfully passing course tests, quizzes, and assignments.
- Demonstrate retrieval, evaluation, and application of scholarly knowledge related to practice issues in the care of child-rearing families as evidenced by contributing to classroom discussions and by successfully passing course tests, quizzes, and assignments.
- Demonstrate professional behaviors in the classroom setting.

NURS 362 : Clinical Practicum for Nursing Care of Children and Families. (2:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 3.

DESCRIPTION: Clinical practicum for nursing care of children and their families from diverse backgrounds (health promotion, disease prevention, acute/chronic illness, and growth development). Includes lab and simulation experience.

NOTE: 12 hours clinical per week for 7 weeks.

**Course Outcomes**

- This will be evidenced by successfully completing and/or participating in:Weekly clinical assignmentsClinical examinationLiterature review presentation and handoutPost clinical discussionsFinal clinical evaluationPediatric simulation activity
- This will be evidenced by successfully completing and or participating in:Pediatric simulation activityLiterature review presentation and handoutComments provided by staff each week on the weekly clinical assessment formWeekly clinical assignmentsFinal clinical evaluation
- This will be evidenced by successfully completing and or participating in:Acknowledging and caring for spiritual needs documented in the weekly clinical assignmentContributing in post clinical conferencesActively seeking learning activitiesAttending the Research Conference in the fall or Research Confernece in winterCompleting a service experience

NURS 403 : Public and Global Health Nursing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 3.

DESCRIPTION: Theory for public health nursing; interventions and strategies targeting population-based care at multiple levels. In addition, theory and content of nursing in diverse populations in a global context emphasizing cultural competency skills.

**Course Outcomes**

There are no course outcomes available

NURS 404 : Clinical Practicum Public and Global Health Nursing. (3.5:0:Arr)

WHEN TAUGHT: Spring

PREREQUISITE: Courses in Nursing Semester 4.

DESCRIPTION: Clinical practicum for nursing care in diverse populations in a global context emphasizing public health and cultural competency skills.

**Course Outcomes**

There are no course outcomes available

NURS 461 : Psychiatric and Mental Health Nursing. (2.5:2.5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 4.

DESCRIPTION: Theory and content in the nursing care for clients with complex psychiatric disorders.

**Course Outcomes**

- 1) Demonstrate an understanding of the common adult and child psychiatric disorders, including substance abuse disorders and appropriate nursing interventions related to each disorder.
- 1) Describe and analyze the appropriate use of psychotropic medications in the care of clients with psychiatric disorders.
- 1) Apply therapeutic communication skills and strategies in providing recovery oriented care to clients and their families.
- 1) Identify essential principles and the nursing role in the management of the therapeutic environment.
- 1) Describe legal and ethical implications that impact the nursing care of clients with mental illness.

NURS 462 : Clinical Practicum for Psychiatric and Mental Health Nursing. (1.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 4.

DESCRIPTION: Clinical practicum in the nursing care for clients with complex psychiatric disorders.

NOTE: 14 hours clinical per week (two 7-hour days) for 4 weeks.

**Course Outcomes**

- Establish and maintain a therapeutic relationship with a patient and demonstrate effective use of effective communication skills with staff and patients.
- Identify and describe common psychiatric disorders and formulate appropriate nursing interventions related to each disorder.
- Identify the main categories of psychotropic medications (indications for use, side effects, dosing, nursing implications, patient/family teaching needs, and appropriate monitoring) and safely pass medications in clinical if appropriate in the clinical setting.
- Demonstrate an understanding of providing holistic care for those who suffer with mental illness through exploring your own feelings, strengths, gifts and spirituality.

NURS 471 : Nursing Care of Adults in Crisis. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 4.

DESCRIPTION: Theory and content in the nursing interventions and care for individuals and families in crisis.

**Course Outcomes**

- Students are responsible to come prepared to class having read the assignments from the textbooks so they are prepared to participate in the discussion of the following topics during lecture;HemodynamicsFluid shiftsShock, MODS, SIRSLaboratory dataCardiovascular diseasePulmonary disordersNeurological disordersBurnsRenal/GI/Endocrine disordersWound careTraumaEnd-of-Life
- The student will be able to demonstrate knowledge and application of that knowledge through in-class quizzes, class participation, three course tests, and a comprehensive final exam in the above content areas of the acutely ill patient.
- Students will optimize their understanding and successfully accomplish the ATI module on Advanced Med/Surg material through study of the material in the ATI textbook. If necessary, the student will complete remediation of the ATI material in order to optimize their potential success in taking the NCLEX.

NURS 472 : Clinical Practicum for Adults in Crisis. (2.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 4.

DESCRIPTION: Clinical practicum in the nursing interventions and care for individuals and families in crisis.

NOTE: 13-14 hours clinical per week for 8 weeks (includes pre-assessment).

**Course Outcomes**

- The student will be able to comprehensively assess, analyze, and manage critically ill patients utilizing the following data; pathophysiology, medications, lab data, hemodynamics, and physical assessment data to determine and implement an appropriate plan of nursing care.
- The student will be able to demonstrate knowledge and application of that knowledge in the following content areas of the acutely ill patient by demonstrating expertise in clinical assessment papers and participation in post-clinical conference activities;HemodynamicsFluid shiftsShock, MODS, SIRSLaboratory dataCardiovascular diseasePulmonary disordersNeurological disordersBurnsRenal/GI/Endocrine disordersWound care
- Demonstrate, assess, develop and implement appropriate nursing interventions while providing care to the acutely ill patient in the clinical setting.

NURS 473 : Lab/Simulation for Adults in Crisis. (1:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 4.

DESCRIPTION: Lab/simulation experience in nursing care for individuals and families in crisis.

NOTE: 4 hours first week of semester, then 2 hours lab and simulation per week for 10 weeks.

**Course Outcomes**

- Demonstrate, assess, and implement appropriate nursing interventions related to the acutely ill patient
- Identify and discuss the pharmacodynamics and appropriate nursing actions related to various medications commonly used in acute care settings.

NURS 491 : Nursing Capstone. (2:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 5.

DESCRIPTION: Seminar in advanced theory and synthesis of concepts for the nursing profession focusing on planning, delivering, and managing patient care in complex environments including leadership in the health care environment.

**Course Outcomes**

- 1. Demonstrate critical thinking skills in conjunction with current trends in nursing.
- 2. Articulate an understanding and appreciation of the nursing profession.
- 3. Reflect through personal behavior an understanding of human and professional values.

NURS 492 : Clinical Practicum for Capstone Nursing. (5.5:0:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 5.

DESCRIPTION: Clinical practicum focusing on planning, delivering, and managing patient care in complex environments. Leadership components incorporated into clinical experiences and practices.

NOTE: Requires 230 hours per semester (210 clinical hours; 20 bridging hours, 1.5 hours per week).

**Course Outcomes**

- 2. Demonstrate critical thinking skills through the understanding, use, and implementation of evidence based nursing practice.
- 1. Act in a responsible and accountable manner while providing safe, efficient, compassionate, evidence based nursing care.
- 3. Demonstrate appropriate, accurate, and effective communication skills with patient/family, health-care team, and faculty.

*Hours include courses that may fulfill university core requirements.

## Show all Nursing (Nurs) Courses

College of Nursing Home

Nursing Program Home

Majors

- BS in Nursing

Course Information

- Nursing (Nurs) Courses

Faculty

# Nursing (Nurs)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

NURS 102 : Nursing and Medical Terminology. (2:2:0)

OFFERED: Independent Study also.

DESCRIPTION: Nursing and medical terminology for prenursing and beginning nursing students or those interested in health occupations.

**Course Outcomes**

- Analyze a medical term and identify the different word parts.
- Use medical abbreviations appropriately.
- Use the most common medical terms in a sentence.
- Categorize medical terms according to body systems.

NURS 180 : Preview of Nursing. (1:2:0)

WHEN TAUGHT: Spring

DESCRIPTION: Development of nursing as a profession; the issues and trends evident throughout nursing history, and their impact on nursing today.

**Course Outcomes**

- Demonstrate an understanding of the development of nursing as a profession.
- Demonstrate an understanding of nursing roles, expectations, and opportunities.
- Be able to formulate a personal definition of nursing and gain insight regarding nursing as a lifetime career.
- Be able to discover the uniqueness of the Brigham Young University's nursing program and program outcomes

### 200-Level Courses

NURS 291 : Nursing Care of the Older Adult. (2.5:2.5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

DESCRIPTION: Theory and content in the nursing care optimizing the functional status of older adults through health promotion, risk reduction, and disease prevention strategies.

**Course Outcomes**

- Generate a knowledge base of the processes and issues associated with aging including the needs and functional capabilities of the older adult.
- Use knowledge concepts to solve aging issues recognizing that interdisciplinary care is essential for quality care.
- Compare and connect aging for the individual, caregiver, family, and friends recognizing ethical/legal issues and the importance of culture.
- Compose a personal perspective on aging
- Create a perspective on the aging of God's children that recognizes the potential and the possible and acknowledges that the aging process includes spiritual, physical and psychosocial perspectives
- Reflect on how personal development is connected to professional development as a life-long learner.

NURS 292 : Clinical Practicum for Nursing Care of the Older Adult. (1.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

DESCRIPTION: Clinical practicum for assessment, communication, critical thinking, and technical skills optimizing the functional status of older adults through health promotion, risk reduction, and disease prevention strategies.

NOTE: 6-hour clinical per week for 11 weeks.

**Course Outcomes**

- Generate a knowledge base of the processes and issues associated with aging including the needs and functional capabilities of the older adult.
- Use knowledge concepts to solve aging issues recognizing that interdisciplinary care is essential for quality care.

Compare and connect aging for the individual, caregiver, family, and friends recognizing ethical/legal issues and the importance of culture.
- Compose a personal perspective on aging
- Create a perspective on the aging of God's children that recognizes the potential and the possible and acknowledges that the aging process includes spiritual, physical and psychosocial perspectives
- Reflect on how personal development is connected to professional development as a life-long learner.

NURS 293 : Communication Lab for Nursing Majors. (.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

NOTE: Lab is 1.5 hours per week for 10 weeks.

**Course Outcomes**

- Identify factors that affect interpersonal communication across the lifespan.
- Recognize cultural, gender and disabilities factors that can affect communication.
- Demonstrate appropriate communication skills utilized in nursing practice.
- Formulate strategies to enhance communication that incorporate respect for God's children.

NURS 294 : Health Assessment and Promotion. (3:2.25:1.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Acceptance into Nursing Program.

DESCRIPTION: Acquiring and applying health assessment knowledge and skills. Health promotion, health maintenance,and therapeutic communication.

**Course Outcomes**

- Perform a basic health history and assessment on the adult individual.
- Identify health problems or risks for health problems based on personal, family and social history.
- Identify health problems or risks for health problems based on physical assessment.
- Identify strategies for health promotion, risk reduction and disease preventions for adult clients.

NURS 295 : Fundamental Nursing Concepts and Care. (3:2:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

DESCRIPTION: Acquiring and applying basic nursing skills and concepts; utilizing the nursing process: assessment, diagnosis, planning, implementation, and evaluation.

NOTE: 2.25 hour per lab each week.

**Course Outcomes**

- Integrate the values of the gospel of Jesus Christ as part of caring.
- Demonstrate critical thinking as it relates to beginning nursing concepts.
- Demonstrate proficiency in performing basic nursing skills.
- Demonstrate knowledge of fundamental nursing concepts
- Communicate professionally with peers and faculty.

NURS 296 : Community Health Nursing. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 1.

DESCRIPTION: Applying principles of community and public health nursing to the health of individuals, family, populations, and groups.

NOTE: Meets 2 hours every other week.

**Course Outcomes**

- Describe the function and practice of community health nursing.
- Discuss issues that affect access to health care for individuals, populations, and communities.
- Identify community resources to promote health.

### 300-Level Courses

NURS 300 : Pharmacology in Nursing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 2.

DESCRIPTION: Common categories of drugs: their action, use and desired and undesired effects; implications for nursing care.

**Course Outcomes**

- Name the common categories of drugs and their actions,uses, and desired effects.
- Identify the side effects and contraindications of various drugs.
- List the nursing implications for the administration of drugs.
- Plan client teaching and other nursing interventions.

NURS 320 : Scholarly Inquiry in Nursing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 2.

DESCRIPTION: Acquiring knowledge of the research process, identifying clinical problems, evaluating and using evidence, and engaging in advanced writing and oral communication in the discipline.

NOTE: Completion of both Nurs 320 and 339 fulfills GE Advanced Written and Oral Communication.

**Course Outcomes**

- Describe the research process.
- Write clearly, focus on a well-defined purpose, use APA conventions of structure, and adopt a voice, tone, and level of formality suited to the audience.
- Demonstrate productive writing processes, which includes organizing content to enhance logical flow of ideas; revising; editing grammar, word usage, spelling, and punctuation; proofreading; seeking and using peer review; properly citing sources to avoid plagiarism; and writing successive drafts of the same paper.
- Critically appraise published research for strength of evidence and potential contribution to clinical practice.
- Synthesize information from current evidence and disseminate through original written and oral communication.

NURS 333 : (Nurs-Soc) End-of-Life Care. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: End-of-life (EOL) care from spiritual, physical, and psychosocial perspectives. Comparisons from various cultural/ethnic backgrounds. Complexities of EOL care including impact on families, health care system, and society. Personal perspectives about death, dying, and bereavement.

**Course Outcomes**

- Identify societal attitudes toward death
- Outline guiding principles of end-of-life care
- Compare and contrast palliative care versus hospice including historical factors.
- Distinguish between the medical model & patient-centered approach to dying
- Summarize discrepancies in patient and provider end-of-life preferences
- Compose personal attitudes toward death and dying

NURS 339 : Ethics in Nursing. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: NURS 300 & NURS 320 & NURS 341

DESCRIPTION: Overview of ethical principles and theories, emphasizing role of ethics in nursing; instruction and practice in advanced oral and written communication skills for professional nursing practice.

NOTE: Completion of both Nurs 320 and Nurs 339 fulfills GE Advanced Written and Oral Communication.

**Course Outcomes**

- Engage in reflective thinking to clarify personal moral and ethical values.
- Communicate one's personal bias on difficult health care decisions that are in conflict with one's moral beliefs.
- Demonstrate professional behavior, including academic honesty in all course work, written and oral.
- Analyze ethical dilemmas faced by nurses in clinical practice; identify ethical principles, ethical theories, and common fallacies in thought; provide rationale for possible decisions through thinking and writing critically.
- Use knowledge of ethics and communication skills to resolve ethical dilemmas with an interdisciplinary team.
- Use written, oral, and emerging technology methods to communicate effectively.
- Engage in ethical reasoning and actions to promote social justice, advocacy, collaboration, and understanding across cultures.
- Engage in reflective thinking to clarify personal moral and ethical values.

NURS 341 : Nursing Care of Adults with Acute and Chronic Illnesses. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 2.

DESCRIPTION: Theory and content in the nursing care of acutely and chronically ill adults; professional behavior; illness implications for patients and families.

**Course Outcomes**

- Design, provide, and evaluate professional nursing care for individuals, families, and communities.Differentiate pathophysiology, risk factors, diagnostic procedures, assessment findings and nursing interventions of common acute and chronic illnesses as well as surgical or procedural interventions.Identify treatment and rationale for each illness and surgical or procedural intervention.Articulate and understand the implications of acute and chronic illness for patients and their families.Correlate laboratory, procedure, treatments and other patient results to the effects of the disease process or treatments.Identify effects of chronic illness on the patient and their significant others (SO).
- Integrate the values of the Gospel of Jesus Christ as part of caring.Value the importance of spirituality in the nursing process.Respect religious beliefs of the client.Utilize personal inspiration in clinical decisions as well as the learning process.
- Demonstrate effective critical thinking and communication.Demonstrate professional behavior when communicating with instructors, other health care providers, patients and families.In practice case studies given in the didactic class, demonstrate critical thinking skills and is able to calculate priority nursing care interventions for various types of medical surgical hospitalized patientIdentify situations where skills and knowledge beyond their scope is needed and accurately seeks assistance.
- Exemplify life-long learning.Participate in activities that contribute to the ongoing development of personal knowledge as well as the Nursing profession's body of knowledge.

NURS 342 : Clinical Practicum for Nursing Care of Adults with Acute and Chronic Illnesses. (3.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 2.

DESCRIPTION: Clinical practicum in the nursing care of acutely and chronically ill adults in inpatient settings; professional behavior; illness implications for patients and families.

NOTE: 10.5 clinical hours per week for 14 weeks (includes pre-assessment).

**Course Outcomes**

- Integrate the values of the Gospel of Jesus Christ as part of caring.Value the importance of spirituality in the nursing process.Respect religious beliefs of the client.Utilize personal inspiration in clinical decisions as well as the learning process.
- Demonstrate effective critical thinking and communication.Demonstrate professional behavior when communicating with instructors, other health care providers, patients and families.Provide safe, competent, professional nursing care of adults in inpatients settings experiencing acute or chronic illnesses.
- Design, provide, and evaluate professional nursing care for individuals, families, and communities.Participate in the peri-operative process as well as perform routines in aseptic and sterile technique.Articulate and understand the implications of acute and chronic illness for patients and their families.Demonstrate proficiency in the performance of given technical skills.

NURS 343 : Lab/Simulation for Nursing Care of Adults with Acute and Chronic Illnesses. (1:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 2.

DESCRIPTION: Lab/simulation experience in nursing care of acutely/chronically ill adults.

NOTE: 4 hours lab per week in first 2 weeks, then 2 hours lab or simulation per week for 12 weeks.

**Course Outcomes**

- Integrate the values of the Gospel of Jesus Christ as part of caring.Value the importance of spirituality in the nursing process.Respect religious beliefs of the client.
- Demonstrate effective critical thinking and communication.Demonstrate professional behavior when communicating with instructors, other students.
- Design, provide, and evaluate professional nursing care for individuals, families, and communities.Demonstrate proficiency in the performance of given technical skills.Articulate and understand the implications of acute and chronic illness for patients and their families.Discusses rationale for each technical procedure/skillIdentifies the impact of the procedure on the patientCompletes the procedure in a satisfactory mannerReports and documents procedure and patient resultsExplains procedure and performs patient teaching to patient and SO

NURS 351 : Nursing Care of Women and Newborns. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 3.

DESCRIPTION: Theory and content in the nursing care of childbearing families from diverse backgrounds. Health promotion, assessment, and interventions relating to complicated and uncomplicated pregnancy and birth.

**Course Outcomes**

- Demonstrate compassion within the nursing role regarding patient's healthcare experience regardless of race, religion, values, experiences, or life choices.
- Demonstrate appropriate interpersonal communication and collaboration with clients, families, peers, coworkers, and faculty in varied settings.
- Demonstrate competent nursing care by performing assessment and management of normal antepartum, intrapartum, postpartum, and newborn patients.
- Recognize professional responsibility to educate society regardless of future practice based on wealth of knowledge achieved by each student within this program and each nurse within the profession.
- Retrieve current research and compare and contrast current practice with research and be able to evaluate "Best Practice" within healthcare systems throughout lifetime.

NURS 352 : Clinical Practicum for Nursing Care of Women and Newborns. (1.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 3.

DESCRIPTION: Clinical practicum in the nursing care of childbearing families from diverse backgrounds. Health promotion, assessment, and interventions related to complicated and uncomplicated pregnancy and birth. Includes lab and simulation experiences.

NOTE: 6-12 hours clinical per week for 7 weeks.

**Course Outcomes**

- Use nursing knowledge and critical thinking to provide care to diverse childbearing families.
- Demonstrate beginning competency in assessment techniques and technology specific to pregnancy, birth, and well infants.
- Demonstrate appropriate interpersonal communication and collaboration with clients, families, peers, co-workers, and faculty in varied settings.
- Demonstrate ability to evaluate evidence –based practice in the care of childbearing families.

NURS 361 : Nursing Care of Children and Families. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 3.

DESCRIPTION: Theory and content in the nursing care of children and their families from diverse backgrounds. Health promotion, disease prevention, care of acute and chronic illness, and growth development.

**Course Outcomes**

- Use nursing knowledge and critical thinking to provide developmentally appropriate care to child-rearing families from diverse backgrounds as evidenced by successfully passing course tests, quizzes, and assignments.
- Demonstrate retrieval, evaluation, and application of scholarly knowledge related to practice issues in the care of child-rearing families as evidenced by contributing to classroom discussions and by successfully passing course tests, quizzes, and assignments.
- Demonstrate professional behaviors in the classroom setting.

NURS 362 : Clinical Practicum for Nursing Care of Children and Families. (2:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 3.

DESCRIPTION: Clinical practicum for nursing care of children and their families from diverse backgrounds (health promotion, disease prevention, acute/chronic illness, and growth development). Includes lab and simulation experience.

NOTE: 12 hours clinical per week for 7 weeks.

**Course Outcomes**

- This will be evidenced by successfully completing and/or participating in:Weekly clinical assignmentsClinical examinationLiterature review presentation and handoutPost clinical discussionsFinal clinical evaluationPediatric simulation activity
- This will be evidenced by successfully completing and or participating in:Pediatric simulation activityLiterature review presentation and handoutComments provided by staff each week on the weekly clinical assessment formWeekly clinical assignmentsFinal clinical evaluation
- This will be evidenced by successfully completing and or participating in:Acknowledging and caring for spiritual needs documented in the weekly clinical assignmentContributing in post clinical conferencesActively seeking learning activitiesAttending the Research Conference in the fall or Research Confernece in winterCompleting a service experience

NURS 390R : Independent Study in the Practice of Nursing. (.5-9:ARR:ARR)

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- Students will complete a plan of action that will promote their successful completion of the NCLEX-RN examination. which includes: an individual plan for test preparation; demonstraton of increased motivation to prepare for NCLEX-RN exam; demonstration of increased confidence for taking the NCLEX-RN examination.
- Students will be able to fulfill the responsibilities of a Student Nurses' Association officer and apply principles of peer leadership and student representation evidenced by: developing confidence in communication skills, applying principles of leadership through appropriate initiative and follow-through.

NURS 399R : Academic Internship in Nursing Practice. (1-4:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Departmental approval.

DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- The international student will be able to apply nursing skills, principles, and knowledge to clinical practice.
- The international student will be use insights gained during the experience to effectively deliver patient and family care.
- The international student will be able to demonstrate and increased knowledge and understanding of the registered nurse's role.

### 400-Level Courses

NURS 403 : Public and Global Health Nursing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 3.

DESCRIPTION: Theory for public health nursing; interventions and strategies targeting population-based care at multiple levels. In addition, theory and content of nursing in diverse populations in a global context emphasizing cultural competency skills.

**Course Outcomes**

There are no course outcomes available

NURS 404 : Clinical Practicum Public and Global Health Nursing. (3.5:0:Arr)

WHEN TAUGHT: Spring

PREREQUISITE: Courses in Nursing Semester 4.

DESCRIPTION: Clinical practicum for nursing care in diverse populations in a global context emphasizing public health and cultural competency skills.

**Course Outcomes**

There are no course outcomes available

NURS 461 : Psychiatric and Mental Health Nursing. (2.5:2.5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 4.

DESCRIPTION: Theory and content in the nursing care for clients with complex psychiatric disorders.

**Course Outcomes**

- 1) Demonstrate an understanding of the common adult and child psychiatric disorders, including substance abuse disorders and appropriate nursing interventions related to each disorder.
- 1) Describe and analyze the appropriate use of psychotropic medications in the care of clients with

psychiatric disorders.
- 1) Apply therapeutic communication skills and strategies in providing recovery oriented care to clients and their families.
- 1) Identify essential principles and the nursing role in the management of the therapeutic environment.
- 1) Describe legal and ethical implications that impact the nursing care of clients with mental illness.

NURS 462 : Clinical Practicum for Psychiatric and Mental Health Nursing. (1.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 4.

DESCRIPTION: Clinical practicum in the nursing care for clients with complex psychiatric disorders.

NOTE: 14 hours clinical per week (two 7-hour days) for 4 weeks.

**Course Outcomes**

- Establish and maintain a therapeutic relationship with a patient and demonstrate effective use of effective communication skills with staff and patients.
- Identify and describe common psychiatric disorders and formulate appropriate nursing interventions related to each disorder.
- Identify the main categories of psychotropic medications (indications for use, side effects, dosing, nursing implications, patient/family teaching needs, and appropriate monitoring) and safely pass medications in clinical if appropriate in the clinical setting.
- Demonstrate an understanding of providing holistic care for those who suffer with mental illness through exploring your own feelings, strengths, gifts and spirituality.

NURS 471 : Nursing Care of Adults in Crisis. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 4.

DESCRIPTION: Theory and content in the nursing interventions and care for individuals and families in crisis.

**Course Outcomes**

- Students are responsible to come prepared to class having read the assignments from the textbooks so they are prepared to participate in the discussion of the following topics during lecture;HemodynamicsFluid shiftsShock, MODS, SIRSLaboratory dataCardiovascular diseasePulmonary disordersNeurological disordersBurnsRenal/GI/Endocrine disordersWound careTraumaEnd-of-Life
- The student will be able to demonstrate knowledge and application of that knowledge through in-class quizzes, class participation, three course tests, and a comprehensive final exam in the above content areas of the acutely ill patient.
- Students will optimize their understanding and successfully accomplish the ATI module on Advanced Med/Surg material through study of the material in the ATI textbook. If necessary, the student will complete remediation of the ATI material in order to optimize their potential success in taking the NCLEX.

NURS 472 : Clinical Practicum for Adults in Crisis. (2.5:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 4.

DESCRIPTION: Clinical practicum in the nursing interventions and care for individuals and families in crisis.

NOTE: 13-14 hours clinical per week for 8 weeks (includes pre-assessment).

**Course Outcomes**

- The student will be able to comprehensively assess, analyze, and manage critically ill patients utilizing the following data; pathophysiology, medications, lab data, hemodynamics, and physical assessment data to determine and implement an appropriate plan of nursing care.
- The student will be able to demonstrate knowledge and application of that knowledge in the following content areas of the acutely ill patient by demonstrating expertise in clinical assessment papers and participation in post-clinical conference activities;HemodynamicsFluid shiftsShock, MODS, SIRSLaboratory dataCardiovascular diseasePulmonary disordersNeurological disordersBurnsRenal/GI/Endocrine disordersWound care
- Demonstrate, assess, develop and implement appropriate nursing interventions while providing care to the acutely ill patient in the clinical setting.

NURS 473 : Lab/Simulation for Adults in Crisis. (1:0:Arr.)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 4.

DESCRIPTION: Lab/simulation experience in nursing care for individuals and families in crisis.

NOTE: 4 hours first week of semester, then 2 hours lab and simulation per week for 10 weeks.

**Course Outcomes**

- Demonstrate, assess, and implement appropriate nursing interventions related to the acutely ill patient
- Identify and discuss the pharmacodynamics and appropriate nursing actions related to various medications commonly used in acute care settings.

NURS 491 : Nursing Capstone. (2:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 5.

DESCRIPTION: Seminar in advanced theory and synthesis of concepts for the nursing profession focusing on planning, delivering, and managing patient care in complex environments including leadership in the health care environment.

**Course Outcomes**

- 1. Demonstrate critical thinking skills in conjunction with current trends in nursing.
- 2. Articulate an understanding and appreciation of the nursing profession.
- 3. Reflect through personal behavior an understanding of human and professional values.

NURS 492 : Clinical Practicum for Capstone Nursing. (5.5:0:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Courses in Nursing Semester 5.

DESCRIPTION: Clinical practicum focusing on planning, delivering, and managing patient care in complex environments. Leadership components incorporated into clinical experiences and practices.

NOTE: Requires 230 hours per semester (210 clinical hours; 20 bridging hours, 1.5 hours per week).

**Course Outcomes**

- 2. Demonstrate critical thinking skills through the understanding, use, and implementation of evidence based nursing practice.
- 1. Act in a responsible and accountable manner while providing safe, efficient, compassionate, evidence based nursing care.
- 3. Demonstrate appropriate, accurate, and effective communication skills with patient/family, health-care team, and faculty.

NURS 499R : Honors Thesis. (.5-3:0:0)

DESCRIPTION: Honors thesis preparation.

**Course Outcomes**

- Complete a project and scholarly paper that reflects: identification of a clinical or professional problem/concern that is significant to the discipline, complete a thorough literature reveiw to investigate the problem/concern and its relevance to nursing profession and/or practice, write a scholarly paper which describes the clinical problem/concern, reports the findings, compares and contrasts the data, identify the implications for nursing and patient care, and make recommendations for practice.

## 500-Level Graduate Courses (available to advanced undergraduates)

NURS 555 : Pharmacology in Advanced Practice. (2:2:0)

WHEN TAUGHT: Fall

DESCRIPTION: Principles of pharmacology and drug therapy for advanced practice nurses.

**Course Outcomes**

- 1. Engage in the scholarship of the discipline through: a. Utilization of pharmacological research b. Application of evidence based knowledge into practice c. Incorporation of concepts and theories from pharmacology
- 2. Assumes accountability in personal and professional actions

NURS 590R : Independent Study. (.5-4:ARR:ARR)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Individualized study.

**Course Outcomes**

- 1. Identify an area where increased skills and knowledge are needed and develop a plan to meet that needed.

# Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Nursing Department Home**

**College of Nursing Home**

**Nursing Program Home**

**Majors**

- BS in Nursing

**Course Information**

- Nursing (Nurs) Courses

**Faculty**

# Nursing Faculty

Show All
Hide All

## Professors

Beckstrand, Renea L.
**COLLEGE:** Nursing
**RANK:** Professor
**DEGREES:** AS, Ricks College, 1979
AS, Brigham Young University, 1981
BS, Brigham Young University, 1983
MS, Brigham Young University, 1987
PhD, University of Utah, 2001

Ravert, Patricia (Patty) Kay
**COLLEGE:** Nursing
**RANK:** Professor
**DEGREES:** AS, Brigham Young University, 1974
BS, Brigham Young University, 1975
MS, Brigham Young University, 1994
PhD, University of Utah, 2004

## Associate Professors

Heise, Barbara A.
**COLLEGE:** Nursing
**RANK:** Associate Professor
**DEGREES:** AS, Missouri Southern State College, 1983
BS, Missouri Southern State College, 1986
MS, State University of New York, 1989
PhD, University of Virginia, 2007

Lassetter, Jane H.
**COLLEGE:** Nursing
**RANK:** Associate Professor
**DEGREES:** AS, Brigham Young University, 1981
BS, Brigham Young University, 1998
MS, Brigham Young University, 2001
PhD, Oregon Health and Science University, 2008

Williams, Mary
**COLLEGE:** Nursing
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1971
MS, University of Utah, 1980
PhD, University of Arizona, 1991

## Assistant Professors

Freeborn, Donna Susan
**COLLEGE:** Nursing
**RANK:** Assistant Professor
**DEGREES:** AS, Brigham Young University, 1974

BS, Chapman University, 1983
MS, University of California, Los Angeles, 1994
PhD, Oregon Health and Science University, 2008

Luthy, Beth
**COLLEGE:** Nursing
**RANK:** Assistant Professor
**DEGREES:** ADN, Utah Valley State College, 2000
BS, Brigham Young University, 2003
MS, Brigham Young University, 2005
DNP, Rush University, 2008

Macintosh, Janelle
**COLLEGE:** Nursing
**RANK:** Assistant Professor
**DEGREES:** BSN, Radford University, 2001
PhD, University of Utah, 2011

Merrill, Katreena
**COLLEGE:** Nursing
**RANK:** Assistant Professor
**DEGREES:** AS, Brigham Young University, 1983
BS, Brigham Young University, 1985
PhD, University of Utah, 2010

Whitt, Karen J.
**COLLEGE:** Nursing
**RANK:** Assistant Professor
**DEGREES:** AS, Brigham Young University, 1984
BS, George Mason University, 2001
MS, George Mason University, 2002
PhD, George Mason University, 2008

## Teaching Professor

Blad, Kent Dean
**COLLEGE:** Nursing
**RANK:** Teaching Professor
**DEGREES:** AA, Snow College, 1983
BS, University of Utah, 1987
MS, Brigham Young University, 1999
DNP, University of Utah, 2010

## Associate Teaching Professors

Anderson, Peggy Hammond
**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor
**DEGREES:** AS, Brigham Young University, 1983
BS, Brigham Young University, 1999
MS, Brigham Young University, 2001

Corbett, Cheryl
**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1989
MS, Brigham Young University, 1996

Heaston, Sondra
**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor
**DEGREES:** AD, Weber State University, 1987
BS, Weber State University, 1989
MS, Brigham Young University, 2005

Lundberg, Karen
**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor

**DEGREES:** AS, Brigham Young University, 1979
BS, University of Utah, 2005
MS, University of Utah, 2007

Mills, Debra Ann
**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor
**DEGREES:** AS, Ricks College, 1974
BS, Brigham Young University, 1982
MS, Brigham Young University, 1989

Palmer, Sheri Patten
**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor
**DEGREES:** AS, Brigham Young University, 1983
BS, Brigham Young University, 1985
MS, Idaho State University, 1990

Reed, Shelly Jensen
**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1984
MSN, University of Utah, 1992
DNP, Case Western Reserve University, 2009

Ulberg, Ronald Stanley
**COLLEGE:** Nursing
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1976
AS, Weber State University, 1989
BS, University of Phoenix, 1992
MN, University of Phoenix, 2000

## Assistant Teaching Professors

de la Cruz, Karen
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, California State University, 1987
MS, University of Phoenix, 2001

Eden, Lacey M.
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 2002
MS, Brigham Young University, 2009

Edmunds, Debra
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** CNE, Salt Lake Community College, 1997
AS, Salt Lake Community College, 2001
BSN, Brigham Young University, 2003
MSN, University of Utah, 2007

Hunsaker, Stacie
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** AS, Ricks College, 1992
BS, University of Phoenix, 1998
MS, Utah Valley University, 2013

Jarvis, Sabrina
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** ADN, Cochise College, 1976
BS, Grandview College, 1985
MS, Brigham Young University, 1990
DNP, University of Utah, 2010

Kohl, James
**COLLEGE:** Nursing

**RANK:** Assistant Teaching Professor
**DEGREES:** BSN, University of San Diego, 1989
MS, University of Maryland, Baltimore, 1996

Mabey, Linda
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** BSN, Idaho State University, 1978
MS, University of Utah, 1988
DNP, University of Utah, 2009

Miles, Leslie
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** AD, Brigham Young University, 1983
BS, Brigham Young University, 1999
MS, University of Utah, 2004
DNP, Rush University, 2012

Nuttall, Craig
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** AS, Utah Valley State College, 2006
BS, Brigham Young University, 2008
MS, Brigham Young University, 2011

Rasmussen, Ryan
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** AS, Utah Valley State College, 2001
BSN, Utah Valley University, 2008
MS, Brigham Young University, 2011

Ray, Gaye
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** AS, Brigham Young University, 1981
BSN, Brigham Young University, 1982
MSN, Georgia State University, 2008
Certificate, University of Albany, 2011
Graduate Certificate, University of Missouri, Columbia, 2012

Valentine, Julie
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** BSN, University of Arizona, 1984
MS, University of Utah, 2009

Wing, Debra
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** AS, Stevens Henagar College, 1981
ASN, Weber State University, 1994
BSN, Weber State University, 1996
MSNED, Westminster College, 2010

Winters, Blaine
**COLLEGE:** Nursing
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 1992
ADN, Salt Lake Community College, 1995
BS, University of Utah, 1999
MS, University of Utah, 2001
DNP, University of Utah, 2008

## Instructor

Himes, Deborah
**COLLEGE:** Nursing
**RANK:** Instructor
**DEGREES:** BS, Brigham Young University, 1991

MS, University of Utah, 1996

- Education
- Engineering and Technology
- Family, Home, and Social Sciences
- Fine Arts and Communications
- Humanities
- Law School
- Life Sciences
- Management
- Nursing
- Physical and Mathematical Sciences
- Religious Education
- Undergraduate Education

**Departments/Programs**

- Chemistry and Biochemistry
- Computer Science
- Geological Sciences
- Mathematics
- Mathematics Education
- Physical Science Program
- Physics and Astronomy
- Statistics

# College of Physical and Mathematical Sciences

N-181 ESC
(801) 422-2674

**Dean:** Scott D. Sommerfeldt, Professor, Physics and Astronomy
**Associate Dean:** Bart J. Kowallis, Professor, Geological Sciences
**Associate Dean:** Thomas W. Sederberg, Professor, Computer Science

The College of Physical and Mathematical Sciences consists of seven departments:

Chemistry and Biochemistry
Computer Science
Geological Sciences
Mathematics
Mathematics Education
Physics and Astronomy
Statistics

Freshmen who are interested in the physical and mathematical sciences but are undecided about a specific major are encouraged to register for one or more of the following science fundamentals core courses: Chem 111 or 105; C S 124 or 142; Geol 101 or 111; Math 112 or 113; MthEd 117; Phscs 121; Stat 121 or 151.

## College Advisement Center

Shane M. Jorgenson, Director
Darlene Willey, Assistant Director
N-181 ESC, (801) 422-2674

The advisement center provides information and help on registration, graduation requirements, policies and procedures, fields of study, changes of major, and many other aspects of the college's academic life.

## Degrees Offered

Bachelor's degrees are offered in actuarial science, applied physics, biochemistry, chemistry, chemistry education, computer science, earth and space science education, geology, mathematics, mathematics education, physical science teaching, physics, physics-astronomy, physics teaching, and statistics.

The master of science degree is offered in biochemistry, chemistry, computer science, geology, mathematics, physics, and statistics. The master of arts degree is available in mathematics education. The doctor of philosophy degree is offered in biochemistry, chemistry, computer science, mathematics, physics, and physics/astronomy.

See specific departmental sections of this catalog for baccalaureate degree requirements. Graduate programs are detailed in the 2014-2015 BYU Graduate Catalog.

**College of Physical and Mathematical Sciences Home**

**Chemistry and Biochemistry Department Home**

**Majors**

- BA in Chemistry
- BS in Biochemistry
- BS in Chemistry
- BS in Chemistry Education

**Minors**

- Minor in Chemistry
- Minor in Chemistry Education

**Course Information**

- Chemistry and Biochemistry Courses

**Faculty**

# Chemistry and Biochemistry

Gregory F. Burton, Chair
C-104 BNSN, (801) 422-4917

College of Physical and Mathematical Sciences Advisement Center
N-181 ESC, (801) 422-2674
1112 TMCB, (801) 422-4214

## Admission to Degree Program

All degree programs in the Department of Chemistry and Biochemistry are open enrollment. However, special limitations apply for teaching majors.

## The Discipline

Chemists and biochemists study the fundamental processes that govern the natural world, including atomic structure and how atoms interact to form molecules and materials. They study the mechanisms of chemical processes, including those that underpin living systems such as the transfer of information from DNA to RNA to proteins. They work to develop simplifying models (theories) that permit the correlation and explanation of observations about the behavior of matter. Chemical principles are fundamental to the understanding of subjects ranging from the molecular biology of life to the structure of rocks and minerals. Chemistry and biochemistry provide an essential foundation for the medical sciences, engineering (especially chemical engineering), electronics, energy, environmental sciences, materials science, pharmacy, and virtually all manufacturing processes.

Chemistry and biochemistry are active branches of science that are vital to human existence. Inasmuch as the field embraces all aspects of the material world, it is subdivided into five areas of interest. Examples of these diverse areas include the regulation of protein synthesis, cellular signal transduction at the molecular level and proteometrics (biochemistry), design and synthesis of medicinal compounds (organic chemistry), design and synthesis of new molecular structures and materials (inorganic chemistry), spectroscopic study of energy transfer and molecular structures (physical chemistry), and analysis of medicinal compounds, biological materials, and contaminants or trace elements found in the environment (analytical chemistry).

Chemistry and biochemistry involve far more than test tubes and beakers. They include sophisticated methodologies such as recombinant DNA technology, working with a variety of instruments such as mass spectrometers, calorimeters, chromatographs, ultracentrifuges, lasers, X-ray diffractometers, electron microscopes and nuclear magnetic resonance spectrometers, all of which are used by undergraduate chemistry and biochemistry students at BYU. Computers also play an important role in these disciplines, with applications varying from simulation of molecules and the collection and analysis of data.

## Career Opportunities

Graduates in chemistry and biochemistry obtain positions in virtually every industry, and those who have imagination and intellectual curiosity are in particular demand. The disciplines also provide an excellent preprofessional course of study for those interested in medicine, dentistry, law, and business. The chemistry and biochemistry curricula are both rigorous and intellectually rewarding.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BA in Chemistry** (Program Outcomes)
**BS in Biochemistry** (Program Outcomes)
**BS in Chemistry** (Program Outcomes)
**BS in Chemistry Education** (Program Outcomes)

**Minor in Chemistry**
**Minor in Chemistry Education**

Students should see the department office for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Chemistry

MS in Biochemistry
PhD in Chemistry
PhD in Biochemistry

For more information see the BYU 2014–2015 Graduate Catalog.

# General Information

## Required High School Preparation

1. It is recommended that a student complete the following courses in high school:
   - 3 units of English.
   - 2 units of physical science, chemistry, and physics.
   - 4 units of mathematics, consisting of 2.5 units of algebra, 1 unit of geometry, and 0.5 unit of trigonometry. This should qualify students to begin college mathematics with Math 112, analytic geometry and calculus.

     Because mathematics provides the foundation for all work in the physical and mathematical sciences, particular attention should be paid to high school preparation in this subject.

     To decide which mathematics course should be taken first, contact the Mathematics Department, 292 TMCB, and request a mathematics placement test.
2. All students, especially freshmen and those transferring, should contact the department between March and August each year for advisement about efficient course scheduling and opportunities for student employment.

## Scholarships

Kenneth W. Brighton, H. Tracy Hall, Ida Tanner Hamblin, Boyd A. Waite and other scholarships are available to qualified chemistry majors at the sophomore level and above.

College of Physical and Mathematical Sciences Home

Chemistry and Biochemistry Department Home

Majors

- BA in Chemistry
- BS in Biochemistry
- BS in Chemistry
- BS in Chemistry Education

Minors

- Minor in Chemistry
- Minor in Chemistry Education

Course Information

- Chemistry and Biochemistry Courses

Faculty

# BA in Chemistry (57.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

This degree provides preparation for those individuals in preprofessional programs (e.g., medicine, dentistry, master of business administration, or law), and it also provides career alternatives in chemistry.

## Program Requirements | View MAP | View Program Outcomes

1. No more than 3 hours of D credit is allowed in major courses.
2. The Chemistry and Biochemistry Department requires the final 10 hours of required chemistry credit to be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
3. Complete the following:

CHEM 111 : Honors Principles of Chemistry. (4:3:3)

OFFERED: Honors also.
WHEN TAUGHT: Fall
PREREQUISITE: Math 110 or equivalent.
RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.
DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.
NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

CHEM 112 : Principles of Chemistry. (3:3:2)

WHEN TAUGHT: Winter
PREREQUISITE: Chem 111 or Chem 105 or equivalent.
DESCRIPTION: Continuation of Chem 111.
NOTE: Tutorial included.

**Course Outcomes**

- Students will be able to use thermodynamic principles and their application to physical and chemical equilibria to calculate entropic and enthalpic contributions to physical changes and reactions and predict equilibria given entropic and enthalpic changes.
- Students will be able to apply acid-base theory, including interactions of strong and weak acids and bases, to determination of pH values of solutions, calculating buffering capacity and performance of acid-base titrations. They will be able to use structural features of molecules to estimate acid and base strength.
- Students will demonstrate an understanding of electrochemistry in designing simple electrodes and will use reduction/oxidation potentials to characterize electrodes.
- Students will be able to apply transition state theory to reaction kinetics. Students will be able to model mathematically rates of multiple reaction types.
- Students will be able to apply the periodic nature of the elements to classify elements and identify the compositions of inorganic salts.

CHEM 113 : Introductory General Chemistry Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Chem 112 or Chem 106 or concurrent enrollment (preferred).
DESCRIPTION: Principles and techniques of chemical measurements. Concepts introduced in general chemistry lecture courses reinforced.

**Course Outcomes**

- Perform precise quantitative measurements using volumetric glassware, analytical balances, and electrochemical and spectrophotometric instrumentation.

- Apply concepts of quantum mechanics, kinetics, equilibrium and thermodynamics taught in Chem 111 and Chem 112 to laboratory measurements.
- Apply a basic understanding of descriptive chemistry introduced in Chem 112 to the separation and classification of inorganic cations and anions.
- Record laboratory procedures and results neatly and concisely in a laboratory notebook
- Report experimental results in a manner that gives proper attention to sources of experimental error.

CHEM 201 : Chemical Handling and Safe Laboratory Practices. (.5:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Safe handling of chemicals and safe practices in chemistry laboratories.

**Course Outcomes**

- Discuss regulations that govern a chemists activities: OSHO, EPA, DOT, CDC, NRC, and state agencies and specifically, the OSHA Laboratory Standard CFR 29 1910.1450 and EPA RCRA regulations (CFR 40) requiring “cradle to grave” responsibility
- Identify chemical hazard classes and follow administrative guidelines to work safely in a laboratory environment and properly store and dispose of chemicals. These guidelines include regulated exposure limits PEL, STEL, IDLH, Ceiling and other measurable standards, such as the TLV, LD50, LC50, SADT, and guidelines for use of compressed gases and cryogenic materials.
- Demonstrate usage of protective equipment available for chemical exposure.
- Respond to laboratory accidents, such as spills, fires, and cuts, and clean up a mercury spill.
- Recognize fire hazards and put out a fire using an ABC fire extinguisher.
- Discuss biological and radiological safety, including biosafety levels, management of biological waste, lasers, and radionuclides.

CHEM 227 : Principles of Chemical Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 113

DESCRIPTION: Principles of quantitative analysis, introductory instrumental methods, and computer applications to chemical analysis.

**Course Outcomes**

- Demonstrate skill in performing precise, careful, basic laboratory operations such as sample preparation, calibration techniques, spectrophotometry, electrochemical analysis, titrimetric and chromatographic methods
- Explain basic measurement methods and devices
- Show proficiency in reporting scientific results in numerical, graphical, and written formats, and be able to explain the ethical standards for such reports
- Show proficiency in using computer programs for data analysis
- Apply basic statistics to data analysis including, confidence intervals, t-test, linear regression, propagation of error, sampling statistics and signal-noise enhancement
- Critically evaluate experiments and data with respect to theory and models
- Apply knowledge to new problems, including the design and validation of new analytical methods

CHEM 351M : Organic Chemistry - Majors. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: For majors in chemistry and biochemistry.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352M : Organic Chemistry--Majors. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 351M; or CHEM 351

DESCRIPTION: Continuation of Chem 351M.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.

- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 354 : Organic Chemistry Laboratory--Majors. (2:0:6)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, manipulative skills, isolation and purification, characterization and identification, syntheses.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

CHEM 391 : Technical Writing Using Chemical Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 227 & CHEM 352; or CHEM 227 & CHEM 352M

DESCRIPTION: Intensive technical writing course based on chemical literature sources.

NOTE: Fulfills GE Advanced Writing requirement.

**Course Outcomes**

- Communicate the results of scientific experiments in oral reports, technical graphics, and written reports.
- Search the chemical literature for published works relevant to a project of interest, and to read and understand technical literature related to the discipline.
- Draw on classroom knowledge to contribute to solutions of problems encountered in a research laboratory.
- Make informed choices among post-graduate opportunities for work or further education.
- Understand professional and scientific ethics.

CHEM 495 : Senior Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 594R

DESCRIPTION: Research topics presented by faculty and visiting scientists. Completion of undergraduate portfolio.

NOTE: Required of all seniors in all chemistry and biochemistry degree programs the last semester in residence.

**Course Outcomes**

- Become familiar with a variety of current research areas by listening to numerous visiting researchers describe their recent research results.
- Prepare for seminar presentations by reading literature articles written by visiting speakers before attending the presentation.
- Improve science-writing skills by writing summaries of research papers.
- Take notes in presentations attended to record thoughts and ideas for future reference.
- Reflect on your BYU education and evaluate how it helps you achieve your goals.

**Note:** With department approval Chem 105 may substitute for Chem 111; and Chem 106 for Chem 112.

4. Complete one of the following options:

**Either**

CHEM 468 : Biophysical Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481 & MATH 113 & PHSCS 220; or CHEM 481M & MATH 113 & PHSCS 220

DESCRIPTION: Applications of physical chemistry to biological systems. Spectroscopic applications, computational methods, structural biochemistry, thermodynamics, equilibria, statistical mechanics, transport properties, kinetics, quantum mechanics.

NOTE: For biochemistry (BS) majors and those interested in the health professions or biochemistry. (For prerequisites, Phscs 220 may be taken concurrently.)

**Course Outcomes**

- Describe conceptually the fundamental concepts in the four principal areas of physical chemistry: classical thermodynamics, statistical thermodynamics kinetics and quantum mechanics
- Define mathematically the concepts outlined in 1) and manipulate the fundamental and derived equations associated with these concepts
- Use the above skills to calculate or predict the equilibrium conditions or direction of spontaneous biochemical processes that are involved in metabolism or energy transfer events given appropriate thermodynamic data and initial system conditions
- Employ mathematical and graphical techniques on enzyme kinetic data to extract key parameters and to identify inhibition mechanisms
- Solve simple Schroedinger equation problems (e.g., particle in a box), identify boundary

conditions, and explain the significance of boundary conditions on the observance of quantized effects
- Relate the simple Hamiltonians from above to biological molecules and systems and generalize from the simple results to make predictions regarding behavior in the biological systems
- Identify the nature of electronic energy levels in key photoactive biological molecules and use spectroscopic data to probe these levels
- Apply fundamental concepts of electronic structure and reaction kinetics to the steps in photosynthesis and vision
- Provide examples in which physical chemistry perspectives have enabled a deeper more complete understanding of the structure and function of biological molecules and complex biological systems

CHEM 481M : Biochemistry--Majors. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry and biochemistry majors only. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

CHEM 584 : Biochemistry Laboratory/Proteins. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Introduction to current biochemical research procedures including spectrophotometry, chromatography, electrophoresis, and immunological techniques. Protein over-expression; isolation and characterization methods. Enzyme kinetics and protein-ligand interactions. Introduction to bioinformatics.

NOTE: May be taken before or after Chem 586.

**Course Outcomes**

- Apply spectroscopic techniques to analyze proteins, both their enzymatic and binding reactions
- Use gel electrophoresis and immunoblotting techniques to determine the presence and purity of proteins in biological samples
- Identify protein binding partners using co-immunoprecipitation methods
- Purify proteins using state-of-the-art separations methods
- Characterize an enzyme using steady state kinetics methods
- Use enzymes as analytical and diagnostic tools
- Properly record and interpret data
- Present data they have collected in an oral presentation and in a written scientific paper
- Understand ethical means of reporting results and giving proper credit to the work of others
- Measure ligand binding to proteins; determine dissociation constants and the degree of cooperativity.

Or

CHEM 586 : Biochemistry Laboratory/Nucleic Acids. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Laboratory course covering major techniques involved in isolation, amplification, and cloning of recombinant DNA as well as isolation, synthesis, translation, and identification of RNA.

NOTE: May be taken before or after Chem 584.

**Course Outcomes**

- Understand, design and execute experiments using basic DNA manipulation procedures that include isolation, purification and modification of DNA
- Explain and perform PCR amplification and use this technique to detect the presence of DNA “targets”, DNA cloning (subcloning) and DNA sequencing
- Understand and explain how to isolate, quantitate and manipulate RNA
- Design and perform experiments to reverse transcribe RNA into complementary DNA (cDNA) and assess gene expression by semi- and quantitative PCR
- Isolate total RNA and be able to purify mRNA from this material
- Introduce and express foreign DNA and/or RNA in mammalian cells using the techniques of electroporation, lipid-based transfection, calcium phosphate based transfection and retroviral transduction
- “Knockdown” an expressed gene in mammalian cells using RNA silencing
- Prepare laboratory notebooks that include the objective, results and methods of each laboratory experiment. Additionally, students will provide conclusions to each experiment,

including when appropriate, potential explanations to unexpected results

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

**Or**

CHEM 462 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 302 & PHSCS 123; Chem 227 or concurrent enrollment; Chem 351M or 351; Phscs 220 or concurrent enrollment.

DESCRIPTION: Quantum mechanics, group theory, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics.

**Course Outcomes**

- Demonstrate understanding of wave functions and operators, including solving for eigenvalues and expectation values
- Solve for properties of model systems, including particle in a box, harmonic oscillator, rigid rotor, Hydrogen-like atoms
- Apply approximation techniques (variation and perturbation) to relate model system to real chemical systems
- Apply quantum models of molecules to interpret spectra and extract information on molecular shape
- Characterize molecular properties by solving for molecular symmetry
- Solve for simple bonding orbitals using valence bond, linear combinations of atomic orbitals and symmetry adapted linear combinations
- Solve for the partition function of molecular systems, including translational, rotational, vibrational and electronic energies

CHEM 463 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 462 & PHSCS 220

RECOMMENDED: Math 302.

DESCRIPTION: Thermodynamics and equilibria, states of matter, kinetic-molecular theory, kinetics, statistical mechanics.

**Course Outcomes**

- Demonstrate connections between molecular interactions and equations of state
- Describe physical and chemical phenomena in terms of molecular and bulk models and understand the limitations of these models
- Describe the kinetics of chemical reactions in terms of molecular mechanisms and empirical rate laws
- Apply the laws of thermodynamics to physical and chemical processes, including phase transitions, mixtures, chemical equilibrium, and electrochemical processes
- Analyze and interpret experimental data to draw conclusions about physical and chemical processes

CHEM 464 : Physical Chemistry Laboratory 1. (1:0:3)

WHEN Winter

TAUGHT:
PREREQUISITE: Chem 463 or 467 or 468 or concurrent enrollment.
DESCRIPTION: Experiments related to physical chemistry: thermodynamics and equilibria, phase transitions, kinetic-molecular theory, kinetics; computer manipulation of data, report preparation.
NOTE: May be taken before, after, or concurrent (preferred) with Chem 465.

**Course Outcomes**

- Collect quantitative data using a variety of instruments, including calorimeters and spectrometers
- Fit collected data to mathematical models and extract molecular and bulk parameters
- Prepare and present clear graphs and tables, showing data from experiments
- Write clear lab reports in standard scientific journal format
- Prepare and give high quality oral presentations

CHEM 465 : Physical Chemistry Laboratory 2. (1:0:3)
WHEN TAUGHT: Winter
PREREQUISITE: Chem 462 or 467 or 468 or concurrent enrollment.
DESCRIPTION: Experiments related to physical chemistry: quantum mechanics, group theory, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics; computer manipulation of data, report preparation.
NOTE: May be taken before, after, or concurrent (preferred) with Chem 464.

**Course Outcomes**

- Collect quantitative spectroscopic data using a variety of instruments, including FT-IR, UV/Vis
- Fit collected data to physical chemical mathematical models and extract molecular parameters
- Perform molecular computations on the molecules in laboratory experiments
- Prepare and present clear graphs and tables, showing data from experiments
- Write clear lab reports in standard scientific journal format

MATH 302 : Mathematics for Engineering 1. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Math 113.
DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

5. Complete the following:

MATH 112 : Calculus 1. (4:5:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 121 or equivalent. Calculus.

DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

6. After consulting with an advisor, complete 3 hours from the following:

CHEM 455 : Synthesis and Qualitative Organic Analysis. (3:1:6)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 354; or CHEM 353; Chem 201 or concurrent enrollment.

DESCRIPTION: Laboratory course emphasizing isolation, purification, and characterization of major and minor products from selected syntheses.

NOTE: For chemistry and other science majors.

**Course Outcomes**

- Critically evaluate literature references, in particular experimental reaction details including reagents, starting materials, solvent, temperature, apparatus, stoichiometry, and scale. Adapt and modify known procedures to design and execute new reactions to obtain desired products on small and moderate scales (mg–g).
- Monitor and evaluate the successful completion of reactions using TLC with various solvents and modes, solvent changes and co-spot interpretation.
- Work up reactions using the appropriate organic and aqueous system based on polarity and acid/base properties including drying and solvent removal operations.
- Perform basic purification operations using recrystallization, distillation, chromatography with proper choice of solvents, techniques, mode of operation, etc. based on the properties of the product compound.
- Evaluate purity and identification of structures using hands on operation of NMR, IR, MS, and polarimetry.
- Prepare sample, set up and obtain routine 1D 1H and 13C NMR spectra showing adequate signal locking, shimming, formatting, data processing, spectra interpretation with complete peak assignment.
- Demonstrate understanding of NMR theory including magnetic field resonance, radio frequency pulse sequences, shift, splitting, polarization transfer, signal correlation, 2D experiments including homo and heterocorrelation spectroscopy, COSY, HSQC, NOESY, and multiple bond techniques, HMBC, TOCSY
- Demonstrate understanding of MS theory including ionization techniques, EI, CI, FAB, ES, MALDI, detection techniques, fragmentation patterns of functional groups, molecular ion, base peak, isotopes, N-rule.
- Demonstrate understanding of polarimetry theory including plane polarized light, interaction with chiral

compounds, optical rotation and determination of enantiomeric excess.
- Write clear lab reports including clear experimental detail, operation, characterization, interpretation, evaluation, and conclusions.

CHEM 462 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 302 & PHSCS 123; Chem 227 or concurrent enrollment; Chem 351M or 351; Phscs 220 or concurrent enrollment.

DESCRIPTION: Quantum mechanics, group theory, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics.

**Course Outcomes**

- Demonstrate understanding of wave functions and operators, including solving for eigenvalues and expectation values
- Solve for properties of model systems, including particle in a box, harmonic oscillator, rigid rotor, Hydrogen-like atoms
- Apply approximation techniques (variation and perturbation) to relate model system to real chemical systems
- Apply quantum models of molecules to interpret spectra and extract information on molecular shape
- Characterize molecular properties by solving for molecular symmetry
- Solve for simple bonding orbitals using valence bond, linear combinations of atomic orbitals and symmetry adapted linear combinations
- Solve for the partition function of molecular systems, including translational, rotational, vibrational and electronic energies

CHEM 463 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 462 & PHSCS 220

RECOMMENDED: Math 302.

DESCRIPTION: Thermodynamics and equilibria, states of matter, kinetic-molecular theory, kinetics, statistical mechanics.

**Course Outcomes**

- Demonstrate connections between molecular interactions and equations of state
- Describe physical and chemical phenomena in terms of molecular and bulk models and understand the limitations of these models
- Describe the kinetics of chemical reactions in terms of molecular mechanisms and empirical rate laws
- Apply the laws of thermodynamics to physical and chemical processes, including phase transitions, mixtures, chemical equilibrium, and electrochemical processes
- Analyze and interpret experimental data to draw conclusions about physical and chemical processes

CHEM 464 : Physical Chemistry Laboratory 1. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 463 or 467 or 468 or concurrent enrollment.

DESCRIPTION: Experiments related to physical chemistry: thermodynamics and equilibria, phase transitions, kinetic-molecular theory, kinetics; computer manipulation of data, report preparation.

NOTE: May be taken before, after, or concurrent (preferred) with Chem 465.

**Course Outcomes**

- Collect quantitative data using a variety of instruments, including calorimeters and spectrometers
- Fit collected data to mathematical models and extract molecular and bulk parameters
- Prepare and present clear graphs and tables, showing data from experiments
- Write clear lab reports in standard scientific journal format
- Prepare and give high quality oral presentations

CHEM 465 : Physical Chemistry Laboratory 2. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 462 or 467 or 468 or concurrent enrollment.

DESCRIPTION: Experiments related to physical chemistry: quantum mechanics, group theory, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics; computer manipulation of data, report preparation.

NOTE: May be taken before, after, or concurrent (preferred) with Chem 464.

**Course Outcomes**

- Collect quantitative spectroscopic data using a variety of instruments, including FT-IR, UV/Vis
- Fit collected data to physical chemical mathematical models and extract molecular parameters
- Perform molecular computations on the molecules in laboratory experiments
- Prepare and present clear graphs and tables, showing data from experiments
- Write clear lab reports in standard scientific journal format

CHEM 481M : Biochemistry--Majors. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry and biochemistry majors only. (For prerequisite, Bio 130 may be used in place of

PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

CHEM 482 : Mechanisms of Molecular Biology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Second-semester biochemistry. Nucleic acid biochemistry and molecular biology: nucleotide metabolism, chromosome and chromatin structure, DNA structure and replication, RNA transcription and gene expression, protein synthesis and regulation, eukaryotic gene systems, signal transduction.

**Course Outcomes**

- Draw the structure of DNA, determine the topology of a plasmid, explain the chemical sequence of events that occur during DNA replication and draw structural changes that occur due to mutation.
- Determine how to perform and interpret an electrophoresis separation of DNA fragments, southern blot, restriction map, polymerase chain reaction, and a DNA sequencing reaction with necessary controls.
- Design a DNA cloning strategy, explain controls necessary, and write procedural plan.
- Draw and explain the mechanism of RNA transcription and how RNA is processed, spliced, and regulated. Understand the basic mechanisms of transcriptional regulation using the example of transcription of genes necessary for cholesterol synthesis.
- Determine when and how to use techniques that involve RNA: Northern blots, quantitative PCR, microarrays, S1 nuclease and primer extension mapping of the transcriptional start with appropriate controls.
- Determine the sequence of amino acids in a protein from a series of nucleotides.
- Draw and explain the process of protein translation and how it is regulated.
- Determine where a protein is localized in a tissue or cell: interpret a western blot, protein fusion assays.
- Determine with what a protein interacts: Interpret gel shift assays, Chromatin Immunoprecipitation, DNA footprinting, and yeast two hybrid reporter assays.
- Maintain faith through challenges and ethical boundaries in reporting and interpreting data.

CHEM 489 : Structural Biochemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 468

DESCRIPTION: Molecular structures of proteins, RNA and DNA as determinants of biological function. Topics include thermodynamics of folding and binding, structural determination, spectroscopy, modeling, protein recognition.

**Course Outcomes**

- Identify motifs and symmetries in macromolecular structures and chemical interactions that maintain structural integrity
- Relate the structure of a macromolecule to its biological function
- Describe how X-ray crystallography, nuclear magnetic resonance, cryogenic electron microscopy, and circular dichroism techniques give structural information for biological macromolecules
- Communicate scientific ideas (e.g. structure-function relationships) clearly and concisely to others orally and in writing, and use ethical standards in oral and written presentations
- Work with peers to answer scientific questions

CHEM 496R : Academic Internship: Chemistry and Biochemistry. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent; Chem 201 or concurrent enrollment or special safety training.

DESCRIPTION: Research experience in an industrial, academic, or government laboratory in collaboration with a BYU faculty colleague/supervisor.

**Course Outcomes**

- The student will carry out a successfull internship connecting classroom principles to real-world applications.
- The students will provide a written report or oral presentation explaining the technical work performec in the internship and its connection to the chemistry curriculum.

CHEM 497R : Undergraduate Special Problems. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent and Chem 201 or concurrent enrollment or special safety training.

DESCRIPTION: Undergraduate research experience.

**Course Outcomes**

- The student will participate in mentored research with a specific research group under the tutelage of a faculty member, and generate original scientific results.

CHEM 499R : Honors Thesis. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent and Chem 201 or concurrent enrollment or special safety training.

**Course Outcomes**

- The students will carry out a research project and write an acceptable honors thesis.

CHEM 514 : Inorganic Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 462; or CHEM 468

DESCRIPTION: In-depth treatment of theoretical concepts in inorganic chemistry and solid state, organmetallic, and bioinorganic chemistry.

**Course Outcomes**

- Students will be able to describe atoms and molecules.
- Students will be able to describe the physical and electronic properties of inorganic compounds such as metals, ionic solids, coordination compounds and nanomaterials
- Students will be able to assign point groups and deduce the symmetries of atomic orbitals, molecular orbitals, and molecular vibrations
- Students will be able to draw and name coordination compounds
- Students will be able to identify stable organometallic compounds, common organometallic reactions, and catalytic mechanisms
- Students will be able to describe several metalloproteins
- Students will be able to write and orally present a report on an element or family of elements

CHEM 518 : Advanced Inorganic Laboratory. (2:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 514; Chem 201 or 601 or concurrent enrollment.

DESCRIPTION: Synthesis, characterization, and properties of materials; coordination and organometallic compounds.

**Course Outcomes**

- Students will be able to safely and with proficiency handle solvents, chemicals, glassware, and instruments.
- Students will be able to use solid-state techniques to synthesize compounds and characterize the compounds they synthesize.
- Students will be able to synthesize, isolate, characterize and explain the properties of main group, coordination, organometallic, and bioinorganic compounds.
- Students will be able to write scientific lab reports.
- Students will be able to work independently and in small groups to complete laboratory experiments.

CHEM 521 : Instrumental Analysis Lecture. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 462 & PHSCS 220; or CHEM 467 & PHSCS 220; or CHEM 468 & PHSCS 220

DESCRIPTION: Modern instrumental methods and basic principles of instrumentation.

**Course Outcomes**

- Students will be able to work independently and in small groups to complete laboratory experiments.
- Discuss the role of the main components of each instrument, how each component works, and how varying a parameter of a given component will affect the overall measurement
- Discuss the roles of sample type, interferences, sensitivity, and selectivity when selecting appropriate instrumental methods for given chemical analysis problems
- Interpret results from each measurement technique
- Discuss ways to optimize signal, noise, interferences, and other limitations to measurement, and quantitatively describe the effect these have on the measurement result
- Discuss sampling methods and requirements for instrumental analysis

CHEM 523 : Instrumental Analysis Laboratory. (2:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 521; Chem 201 or 601 or concurrent enrollment.

DESCRIPTION: Continuation of Chem 521. Laboratory experience with modern analytical instrumentation.

**Course Outcomes**

- Make accurate chemical analyses using a variety of instrumental techniques
- Describe their findings clearly and concisely in writing, including interpretation of results and statistical analysis
- Present data in graph and/or tabular formats effectively
- Apply what they have learned about instrumental analysis to carry out a new procedure of their own design
- Explain observations made during the course of an experiment
- Discuss how experimental variables affect the outcome of a measurement
- Identify appropriate instrumental methods for given chemical analysis problems, taking into account such factors as sample type, interferences, sensitivity, and selectivity
- Identify and resolve problems when they arise in analyses

CHEM 552 : Advanced Organic Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 352M; or CHEM 352; Chem 462 and 463 (or Chem 468).

DESCRIPTION: Physical aspects of organic chemistry; mechanisms, reaction intermediates, bonding, stereochemical and stereoelectronic effects, molecular orbital theory, Lewis acidity and basicity.

**Course Outcomes**

- Predict relative energies and locations of frontier molecular orbitals for organic molecules of intermediate complexity using linear combinations of atomic orbitals and hybridized orbital approaches.
- Perform calculations using ab initio, semi-empirical, density functional, and molecular mechanics approaches to predict energies and structures of ground and transition states.
- Use reaction kinetics, linear free energy relationships, isotope labeling, stereo-electronic effects and stereochemical outcomes to determine reaction mechanisms.
- Predict reaction mechanisms of major classes of organic reactions, including substitutions, eliminations, additions and radical reactions.
- Recognize the impact of non-covalent interactions in complex systems and reaction mechanisms.

CHEM 553 : Advanced Organic Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 352; or CHEM 352M

DESCRIPTION: Synthetic aspects of organic chemistry; oxidations, reductions, concerted reactions, stereoselectivity, synthetic equivalents, protecting groups. Examples of natural product total synthesis.

**Course Outcomes**

- Formulate a retrosynthetic analysis and propose a total synthesis route for a previously un-synthesized complex natural product.
- Apply protecting group strategies in feasible routes to complex natural products and/or other organic molecules of biological or theoretical interest.
- Recognize and be able to apply standard methods for carbon-carbon bond forming reactions including: alkylation of nucleophilic carbon; reactions of carbanions with carbonyl groups; reactions involving transition metals; reactions of compounds of boron, silicon, and tin; and cycloadditions.
- Recognize and be able to apply standard methods for carrying out the following types of synthetic transformations: reductions of carbonyls and other functional groups, oxidations, electrophilic additions, aromatic substitution reactions.
- Predict reaction mechanisms for the reaction types listed in outcomes 3 and 4.

CHEM 563 : Reaction Kinetics. (3:3:0)

WHEN TAUGHT: Winter Even Yrs., Contact Department

PREREQUISITE: CHEM 462 & CHEM 463

DESCRIPTION: Theoretical aspects of chemical kinetics in the gas phase and in solution. Rates and mechanisms in solution, rapid reactions, and other topics.

**Course Outcomes**

- Solve simple and complex (coupled or sequential) kin etic expressions to obtain rate constants, reaction lifetimes, and activation energies, for gas, liquid, surface, and catalyzed reactions.
- Use statistical reaction theories, including transition state theory and RRKM, to both predict and interpret chemical reaction rates.
- Interpret the results of experiments that measure dynamic processes, such as cross-molecular beam experiments.
- Use the concepts of detailed balance and microscopic reversibility to connect the results of experiments that measure dynamic processes to experiments that obtain kinetic results.
- Calculate the potential energy surface (PES) for a simple chemical reaction, explain the relationship between the PES and the outcomes of a chemical reaction including how different types of energy influence the reaction given the PES.

CHEM 565 : Introduction to Quantum Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 462 & CHEM 463

DESCRIPTION: Introduction to physical and mathematical aspects of quantum theory, emphasizing application of the Schrodinger wave equation to chemical systems.

**Course Outcomes**

- Write and solve the Schrödinger equation in 1, 2 or 3 dimensions for 1, 2, or N particles for typical model problems and describe the meaning and significance of the solutions.
- Interpret the wavefunctions in #1 by calculating probability in a region, expectation values and matrix elements of Hermitian operators corresponding to physical observables.
- Use as necessary to solve problems: commutators of operators, basis set expansions, perturbation theory (degenerate and nondegenerate) and the variational principle.
- Describe how the Hartree-Fock SCF method works and use Slater determinants of spin and spatial eigenfunctions to build anti-symmetric atomic wavefunctions

CHEM 567 : Statistical Mechanics. (3:3:0)

WHEN TAUGHT: Winter Contact Department

PREREQUISITE: CHEM 462 & CHEM 463

RECOMMENDED: Chem 565.

DESCRIPTION: Introduction to classical and quantum statistical mechanics, including Boltzmann, Fermi-Dirac, and Bose-Einstein statistics. Applications of statistical thermodynamics to gases, liquids, and solids.

**Course Outcomes**

- Use probability density functions to describe a system, and recognize simple probability functions and their properties including Gaussian (normal), binomial (or multinomial), and Poisson distributions.
- Use combinatorics to define probabilities in simple systems.
- Describe how to choose a Gibbsian ensemble for calculation of system properties. Be able to recognize when the following ensembles are appropriate: microcanonical (N,V,E), canonical (N,V,T), grand canonical (V,T,m), isobaric-isothermal (N,T,P). Know how to construct the partition function in each case.
- Calculate average system quantities and thermodynamic variables using the appropriate partition function.
- Calculate the size of fluctuations of system properties and relate them to the number of particles in a system.
- Use proper statistics for classical particles and for quantum particles (bosons or fermions).
- Calculate canonical partition functions for translation, rotation, and harmonic vibration. Use them for applications and know when they don't apply
- Explain the meaning, significance and range of applicability of these fundamentals: ergodic hypothesis, equipartition theorem, and Bose-Einstein condensation.
- Use statistical mechanical principles to describe chemical equilibrium constants.
- Apply statistical mechanical principles to simple crystals, blackbody radiation and imperfect gases.
- Use the Metropolis Monte Carlo method to calculate statistical averages for a system. Know how to choose an efficient sampling method.
- Show how to use molecular dynamics to calculate statistical averages for a molecular system. Know when molecular dynamics is more appropriate than Monte Carlo methods. Know the advantages and disadvantages of common trajectory propagation algorithms.
- Obtain the radial distribution from the probability function for a system, from Monte Carlo calculations or molecular dynamics trajectories and evaluate system properties from the radial distribution function.
- Use Monte Carlo and transfer matrix methods to study a system of interacting spins as a model of phase transitions.

CHEM 569 : Fundamentals of Spectroscopy. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: CHEM 462; or CHEM 468

DESCRIPTION: Atomic and molecular spectroscopy and application of group theoretical concepts. Types of experiments and interpretation of data.

**Course Outcomes**

- Explain the electric and magnetic properties of radiation, molecules and bulk matter and solve problems related to these properties.
- Solve time-dependent quantum mechanical problems and apply these solutions to spectroscopy where light is the time-dependent perturbation.
- Explain angular momentum as possessed by atomic or molecular systems, various descriptions of how angular momentum can be coupled, and how conservation of angular momentum is important to spectroscopy.
- Apply solutions of the Schrödinger equation for simple systems (particle in a box, rigid rotor, harmonic oscillator, etc) to real systems (vibrational, rotational, and electronic energy states) for use in determining the energy of stationary states.
- Explain the origin of selection rules and derive electric and magnetic dipole, quadrupole, etc. selection rules for simple model quantum systems.
- Use symmetry arguments, including group theory and parity, to simplify the interpretation and explanation of atomic and molecular spectra.
- Use solutions to the model systems and the selection rules the predict spectra for atomic and molecular systems.
- Fit experimentally obtained spectra to the mathematical models to obtain physical constants.

CHEM 581 : Advanced Biochemical Methodology 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 482

DESCRIPTION: Analytical and structural determination methods used in biochemical research, including mass spectrometry-based proteomics, immunotechniques, atomic force and electron microscopy, NMR and X-ray diffraction.

NOTE: One of two required courses for biochemistry graduate students. May be taken before or after Chem 583.

**Course Outcomes**

- Understand the theory, instrumentation and applications of proteomic, immunological and structural methods currently used to address important biochemical questions.
- Interpret and critique data from these techniques.
- Design appropriate experiments and apply these techniques to their own research problems.
- Recognize important technological advances in proteomic, immunological and structural methods.
- Present findings from the primary literature describing the application of these methods to significant biochemical questions in a professional manner.

CHEM 583 : Advanced Biochemical Methodology 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Maintenance and expression of genetic information, the role of nucleic acids in biology at the chemical and structural level, and methods to study and control nucleic acid function as a means of solving biological problems.

NOTE: One of two required courses for biochemistry graduate students. May be taken before or after Chem 581.

**Course Outcomes**

- Describe how genetic information is stably maintained, how it is expressed, and how that expression is regulated, with an emphasis on the mechanism by which molecular machines perform these processes.
- Understand methods for studying the structure and function of nucleic acids and methods for manipulating gene expression in living systems.
- Interpret and critique data obtained using these methods as reported in the primary scientific literature.
- Communicate this understanding in both oral and written formats. [
- Design appropriate experiments and apply the techniques of nucleic acid biochemistry to their own research problems.

CHEM 594R : General Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Research topics presented by faculty and visiting scientists.

NOTE: Required one semester in residence of all senior BS majors in chemistry and biochemistry.

**Course Outcomes**

- Become familiar with a variety of current research areas by listening to numerous visiting researchers describe their recent research results.
- Prepare for seminar presentations by reading literature articles written by visiting speakers before attending the presentation.
- Improve science-writing skills by writing summaries of research papers.
- Take notes in presentations attended to record thoughts and ideas for future reference.

CHEM 596R : Special Topics in Chemistry. (.5-3:ARR:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

There are no course outcomes available

: Atmospheric Chemistry.

**Course Outcomes**

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies
- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

**Note 1:** Chem 500 does not count toward filling this requirement.

**Note 2:** Elective courses must be different from required courses

**Note 3:** With prior approval, certain 300-level and above courses in biology, engineering, physics, and statistics may be taken to satisfy this requirement.

## Recommended Courses

CHEM 195 : Freshman Seminar. (.5:1.0:0)

WHEN TAUGHT: Fall

DESCRIPTION: Impact of chemistry and biochemistry on science and society. Overview of areas of chemistry and undergraduate research. Benefits of a chemistry or biochemistry degree for jobs, graduate or professional school.

**Course Outcomes**

- Students will appreciate the impact of chemistry and biochemistry on society.
- Students will understand the distinctions between the main areas of chemistry and biochemistry.
- Students will recognize the value of a chemistry and biochemistry degree and the range of opportunities for

degree holders.
- Students will be aware of options to do undergraduate research.

MATH 302 : Mathematics for Engineering 1. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Math 113.

DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

MATH 303 : Mathematics for Engineering 2. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 302

DESCRIPTION: ODEs, Laplace transforms, Fourier series, PDEs.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For a more detailed course description, visit Math 303 Wiki.

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

PHSCS 140 : Electronics Lab. (1:1:2)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Introduction to analog and digital circuits.

**Course Outcomes**

- Build and debug basic analog circuits that are of practical use in experimental physics such as voltage dividers, diode rectifiers, inverting and non-inverting op amp circuits, and transistor switches.
- Demonstrate understanding of electrical concepts of voltage, current, resistance, power, and input and output resistance through the analysis of simple circuits.
- Demonstrate proper use and limitations of electrical sources and test equipment including DC power supplies, multimeters, oscilloscopes, and function generators.
- Build and debug basic digital circuits that use components such as digital gates, flipflops, counters, and digital to analog converters.

PHSCS 145 : Experimental Methods in Physics. (1:0:3)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: PHSCS 140; Phscs 121 or equivalent.

DESCRIPTION: Introduction to physical measurement and analysis, optics, sensors, actuators, and computer-based data acquisition.

**Course Outcomes**

- Demonstrate good practices in experimental physics documentation and communication such as data collection, record keeping, and presentation.
- Demonstrate the ability to analyze experimental data this includes techniques such as error estimation, error propagation, model selection, and curve fitting.
- Use simple optical devices (e.g. lenses, mirrors, slits and gratings, polarizers) to explore the geometric and wave properties of light.
- Apply AC concepts such as frequency response, frequency filtering, fourier transform analysis, and impedance to sinusoidally-driven electrical, mechanical, optical, and acoustical systems.

**Note:** Supporting courses suggested by most medical and dental schools are found by visiting the Preprofessional Advisement office. The more rigorous chemistry, mathematics, and physics courses required for the chemistry majors will satisfy the minimum requirements listed there. Elective courses in biochemistry and in biological science are especially pertinent to these preprofessional programs.

*Hours include courses that may fulfill university core requirements.

## Show all Chemistry and Biochemistry Courses

**College of Physical and Mathematical Sciences Home**

**Chemistry and Biochemistry Department Home**

**Majors**

- BA in Chemistry
- BS in Biochemistry
- BS in Chemistry
- BS in Chemistry Education

**Minors**

- Minor in Chemistry
- Minor in Chemistry Education

**Course Information**

- Chemistry and Biochemistry Courses

**Faculty**

# BS in Biochemistry (76 hours*)

Show All Course Descriptions
Hide All Course Descriptions

Students preparing for health-related fields (medicine, dentistry, veterinary medicine) or those who desire an advanced degree (MS, PhD) in biochemistry, biology, or the health sciences receive excellent preparation from this degree program.

## Program Requirements | View MAP | View Program Outcomes

1. No more than three hours of D credit is allowed in major courses.
2. The Chemistry and Biochemistry Department requires the final 10 hours of required chemistry credit must be taken in residence at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
3. Complete the following:

†CHEM 111 : Honors Principles of Chemistry. (4:3:3)

OFFERED: Honors also.
WHEN TAUGHT: Fall
PREREQUISITE: Math 110 or equivalent.
RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.
DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.
NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

†CHEM 112 : Principles of Chemistry. (3:3:2)

WHEN TAUGHT: Winter
PREREQUISITE: Chem 111 or Chem 105 or equivalent.
DESCRIPTION: Continuation of Chem 111.
NOTE: Tutorial included.

**Course Outcomes**

- Students will be able to use thermodynamic principles and their application to physical and chemical equilibria to calculate entropic and enthalpic contributions to physical changes and reactions and predict equilibria given entropic and enthalpic changes.
- Students will be able to apply acid-base theory, including interactions of strong and weak acids and bases, to determination of pH values of solutions, calculating buffering capacity and performance of acid-base titrations. They will be able to use structural features of molecules to estimate acid and base strength.
- Students will demonstrate an understanding of electrochemistry in designing simple electrodes and will use reduction/oxidation potentials to characterize electrodes.
- Students will be able to apply transition state theory to reaction kinetics. Students will be able to model mathematically rates of multiple reaction types.
- Students will be able to apply the periodic nature of the elements to classify elements and identify the compositions of inorganic salts.

CHEM 113 : Introductory General Chemistry Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Chem 112 or Chem 106 or concurrent enrollment (preferred).
DESCRIPTION: Principles and techniques of chemical measurements. Concepts introduced in general chemistry lecture courses reinforced.

**Course Outcomes**

- Perform precise quantitative measurements using volumetric glassware, analytical balances, and

electrochemical and spectrophotometric instrumentation.
- Apply concepts of quantum mechanics, kinetics, equilibrium and thermodynamics taught in Chem 111 and Chem 112 to laboratory measurements.
- Apply a basic understanding of descriptive chemistry introduced in Chem 112 to the separation and classification of inorganic cations and anions.
- Record laboratory procedures and results neatly and concisely in a laboratory notebook
- Report experimental results in a manner that gives proper attention to sources of experimental error.

CHEM 201 : Chemical Handling and Safe Laboratory Practices. (.5:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Safe handling of chemicals and safe practices in chemistry laboratories.

**Course Outcomes**

- Discuss regulations that govern a chemists activities: OSHO, EPA, DOT, CDC, NRC, and state agencies and specifically, the OSHA Laboratory Standard CFR 29 1910.1450 and EPA RCRA regulations (CFR 40) requiring “cradle to grave” responsibility
- Identify chemical hazard classes and follow administrative guidelines to work safely in a laboratory environment and properly store and dispose of chemicals. These guidelines include regulated exposure limits PEL, STEL, IDLH, Ceiling and other measurable standards, such as the TLV, LD50, LC50, SADT, and guidelines for use of compressed gases and cryogenic materials.
- Demonstrate usage of protective equipment available for chemical exposure.
- Respond to laboratory accidents, such as spills, fires, and cuts, and clean up a mercury spill.
- Recognize fire hazards and put out a fire using an ABC fire extinguisher.
- Discuss biological and radiological safety, including biosafety levels, management of biological waste, lasers, and radionuclides.

CHEM 227 : Principles of Chemical Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 113

DESCRIPTION: Principles of quantitative analysis, introductory instrumental methods, and computer applications to chemical analysis.

**Course Outcomes**

- Demonstrate skill in performing precise, careful, basic laboratory operations such as sample preparation, calibration techniques, spectrophotometry, electrochemical analysis, titrimetric and chromatographic methods
- Explain basic measurement methods and devices
- Show proficiency in reporting scientific results in numerical, graphical, and written formats, and be able to explain the ethical standards for such reports
- Show proficiency in using computer programs for data analysis
- Apply basic statistics to data analysis including, confidence intervals, t-test, linear regression, propagation of error, sampling statistics and signal-noise enhancement
- Critically evaluate experiments and data with respect to theory and models
- Apply knowledge to new problems, including the design and validation of new analytical methods

CHEM 351M : Organic Chemistry - Majors. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: For majors in chemistry and biochemistry.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352M : Organic Chemistry--Majors. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 351M; or CHEM 351

DESCRIPTION: Continuation of Chem 351M.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl

substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 354 : Organic Chemistry Laboratory--Majors. (2:0:6)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, manipulative skills, isolation and purification, characterization and identification, syntheses.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

CHEM 391 : Technical Writing Using Chemical Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 227 & CHEM 352; or CHEM 227 & CHEM 352M

DESCRIPTION: Intensive technical writing course based on chemical literature sources.

NOTE: Fulfills GE Advanced Writing requirement.

**Course Outcomes**

- Communicate the results of scientific experiments in oral reports, technical graphics, and written reports.
- Search the chemical literature for published works relevant to a project of interest, and to read and understand technical literature related to the discipline.
- Draw on classroom knowledge to contribute to solutions of problems encountered in a research laboratory.
- Make informed choices among post-graduate opportunities for work or further education.
- Understand professional and scientific ethics.

CHEM 468 : Biophysical Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481 & MATH 113 & PHSCS 220; or CHEM 481M & MATH 113 & PHSCS 220

DESCRIPTION: Applications of physical chemistry to biological systems. Spectroscopic applications, computational methods, structural biochemistry, thermodynamics, equilibria, statistical mechanics, transport properties, kinetics, quantum mechanics.

NOTE: For biochemistry (BS) majors and those interested in the health professions or biochemistry. (For prerequisites, Phscs 220 may be taken concurrently.)

**Course Outcomes**

- Describe conceptually the fundamental concepts in the four principal areas of physical chemistry: classical thermodynamics, statistical thermodynamics kinetics and quantum mechanics
- Define mathematically the concepts outlined in 1) and manipulate the fundamental and derived equations associated with these concepts
- Use the above skills to calculate or predict the equilibrium conditions or direction of spontaneous biochemical processes that are involved in metabolism or energy transfer events given appropriate thermodynamic data and initial system conditions
- Employ mathematical and graphical techniques on enzyme kinetic data to extract key parameters and to identify inhibition mechanisms
- Solve simple Schroedinger equation problems (e.g., particle in a box), identify boundary conditions, and explain the significance of boundary conditions on the observance of quantized effects
- Relate the simple Hamiltonians from above to biological molecules and systems and generalize from the simple results to make predictions regarding behavior in the biological systems
- Identify the nature of electronic energy levels in key photoactive biological molecules and use spectroscopic data to probe these levels
- Apply fundamental concepts of electronic structure and reaction kinetics to the steps in photosynthesis and vision
- Provide examples in which physical chemistry perspectives have enabled a deeper more complete understanding of the structure and function of biological molecules and complex biological systems

CHEM 481M : Biochemistry--Majors. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry and biochemistry majors only. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below

- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

CHEM 482 : Mechanisms of Molecular Biology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Second-semester biochemistry. Nucleic acid biochemistry and molecular biology: nucleotide metabolism, chromosome and chromatin structure, DNA structure and replication, RNA transcription and gene expression, protein synthesis and regulation, eukaryotic gene systems, signal transduction.

**Course Outcomes**

- Draw the structure of DNA, determine the topology of a plasmid, explain the chemical sequence of events that occur during DNA replication and draw structural changes that occur due to mutation.
- Determine how to perform and interpret an electrophoresis separation of DNA fragments, southern blot, restriction map, polymerase chain reaction, and a DNA sequencing reaction with necessary controls.
- Design a DNA cloning strategy, explain controls necessary, and write procedural plan.
- Draw and explain the mechanism of RNA transcription and how RNA is processed, spliced, and regulated. Understand the basic mechanisms of transcriptional regulation using the example of transcription of genes necessary for cholesterol synthesis.
- Determine when and how to use techniques that involve RNA: Northern blots, quantitative PCR, microarrays, S1 nuclease and primer extension mapping of the transcriptional start with appropriate controls.
- Determine the sequence of amino acids in a protein from a series of nucleotides.
- Draw and explain the process of protein translation and how it is regulated.
- Determine where a protein is localized in a tissue or cell: interpret a western blot, protein fusion assays.
- Determine with what a protein interacts: Interpret gel shift assays, Chromatin Immunoprecipitation, DNA footprinting, and yeast two hybrid reporter assays.
- Maintain faith through challenges and ethical boundaries in reporting and interpreting data.

CHEM 489 : Structural Biochemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 468

DESCRIPTION: Molecular structures of proteins, RNA and DNA as determinants of biological function. Topics include thermodynamics of folding and binding, structural determination, spectroscopy, modeling, protein recognition.

**Course Outcomes**

- Identify motifs and symmetries in macromolecular structures and chemical interactions that maintain structural integrity
- Relate the structure of a macromolecule to its biological function
- Describe how X-ray crystallography, nuclear magnetic resonance, cryogenic electron microscopy, and circular dichroism techniques give structural information for biological macromolecules
- Communicate scientific ideas (e.g. structure-function relationships) clearly and concisely to others orally and in writing, and use ethical standards in oral and written presentations
- Work with peers to answer scientific questions

CHEM 495 : Senior Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 594R

DESCRIPTION: Research topics presented by faculty and visiting scientists. Completion of undergraduate portfolio.

NOTE: Required of all seniors in all chemistry and biochemistry degree programs the last semester in residence.

**Course Outcomes**

- Become familiar with a variety of current research areas by listening to numerous visiting researchers describe their recent research results.
- Prepare for seminar presentations by reading literature articles written by visiting speakers before attending the presentation.
- Improve science-writing skills by writing summaries of research papers.
- Take notes in presentations attended to record thoughts and ideas for future reference.
- Reflect on your BYU education and evaluate how it helps you achieve your goals.

CHEM 584 : Biochemistry Laboratory/Proteins. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Introduction to current biochemical research procedures including spectrophotometry, chromatography, electrophoresis, and immunological techniques. Protein over-expression; isolation and characterization methods. Enzyme kinetics and protein-ligand interactions. Introduction to bioinformatics.

NOTE: May be taken before or after Chem 586.

**Course Outcomes**

- Apply spectroscopic techniques to analyze proteins, both their enzymatic and binding reactions
- Use gel electrophoresis and immunoblotting techniques to determine the presence and purity of proteins in biological samples
- Identify protein binding partners using co-immunoprecipitation methods
- Purify proteins using state-of-the-art separations methods
- Characterize an enzyme using steady state kinetics methods
- Use enzymes as analytical and diagnostic tools
- Properly record and interpret data
- Present data they have collected in an oral presentation and in a written scientific paper
- Understand ethical means of reporting results and giving proper credit to the work of others
- Measure ligand binding to proteins; determine dissociation constants and the degree of cooperativity.

CHEM 586 : Biochemistry Laboratory/Nucleic Acids. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Laboratory course covering major techniques involved in isolation, amplification, and cloning of recombinant DNA as well as isolation, synthesis, translation, and identification of RNA.

NOTE: May be taken before or after Chem 584.

**Course Outcomes**

- Understand, design and execute experiments using basic DNA manipulation procedures that include isolation, purification and modification of DNA
- Explain and perform PCR amplification and use this technique to detect the presence of DNA “targets”, DNA cloning (subcloning) and DNA sequencing
- Understand and explain how to isolate, quantitate and manipulate RNA
- Design and perform experiments to reverse transcribe RNA into complementary DNA (cDNA) and assess gene expression by semi- and quantitative PCR
- Isolate total RNA and be able to purify mRNA from this material
- Introduce and express foreign DNA and/or RNA in mammalian cells using the techniques of electroporation, lipid-based transfection, calcium phosphate based transfection and retroviral transduction
- “Knockdown” an expressed gene in mammalian cells using RNA silencing
- Prepare laboratory notebooks that include the objective, results and methods of each laboratory experiment. Additionally, students will provide conclusions to each experiment, including when appropriate, potential explanations to unexpected results

CHEM 594R : General Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Research topics presented by faculty and visiting scientists.

NOTE: Required one semester in residence of all senior BS majors in chemistry and biochemistry.

**Course Outcomes**

- Become familiar with a variety of current research areas by listening to numerous visiting researchers describe their recent research results.
- Prepare for seminar presentations by reading literature articles written by visiting speakers before attending the presentation.
- Improve science-writing skills by writing summaries of research papers.
- Take notes in presentations attended to record thoughts and ideas for future reference.

†**Note:** With department approval Chem 105 may substitute for Chem 111; and Chem 106 for Chem 112.

4. Complete the following:

BIO 130 : Biology. (4:3:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: General biology course with laboratory for biology majors. Introduction to disciplines in the life sciences including methods for scientific inquiry, biochemical dynamics, cell structure and function, evolutionary theory, bioenergetics, and ecological interactions.

**Course Outcomes**

- Students will demonstrate basic literacy in the language of science and an understanding of the foundational theories of biology (i.e., be able to formulate appropriate hypotheses and predictions to test specific biological phenomena and use appropriate vocabulary to do so) o Atomic Molecular Theoryo Cell Theoryo Theories of Photosynthesis, Fermentation, and Cellular Respirationo Cell Division and Meiotic Theorieso Chromosomal and Mendelian Theories of Inheritanceo Watson and Crick’s Theory of DNA Structure and Replicationo Protein Synthesis Theoryo Darwin’s Theory of Natural Selectiono Hardy-Weinberg Theoryo Ecosystem Theoryo Population Growth Theoryo Competitive Exclusion and Behavioral Theory
- Students will demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process.
- Students willappreciate the excitement of discovery that has accompanied important scientific developments.
- Students will demonstrate how scientific methodology can be used to analyze real-world science-related problems.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public-policy science issues that affect their community.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.

- Students will be able to reflect rationally upon the interface between science and religion.
- Students will demonstrate sound scientific reasoning ability.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 121 or equivalent. Calculus.

DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

5. Complete one of the following:

MMBIO 463 : Immunology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & MMBIO 261

DESCRIPTION: Advanced concepts of immunological processes.

**Course Outcomes**

- Understanding advanced concepts of Immunology by studying and reflecting on the subject.*Relates to Program Learning Outcome: Exhibit mastery of four of the principle areas of the discipline
- Understands experimental designs used in immunology research and determine the soundness of the immunological data.*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Read and understand current publications in Immunology and be able to discuss and critically evaluate experiments and data*Relates to Program Learning Outcome: Devise experiments with appropriate hypotheses and controls.
- Engage in discussions about concepts in immunology and research. Present a PowerPoint on a particular immunological topic. Engage in a question and answer session on the content. Write an easy on a chosen subject relating to recent immunological advances.*Relates to Program Learning Outcome: Communicate scientific information using both oral and written methods.

- Develop a deep appreciation for our Heavenly Father and his love for each of us by engaging in studying how he designed the immune system to protect his children from disease.*Relates to Program Learning Outcome: Reflect/ discuss/ explore how faith in the Lord, and Christ like living are affected by an understanding of the fundamental biological processes.

MMBIO 465 : Virology. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBio 261 or equivalent.

DESCRIPTION: Basic principles of virology, emphasizing selected molecular aspects of virus life cycles and disease processes.

**Course Outcomes**

- Be able to answer basic questions about Virology: Why are viruses organized as they are? How do viruses replicate? How do viruses cause disease? What are the interactions between viruses and the host immune system? How to prevent/treat/cure viral infections? How can viruses be used as tools to study biological processes and for gene transfer? How can an understanding of viruses help you in your future career? *Relates to Program Learning Outcome: "Exhibit mastery of four of the principal areas of the discipline", one of which is Virology.
- Understand experimental tools used to study viruses (these are broadly applicable to molecular biology, cell biology, and microbiology) and be able to develop experiments and interpret data.*Relates to Program Learning Outcomes: "Devise experiments with appropriate hypotheses and controls" and "Interpret experiments from primary scientific literature"
- Write about a current, pressing issue in the field of Virology.*Relates to Program Learning Outcome: "Communicate scientific information"
- Understand how research of viruses "by study and also by faith" can lead to alleviation of human disease and suffering.*Relates to Program Learning Outcome: "Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological processes"

MMBIO 468 : (MMBio-Bio-PWS) Genomics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240 & PWS 340

DESCRIPTION: Current analysis of genes and genomes; computational and statistical approaches for analyzing genomic data, including genome sequencing and annotation, gene expression and the transcriptome, proteomics and functional genomics, and genetic variation and SNPs.

**Course Outcomes**

- Students can describe the technology and process used to sequence genomes (de novo and re-sequencing)
- Students can complete a series of exercises with data representing genomic experiments (analyze and interpret)
- Students can outline techniques and concepts for assessing genomic parameters such as methylation, gene expression, DNA-binding motifs, metagenomics, and comparative genomics.

PDBIO 360 : Cell Biology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Fundamentals of cell structure and function with reference to analytical methods used by cell biologists. Practice in designing, executing, and interpreting relative experiments.

**Course Outcomes**

- Students will demonstrate knowledge of the molecular architecture of the nucleus, including the nuclear envelope, nucleoplasm and nucleolus, chromatin, and the nuclear pore.
- Students will demonstrate an understanding of protein transport, including nuclear import and export and vesicular transport through the secretory and sorting pathways.
- Students will demonstrate knowledge of the molecular and cellular structure and dynamics of cytoskeletal systems.
- Students will be able to apply the basic cell biological principles in outcomes 1-3 to more complicated cellular processes, including cell adhesion, cell migration, cell polarity, cell division, cancer, and development.
- Students will demonstrate the ability to generate hypothesis about how cell biological systems work at the molecular level and design experiments that test that hypothesis.
- Students will demonstrate competence in interpreting original raw data from cell biology experiments, including microscopy, protein biochemistry, molecular biology, and genetics strategies
- Students will demonstrate the ability to critically evaluate primary cell biology literature, including the ability to evaluate the design and interpretation of experimental data.

PDBIO 362 : Advanced Physiology. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MMBIO 240 & PHSCS 106; or MMBIO 240 & PHSCS 220

DESCRIPTION: Integrated approach to organ system and cellular physiology. Problem solving/calculations.

NOTE: Requires background in chemistry and molecular biology. Students without this background should take PDBio 305.

**Course Outcomes**

- Students will manifest an understanding of how structures at the molecular level lead to properties associated with cells, tissues, organs, and organ systems.
- Students will demonstrate a comprehension of the functions of the major physiological systems found in humans.

- Students will describe how organ systems work together interactively to maintain homeostasis.

6. After consulting with an advisor, complete three credit hours from the following:

CHEM 455 : Synthesis and Qualitative Organic Analysis. (3:1:6)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 354; or CHEM 353; Chem 201 or concurrent enrollment.

DESCRIPTION: Laboratory course emphasizing isolation, purification, and characterization of major and minor products from selected syntheses.

NOTE: For chemistry and other science majors.

**Course Outcomes**

- Critically evaluate literature references, in particular experimental reaction details including reagents, starting materials, solvent, temperature, apparatus, stoichiometry, and scale. Adapt and modify known procedures to design and execute new reactions to obtain desired products on small and moderate scales (mg–g).
- Monitor and evaluate the successful completion of reactions using TLC with various solvents and modes, solvent changes and co-spot interpretation.
- Work up reactions using the appropriate organic and aqueous system based on polarity and acid/base properties including drying and solvent removal operations.
- Perform basic purification operations using recrystallization, distillation, chromatography with proper choice of solvents, techniques, mode of operation, etc. based on the properties of the product compound.
- Evaluate purity and identification of structures using hands on operation of NMR, IR, MS, and polarimetry.
- Prepare sample, set up and obtain routine 1D 1H and 13C NMR spectra showing adequate signal locking, shimming, formatting, data processing, spectra interpretation with complete peak assignment.
- Demonstrate understanding of NMR theory including magnetic field resonance, radio frequency pulse sequences, shift, splitting, polarization transfer, signal correlation, 2D experiments including homo and heterocorrelation spectroscopy, COSY, HSQC, NOESY, and multiple bond techniques, HMBC, TOCSY
- Demonstrate understanding of MS theory including ionization techniques, EI, CI, FAB, ES, MALDI, detection techniques, fragmentation patterns of functional groups, molecular ion, base peak, isotopes, N-rule.
- Demonstrate understanding of polarimetry theory including plane polarized light, interaction with chiral compounds, optical rotation and determination of enantiomeric excess.
- Write clear lab reports including clear experimental detail, operation, characterization, interpretation, evaluation, and conclusions.

CHEM 496R : Academic Internship: Chemistry and Biochemistry. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent; Chem 201 or concurrent enrollment or special safety training.

DESCRIPTION: Research experience in an industrial, academic, or government laboratory in collaboration with a BYU faculty colleague/supervisor.

**Course Outcomes**

- The student will carry out a successfull internship connecting classroom principles to real-world applications.
- The students will provide a written report or oral presentation explaining the technical work performec in the internship and its connection to the chemistry curriculum.

CHEM 497R : Undergraduate Special Problems. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent and Chem 201 or concurrent enrollment or special safety training.

DESCRIPTION: Undergraduate research experience.

**Course Outcomes**

- The student will participate in mentored research with a specific research group under the tutelage of a faculty member, and generate original scientific results.

CHEM 499R : Honors Thesis. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent and Chem 201 or concurrent enrollment or special safety training.

**Course Outcomes**

- The students will carry out a research project and write an acceptable honors thesis.

CHEM 514 : Inorganic Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 462; or CHEM 468

DESCRIPTION: In-depth treatment of theoretical concepts in inorganic chemistry and solid state, organmetallic, and bioinorganic chemistry.

**Course Outcomes**

- Students will be able to describe atoms and molecules.
- Students will be able to describe the physical and electronic properties of inorganic compounds such as metals, ionic solids, coordination compounds and nanomaterials
- Students will be able to assign point groups and deduce the symmetries of atomic orbitals, molecular

orbitals, and molecular vibrations
- Students will be able to draw and name coordination compounds
- Students will be able to identify stable organometallic compounds, common organometallic reactions, and catalytic mechanisms
- Students will be able to describe several metalloproteins
- Students will be able to write and orally present a report on an element or family of elements

CHEM 518 : Advanced Inorganic Laboratory. (2:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 514; Chem 201 or 601 or concurrent enrollment.

DESCRIPTION: Synthesis, characterization, and properties of materials; coordination and organometallic compounds.

**Course Outcomes**

- Students will be able to safely and with proficiency handle solvents, chemicals, glassware, and instruments.
- Students will be able to use solid-state techniques to synthesize compounds and characterize the compounds they synthesize.
- Students will be able to synthesize, isolate, characterize and explain the properties of main group, coordination, organometallic, and bioinorganic compounds.
- Students will be able to write scientific lab reports.
- Students will be able to work independently and in small groups to complete laboratory experiments.

CHEM 521 : Instrumental Analysis Lecture. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 462 & PHSCS 220; or CHEM 467 & PHSCS 220; or CHEM 468 & PHSCS 220

DESCRIPTION: Modern instrumental methods and basic principles of instrumentation.

**Course Outcomes**

- Students will be able to work independently and in small groups to complete laboratory experiments.
- Discuss the role of the main components of each instrument, how each component works, and how varying a parameter of a given component will affect the overall measurement
- Discuss the roles of sample type, interferences, sensitivity, and selectivity when selecting appropriate instrumental methods for given chemical analysis problems
- Interpret results from each measurement technique
- Discuss ways to optimize signal, noise, interferences, and other limitations to measurement, and quantitatively describe the effect these have on the measurement result
- Discuss sampling methods and requirements for instrumental analysis

CHEM 523 : Instrumental Analysis Laboratory. (2:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 521; Chem 201 or 601 or concurrent enrollment.

DESCRIPTION: Continuation of Chem 521. Laboratory experience with modern analytical instrumentation.

**Course Outcomes**

- Make accurate chemical analyses using a variety of instrumental techniques
- Describe their findings clearly and concisely in writing, including interpretation of results and statistical analysis
- Present data in graph and/or tabular formats effectively
- Apply what they have learned about instrumental analysis to carry out a new procedure of their own design
- Explain observations made during the course of an experiment
- Discuss how experimental variables affect the outcome of a measurement
- Identify appropriate instrumental methods for given chemical analysis problems, taking into account such factors as sample type, interferences, sensitivity, and selectivity
- Identify and resolve problems when they arise in analyses

CHEM 552 : Advanced Organic Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 352M; or CHEM 352; Chem 462 and 463 (or Chem 468).

DESCRIPTION: Physical aspects of organic chemistry; mechanisms, reaction intermediates, bonding, stereochemical and stereoelectronic effects, molecular orbital theory, Lewis acidity and basicity.

**Course Outcomes**

- Predict relative energies and locations of frontier molecular orbitals for organic molecules of intermediate complexity using linear combinations of atomic orbitals and hybridized orbital approaches.
- Perform calculations using ab initio, semi-empirical, density functional, and molecular mechanics approaches to predict energies and structures of ground and transition states.
- Use reaction kinetics, linear free energy relationships, isotope labeling, stereo-electronic effects and stereochemical outcomes to determine reaction mechanisms.
- Predict reaction mechanisms of major classes of organic reactions, including substitutions, eliminations, additions and radical reactions.
- Recognize the impact of non-covalent interactions in complex systems and reaction mechanisms.

CHEM 553 : Advanced Organic Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 352; or CHEM 352M

DESCRIPTION: Synthetic aspects of organic chemistry; oxidations, reductions, concerted reactions, stereoselectivity, synthetic equivalents, protecting groups. Examples of natural product total synthesis.

**Course Outcomes**

- Formulate a retrosynthetic analysis and propose a total synthesis route for a previously un-synthesized complex natural product.
- Apply protecting group strategies in feasible routes to complex natural products and/or other organic molecules of biological or theoretical interest.
- Recognize and be able to apply standard methods for carbon-carbon bond forming reactions including: alkylation of nucleophilic carbon; reactions of carbanions with carbonyl groups; reactions involving transition metals; reactions of compounds of boron, silicon, and tin; and cycloadditions.
- Recognize and be able to apply standard methods for carrying out the following types of synthetic transformations: reductions of carbonyls and other functional groups, oxidations, electrophilic additions, aromatic substitution reactions.
- Predict reaction mechanisms for the reaction types listed in outcomes 3 and 4.

CHEM 563 : Reaction Kinetics. (3:3:0)

WHEN TAUGHT: Winter Even Yrs., Contact Department

PREREQUISITE: CHEM 462 & CHEM 463

DESCRIPTION: Theoretical aspects of chemical kinetics in the gas phase and in solution. Rates and mechanisms in solution, rapid reactions, and other topics.

**Course Outcomes**

- Solve simple and complex (coupled or sequential) kin etic expressions to obtain rate constants, reaction lifetimes, and activation energies, for gas, liquid, surface, and catalyzed reactions.
- Use statistical reaction theories, including transition state theory and RRKM, to both predict and interpret chemical reaction rates.
- Interpret the results of experiments that measure dynamic processes, such as cross-molecular beam experiments.
- Use the concepts of detailed balance and microscopic reversibility to connect the results of experiments that measure dynamic processes to experiments that obtain kinetic results.
- Calculate the potential energy surface (PES) for a simple chemical reaction, explain the relationship between the PES and the outcomes of a chemical reaction including how different types of energy influence the reaction given the PES.

CHEM 565 : Introduction to Quantum Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 462 & CHEM 463

DESCRIPTION: Introduction to physical and mathematical aspects of quantum theory, emphasizing application of the Schrodinger wave equation to chemical systems.

**Course Outcomes**

- Write and solve the Schrödinger equation in 1, 2 or 3 dimensions for 1, 2, or N particles for typical model problems and describe the meaning and significance of the solutions.
- Interpret the wavefunctions in #1 by calculating probability in a region, expectation values and matrix elements of Hermitian operators corresponding to physical observables.
- Use as necessary to solve problems: commutators of operators, basis set expansions, perturbation theory (degenerate and nondegenerate) and the variational principle.
- Describe how the Hartree-Fock SCF method works and use Slater determinants of spin and spatial eigenfunctions to build anti-symmetric atomic wavefunctions

CHEM 567 : Statistical Mechanics. (3:3:0)

WHEN TAUGHT: Winter Contact Department

PREREQUISITE: CHEM 462 & CHEM 463

RECOMMENDED: Chem 565.

DESCRIPTION: Introduction to classical and quantum statistical mechanics, including Boltzmann, Fermi-Dirac, and Bose-Einstein statistics. Applications of statistical thermodynamics to gases, liquids, and solids.

**Course Outcomes**

- Use probability density functions to describe a system, and recognize simple probability functions and their properties including Gaussian (normal), binomial (or multinomial), and Poisson distributions.
- Use combinatorics to define probabilities in simple systems.
- Describe how to choose a Gibbsian ensemble for calculation of system properties. Be able to recognize when the following ensembles are appropriate: microcanonical (N,V,E), canonical (N,V,T), grand canonical (V,T,m), isobaric-isothermal (N,T,P). Know how to construct the partition function in each case.
- Calculate average system quantities and thermodynamic variables using the appropriate partition function.
- Calculate the size of fluctuations of system properties and relate them to the number of particles in a system.
- Use proper statistics for classical particles and for quantum particles (bosons or fermions).
- Calculate canonical partition functions for translation, rotation, and harmonic vibration. Use them for applications and know when they don't apply
- Explain the meaning, significance and range of applicability of these fundamentals: ergodic hypothesis, equipartition theorem, and Bose-Einstein condensation.
- Use statistical mechanical principles to describe chemical equilibrium constants.
- Apply statistical mechanical principles to simple crystals, blackbody radiation and imperfect gases.
- Use the Metropolis Monte Carlo method to calculate statistical averages for a system. Know how to choose an efficient sampling method.
- Show how to use molecular dynamics to calculate statistical averages for a molecular system. Know

when molecular dynamics is more appropriate than Monte Carlo methods. Know the advantages and disadvantages of common trajectory propagation algorithms.
- Obtain the radial distribution from the probability function for a system, from Monte Carlo calculations or molecular dynamics trajectories and evaluate system properties from the radial distribution function.
- Use Monte Carlo and transfer matrix methods to study a system of interacting spins as a model of phase transitions.

CHEM 569 : Fundamentals of Spectroscopy. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: CHEM 462; or CHEM 468

DESCRIPTION: Atomic and molecular spectroscopy and application of group theoretical concepts. Types of experiments and interpretation of data.

**Course Outcomes**

- Explain the electric and magnetic properties of radiation, molecules and bulk matter and solve problems related to these properties.
- Solve time-dependent quantum mechanical problems and apply these solutions to spectroscopy where light is the time-dependent perturbation.
- Explain angular momentum as possessed by atomic or molecular systems, various descriptions of how angular momentum can be coupled, and how conservation of angular momentum is important to spectroscopy.
- Apply solutions of the Schrödinger equation for simple systems (particle in a box, rigid rotor, harmonic oscillator, etc) to real systems (vibrational, rotational, and electronic energy states) for use in determining the energy of stationary states.
- Explain the origin of selection rules and derive electric and magnetic dipole, quadrupole, etc. selection rules for simple model quantum systems.
- Use symmetry arguments, including group theory and parity, to simplify the interpretation and explanation of atomic and molecular spectra.
- Use solutions to the model systems and the selection rules the predict spectra for atomic and molecular systems.
- Fit experimentally obtained spectra to the mathematical models to obtain physical constants.

CHEM 581 : Advanced Biochemical Methodology 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 482

DESCRIPTION: Analytical and structural determination methods used in biochemical research, including mass spectrometry-based proteomics, immunotechniques, atomic force and electron microscopy, NMR and X-ray diffraction.

NOTE: One of two required courses for biochemistry graduate students. May be taken before or after Chem 583.

**Course Outcomes**

- Understand the theory, instrumentation and applications of proteomic, immunological and structural methods currently used to address important biochemical questions.
- Interpret and critique data from these techniques.
- Design appropriate experiments and apply these techniques to their own research problems.
- Recognize important technological advances in proteomic, immunological and structural methods.
- Present findings from the primary literature describing the application of these methods to significant biochemical questions in a professional manner.

CHEM 583 : Advanced Biochemical Methodology 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Maintenance and expression of genetic information, the role of nucleic acids in biology at the chemical and structural level, and methods to study and control nucleic acid function as a means of solving biological problems.

NOTE: One of two required courses for biochemistry graduate students. May be taken before or after Chem 581.

**Course Outcomes**

- Describe how genetic information is stably maintained, how it is expressed, and how that expression is regulated, with an emphasis on the mechanism by which molecular machines perform these processes.
- Understand methods for studying the structure and function of nucleic acids and methods for manipulating gene expression in living systems.
- Interpret and critique data obtained using these methods as reported in the primary scientific literature.
- Communicate this understanding in both oral and written formats. [
- Design appropriate experiments and apply the techniques of nucleic acid biochemistry to their own research problems.

CHEM 596R : Special Topics in Chemistry. (.5-3:ARR:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

There are no course outcomes available

: Atmospheric Chemistry.

**Course Outcomes**

**Note:** With prior approval, many 300-level and above courses in biology, integrative biology, microbiology and molecular biology, and physiology and developmental biology will fill this requirement. Chem 500 does not count toward fulfilling this requirement.

## Recommended Courses

CHEM 195 : Freshman Seminar. (.5:1.0:0)

WHEN TAUGHT: Fall

DESCRIPTION: Impact of chemistry and biochemistry on science and society. Overview of areas of chemistry and undergraduate research. Benefits of a chemistry or biochemistry degree for jobs, graduate or professional school.

**Course Outcomes**

- Students will appreciate the impact of chemistry and biochemistry on society.
- Students will understand the distinctions between the main areas of chemistry and biochemistry.
- Students will recognize the value of a chemistry and biochemistry degree and the range of opportunities for degree holders.
- Students will be aware of options to do undergraduate research.

MATH 302 : Mathematics for Engineering 1. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Math 113.

DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

OR

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

RECOMMENDED: Math 290.

DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

: Honors Elementary Linear Algebra. (3:3:1)

**Course Outcomes**

**Note:** Supporting courses suggested by most medical and dental schools are found by visiting the Preprofessional Advisement office. The more rigorous chemistry, mathematics, and physics courses required for the biochemistry majors will satisfy the minimum requirements listed there. Elective courses in biochemistry and in biological science are especially pertinent to these preprofessional programs.

*Hours include courses that may fulfill university core requirements.

## Show all Chemistry and Biochemistry Courses

**College of Physical and Mathematical Sciences Home**

**Chemistry and Biochemistry Department Home**

**Majors**

- BA in Chemistry
- BS in Biochemistry
- BS in Chemistry
- BS in Chemistry Education

**Minors**

- Minor in Chemistry
- Minor in Chemistry Education

**Course Information**

- Chemistry and Biochemistry Courses

**Faculty**

# BS in Chemistry (75.0 hours*)

Show All Course Descriptions
Hide All Course Descriptions

This is the preferred degree for chemistry majors (approved by the American Chemical Society) and those who desire an advanced degree (MS, PhD) in chemistry. It also provides excellent preparation for those individuals in preprofessional programs (e.g., medicine, dentistry, business, law).

## Program Requirements | View MAP | View Program Outcomes

1. No more than three hours of D credit is allowed in major courses.
2. The Chemistry and Biochemistry Department requires the final 10 hours of required chemistry credit to be taken in residency at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
3. Complete the following:

CHEM 111 : Honors Principles of Chemistry. (4:3:3)

OFFERED: Honors also.
WHEN TAUGHT: Fall
PREREQUISITE: Math 110 or equivalent.
RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.
DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.
NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

CHEM 112 : Principles of Chemistry. (3:3:2)

WHEN TAUGHT: Winter
PREREQUISITE: Chem 111 or Chem 105 or equivalent.
DESCRIPTION: Continuation of Chem 111.
NOTE: Tutorial included.

**Course Outcomes**

- Students will be able to use thermodynamic principles and their application to physical and chemical equilibria to calculate entropic and enthalpic contributions to physical changes and reactions and predict equilibria given entropic and enthalpic changes.
- Students will be able to apply acid-base theory, including interactions of strong and weak acids and bases, to determination of pH values of solutions, calculating buffering capacity and performance of acid-base titrations. They will be able to use structural features of molecules to estimate acid and base strength.
- Students will demonstrate an understanding of electrochemistry in designing simple electrodes and will use reduction/oxidation potentials to characterize electrodes.
- Students will be able to apply transition state theory to reaction kinetics. Students will be able to model mathematically rates of multiple reaction types.
- Students will be able to apply the periodic nature of the elements to classify elements and identify the compositions of inorganic salts.

CHEM 113 : Introductory General Chemistry Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Chem 112 or Chem 106 or concurrent enrollment (preferred).
DESCRIPTION: Principles and techniques of chemical measurements. Concepts introduced in general chemistry lecture courses reinforced.

**Course Outcomes**

- Perform precise quantitative measurements using volumetric glassware, analytical balances, and electrochemical and spectrophotometric instrumentation.
- Apply concepts of quantum mechanics, kinetics, equilibrium and thermodynamics taught in Chem 111 and Chem 112 to laboratory measurements.
- Apply a basic understanding of descriptive chemistry introduced in Chem 112 to the separation and classification of inorganic cations and anions.
- Record laboratory procedures and results neatly and concisely in a laboratory notebook
- Report experimental results in a manner that gives proper attention to sources of experimental error.

CHEM 201 : Chemical Handling and Safe Laboratory Practices. (.5:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Safe handling of chemicals and safe practices in chemistry laboratories.

**Course Outcomes**

- Discuss regulations that govern a chemists activities: OSHO, EPA, DOT, CDC, NRC, and state agencies and specifically, the OSHA Laboratory Standard CFR 29 1910.1450 and EPA RCRA regulations (CFR 40) requiring “cradle to grave” responsibility
- Identify chemical hazard classes and follow administrative guidelines to work safely in a laboratory environment and properly store and dispose of chemicals. These guidelines include regulated exposure limits PEL, STEL, IDLH, Ceiling and other measurable standards, such as the TLV, LD50, LC50, SADT, and guidelines for use of compressed gases and cryogenic materials.
- Demonstrate usage of protective equipment available for chemical exposure.
- Respond to laboratory accidents, such as spills, fires, and cuts, and clean up a mercury spill.
- Recognize fire hazards and put out a fire using an ABC fire extinguisher.
- Discuss biological and radiological safety, including biosafety levels, management of biological waste, lasers, and radionuclides.

CHEM 227 : Principles of Chemical Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 113

DESCRIPTION: Principles of quantitative analysis, introductory instrumental methods, and computer applications to chemical analysis.

**Course Outcomes**

- Demonstrate skill in performing precise, careful, basic laboratory operations such as sample preparation, calibration techniques, spectrophotometry, electrochemical analysis, titrimetric and chromatographic methods
- Explain basic measurement methods and devices
- Show proficiency in reporting scientific results in numerical, graphical, and written formats, and be able to explain the ethical standards for such reports
- Show proficiency in using computer programs for data analysis
- Apply basic statistics to data analysis including, confidence intervals, t-test, linear regression, propagation of error, sampling statistics and signal-noise enhancement
- Critically evaluate experiments and data with respect to theory and models
- Apply knowledge to new problems, including the design and validation of new analytical methods

CHEM 351M : Organic Chemistry - Majors. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: For majors in chemistry and biochemistry.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352M : Organic Chemistry--Majors. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 351M; or CHEM 351

DESCRIPTION: Continuation of Chem 351M.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.

- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 354 : Organic Chemistry Laboratory--Majors. (2:0:6)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, manipulative skills, isolation and purification, characterization and identification, syntheses.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

CHEM 391 : Technical Writing Using Chemical Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 227 & CHEM 352; or CHEM 227 & CHEM 352M

DESCRIPTION: Intensive technical writing course based on chemical literature sources.

NOTE: Fulfills GE Advanced Writing requirement.

**Course Outcomes**

- Communicate the results of scientific experiments in oral reports, technical graphics, and written reports.
- Search the chemical literature for published works relevant to a project of interest, and to read and understand technical literature related to the discipline.
- Draw on classroom knowledge to contribute to solutions of problems encountered in a research laboratory.
- Make informed choices among post-graduate opportunities for work or further education.
- Understand professional and scientific ethics.

CHEM 455 : Synthesis and Qualitative Organic Analysis. (3:1:6)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 354; or CHEM 353; Chem 201 or concurrent enrollment.

DESCRIPTION: Laboratory course emphasizing isolation, purification, and characterization of major and minor products from selected syntheses.

NOTE: For chemistry and other science majors.

**Course Outcomes**

- Critically evaluate literature references, in particular experimental reaction details including reagents, starting materials, solvent, temperature, apparatus, stoichiometry, and scale. Adapt and modify known procedures to design and execute new reactions to obtain desired products on small and moderate scales (mg–g).
- Monitor and evaluate the successful completion of reactions using TLC with various solvents and modes, solvent changes and co-spot interpretation.
- Work up reactions using the appropriate organic and aqueous system based on polarity and acid/base properties including drying and solvent removal operations.
- Perform basic purification operations using recrystallization, distillation, chromatography with proper choice of solvents, techniques, mode of operation, etc. based on the properties of the product compound.
- Evaluate purity and identification of structures using hands on operation of NMR, IR, MS, and polarimetry.
- Prepare sample, set up and obtain routine 1D 1H and 13C NMR spectra showing adequate signal locking, shimming, formatting, data processing, spectra interpretation with complete peak assignment.
- Demonstrate understanding of NMR theory including magnetic field resonance, radio frequency pulse sequences, shift, splitting, polarization transfer, signal correlation, 2D experiments including homo and heterocorrelation spectroscopy, COSY, HSQC, NOESY, and multiple bond techniques, HMBC, TOCSY
- Demonstrate understanding of MS theory including ionization techniques, EI, CI, FAB, ES, MALDI, detection techniques, fragmentation patterns of functional groups, molecular ion, base peak, isotopes, N-rule.
- Demonstrate understanding of polarimetry theory including plane polarized light, interaction with chiral compounds, optical rotation and determination of enantiomeric excess.
- Write clear lab reports including clear experimental detail, operation, characterization, interpretation, evaluation, and conclusions.

CHEM 462 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 302 & PHSCS 123; Chem 227 or concurrent enrollment; Chem 351M or 351; Phscs 220 or concurrent enrollment.

DESCRIPTION: Quantum mechanics, group theory, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics.

**Course Outcomes**

- Demonstrate understanding of wave functions and operators, including solving for eigenvalues and expectation values
- Solve for properties of model systems, including particle in a box, harmonic oscillator, rigid rotor, Hydrogen-like atoms
- Apply approximation techniques (variation and perturbation) to relate model system to real chemical systems
- Apply quantum models of molecules to interpret spectra and extract information on molecular shape
- Characterize molecular properties by solving for molecular symmetry
- Solve for simple bonding orbitals using valence bond, linear combinations of atomic orbitals and symmetry adapted linear combinations
- Solve for the partition function of molecular systems, including translational, rotational, vibrational and electronic energies

CHEM 463 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: CHEM 462 & PHSCS 220
RECOMMENDED: Math 302.
DESCRIPTION: Thermodynamics and equilibria, states of matter, kinetic-molecular theory, kinetics, statistical mechanics.

**Course Outcomes**

- Demonstrate connections between molecular interactions and equations of state
- Describe physical and chemical phenomena in terms of molecular and bulk models and understand the limitations of these models
- Describe the kinetics of chemical reactions in terms of molecular mechanisms and empirical rate laws
- Apply the laws of thermodynamics to physical and chemical processes, including phase transitions, mixtures, chemical equilibrium, and electrochemical processes
- Analyze and interpret experimental data to draw conclusions about physical and chemical processes

CHEM 464 : Physical Chemistry Laboratory 1. (1:0:3)

WHEN TAUGHT: Winter
PREREQUISITE: Chem 463 or 467 or 468 or concurrent enrollment.
DESCRIPTION: Experiments related to physical chemistry: thermodynamics and equilibria, phase transitions, kinetic-molecular theory, kinetics; computer manipulation of data, report preparation.
NOTE: May be taken before, after, or concurrent (preferred) with Chem 465.

**Course Outcomes**

- Collect quantitative data using a variety of instruments, including calorimeters and spectrometers
- Fit collected data to mathematical models and extract molecular and bulk parameters
- Prepare and present clear graphs and tables, showing data from experiments
- Write clear lab reports in standard scientific journal format
- Prepare and give high quality oral presentations

CHEM 465 : Physical Chemistry Laboratory 2. (1:0:3)

WHEN TAUGHT: Winter
PREREQUISITE: Chem 462 or 467 or 468 or concurrent enrollment.
DESCRIPTION: Experiments related to physical chemistry: quantum mechanics, group theory, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics; computer manipulation of data, report preparation.
NOTE: May be taken before, after, or concurrent (preferred) with Chem 464.

**Course Outcomes**

- Collect quantitative spectroscopic data using a variety of instruments, including FT-IR, UV/Vis
- Fit collected data to physical chemical mathematical models and extract molecular parameters
- Perform molecular computations on the molecules in laboratory experiments
- Prepare and present clear graphs and tables, showing data from experiments
- Write clear lab reports in standard scientific journal format

CHEM 481M : Biochemistry--Majors. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120
DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.
NOTE: For chemistry and biochemistry majors only. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing

- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

CHEM 495 : Senior Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 594R

DESCRIPTION: Research topics presented by faculty and visiting scientists. Completion of undergraduate portfolio.

NOTE: Required of all seniors in all chemistry and biochemistry degree programs the last semester in residence.

**Course Outcomes**

- Become familiar with a variety of current research areas by listening to numerous visiting researchers describe their recent research results.
- Prepare for seminar presentations by reading literature articles written by visiting speakers before attending the presentation.
- Improve science-writing skills by writing summaries of research papers.
- Take notes in presentations attended to record thoughts and ideas for future reference.
- Reflect on your BYU education and evaluate how it helps you achieve your goals.

CHEM 514 : Inorganic Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 462; or CHEM 468

DESCRIPTION: In-depth treatment of theoretical concepts in inorganic chemistry and solid state, organmetallic, and bioinorganic chemistry.

**Course Outcomes**

- Students will be able to describe atoms and molecules.
- Students will be able to describe the physical and electronic properties of inorganic compounds such as metals, ionic solids, coordination compounds and nanomaterials
- Students will be able to assign point groups and deduce the symmetries of atomic orbitals, molecular orbitals, and molecular vibrations
- Students will be able to draw and name coordination compounds
- Students will be able to identify stable organometallic compounds, common organometallic reactions, and catalytic mechanisms
- Students will be able to describe several metalloproteins
- Students will be able to write and orally present a report on an element or family of elements

CHEM 518 : Advanced Inorganic Laboratory. (2:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 514; Chem 201 or 601 or concurrent enrollment.

DESCRIPTION: Synthesis, characterization, and properties of materials; coordination and organometallic compounds.

**Course Outcomes**

- Students will be able to safely and with proficiency handle solvents, chemicals, glassware, and instruments.
- Students will be able to use solid-state techniques to synthesize compounds and characterize the compounds they synthesize.
- Students will be able to synthesize, isolate, characterize and explain the properties of main group, coordination, organometallic, and bioinorganic compounds.
- Students will be able to write scientific lab reports.
- Students will be able to work independently and in small groups to complete laboratory experiments.

CHEM 521 : Instrumental Analysis Lecture. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 462 & PHSCS 220; or CHEM 467 & PHSCS 220; or CHEM 468 & PHSCS 220

DESCRIPTION: Modern instrumental methods and basic principles of instrumentation.

**Course Outcomes**

- Students will be able to work independently and in small groups to complete laboratory experiments.
- Discuss the role of the main components of each instrument, how each component works, and how varying a parameter of a given component will affect the overall measurement
- Discuss the roles of sample type, interferences, sensitivity, and selectivity when selecting appropriate instrumental methods for given chemical analysis problems
- Interpret results from each measurement technique
- Discuss ways to optimize signal, noise, interferences, and other limitations to measurement, and quantitatively describe the effect these have on the measurement result
- Discuss sampling methods and requirements for instrumental analysis

CHEM 523 : Instrumental Analysis Laboratory. (2:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 521; Chem 201 or 601 or concurrent enrollment.

DESCRIPTION: Continuation of Chem 521. Laboratory experience with modern analytical instrumentation.

**Course Outcomes**

- Make accurate chemical analyses using a variety of instrumental techniques
- Describe their findings clearly and concisely in writing, including interpretation of results and statistical analysis
- Present data in graph and/or tabular formats effectively
- Apply what they have learned about instrumental analysis to carry out a new procedure of their own design
- Explain observations made during the course of an experiment
- Discuss how experimental variables affect the outcome of a measurement
- Identify appropriate instrumental methods for given chemical analysis problems, taking into account such factors as sample type, interferences, sensitivity, and selectivity
- Identify and resolve problems when they arise in analyses

CHEM 594R : General Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Research topics presented by faculty and visiting scientists.

NOTE: Required one semester in residence of all senior BS majors in chemistry and biochemistry.

**Course Outcomes**

- Become familiar with a variety of current research areas by listening to numerous visiting researchers describe their recent research results.
- Prepare for seminar presentations by reading literature articles written by visiting speakers before attending the presentation.
- Improve science-writing skills by writing summaries of research papers.
- Take notes in presentations attended to record thoughts and ideas for future reference.

**Note:** With department approval, Chem 105 may substitute for Chem 111; and Chem 106 for Chem 112.

4. Complete the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 302 : Mathematics for Engineering 1. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Math 113.

DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 121 or equivalent. Calculus.

DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

**Note:** Math 313 and Math 314 may substitute for Math 302.

5. After consulting with an advisor, complete three credit hours from the following:

CHEM 482 : Mechanisms of Molecular Biology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Second-semester biochemistry. Nucleic acid biochemistry and molecular biology: nucleotide metabolism, chromosome and chromatin structure, DNA structure and replication, RNA transcription and gene expression, protein synthesis and regulation, eukaryotic gene systems, signal transduction.

**Course Outcomes**

- Draw the structure of DNA, determine the topology of a plasmid, explain the chemical sequence of events that occur during DNA replication and draw structural changes that occur due to mutation.
- Determine how to perform and interpret an electrophoresis separation of DNA fragments, southern blot, restriction map, polymerase chain reaction, and a DNA sequencing reaction with necessary controls.
- Design a DNA cloning strategy, explain controls necessary, and write procedural plan.
- Draw and explain the mechanism of RNA transcription and how RNA is processed, spliced, and regulated. Understand the basic mechanisms of transcriptional regulation using the example of transcription of genes necessary for cholesterol synthesis.
- Determine when and how to use techniques that involve RNA: Northern blots, quantitative PCR,

microarrays, S1 nuclease and primer extension mapping of the transcriptional start with appropriate controls.
- Determine the sequence of amino acids in a protein from a series of nucleotides.
- Draw and explain the process of protein translation and how it is regulated.
- Determine where a protein is localized in a tissue or cell: interpret a western blot, protein fusion assays.
- Determine with what a protein interacts: Interpret gel shift assays, Chromatin Immunoprecipitation, DNA footprinting, and yeast two hybrid reporter assays.
- Maintain faith through challenges and ethical boundaries in reporting and interpreting data.

CHEM 496R : Academic Internship: Chemistry and Biochemistry. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent; Chem 201 or concurrent enrollment or special safety training.

DESCRIPTION: Research experience in an industrial, academic, or government laboratory in collaboration with a BYU faculty colleague/supervisor.

**Course Outcomes**

- The student will carry out a successfull internship connecting classroom principles to real-world applications.
- The students will provide a written report or oral presentation explaining the technical work performec in the internship and its connection to the chemistry curriculum.

CHEM 497R : Undergraduate Special Problems. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent and Chem 201 or concurrent enrollment or special safety training.

DESCRIPTION: Undergraduate research experience.

**Course Outcomes**

- The student will participate in mentored research with a specific research group under the tutelage of a faculty member, and generate original scientific results.

CHEM 499R : Honors Thesis. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent and Chem 201 or concurrent enrollment or special safety training.

**Course Outcomes**

- The students will carry out a research project and write an acceptable honors thesis.

CHEM 552 : Advanced Organic Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 352M; or CHEM 352; Chem 462 and 463 (or Chem 468).

DESCRIPTION: Physical aspects of organic chemistry; mechanisms, reaction intermediates, bonding, stereochemical and stereoelectronic effects, molecular orbital theory, Lewis acidity and basicity.

**Course Outcomes**

- Predict relative energies and locations of frontier molecular orbitals for organic molecules of intermediate complexity using linear combinations of atomic orbitals and hybridized orbital approaches.
- Perform calculations using ab initio, semi-empirical, density functional, and molecular mechanics approaches to predict energies and structures of ground and transition states.
- Use reaction kinetics, linear free energy relationships, isotope labeling, stereo-electronic effects and stereochemical outcomes to determine reaction mechanisms.
- Predict reaction mechanisms of major classes of organic reactions, including substitutions, eliminations, additions and radical reactions.
- Recognize the impact of non-covalent interactions in complex systems and reaction mechanisms.

CHEM 553 : Advanced Organic Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 352; or CHEM 352M

DESCRIPTION: Synthetic aspects of organic chemistry; oxidations, reductions, concerted reactions, stereoselectivity, synthetic equivalents, protecting groups. Examples of natural product total synthesis.

**Course Outcomes**

- Formulate a retrosynthetic analysis and propose a total synthesis route for a previously un-synthesized complex natural product.
- Apply protecting group strategies in feasible routes to complex natural products and/or other organic molecules of biological or theoretical interest.
- Recognize and be able to apply standard methods for carbon-carbon bond forming reactions including: alkylation of nucleophilic carbon; reactions of carbanions with carbonyl groups; reactions involving transition metals; reactions of compounds of boron, silicon, and tin; and cycloadditions.
- Recognize and be able to apply standard methods for carrying out the following types of synthetic transformations: reductions of carbonyls and other functional groups, oxidations, electrophilic additions, aromatic substitution reactions.
- Predict reaction mechanisms for the reaction types listed in outcomes 3 and 4.

CHEM 563 : Reaction Kinetics. (3:3:0)

WHEN TAUGHT: Winter Even Yrs., Contact Department

PREREQUISITE: CHEM 462 & CHEM 463

DESCRIPTION: Theoretical aspects of chemical kinetics in the gas phase and in solution. Rates and mechanisms in solution, rapid reactions, and other topics.

**Course Outcomes**

- Solve simple and complex (coupled or sequential) kin etic expressions to obtain rate constants, reaction lifetimes, and activation energies, for gas, liquid, surface, and catalyzed reactions.
- Use statistical reaction theories, including transition state theory and RRKM, to both predict and interpret chemical reaction rates.
- Interpret the results of experiments that measure dynamic processes, such as cross-molecular beam experiments.
- Use the concepts of detailed balance and microscopic reversibility to connect the results of experiments that measure dynamic processes to experiments that obtain kinetic results.
- Calculate the potential energy surface (PES) for a simple chemical reaction, explain the relationship between the PES and the outcomes of a chemical reaction including how different types of energy influence the reaction given the PES.

CHEM 565 : Introduction to Quantum Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 462 & CHEM 463

DESCRIPTION: Introduction to physical and mathematical aspects of quantum theory, emphasizing application of the Schrodinger wave equation to chemical systems.

**Course Outcomes**

- Write and solve the Schrödinger equation in 1, 2 or 3 dimensions for 1, 2, or N particles for typical model problems and describe the meaning and significance of the solutions.
- Interpret the wavefunctions in #1 by calculating probability in a region, expectation values and matrix elements of Hermitian operators corresponding to physical observables.
- Use as necessary to solve problems: commutators of operators, basis set expansions, perturbation theory (degenerate and nondegenerate) and the variational principle.
- Describe how the Hartree-Fock SCF method works and use Slater determinants of spin and spatial eigenfunctions to build anti-symmetric atomic wavefunctions

CHEM 567 : Statistical Mechanics. (3:3:0)

WHEN TAUGHT: Winter Contact Department

PREREQUISITE: CHEM 462 & CHEM 463

RECOMMENDED: Chem 565.

DESCRIPTION: Introduction to classical and quantum statistical mechanics, including Boltzmann, Fermi-Dirac, and Bose-Einstein statistics. Applications of statistical thermodynamics to gases, liquids, and solids.

**Course Outcomes**

- Use probability density functions to describe a system, and recognize simple probability functions and their properties including Gaussian (normal), binomial (or multinomial), and Poisson distributions.
- Use combinatorics to define probabilities in simple systems.
- Describe how to choose a Gibbsian ensemble for calculation of system properties. Be able to recognize when the following ensembles are appropriate: microcanonical (N,V,E), canonical (N,V,T), grand canonical (V,T,m), isobaric-isothermal (N,T,P). Know how to construct the partition function in each case.
- Calculate average system quantities and thermodynamic variables using the appropriate partition function.
- Calculate the size of fluctuations of system properties and relate them to the number of particles in a system.
- Use proper statistics for classical particles and for quantum particles (bosons or fermions).
- Calculate canonical partition functions for translation, rotation, and harmonic vibration. Use them for applications and know when they don't apply
- Explain the meaning, significance and range of applicability of these fundamentals: ergodic hypothesis, equipartition theorem, and Bose-Einstein condensation.
- Use statistical mechanical principles to describe chemical equilibrium constants.
- Apply statistical mechanical principles to simple crystals, blackbody radiation and imperfect gases.
- Use the Metropolis Monte Carlo method to calculate statistical averages for a system. Know how to choose an efficient sampling method.
- Show how to use molecular dynamics to calculate statistical averages for a molecular system. Know when molecular dynamics is more appropriate than Monte Carlo methods. Know the advantages and disadvantages of common trajectory propagation algorithms.
- Obtain the radial distribution from the probability function for a system, from Monte Carlo calculations or molecular dynamics trajectories and evaluate system properties from the radial distribution function.
- Use Monte Carlo and transfer matrix methods to study a system of interacting spins as a model of phase transitions.

CHEM 569 : Fundamentals of Spectroscopy. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: CHEM 462; or CHEM 468

DESCRIPTION: Atomic and molecular spectroscopy and application of group theoretical concepts. Types of experiments and interpretation of data.

**Course Outcomes**

- Explain the electric and magnetic properties of radiation, molecules and bulk matter and solve problems related to these properties.

Solve time-dependent quantum mechanical problems and apply these solutions to spectroscopy where light is the time-dependent perturbation.
- Explain angular momentum as possessed by atomic or molecular systems, various descriptions of how angular momentum can be coupled, and how conservation of angular momentum is important to spectroscopy.
- Apply solutions of the Schrödinger equation for simple systems (particle in a box, rigid rotor, harmonic oscillator, etc) to real systems (vibrational, rotational, and electronic energy states) for use in determining the energy of stationary states.
- Explain the origin of selection rules and derive electric and magnetic dipole, quadrupole, etc. selection rules for simple model quantum systems.
- Use symmetry arguments, including group theory and parity, to simplify the interpretation and explanation of atomic and molecular spectra.
- Use solutions to the model systems and the selection rules the predict spectra for atomic and molecular systems.
- Fit experimentally obtained spectra to the mathematical models to obtain physical constants.

CHEM 584 : Biochemistry Laboratory/Proteins. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Introduction to current biochemical research procedures including spectrophotometry, chromatography, electrophoresis, and immunological techniques. Protein over-expression; isolation and characterization methods. Enzyme kinetics and protein-ligand interactions. Introduction to bioinformatics.

NOTE: May be taken before or after Chem 586.

**Course Outcomes**

- Apply spectroscopic techniques to analyze proteins, both their enzymatic and binding reactions
- Use gel electrophoresis and immunoblotting techniques to determine the presence and purity of proteins in biological samples
- Identify protein binding partners using co-immunoprecipitation methods
- Purify proteins using state-of-the-art separations methods
- Characterize an enzyme using steady state kinetics methods
- Use enzymes as analytical and diagnostic tools
- Properly record and interpret data
- Present data they have collected in an oral presentation and in a written scientific paper
- Understand ethical means of reporting results and giving proper credit to the work of others
- Measure ligand binding to proteins; determine dissociation constants and the degree of cooperativity.

CHEM 586 : Biochemistry Laboratory/Nucleic Acids. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Laboratory course covering major techniques involved in isolation, amplification, and cloning of recombinant DNA as well as isolation, synthesis, translation, and identification of RNA.

NOTE: May be taken before or after Chem 584.

**Course Outcomes**

- Understand, design and execute experiments using basic DNA manipulation procedures that include isolation, purification and modification of DNA
- Explain and perform PCR amplification and use this technique to detect the presence of DNA “targets”, DNA cloning (subcloning) and DNA sequencing
- Understand and explain how to isolate, quantitate and manipulate RNA
- Design and perform experiments to reverse transcribe RNA into complementary DNA (cDNA) and assess gene expression by semi- and quantitative PCR
- Isolate total RNA and be able to purify mRNA from this material
- Introduce and express foreign DNA and/or RNA in mammalian cells using the techniques of electroporation, lipid-based transfection, calcium phosphate based transfection and retroviral transduction
- “Knockdown” an expressed gene in mammalian cells using RNA silencing
- Prepare laboratory notebooks that include the objective, results and methods of each laboratory experiment. Additionally, students will provide conclusions to each experiment, including when appropriate, potential explanations to unexpected results

CHEM 596R : Special Topics in Chemistry. (.5-3:ARR:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

There are no course outcomes available

: Atmospheric Chemistry.

**Course Outcomes**

**Note:** With approval, certain other 300-level and above courses in the allied fields of physics, statistics, engineering, and biology may be taken to satisfy this requirement. Chem 500 does not count toward fulfilling this requirement.

## Recommended Courses

CHEM 195 : Freshman Seminar. (.5:1.0:0)

WHEN Fall

TAUGHT:

DESCRIPTION: Impact of chemistry and biochemistry on science and society. Overview of areas of chemistry and undergraduate research. Benefits of a chemistry or biochemistry degree for jobs, graduate or professional school.

**Course Outcomes**

- Students will appreciate the impact of chemistry and biochemistry on society.
- Students will understand the distinctions between the main areas of chemistry and biochemistry.
- Students will recognize the value of a chemistry and biochemistry degree and the range of opportunities for degree holders.
- Students will be aware of options to do undergraduate research.

MATH 303 : Mathematics for Engineering 2. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 302

DESCRIPTION: ODEs, Laplace transforms, Fourier series, PDEs.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For a more detailed course description, visit Math 303 Wiki.

PHSCS 140 : Electronics Lab. (1:1:2)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Introduction to analog and digital circuits.

**Course Outcomes**

- Build and debug basic analog circuits that are of practical use in experimental physics such as voltage dividers, diode rectifiers, inverting and non-inverting op amp circuits, and transistor switches.
- Demonstrate understanding of electrical concepts of voltage, current, resistance, power, and input and output resistance through the analysis of simple circuits.
- Demonstrate proper use and limitations of electrical sources and test equipment including DC power supplies, multimeters, oscilloscopes, and function generators.
- Build and debug basic digital circuits that use components such as digital gates, flipflops, counters, and digital to analog converters.

PHSCS 145 : Experimental Methods in Physics. (1:0:3)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: PHSCS 140; Phscs 121 or equivalent.

DESCRIPTION: Introduction to physical measurement and analysis, optics, sensors, actuators, and computer-based data acquisition.

**Course Outcomes**

- Demonstrate good practices in experimental physics documentation and communication such as data collection, record keeping, and presentation.
- Demonstrate the ability to analyze experimental data this includes techniques such as error estimation, error propagation, model selection, and curve fitting.
- Use simple optical devices (e.g. lenses, mirrors, slits and gratings, polarizers) to explore the geometric and wave properties of light.
- Apply AC concepts such as frequency response, frequency filtering, fourier transform analysis, and impedance to sinusoidally-driven electrical, mechanical, optical, and acoustical systems.

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for $\mu$ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for $H0 : \mu = \mu0$ from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction

- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

**Note:** Elective courses, beyond the requirements above, should be selected in consultation with an advisor. The following should be given consideration: advanced chemistry, foreign languages (especially French, German, Japanese, and Russian), biological sciences, computer science, engineering, mathematics, physics, statistics.

*Hours include courses that may fulfill university core requirements.

## Show all Chemistry and Biochemistry Courses

**College of Physical and Mathematical Sciences Home**

**Chemistry and Biochemistry Department Home**

**Majors**

- BA in Chemistry
- BS in Biochemistry
- BS in Chemistry
- BS in Chemistry Education

**Minors**

- Minor in Chemistry
- Minor in Chemistry Education

**Course Information**

- Chemistry and Biochemistry Courses

**Faculty**

# BS in Chemistry Education (80.5 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

This degree provides preparation for professional high school teaching. High school chemistry teachers will find opportunities available and will know the satisfaction of guiding good students into essential and rewarding careers. Students should work closely with both the Department of Chemistry and Biochemistry and the David O. McKay School of Education Student Services.

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
2. The Chemistry and Biochemistry Department requires the final 10 hours of required chemistry credit to be taken in residency at BYU for this degree program. These hours may also go toward BYU's 30-hour residency requirement for graduation.
3. Contact Education Student Services for entrance requirements into the licensure program.
4. A teaching minor is not required for licensure. However, it is strongly recommended.
5. Complete the following:

CHEM 111 : Honors Principles of Chemistry. (4:3:3)

OFFERED: Honors also.
WHEN TAUGHT: Fall
PREREQUISITE: Math 110 or equivalent.
RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.
DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.
NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

CHEM 112 : Principles of Chemistry. (3:3:2)

WHEN TAUGHT: Winter
PREREQUISITE: Chem 111 or Chem 105 or equivalent.
DESCRIPTION: Continuation of Chem 111.
NOTE: Tutorial included.

**Course Outcomes**

- Students will be able to use thermodynamic principles and their application to physical and chemical equilibria to calculate entropic and enthalpic contributions to physical changes and reactions and predict equilibria given entropic and enthalpic changes.
- Students will be able to apply acid-base theory, including interactions of strong and weak acids and bases, to determination of pH values of solutions, calculating buffering capacity and performance of acid-base titrations. They will be able to use structural features of molecules to estimate acid and base strength.
- Students will demonstrate an understanding of electrochemistry in designing simple electrodes and will use reduction/oxidation potentials to characterize electrodes.
- Students will be able to apply transition state theory to reaction kinetics. Students will be able to model mathematically rates of multiple reaction types.
- Students will be able to apply the periodic nature of the elements to classify elements and identify the compositions of inorganic salts.

CHEM 113 : Introductory General Chemistry Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Chem 112 or Chem 106 or concurrent enrollment (preferred).

DESCRIPTION: Principles and techniques of chemical measurements. Concepts introduced in general chemistry lecture courses reinforced.

**Course Outcomes**

- Perform precise quantitative measurements using volumetric glassware, analytical balances, and electrochemical and spectrophotometric instrumentation.
- Apply concepts of quantum mechanics, kinetics, equilibrium and thermodynamics taught in Chem 111 and Chem 112 to laboratory measurements.
- Apply a basic understanding of descriptive chemistry introduced in Chem 112 to the separation and classification of inorganic cations and anions.
- Record laboratory procedures and results neatly and concisely in a laboratory notebook
- Report experimental results in a manner that gives proper attention to sources of experimental error.

CHEM 201 : Chemical Handling and Safe Laboratory Practices. (.5:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Safe handling of chemicals and safe practices in chemistry laboratories.

**Course Outcomes**

- Discuss regulations that govern a chemists activities: OSHO, EPA, DOT, CDC, NRC, and state agencies and specifically, the OSHA Laboratory Standard CFR 29 1910.1450 and EPA RCRA regulations (CFR 40) requiring “cradle to grave” responsibility
- Identify chemical hazard classes and follow administrative guidelines to work safely in a laboratory environment and properly store and dispose of chemicals. These guidelines include regulated exposure limits PEL, STEL, IDLH, Ceiling and other measurable standards, such as the TLV, LD50, LC50, SADT, and guidelines for use of compressed gases and cryogenic materials.
- Demonstrate usage of protective equipment available for chemical exposure.
- Respond to laboratory accidents, such as spills, fires, and cuts, and clean up a mercury spill.
- Recognize fire hazards and put out a fire using an ABC fire extinguisher.
- Discuss biological and radiological safety, including biosafety levels, management of biological waste, lasers, and radionuclides.

CHEM 227 : Principles of Chemical Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 113

DESCRIPTION: Principles of quantitative analysis, introductory instrumental methods, and computer applications to chemical analysis.

**Course Outcomes**

- Demonstrate skill in performing precise, careful, basic laboratory operations such as sample preparation, calibration techniques, spectrophotometry, electrochemical analysis, titrimetric and chromatographic methods
- Explain basic measurement methods and devices
- Show proficiency in reporting scientific results in numerical, graphical, and written formats, and be able to explain the ethical standards for such reports
- Show proficiency in using computer programs for data analysis
- Apply basic statistics to data analysis including, confidence intervals, t-test, linear regression, propagation of error, sampling statistics and signal-noise enhancement
- Critically evaluate experiments and data with respect to theory and models
- Apply knowledge to new problems, including the design and validation of new analytical methods

CHEM 351M : Organic Chemistry - Majors. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: For majors in chemistry and biochemistry.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352M : Organic Chemistry--Majors. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 351M; or CHEM 351

DESCRIPTION: Continuation of Chem 351M.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 391 : Technical Writing Using Chemical Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 227 & CHEM 352; or CHEM 227 & CHEM 352M

DESCRIPTION: Intensive technical writing course based on chemical literature sources.

NOTE: Fulfills GE Advanced Writing requirement.

**Course Outcomes**

- Communicate the results of scientific experiments in oral reports, technical graphics, and written reports.
- Search the chemical literature for published works relevant to a project of interest, and to read and understand technical literature related to the discipline.
- Draw on classroom knowledge to contribute to solutions of problems encountered in a research laboratory.
- Make informed choices among post-graduate opportunities for work or further education.
- Understand professional and scientific ethics.

CHEM 462 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 302 & PHSCS 123; Chem 227 or concurrent enrollment; Chem 351M or 351; Phscs 220 or concurrent enrollment.

DESCRIPTION: Quantum mechanics, group theory, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics.

**Course Outcomes**

- Demonstrate understanding of wave functions and operators, including solving for eigenvalues and expectation values
- Solve for properties of model systems, including particle in a box, harmonic oscillator, rigid rotor, Hydrogen-like atoms
- Apply approximation techniques (variation and perturbation) to relate model system to real chemical systems
- Apply quantum models of molecules to interpret spectra and extract information on molecular shape
- Characterize molecular properties by solving for molecular symmetry
- Solve for simple bonding orbitals using valence bond, linear combinations of atomic orbitals and symmetry adapted linear combinations
- Solve for the partition function of molecular systems, including translational, rotational, vibrational and electronic energies

CHEM 495 : Senior Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 594R

DESCRIPTION: Research topics presented by faculty and visiting scientists. Completion of undergraduate portfolio.

NOTE: Required of all seniors in all chemistry and biochemistry degree programs the last semester in residence.

**Course Outcomes**

- Become familiar with a variety of current research areas by listening to numerous visiting researchers describe their recent research results.
- Prepare for seminar presentations by reading literature articles written by visiting speakers before attending the presentation.
- Improve science-writing skills by writing summaries of research papers.
- Take notes in presentations attended to record thoughts and ideas for future reference.
- Reflect on your BYU education and evaluate how it helps you achieve your goals.

**Note:** With department approval Chem 105 may substitute for Chem 111; and Chem 106 for Chem 112.

6. Complete the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the

definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Calculus or concurrent enrollment.
DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 121 or equivalent. Calculus.
DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

7. Complete three hours from the following:

CHEM 354 : Organic Chemistry Laboratory--Majors. (2:0:6)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).
DESCRIPTION: Physical and chemical properties, manipulative skills, isolation and purification, characterization

and identification, syntheses.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

CHEM 464 : Physical Chemistry Laboratory 1. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 463 or 467 or 468 or concurrent enrollment.

DESCRIPTION: Experiments related to physical chemistry: thermodynamics and equilibria, phase transitions, kinetic-molecular theory, kinetics; computer manipulation of data, report preparation.

NOTE: May be taken before, after, or concurrent (preferred) with Chem 465.

**Course Outcomes**

- Collect quantitative data using a variety of instruments, including calorimeters and spectrometers
- Fit collected data to mathematical models and extract molecular and bulk parameters
- Prepare and present clear graphs and tables, showing data from experiments
- Write clear lab reports in standard scientific journal format
- Prepare and give high quality oral presentations

CHEM 465 : Physical Chemistry Laboratory 2. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 462 or 467 or 468 or concurrent enrollment.

DESCRIPTION: Experiments related to physical chemistry: quantum mechanics, group theory, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics; computer manipulation of data, report preparation.

NOTE: May be taken before, after, or concurrent (preferred) with Chem 464.

**Course Outcomes**

- Collect quantitative spectroscopic data using a variety of instruments, including FT-IR, UV/Vis
- Fit collected data to physical chemical mathematical models and extract molecular parameters
- Perform molecular computations on the molecules in laboratory experiments
- Prepare and present clear graphs and tables, showing data from experiments
- Write clear lab reports in standard scientific journal format

CHEM 497R : Undergraduate Special Problems. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent and Chem 201 or concurrent enrollment or special safety training.

DESCRIPTION: Undergraduate research experience.

**Course Outcomes**

- The student will participate in mentored research with a specific research group under the tutelage of a faculty member, and generate original scientific results.

8. Complete 9 hours from the following:

BIO 100 : Principles of Biology. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Introductory course for general education students.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

CHEM 331 : Guided Learning for Chemistry Instruction. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 107; or CHEM 113

RECOMMENDED: Chem 201.

DESCRIPTION: Methods for guiding the learning of high school chemistry students, including modeling of instruction and practice in preparing and conducting demonstrations.

**Course Outcomes**

- Develop and broaden an understanding of the explanations of natural phenomena with chemistry principles to encourage student interest in the world around them.Develop and broaden an understanding of the explanations of natural phenomena with chemistry principles to encourage student interest in the world around them.
- Enrich and supplement the chemical principles and concepts learned in university chemistry courses to fully understand basic chemical principles.
- Develop and refine a variety of laboratory and problem solving strategies: dimensional analysis,

microscale chemistry, Virtual ChemLab, and inquiry methods.

CHEM 463 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 462 & PHSCS 220

RECOMMENDED: Math 302.

DESCRIPTION: Thermodynamics and equilibria, states of matter, kinetic-molecular theory, kinetics, statistical mechanics.

**Course Outcomes**

- Demonstrate connections between molecular interactions and equations of state
- Describe physical and chemical phenomena in terms of molecular and bulk models and understand the limitations of these models
- Describe the kinetics of chemical reactions in terms of molecular mechanisms and empirical rate laws
- Apply the laws of thermodynamics to physical and chemical processes, including phase transitions, mixtures, chemical equilibrium, and electrochemical processes
- Analyze and interpret experimental data to draw conclusions about physical and chemical processes

CHEM 481M : Biochemistry--Majors. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry and biochemistry majors only. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

GEOL 101 : Introduction to Geology. (3:2:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Cultural focus on physical and environmental geology for nonscience majors; rocks and minerals. Field trips.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- 1. Understand the difference between minerals and rocks.2. Be able to identify common rocks and minerals.3. Know where and when the basic rock and mineral types form and how they are related to the hydrologic and tectonic systems.
- 1. Understand how the hydrologic system helps to shape the Earth and how the different sub-systems interact.2. Learn the reasons for climate change in both ancient and modern times.
- 1. Learn the basic evidences and ideas that support the Theory of Plate Tectonics.2. Understand how the plate tectonic system works, including the role of the different types of plate boundaries and the forces that help to drive the system.3. Learn how the plate tectonic system has helped to shape the Earth's surface.
- 1. Gain a greater insight into the enormous length of geologic time and the evidences that support this claim.2. Learn the different ways that scientists can determine geologic ages.
- Learn how and why the other planets and moons in our solar system are different from Earth.

Or

GEOL 111 : Physical Geology. (4:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Materials, structure, and surface features of the earth and the geologic processes involved in their development. Field trips and lab studies, use of aerial photos.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.
- Learn some fundamental skills in preparation to conduct research and ultimately write research papers in other classes, including:1. Using online databases (GEOREF, Web of Science) to obtain

information on a particular topic.2. Using online resources (Refworks) to manage and format references.3. Reading articles in the primary geologic literature and drawing out primary information such as the topic of and article and its conclusions even if the student is not prepared (at this stage) to understand the methodology employed.4. Appreciate the need to properly format cited literature in a research paper.5. Learn the content and proper voice for the abstract of a research paper.
- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin, distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the role of human activity in climate change.
- 1. Learn or review the large scale features of the Earth's interior and exterior, including the basic features of the tectonic and hydrological systems.2. Appreciate the role of heat transfer, and in particular convection, in making both the hydrosphere and tectonosphere dynamic.

MATH 290 : Fundamentals of Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Math 112 or concurrent enrollment with instructor's consent.

DESCRIPTION: Achieving maturity in mathematical communication. Introduction to mathematical proof; methods of proof; analysis of proof; induction; logical reasoning.

**Course Outcomes**

- This course is aimed at undergraduate mathematics and mathematics education majors. It is a first course in mathematical thinking. It is intended as an introduction to mathematical proof, and students who finish the course should achieve maturity in mathematical communication. For more detailed information visit the Math 290 Wiki page.

MATH 302 : Mathematics for Engineering 1. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Math 113.

DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

RECOMMENDED: Math 290.

DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

MATH 334 : Ordinary Differential Equations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 113 and Math 313.

DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

PHIL 423 : History and Philosophy of Science. (3:3:0)

PREREQUISITE: Phy S 100 or instructor's consent; Phil 300.

DESCRIPTION: Scientific explanation, concepts, and models. Philosophical assumptions and criteria for theory selection, as exemplified by historical development of basic ideas in science.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in the history and philosophy of Western science from antiquity to the contemporary era.
- Read and critically discuss figures and texts in the philosophy of science.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of science.
- Be able to explain the practice and value of philosophy of science.

PHSCS 127 : Descriptive Astronomy. (3:3:1)

OFFERED: Honors also.

WHEN Fall; Winter; Spring

TAUGHT:
DESCRIPTION: Nonmathematical presentation of knowledge of the content and history of the cosmos, frequently using observatory and planetarium.

**Course Outcomes**

There are no course outcomes available

PHSCS 137 : Severe and Hazardous Weather. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Phy S 100 or high school/college physics.
DESCRIPTION: Nonmathematical introduction to meteorology. Atmospheric structure and dynamic behavior, focusing on short-term violent weather and longer-term hazards: drought, floods, heat waves, cold waves, and climate change, including human environmental impact.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

PHSCS 140 : Electronics Lab. (1:1:2)

WHEN TAUGHT: Winter; Spring
DESCRIPTION: Introduction to analog and digital circuits.

**Course Outcomes**

- Build and debug basic analog circuits that are of practical use in experimental physics such as voltage dividers, diode rectifiers, inverting and non-inverting op amp circuits, and transistor switches.
- Demonstrate understanding of electrical concepts of voltage, current, resistance, power, and input and output resistance through the analysis of simple circuits.
- Demonstrate proper use and limitations of electrical sources and test equipment including DC power supplies, multimeters, oscilloscopes, and function generators.
- Build and debug basic digital circuits that use components such as digital gates, flipflops, counters, and digital to analog converters.

PHSCS 145 : Experimental Methods in Physics. (1:0:3)

WHEN TAUGHT: Fall; Summer
PREREQUISITE: PHSCS 140; Phscs 121 or equivalent.
DESCRIPTION: Introduction to physical measurement and analysis, optics, sensors, actuators, and computer-based data acquisition.

**Course Outcomes**

- Demonstrate good practices in experimental physics documentation and communication such as data collection, record keeping, and presentation.
- Demonstrate the ability to analyze experimental data this includes techniques such as error estimation, error propagation, model selection, and curve fitting.
- Use simple optical devices (e.g. lenses, mirrors, slits and gratings, polarizers) to explore the geometric and wave properties of light.
- Apply AC concepts such as frequency response, frequency filtering, fourier transform analysis, and impedance to sinusoidally-driven electrical, mechanical, optical, and acoustical systems.

PWS 150 : Environmental Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
DESCRIPTION: Conservation and management of natural resources concurrent with increasing socioeconomic and human population demands; factors such as soil, water, and air pollution, resources management, bioremediation, nutrient cycles, and global climate changes
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Gain a deep appreciation for the Lord's admonition to Adam and Eve regarding the Earth to dress it and keep it
- Engage others and participate in discussions about major environmental problems, movements, and solutions (e.g., desertification, invasive species, water pollution, green revolution, and renewable energy).
- Understand how “science” is conducted.
- Demonstrate a fundamental knowledge (i.e., scientific literacy) of the environment and current environmental problems facing us locally, regionally, and globally.
- Devise experiments with testable hypotheses based the scientific method—process of making observations and logically integrating those observations into a model of how the world works.
- Foster and promote environmental stewardship within your realm of influence and your community.

With approval, certain other courses in physics, geology, mathematics, and biology may be taken to safisfy this requirement.

9. Complete the Professional Education Component:
   - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

PHY S 276 : Exploration of Teaching. (4:4:0)

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

- Students will become familiar with the four moral dimensions of education as outlined by the McKay School of Education
- Engage in the exploration of teachers and students in the public school to come to a conclusion if teaching physical science is a career path you want to pursue.
- Complete PIBS, CDS, Field Experience Demographic forms in Mackay School date collection program.

PHY S 377 : Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHY S 276

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Using Science Standards as a quide develop Assessments, Lesson Plans, Outlines, and all parts of a unit of science instruction.
- Inquiry, Constructivism, Lab, Activities, Projects and other methods to engage students in learning. These teaching methods will be modeled and practiced by the students.
- Students will complete Transition 2 level toward teaching license.

PHY S 378 : Practicum in Secondary Education. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in Phy S 377.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- 30 practicum hours where you teach a unit of instruction with guidance public school mentor.

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or

SFL 276R or HIth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or HIth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.

DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

**Note:** FBI fingerprint and background clearance must be completed before entry into Phy S 276.

- Complete 12 hours from one of the following:

SC ED 476R : Secondary Student Teaching - Physical Science. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will put into practice the theories they have learned in content and pedagogy courses including planning lessons, assessing students of all abilities and cultural backgrounds, using a variety of instructional strategies, and collaborating with other teachers and with the community.

SC ED 496R : Academic Internship: Physical Sciences. (12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will demonstrate that they can teach, manage, and assess content area knowledge and skills in the 7-12 classroom.
- Foster relationships with school colleagues, parents, and the larger community.

*Hours include courses that may fulfill university core requirements.

## Show all Chemistry and Biochemistry Courses

**College of Physical and Mathematical Sciences Home**

**Chemistry and Biochemistry Department Home**

**Majors**

- BA in Chemistry
- BS in Biochemistry
- BS in Chemistry
- BS in Chemistry Education

**Minors**

- Minor in Chemistry
- Minor in Chemistry Education

**Course Information**

- Chemistry and Biochemistry Courses

**Faculty**

# Minor in Chemistry (20 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete one of the following options:

**Either**

CHEM 111 : Honors Principles of Chemistry. (4:3:3)

OFFERED: Honors also.
WHEN TAUGHT: Fall
PREREQUISITE: Math 110 or equivalent.
RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.
DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.
NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

CHEM 112 : Principles of Chemistry. (3:3:2)

WHEN TAUGHT: Winter
PREREQUISITE: Chem 111 or Chem 105 or equivalent.
DESCRIPTION: Continuation of Chem 111.
NOTE: Tutorial included.

**Course Outcomes**

- Students will be able to use thermodynamic principles and their application to physical and chemical equilibria to calculate entropic and enthalpic contributions to physical changes and reactions and predict equilibria given entropic and enthalpic changes.
- Students will be able to apply acid-base theory, including interactions of strong and weak acids and bases, to determination of pH values of solutions, calculating buffering capacity and performance of acid-base titrations. They will be able to use structural features of molecules to estimate acid and base strength.
- Students will demonstrate an understanding of electrochemistry in designing simple electrodes and will use reduction/oxidation potentials to characterize electrodes.
- Students will be able to apply transition state theory to reaction kinetics. Students will be able to model mathematically rates of multiple reaction types.
- Students will be able to apply the periodic nature of the elements to classify elements and identify the compositions of inorganic salts.

CHEM 113 : Introductory General Chemistry Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Chem 112 or Chem 106 or concurrent enrollment (preferred).
DESCRIPTION: Principles and techniques of chemical measurements. Concepts introduced in general chemistry lecture courses reinforced.

**Course Outcomes**

- Perform precise quantitative measurements using volumetric glassware, analytical balances, and electrochemical and spectrophotometric instrumentation.
- Apply concepts of quantum mechanics, kinetics, equilibrium and thermodynamics taught in Chem 111 and Chem 112 to laboratory measurements.
- Apply a basic understanding of descriptive chemistry introduced in Chem 112 to the separation and classification of inorganic cations and anions.

Record laboratory procedures and results neatly and concisely in a laboratory notebook
- Report experimental results in a manner that gives proper attention to sources of experimental error.

**And** complete one of the following:

CHEM 223 : Quantitative and Qualitative Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 107; or CHEM 113

DESCRIPTION: Principles of chemical equilibrium, quantitative chemical measurements, and qualitative detection of selected chemical species.

NOTE: Primarily for majors in molecular biology and the life sciences.

**Course Outcomes**

- Course Objectives: The course is designed to develop research skills. The labwork will have a somewhat bioanalytical focus, e.g. the chemical analysis of biological molecules or biologically related ions and the use of biomolecules in assays. We will work to develop good laboratory practice, both conceptually and practically, and consider how to do good science. The combined lecture/lab approach will be used to help you understand quantitative approaches to analysis, sources of error, and the utility but also limitations of laboratory measurements. You will be asked to apply a portion of this knowledge to your own laboratory determinations. We will also discuss more advanced analytical methods involving chemical separations and instrumental analyses. This course fills one of the requirements for a minor in chemistry.

CHEM 227 : Principles of Chemical Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 113

DESCRIPTION: Principles of quantitative analysis, introductory instrumental methods, and computer applications to chemical analysis.

**Course Outcomes**

- Demonstrate skill in performing precise, careful, basic laboratory operations such as sample preparation, calibration techniques, spectrophotometry, electrochemical analysis, titrimetric and chromatographic methods
- Explain basic measurement methods and devices
- Show proficiency in reporting scientific results in numerical, graphical, and written formats, and be able to explain the ethical standards for such reports
- Show proficiency in using computer programs for data analysis
- Apply basic statistics to data analysis including, confidence intervals, t-test, linear regression, propagation of error, sampling statistics and signal-noise enhancement
- Critically evaluate experiments and data with respect to theory and models
- Apply knowledge to new problems, including the design and validation of new analytical methods

**Or**

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation

equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 223 : Quantitative and Qualitative Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 107; or CHEM 113

DESCRIPTION: Principles of chemical equilibrium, quantitative chemical measurements, and qualitative detection of selected chemical species.

NOTE: Primarily for majors in molecular biology and the life sciences.

**Course Outcomes**

- Course Objectives: The course is designed to develop research skills. The labwork will have a somewhat bioanalytical focus, e.g. the chemical analysis of biological molecules or biologically related ions and the use of biomolecules in assays. We will work to develop good laboratory practice, both conceptually and practically, and consider how to do good science. The combined lecture/lab approach will be used to help you understand quantitative approaches to analysis, sources of error, and the utility but also limitations of laboratory measurements. You will be asked to apply a portion of this knowledge to your own laboratory determinations. We will also discuss more advanced analytical methods involving chemical separations and instrumental analyses. This course fills one of the requirements for a minor in chemistry.

2. Complete one of the following options:

**Either**

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.

- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

**And** complete one of the following:

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.

NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

(for two credit hours)

CHEM 354 : Organic Chemistry Laboratory--Majors. (2:0:6)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, manipulative skills, isolation and purification, characterization and identification, syntheses.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

**Or**

CHEM 462 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 302 & PHSCS 123; Chem 227 or concurrent enrollment; Chem 351M or 351; Phscs 220 or concurrent enrollment.

DESCRIPTION: Quantum mechanics, group theory, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics.

**Course Outcomes**

- Demonstrate understanding of wave functions and operators, including solving for eigenvalues and expectation values
- Solve for properties of model systems, including particle in a box, harmonic oscillator, rigid rotor, Hydrogen-like atoms
- Apply approximation techniques (variation and perturbation) to relate model system to real chemical systems
- Apply quantum models of molecules to interpret spectra and extract information on molecular shape
- Characterize molecular properties by solving for molecular symmetry
- Solve for simple bonding orbitals using valence bond, linear combinations of atomic orbitals and symmetry adapted linear combinations
- Solve for the partition function of molecular systems, including translational, rotational, vibrational and electronic energies

CHEM 463 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 462 & PHSCS 220

RECOMMENDED: Math 302.

DESCRIPTION: Thermodynamics and equilibria, states of matter, kinetic-molecular theory, kinetics, statistical mechanics.

**Course Outcomes**

- Demonstrate connections between molecular interactions and equations of state
- Describe physical and chemical phenomena in terms of molecular and bulk models and understand the limitations of these models
- Describe the kinetics of chemical reactions in terms of molecular mechanisms and empirical rate laws

- Apply the laws of thermodynamics to physical and chemical processes, including phase transitions, mixtures, chemical equilibrium, and electrochemical processes
- Analyze and interpret experimental data to draw conclusions about physical and chemical processes

CHEM 464 : Physical Chemistry Laboratory 1. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 463 or 467 or 468 or concurrent enrollment.

DESCRIPTION: Experiments related to physical chemistry: thermodynamics and equilibria, phase transitions, kinetic-molecular theory, kinetics; computer manipulation of data, report preparation.

NOTE: May be taken before, after, or concurrent (preferred) with Chem 465.

**Course Outcomes**

- Collect quantitative data using a variety of instruments, including calorimeters and spectrometers
- Fit collected data to mathematical models and extract molecular and bulk parameters
- Prepare and present clear graphs and tables, showing data from experiments
- Write clear lab reports in standard scientific journal format
- Prepare and give high quality oral presentations

CHEM 465 : Physical Chemistry Laboratory 2. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 462 or 467 or 468 or concurrent enrollment.

DESCRIPTION: Experiments related to physical chemistry: quantum mechanics, group theory, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics; computer manipulation of data, report preparation.

NOTE: May be taken before, after, or concurrent (preferred) with Chem 464.

**Course Outcomes**

- Collect quantitative spectroscopic data using a variety of instruments, including FT-IR, UV/Vis
- Fit collected data to physical chemical mathematical models and extract molecular parameters
- Perform molecular computations on the molecules in laboratory experiments
- Prepare and present clear graphs and tables, showing data from experiments
- Write clear lab reports in standard scientific journal format

**Note:** When all of the chemistry credit required for a minor is transferred from another school, at least one course in chemistry must be taken at BYU with a grade of C or better—or the student may request to take a standardized national exam covering advanced material required for the minor. Chemistry programs at some schools have been evaluated, and their credit is acceptable for the minor. No more than 3 hours of D credit is allowed for the Chemistry minor.

*Hours include courses that may fulfill university core requirements.

## Show all Chemistry and Biochemistry Courses

**College of Physical and Mathematical Sciences Home**

**Chemistry and Biochemistry Department Home**

**Majors**

- BA in Chemistry
- BS in Biochemistry
- BS in Chemistry
- BS in Chemistry Education

**Minors**

- Minor in Chemistry
- Minor in Chemistry Education

**Course Information**

- Chemistry and Biochemistry Courses

**Faculty**

# Minor in Chemistry Education (21.5–23.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete one of the following options:

**Either**

CHEM 111 : Honors Principles of Chemistry. (4:3:3)

OFFERED: Honors also.
WHEN TAUGHT: Fall
PREREQUISITE: Math 110 or equivalent.
RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.
DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.
NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

CHEM 112 : Principles of Chemistry. (3:3:2)

WHEN TAUGHT: Winter
PREREQUISITE: Chem 111 or Chem 105 or equivalent.
DESCRIPTION: Continuation of Chem 111.
NOTE: Tutorial included.

**Course Outcomes**

- Students will be able to use thermodynamic principles and their application to physical and chemical equilibria to calculate entropic and enthalpic contributions to physical changes and reactions and predict equilibria given entropic and enthalpic changes.
- Students will be able to apply acid-base theory, including interactions of strong and weak acids and bases, to determination of pH values of solutions, calculating buffering capacity and performance of acid-base titrations. They will be able to use structural features of molecules to estimate acid and base strength.
- Students will demonstrate an understanding of electrochemistry in designing simple electrodes and will use reduction/oxidation potentials to characterize electrodes.
- Students will be able to apply transition state theory to reaction kinetics. Students will be able to model mathematically rates of multiple reaction types.
- Students will be able to apply the periodic nature of the elements to classify elements and identify the compositions of inorganic salts.

CHEM 113 : Introductory General Chemistry Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Chem 112 or Chem 106 or concurrent enrollment (preferred).
DESCRIPTION: Principles and techniques of chemical measurements. Concepts introduced in general chemistry lecture courses reinforced.

**Course Outcomes**

- Perform precise quantitative measurements using volumetric glassware, analytical balances, and electrochemical and spectrophotometric instrumentation.
- Apply concepts of quantum mechanics, kinetics, equilibrium and thermodynamics taught in Chem 111 and Chem 112 to laboratory measurements.
- Apply a basic understanding of descriptive chemistry introduced in Chem 112 to the separation and classification of inorganic cations and anions.
- Record laboratory procedures and results neatly and concisely in a laboratory notebook
- Report experimental results in a manner that gives proper attention to sources of experimental error.

**Or**

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

3. Complete the following:

CHEM 201 : Chemical Handling and Safe Laboratory Practices. (.5:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Safe handling of chemicals and safe practices in chemistry laboratories.

**Course Outcomes**

- Discuss regulations that govern a chemists activities: OSHO, EPA, DOT, CDC, NRC, and state agencies and specifically, the OSHA Laboratory Standard CFR 29 1910.1450 and EPA RCRA regulations (CFR 40) requiring “cradle to grave” responsibility
- Identify chemical hazard classes and follow administrative guidelines to work safely in a laboratory environment and properly store and dispose of chemicals. These guidelines include regulated exposure limits PEL, STEL, IDLH, Ceiling and other measurable standards, such as the TLV, LD50, LC50, SADT, and guidelines for use of compressed gases and cryogenic materials.

- Demonstrate usage of protective equipment available for chemical exposure.
- Respond to laboratory accidents, such as spills, fires, and cuts, and clean up a mercury spill.
- Recognize fire hazards and put out a fire using an ABC fire extinguisher.
- Discuss biological and radiological safety, including biosafety levels, management of biological waste, lasers, and radionuclides.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.

NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

(for two credit hours)

4. Complete one course from the following:

CHEM 223 : Quantitative and Qualitative Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 107; or CHEM 113

DESCRIPTION: Principles of chemical equilibrium, quantitative chemical measurements, and qualitative detection of selected chemical species.

NOTE: Primarily for majors in molecular biology and the life sciences.

**Course Outcomes**

- Course Objectives: The course is designed to develop research skills. The labwork will have a somewhat bioanalytical focus, e.g. the chemical analysis of biological molecules or biologically related ions and the use of biomolecules in assays. We will work to develop good laboratory practice, both conceptually and practically, and consider how to do good science. The combined lecture/lab approach will be used to help you understand quantitative approaches to analysis, sources of error, and the utility but also

limitations of laboratory measurements. You will be asked to apply a portion of this knowledge to your own laboratory determinations. We will also discuss more advanced analytical methods involving chemical separations and instrumental analyses. This course fills one of the requirements for a minor in chemistry.

CHEM 227 : Principles of Chemical Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 113

DESCRIPTION: Principles of quantitative analysis, introductory instrumental methods, and computer applications to chemical analysis.

**Course Outcomes**

- Demonstrate skill in performing precise, careful, basic laboratory operations such as sample preparation, calibration techniques, spectrophotometry, electrochemical analysis, titrimetric and chromatographic methods
- Explain basic measurement methods and devices
- Show proficiency in reporting scientific results in numerical, graphical, and written formats, and be able to explain the ethical standards for such reports
- Show proficiency in using computer programs for data analysis
- Apply basic statistics to data analysis including, confidence intervals, t-test, linear regression, propagation of error, sampling statistics and signal-noise enhancement
- Critically evaluate experiments and data with respect to theory and models
- Apply knowledge to new problems, including the design and validation of new analytical methods

CHEM 462 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 302 & PHSCS 123; Chem 227 or concurrent enrollment; Chem 351M or 351; Phscs 220 or concurrent enrollment.

DESCRIPTION: Quantum mechanics, group theory, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics.

**Course Outcomes**

- Demonstrate understanding of wave functions and operators, including solving for eigenvalues and expectation values
- Solve for properties of model systems, including particle in a box, harmonic oscillator, rigid rotor, Hydrogen-like atoms
- Apply approximation techniques (variation and perturbation) to relate model system to real chemical systems
- Apply quantum models of molecules to interpret spectra and extract information on molecular shape
- Characterize molecular properties by solving for molecular symmetry
- Solve for simple bonding orbitals using valence bond, linear combinations of atomic orbitals and symmetry adapted linear combinations
- Solve for the partition function of molecular systems, including translational, rotational, vibrational and electronic energies

CHEM 463 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 462 & PHSCS 220

RECOMMENDED: Math 302.

DESCRIPTION: Thermodynamics and equilibria, states of matter, kinetic-molecular theory, kinetics, statistical mechanics.

**Course Outcomes**

- Demonstrate connections between molecular interactions and equations of state
- Describe physical and chemical phenomena in terms of molecular and bulk models and understand the limitations of these models
- Describe the kinetics of chemical reactions in terms of molecular mechanisms and empirical rate laws
- Apply the laws of thermodynamics to physical and chemical processes, including phase transitions, mixtures, chemical equilibrium, and electrochemical processes
- Analyze and interpret experimental data to draw conclusions about physical and chemical processes

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing

- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

5. Complete the following:

PHY S 377 : Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHY S 276

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Using Science Standards as a quide develop Assessments, Lesson Plans, Outlines, and all parts of a unit of science instruction.
- Inquiry, Constructivism, Lab, Activities, Projects and other methods to engage students in learning. These teaching methods will be modeled and practiced by the students.
- Students will complete Transition 2 level toward teaching license.

**Note:** When all of the chemistry credit required for a minor is transferred from another school, at least one course in chemistry must be taken at BYU with a grade of C or better—or the student may request to take a standardized national exam covering advanced material required for the minor. Chemistry programs at some schools have been evaluated, and their credit is acceptable for the minor.

*Hours include courses that may fulfill university core requirements.

## Show all Chemistry and Biochemistry Courses

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# Chemistry and Biochemistry (Chem)

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## Undergraduate Courses

### 100-Level Courses

CHEM 100 : Elementary College Chemistry. (3:3:0)

WHEN TAUGHT: Contact Department.
RECOMMENDED: PhyS 100 or equivalent.
DESCRIPTION: Structure of matter and the chemical consequences of that structure.
NOTE: For nonscience and nonmedical majors.

**Course Outcomes**

- Students will be able to view the world around them in chemical terms. Students will use the concepts of atoms, molecules, and their properties to understand a variety of phenomena.
- Students will be able to make basic quantitative calculations regarding a number of chemical concepts in preparation for more rigorous, college-level chemistry courses.

CHEM 101 : Introductory General Chemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 97 or equivalent.
DESCRIPTION: Atomic and molecular structure, periodic relationships, states of matter, chemical reactions and stoichiometry, acids and bases.
NOTE: Primarily for nonscience majors who require a broad introduction to general chemistry.

**Course Outcomes**

- Students will be able to view the world around them in chemical terms. Students will use the concepts of atoms, molecules, and their properties to understand a variety of phenomena.
- Students will be able to make qualitative and/or quantitative predictions regarding a number of chemical concepts including chemical reactions and stoichiometry, calorimetry, osmosis, gases, acid/base chemistry, chemical equilibria, and radioactivity.

CHEM 102 : Concepts of Chemistry. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: The chemical nature of the world and the process of scientific inquiry. Application to critical scientific issues facing society.

**Course Outcomes**

- Students will be able to view the world around them in chemical terms. Students will use the concepts of atoms, molecules, and their properties to understand a variety of phenomena.
- Students will demonstrate the ability to distinguish between reliable and questionable scientific claims as related to current, relevant issues facing society.
- Students will discuss intelligently the relationship between modern science and religious belief.

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.
DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.
NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the

elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 111 : Principles of Chemistry. (4:3:3)

OFFERED: Honors also.

WHEN TAUGHT: Fall

PREREQUISITE: Math 110 or equivalent.

RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.

DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.

NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

: Honors Principles of Chemistry.

**Course Outcomes**

CHEM 112 : Principles of Chemistry. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 111 or Chem 105 or equivalent.

DESCRIPTION: Continuation of Chem 111.

NOTE: Tutorial included.

**Course Outcomes**

- Students will be able to use thermodynamic principles and their application to physical and chemical equilibria to calculate entropic and enthalpic contributions to physical changes and reactions and predict equilibria given entropic and enthalpic changes.
- Students will be able to apply acid-base theory, including interactions of strong and weak acids and bases, to determination of pH values of solutions, calculating buffering capacity and performance of acid-base titrations. They will be able to use structural features of molecules to estimate acid and base strength.
- Students will demonstrate an understanding of electrochemistry in designing simple electrodes and will use reduction/oxidation potentials to characterize electrodes.
- Students will be able to apply transition state theory to reaction kinetics. Students will be able to model mathematically rates of multiple reaction types.
- Students will be able to apply the periodic nature of the elements to classify elements and identify the compositions of inorganic salts.

CHEM 113 : Introductory General Chemistry Laboratory. (2:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Chem 112 or Chem 106 or concurrent enrollment (preferred).

DESCRIPTION: Principles and techniques of chemical measurements. Concepts introduced in general chemistry lecture courses reinforced.

**Course Outcomes**

- Perform precise quantitative measurements using volumetric glassware, analytical balances, and electrochemical and spectrophotometric instrumentation.
- Apply concepts of quantum mechanics, kinetics, equilibrium and thermodynamics taught in Chem 111 and Chem 112 to laboratory measurements.
- Apply a basic understanding of descriptive chemistry introduced in Chem 112 to the separation and classification of inorganic cations and anions.
- Record laboratory procedures and results neatly and concisely in a laboratory notebook
- Report experimental results in a manner that gives proper attention to sources of experimental error.

CHEM 195 : Freshman Seminar. (.5:1.0:0)

WHEN TAUGHT: Fall

DESCRIPTION: Impact of chemistry and biochemistry on science and society. Overview of areas of chemistry and undergraduate research. Benefits of a chemistry or biochemistry degree for jobs, graduate or professional school.

**Course Outcomes**

- Students will appreciate the impact of chemistry and biochemistry on society.
- Students will understand the distinctions between the main areas of chemistry and biochemistry.
- Students will recognize the value of a chemistry and biochemistry degree and the range of opportunities for degree holders.
- Students will be aware of options to do undergraduate research.

### 200-Level Courses

CHEM 201 : Chemical Handling and Safe Laboratory Practices. (.5:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Safe handling of chemicals and safe practices in chemistry laboratories.

**Course Outcomes**

- Discuss regulations that govern a chemists activities: OSHO, EPA, DOT, CDC, NRC, and state agencies and specifically, the OSHA Laboratory Standard CFR 29 1910.1450 and EPA RCRA regulations (CFR 40) requiring “cradle to grave” responsibility
- Identify chemical hazard classes and follow administrative guidelines to work safely in a laboratory environment and properly store and dispose of chemicals. These guidelines include regulated exposure limits PEL, STEL, IDLH, Ceiling and other measurable standards, such as the TLV, LD50, LC50, SADT, and guidelines for use of compressed gases and cryogenic materials.
- Demonstrate usage of protective equipment available for chemical exposure.
- Respond to laboratory accidents, such as spills, fires, and cuts, and clean up a mercury spill.
- Recognize fire hazards and put out a fire using an ABC fire extinguisher.
- Discuss biological and radiological safety, including biosafety levels, management of biological waste, lasers, and radionuclides.

CHEM 223 : Quantitative and Qualitative Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 107; or CHEM 113

DESCRIPTION: Principles of chemical equilibrium, quantitative chemical measurements, and qualitative detection of selected chemical species.

NOTE: Primarily for majors in molecular biology and the life sciences.

**Course Outcomes**

- Course Objectives: The course is designed to develop research skills. The labwork will have a somewhat bioanalytical focus, e.g. the chemical analysis of biological molecules or biologically related ions and the use of biomolecules in assays. We will work to develop good laboratory practice, both conceptually and practically, and consider how to do good science. The combined lecture/lab approach will be used to help you understand quantitative approaches to analysis, sources of error, and the utility but also limitations of laboratory measurements. You will be asked to apply a portion of this knowledge to your own laboratory determinations. We will also discuss more advanced analytical methods involving chemical separations and instrumental analyses. This course fills one of the requirements for a minor in chemistry.

CHEM 227 : Principles of Chemical Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 113

DESCRIPTION: Principles of quantitative analysis, introductory instrumental methods, and computer applications to chemical analysis.

**Course Outcomes**

- Demonstrate skill in performing precise, careful, basic laboratory operations such as sample preparation, calibration techniques, spectrophotometry, electrochemical analysis, titrimetric and chromatographic methods
- Explain basic measurement methods and devices
- Show proficiency in reporting scientific results in numerical, graphical, and written formats, and be able to explain the ethical standards for such reports
- Show proficiency in using computer programs for data analysis
- Apply basic statistics to data analysis including, confidence intervals, t-test, linear regression, propagation of

error, sampling statistics and signal-noise enhancement
- Critically evaluate experiments and data with respect to theory and models
- Apply knowledge to new problems, including the design and validation of new analytical methods

CHEM 285 : Introductory Bio-organic Chemistry. (4:4:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent.

DESCRIPTION: Principles of organic chemistry and biochemistry relating to biomolecule structure and function.

**Course Outcomes**

- Students will understand the metabolism of carbohydrates, lipids, and proteins in humans. They will be able to describe in structures and words the metabolism of sugars through the pathways of glycolysis, the citric acid cycle, and the electron transport chain.
- Students will understand the structure and reactivity of organic functional groups, such as alcohols, aldehydes, carboxylic acids, and amides. For example, students will learn that aldehydes and ketones typically undergo addition reactions.
- Students will understand the structure and reactivity of the biomolecules that have those functional groups. For example, students will be able to demonstrate that carbohydrates are aldehydes and ketones that undergo addition reactions to form hemiacetals and polysaccharides with acetal linkages.

CHEM 297R : Research Training Experience. (.5-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Developing competence in methods of research, safe practices, and application of classroom knowledge to research problems leading to confidence and independence in research work.

**Course Outcomes**

- The student will develop the fundamental skills necessary to participate in mentored research in future semesters with a specific research group under the tutelage of a faculty member.

**300-Level Courses**

CHEM 331 : Guided Learning for Chemistry Instruction. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 107; or CHEM 113

RECOMMENDED: Chem 201.

DESCRIPTION: Methods for guiding the learning of high school chemistry students, including modeling of instruction and practice in preparing and conducting demonstrations.

**Course Outcomes**

- Develop and broaden an understanding of the explanations of natural phenomena with chemistry principles to encourage student interest in the world around them.Develop and broaden an understanding of the explanations of natural phenomena with chemistry principles to encourage student interest in the world around them.
- Enrich and supplement the chemical principles and concepts learned in university chemistry courses to fully understand basic chemical principles.
- Develop and refine a variety of laboratory and problem solving strategies: dimensional analysis, microscale chemistry, Virtual ChemLab, and inquiry methods.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 351M : Organic Chemistry - Majors. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and

mechanisms, syntheses.

NOTE: For majors in chemistry and biochemistry.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

CHEM 352 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 351; or CHEM 351M

DESCRIPTION: Continuation of Chem 351.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 352M : Organic Chemistry--Majors. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 351M; or CHEM 351

DESCRIPTION: Continuation of Chem 351M.

**Course Outcomes**

- Predict structure and reactivity of aldehydes, ketones, carboxylic acids, esters, anhydrides, amides, b-ketocarbonyl containing compounds, amines, and phenols.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: electrophilic & nucleophilic aromatic substitution, nucleophilic carbonyl addition, nucleophilic acyl substitution, carbonyl condensation, [4 2] cycloaddition, and substitution ato a carbonyl.
- Recognize and predict the reactivity of the following reactive species and/or reactive intermediates: Grignard reagents, Wittig reagents, organolithiums, diorganocuprates, enols, enolates, aryl diazonium ions, and benzynes.
- Recognize and predict the structure and reactivity of the following classes of biologically important organic molecules: carbohydrates, amino acids, proteins, and lipids.

CHEM 353 : Organic Chemistry Laboratory--Nonmajors. (1-2:0:6)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, isolation and purification, characterization, syntheses.

NOTE: For predentistry, premedicine, and other majors who do not intend to take Chem 455.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

CHEM 354 : Organic Chemistry Laboratory--Majors. (2:0:6)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 352 or Chem 352M or concurrent enrollment (preferred).

DESCRIPTION: Physical and chemical properties, manipulative skills, isolation and purification, characterization and identification, syntheses.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.

- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

CHEM 355 : Organic Chemistry Laboratory 2 - Nonmajors. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: CHEM 353

DESCRIPTION: Physical and chemical properties, isolation, purification, characterization, identification, and syntheses of organic compounds.

**Course Outcomes**

- Perform a broad range of traditional organic reactions at the micro scale including: nucleophilic carbonyl additions, hydroboration, nucleophilic acyl substitution, electrophilic aromatic substitution, [4 2] cycloaddition, and photochemical alkene isomerization.
- Implement fundamental organic chemistry techniques for carrying out basic experiments, and purifying products, at the micro scale including: extraction, distillation, recrystalization, column chromatography, and TLC.
- Make correct conclusions about the outcome of experiments after collecting basic physical data, and after providing unambiguous interpretation of the necessary spectra.

CHEM 391 : Technical Writing Using Chemical Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 227 & CHEM 352; or CHEM 227 & CHEM 352M

DESCRIPTION: Intensive technical writing course based on chemical literature sources.

NOTE: Fulfills GE Advanced Writing requirement.

**Course Outcomes**

- Communicate the results of scientific experiments in oral reports, technical graphics, and written reports.
- Search the chemical literature for published works relevant to a project of interest, and to read and understand technical literature related to the discipline.
- Draw on classroom knowledge to contribute to solutions of problems encountered in a research laboratory.
- Make informed choices among post-graduate opportunities for work or further education.
- Understand professional and scientific ethics.

**400-Level Courses**

CHEM 455 : Synthesis and Qualitative Organic Analysis. (3:1:6)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 354; or CHEM 353; Chem 201 or concurrent enrollment.

DESCRIPTION: Laboratory course emphasizing isolation, purification, and characterization of major and minor products from selected syntheses.

NOTE: For chemistry and other science majors.

**Course Outcomes**

- Critically evaluate literature references, in particular experimental reaction details including reagents, starting materials, solvent, temperature, apparatus, stoichiometry, and scale. Adapt and modify known procedures to design and execute new reactions to obtain desired products on small and moderate scales (mg–g).
- Monitor and evaluate the successful completion of reactions using TLC with various solvents and modes, solvent changes and co-spot interpretation.
- Work up reactions using the appropriate organic and aqueous system based on polarity and acid/base properties including drying and solvent removal operations.
- Perform basic purification operations using recrystallization, distillation, chromatography with proper choice of solvents, techniques, mode of operation, etc. based on the properties of the product compound.
- Evaluate purity and identification of structures using hands on operation of NMR, IR, MS, and polarimetry.
- Prepare sample, set up and obtain routine 1D 1H and 13C NMR spectra showing adequate signal locking, shimming, formatting, data processing, spectra interpretation with complete peak assignment.
- Demonstrate understanding of NMR theory including magnetic field resonance, radio frequency pulse sequences, shift, splitting, polarization transfer, signal correlation, 2D experiments including homo and heterocorrelation spectroscopy, COSY, HSQC, NOESY, and multiple bond techniques, HMBC, TOCSY
- Demonstrate understanding of MS theory including ionization techniques, EI, CI, FAB, ES, MALDI, detection techniques, fragmentation patterns of functional groups, molecular ion, base peak, isotopes, N-rule.
- Demonstrate understanding of polarimetry theory including plane polarized light, interaction with chiral compounds, optical rotation and determination of enantiomeric excess.
- Write clear lab reports including clear experimental detail, operation, characterization, interpretation, evaluation, and conclusions.

CHEM 462 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 302 & PHSCS 123; Chem 227 or concurrent enrollment; Chem 351M or 351; Phscs 220 or concurrent enrollment.

DESCRIPTION: Quantum mechanics, group theory, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics.

**Course Outcomes**

- Demonstrate understanding of wave functions and operators, including solving for eigenvalues and expectation values

- Solve for properties of model systems, including particle in a box, harmonic oscillator, rigid rotor, Hydrogen-like atoms
- Apply approximation techniques (variation and perturbation) to relate model system to real chemical systems
- Apply quantum models of molecules to interpret spectra and extract information on molecular shape
- Characterize molecular properties by solving for molecular symmetry
- Solve for simple bonding orbitals using valence bond, linear combinations of atomic orbitals and symmetry adapted linear combinations
- Solve for the partition function of molecular systems, including translational, rotational, vibrational and electronic energies

CHEM 463 : Physical Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 462 & PHSCS 220

RECOMMENDED: Math 302.

DESCRIPTION: Thermodynamics and equilibria, states of matter, kinetic-molecular theory, kinetics, statistical mechanics.

**Course Outcomes**

- Demonstrate connections between molecular interactions and equations of state
- Describe physical and chemical phenomena in terms of molecular and bulk models and understand the limitations of these models
- Describe the kinetics of chemical reactions in terms of molecular mechanisms and empirical rate laws
- Apply the laws of thermodynamics to physical and chemical processes, including phase transitions, mixtures, chemical equilibrium, and electrochemical processes
- Analyze and interpret experimental data to draw conclusions about physical and chemical processes

CHEM 464 : Physical Chemistry Laboratory 1. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 463 or 467 or 468 or concurrent enrollment.

DESCRIPTION: Experiments related to physical chemistry: thermodynamics and equilibria, phase transitions, kinetic-molecular theory, kinetics; computer manipulation of data, report preparation.

NOTE: May be taken before, after, or concurrent (preferred) with Chem 465.

**Course Outcomes**

- Collect quantitative data using a variety of instruments, including calorimeters and spectrometers
- Fit collected data to mathematical models and extract molecular and bulk parameters
- Prepare and present clear graphs and tables, showing data from experiments
- Write clear lab reports in standard scientific journal format
- Prepare and give high quality oral presentations

CHEM 465 : Physical Chemistry Laboratory 2. (1:0:3)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 462 or 467 or 468 or concurrent enrollment.

DESCRIPTION: Experiments related to physical chemistry: quantum mechanics, group theory, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics; computer manipulation of data, report preparation.

NOTE: May be taken before, after, or concurrent (preferred) with Chem 464.

**Course Outcomes**

- Collect quantitative spectroscopic data using a variety of instruments, including FT-IR, UV/Vis
- Fit collected data to physical chemical mathematical models and extract molecular parameters
- Perform molecular computations on the molecules in laboratory experiments
- Prepare and present clear graphs and tables, showing data from experiments
- Write clear lab reports in standard scientific journal format

CHEM 467 : Physical Chemistry for Engineers. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 351 & MATH 302 & PHSCS 121; Ch En 263.

DESCRIPTION: Quantum mechanics, atomic and molecular structure, spectroscopy, computational methods, statistical mechanics, thermodynamics and equilibria, states of matter, kinetic-molecular theory, kinetics.

NOTE: For chemical engineering majors and other interested students in fields of engineering and physical science.

**Course Outcomes**

- understand the fundamentals of classical thermodynamics, quantum mechanics, reaction kinetics, and statistical mechanics, including foundational principles, key mathematical relationships and derivations, at a deeper, more rigorous level than Chem 111H and 112.
- be able to relate atomic/molecular properties and interactions to bulk properties and vice versa.
- be able to interpret atomic and molecular spectra in terms of quantum mechanical models.
- be able to describe the kinetics of chemical reactions in terms of molecular mechanisms and empirical rate laws.
- be able to apply the laws of thermodynamics to physical and chemical processes.
- be able to analyze and interpret experimental data to draw conclusions about chemical processes from a wide range of disciplines, including chemistry, biology, engineering and geology.
- be able to develop and use models, both conceptual and mathematical, of physical and chemical phenomena and understand the limitations of these models.

CHEM 468 : Biophysical Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481 & MATH 113 & PHSCS 220; or CHEM 481M & MATH 113 & PHSCS 220

DESCRIPTION: Applications of physical chemistry to biological systems. Spectroscopic applications, computational methods, structural biochemistry, thermodynamics, equilibria, statistical mechanics, transport properties, kinetics, quantum mechanics.

NOTE: For biochemistry (BS) majors and those interested in the health professions or biochemistry. (For prerequisites, Phscs 220 may be taken concurrently.)

**Course Outcomes**

- Describe conceptually the fundamental concepts in the four principal areas of physical chemistry: classical thermodynamics, statistical thermodynamics kinetics and quantum mechanics
- Define mathematically the concepts outlined in 1) and manipulate the fundamental and derived equations associated with these concepts
- Use the above skills to calculate or predict the equilibrium conditions or direction of spontaneous biochemical processes that are involved in metabolism or energy transfer events given appropriate thermodynamic data and initial system conditions
- Employ mathematical and graphical techniques on enzyme kinetic data to extract key parameters and to identify inhibition mechanisms
- Solve simple Schroedinger equation problems (e.g., particle in a box), identify boundary conditions, and explain the significance of boundary conditions on the observance of quantized effects
- Relate the simple Hamiltonians from above to biological molecules and systems and generalize from the simple results to make predictions regarding behavior in the biological systems
- Identify the nature of electronic energy levels in key photoactive biological molecules and use spectroscopic data to probe these levels
- Apply fundamental concepts of electronic structure and reaction kinetics to the steps in photosynthesis and vision
- Provide examples in which physical chemistry perspectives have enabled a deeper more complete understanding of the structure and function of biological molecules and complex biological systems

CHEM 481 : Biochemistry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry majors and students in biological sciences who contemplate pursuing advanced degrees, including medicine. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

CHEM 481M : Biochemistry--Majors. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 352M & PDBIO 120; or CHEM 352 & PDBIO 120

DESCRIPTION: First-semester biochemistry. Molecular components of cells, chemical structure and function, enzymes, metabolic transformations, photosynthesis.

NOTE: For chemistry and biochemistry majors only. (For prerequisite, Bio 130 may be used in place of PDBio 120.)

**Course Outcomes**

- Demonstrate mastery of key concepts in the Biochemistry subdiscipline and articulate the relationships between chemistry and biology. This outcome is elaborated in outcomes 2-5 below
- Explain how the structure of biomolecules such as proteins, nucleic acids, lipids, and carbohydrates determines their biological function
- Describe how enzymes catalyze reactions in terms of thermodynamics, kinetics, and mechanistic strategies
- Understand how energy is generated from metabolic reaction pathways
- Push arrows to predict and understand reactivity in metabolic pathways
- Communicate scientific ideas clearly to other specialists in writing
- Identify and understand primary research articles relevant to a specific biochemical question of current interest
- Interpret and critique experimental data relating to biochemical models

CHEM 482 : Mechanisms of Molecular Biology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Second-semester biochemistry. Nucleic acid biochemistry and molecular biology: nucleotide metabolism, chromosome and chromatin structure, DNA structure and replication, RNA transcription and gene expression, protein synthesis and regulation, eukaryotic gene systems, signal transduction.

**Course Outcomes**

- Draw the structure of DNA, determine the topology of a plasmid, explain the chemical sequence of events that occur during DNA replication and draw structural changes that occur due to mutation.
- Determine how to perform and interpret an electrophoresis separation of DNA fragments, southern blot, restriction map, polymerase chain reaction, and a DNA sequencing reaction with necessary controls.
- Design a DNA cloning strategy, explain controls necessary, and write procedural plan.
- Draw and explain the mechanism of RNA transcription and how RNA is processed, spliced, and regulated.

Understand the basic mechanisms of transcriptional regulation using the example of transcription of genes necessary for cholesterol synthesis.
- Determine when and how to use techniques that involve RNA: Northern blots, quantitative PCR, microarrays, S1 nuclease and primer extension mapping of the transcriptional start with appropriate controls.
- Determine the sequence of amino acids in a protein from a series of nucleotides.
- Draw and explain the process of protein translation and how it is regulated.
- Determine where a protein is localized in a tissue or cell: interpret a western blot, protein fusion assays.
- Determine with what a protein interacts: Interpret gel shift assays, Chromatin Immunoprecipitation, DNA footprinting, and yeast two hybrid reporter assays.
- Maintain faith through challenges and ethical boundaries in reporting and interpreting data.

CHEM 489 : Structural Biochemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 468

DESCRIPTION: Molecular structures of proteins, RNA and DNA as determinants of biological function. Topics include thermodynamics of folding and binding, structural determination, spectroscopy, modeling, protein recognition.

**Course Outcomes**

- Identify motifs and symmetries in macromolecular structures and chemical interactions that maintain structural integrity
- Relate the structure of a macromolecule to its biological function
- Describe how X-ray crystallography, nuclear magnetic resonance, cryogenic electron microscopy, and circular dichroism techniques give structural information for biological macromolecules
- Communicate scientific ideas (e.g. structure-function relationships) clearly and concisely to others orally and in writing, and use ethical standards in oral and written presentations
- Work with peers to answer scientific questions

CHEM 495 : Senior Seminar. (1:1:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 594R

DESCRIPTION: Research topics presented by faculty and visiting scientists. Completion of undergraduate portfolio.

NOTE: Required of all seniors in all chemistry and biochemistry degree programs the last semester in residence.

**Course Outcomes**

- Become familiar with a variety of current research areas by listening to numerous visiting researchers describe their recent research results.
- Prepare for seminar presentations by reading literature articles written by visiting speakers before attending the presentation.
- Improve science-writing skills by writing summaries of research papers.
- Take notes in presentations attended to record thoughts and ideas for future reference.
- Reflect on your BYU education and evaluate how it helps you achieve your goals.

CHEM 496R : Academic Internship: Chemistry and Biochemistry. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent; Chem 201 or concurrent enrollment or special safety training.

DESCRIPTION: Research experience in an industrial, academic, or government laboratory in collaboration with a BYU faculty colleague/supervisor.

**Course Outcomes**

- The student will carry out a successfull internship connecting classroom principles to real-world applications.
- The students will provide a written report or oral presentation explaining the technical work performec in the internship and its connection to the chemistry curriculum.

CHEM 497R : Undergraduate Special Problems. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent and Chem 201 or concurrent enrollment or special safety training.

DESCRIPTION: Undergraduate research experience.

**Course Outcomes**

- The student will participate in mentored research with a specific research group under the tutelage of a faculty member, and generate original scientific results.

CHEM 499R : Honors Thesis. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent and Chem 201 or concurrent enrollment or special safety training.

**Course Outcomes**

- The students will carry out a research project and write an acceptable honors thesis.

## 500-Level Graduate Courses (available to advanced undergraduates)

CHEM 500 : (Chem-C S-Geol-Math-MthEd-Phscs-Stat) Business Career Essentials in Science and Math. (1.5:1.5:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction for science, math, and statistics majors to careers in industry. Project planning, oral and written business presentations, business accounting, and technology readiness.

**Course Outcomes**

- Demonstrate knowledge of business skills necessary to function as a scientist working in industry.Be able to explain how corporate politics can affect your career.
- Learn how to present concepts and ideas in a clear and effective manner in both oral and written form.
- Learn to read and understand corporate accounting statements and data and understand the basic ideas of project and portfolio management.Learn the steps to moving an idea from concept to completion in a business setting.

CHEM 514 : Inorganic Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 462; or CHEM 468

DESCRIPTION: In-depth treatment of theoretical concepts in inorganic chemistry and solid state, organmetallic, and bioinorganic chemistry.

**Course Outcomes**

- Students will be able to describe atoms and molecules.
- Students will be able to describe the physical and electronic properties of inorganic compounds such as metals, ionic solids, coordination compounds and nanomaterials
- Students will be able to assign point groups and deduce the symmetries of atomic orbitals, molecular orbitals, and molecular vibrations
- Students will be able to draw and name coordination compounds
- Students will be able to identify stable organometallic compounds, common organometallic reactions, and catalytic mechanisms
- Students will be able to describe several metalloproteins
- Students will be able to write and orally present a report on an element or family of elements

CHEM 518 : Advanced Inorganic Laboratory. (2:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 514; Chem 201 or 601 or concurrent enrollment.

DESCRIPTION: Synthesis, characterization, and properties of materials; coordination and organometallic compounds.

**Course Outcomes**

- Students will be able to safely and with proficiency handle solvents, chemicals, glassware, and instruments.
- Students will be able to use solid-state techniques to synthesize compounds and characterize the compounds they synthesize.
- Students will be able to synthesize, isolate, characterize and explain the properties of main group, coordination, organometallic, and bioinorganic compounds.
- Students will be able to write scientific lab reports.
- Students will be able to work independently and in small groups to complete laboratory experiments.

CHEM 521 : Instrumental Analysis Lecture. (2:2:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 462 & PHSCS 220; or CHEM 467 & PHSCS 220; or CHEM 468 & PHSCS 220

DESCRIPTION: Modern instrumental methods and basic principles of instrumentation.

**Course Outcomes**

- Students will be able to work independently and in small groups to complete laboratory experiments.
- Discuss the role of the main components of each instrument, how each component works, and how varying a parameter of a given component will affect the overall measurement
- Discuss the roles of sample type, interferences, sensitivity, and selectivity when selecting appropriate instrumental methods for given chemical analysis problems
- Interpret results from each measurement technique
- Discuss ways to optimize signal, noise, interferences, and other limitations to measurement, and quantitatively describe the effect these have on the measurement result
- Discuss sampling methods and requirements for instrumental analysis

CHEM 523 : Instrumental Analysis Laboratory. (2:0:6)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 521; Chem 201 or 601 or concurrent enrollment.

DESCRIPTION: Continuation of Chem 521. Laboratory experience with modern analytical instrumentation.

**Course Outcomes**

- Make accurate chemical analyses using a variety of instrumental techniques
- Describe their findings clearly and concisely in writing, including interpretation of results and statistical analysis
- Present data in graph and/or tabular formats effectively
- Apply what they have learned about instrumental analysis to carry out a new procedure of their own design
- Explain observations made during the course of an experiment
- Discuss how experimental variables affect the outcome of a measurement
- Identify appropriate instrumental methods for given chemical analysis problems, taking into account such factors as sample type, interferences, sensitivity, and selectivity
- Identify and resolve problems when they arise in analyses

CHEM 552 : Advanced Organic Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 352M; or CHEM 352; Chem 462 and 463 (or Chem 468).

DESCRIPTION: Physical aspects of organic chemistry; mechanisms, reaction intermediates, bonding, stereochemical and stereoelectronic effects, molecular orbital theory, Lewis acidity and basicity.

**Course Outcomes**

- Predict relative energies and locations of frontier molecular orbitals for organic molecules of intermediate complexity using linear combinations of atomic orbitals and hybridized orbital approaches.
- Perform calculations using ab initio, semi-empirical, density functional, and molecular mechanics approaches to predict energies and structures of ground and transition states.
- Use reaction kinetics, linear free energy relationships, isotope labeling, stereo-electronic effects and stereochemical outcomes to determine reaction mechanisms.
- Predict reaction mechanisms of major classes of organic reactions, including substitutions, eliminations, additions and radical reactions.
- Recognize the impact of non-covalent interactions in complex systems and reaction mechanisms.

CHEM 553 : Advanced Organic Chemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 352; or CHEM 352M

DESCRIPTION: Synthetic aspects of organic chemistry; oxidations, reductions, concerted reactions, stereoselectivity, synthetic equivalents, protecting groups. Examples of natural product total synthesis.

**Course Outcomes**

- Formulate a retrosynthetic analysis and propose a total synthesis route for a previously un-synthesized complex natural product.
- Apply protecting group strategies in feasible routes to complex natural products and/or other organic molecules of biological or theoretical interest.
- Recognize and be able to apply standard methods for carbon-carbon bond forming reactions including: alkylation of nucleophilic carbon; reactions of carbanions with carbonyl groups; reactions involving transition metals; reactions of compounds of boron, silicon, and tin; and cycloadditions.
- Recognize and be able to apply standard methods for carrying out the following types of synthetic transformations: reductions of carbonyls and other functional groups, oxidations, electrophilic additions, aromatic substitution reactions.
- Predict reaction mechanisms for the reaction types listed in outcomes 3 and 4.

CHEM 555 : Organic Spectroscopic Identification. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 352M; or CHEM 352

DESCRIPTION: Theory and practice of spectrometric methods of identifying organic compounds, including infrared, ultraviolet nuclear magnetic resonance, and mass spectrometries.

**Course Outcomes**

- Students will develop problem-solving skills by identifying the molecular structure of organic compounds using multiple spectrometric techniques including IR, UV, MS, and NMR (both 1D and 2D spectra).
- Students will receive training on the open-access research instruments used for spectrometric analysis. This includes the IR, UV, MS, NMR spectrometers and the polarimeter, with an emphasis on 1D and 2D NMR methods.
- Students will complete an unknown identification project that gives them practice preparing their own samples, operating the instruments to acquire their own spectra and interpreting this data to identify their unknowns.

CHEM 561 : Chemical Thermodynamics. (3:3:0)

WHEN TAUGHT: Fall Contact Department

PREREQUISITE: CHEM 462 & CHEM 463

DESCRIPTION: Development of the principles of chemical thermodynamics, including laws, pure materials, mixtures, equilibria, and elementary statistical mechanics.

**Course Outcomes**

There are no course outcomes available

CHEM 563 : Reaction Kinetics. (3:3:0)

WHEN TAUGHT: Winter Even Yrs., Contact Department

PREREQUISITE: CHEM 462 & CHEM 463

DESCRIPTION: Theoretical aspects of chemical kinetics in the gas phase and in solution. Rates and mechanisms in solution, rapid reactions, and other topics.

**Course Outcomes**

- Solve simple and complex (coupled or sequential) kin etic expressions to obtain rate constants, reaction lifetimes, and activation energies, for gas, liquid, surface, and catalyzed reactions.
- Use statistical reaction theories, including transition state theory and RRKM, to both predict and interpret chemical reaction rates.
- Interpret the results of experiments that measure dynamic processes, such as cross-molecular beam experiments.
- Use the concepts of detailed balance and microscopic reversibility to connect the results of experiments that measure dynamic processes to experiments that obtain kinetic results.
- Calculate the potential energy surface (PES) for a simple chemical reaction, explain the relationship between the PES and the outcomes of a chemical reaction including how different types of energy influence the reaction given the PES.

CHEM 565 : Introduction to Quantum Chemistry. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 462 & CHEM 463

DESCRIPTION: Introduction to physical and mathematical aspects of quantum theory, emphasizing application of the Schrodinger wave equation to chemical systems.

**Course Outcomes**

- Write and solve the Schrödinger equation in 1, 2 or 3 dimensions for 1, 2, or N particles for typical model problems and describe the meaning and significance of the solutions.
- Interpret the wavefunctions in #1 by calculating probability in a region, expectation values and matrix elements of Hermitian operators corresponding to physical observables.
- Use as necessary to solve problems: commutators of operators, basis set expansions, perturbation theory (degenerate and nondegenerate) and the variational principle.
- Describe how the Hartree-Fock SCF method works and use Slater determinants of spin and spatial eigenfunctions to build anti-symmetric atomic wavefunctions

CHEM 567 : Statistical Mechanics. (3:3:0)

WHEN TAUGHT: Winter Contact Department

PREREQUISITE: CHEM 462 & CHEM 463

RECOMMENDED: Chem 565.

DESCRIPTION: Introduction to classical and quantum statistical mechanics, including Boltzmann, Fermi-Dirac, and Bose-Einstein statistics. Applications of statistical thermodynamics to gases, liquids, and solids.

**Course Outcomes**

- Use probability density functions to describe a system, and recognize simple probability functions and their properties including Gaussian (normal), binomial (or multinomial), and Poisson distributions.
- Use combinatorics to define probabilities in simple systems.
- Describe how to choose a Gibbsian ensemble for calculation of system properties. Be able to recognize when the following ensembles are appropriate: microcanonical (N,V,E), canonical (N,V,T), grand canonical (V,T,m), isobaric-isothermal (N,T,P). Know how to construct the partition function in each case.
- Calculate average system quantities and thermodynamic variables using the appropriate partition function.
- Calculate the size of fluctuations of system properties and relate them to the number of particles in a system.
- Use proper statistics for classical particles and for quantum particles (bosons or fermions).
- Calculate canonical partition functions for translation, rotation, and harmonic vibration. Use them for applications and know when they don't apply
- Explain the meaning, significance and range of applicability of these fundamentals: ergodic hypothesis, equipartition theorem, and Bose-Einstein condensation.
- Use statistical mechanical principles to describe chemical equilibrium constants.
- Apply statistical mechanical principles to simple crystals, blackbody radiation and imperfect gases.
- Use the Metropolis Monte Carlo method to calculate statistical averages for a system. Know how to choose an efficient sampling method.
- Show how to use molecular dynamics to calculate statistical averages for a molecular system. Know when molecular dynamics is more appropriate than Monte Carlo methods. Know the advantages and disadvantages of common trajectory propagation algorithms.
- Obtain the radial distribution from the probability function for a system, from Monte Carlo calculations or molecular dynamics trajectories and evaluate system properties from the radial distribution function.
- Use Monte Carlo and transfer matrix methods to study a system of interacting spins as a model of phase transitions.

CHEM 569 : Fundamentals of Spectroscopy. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: CHEM 462; or CHEM 468

DESCRIPTION: Atomic and molecular spectroscopy and application of group theoretical concepts. Types of experiments and interpretation of data.

**Course Outcomes**

- Explain the electric and magnetic properties of radiation, molecules and bulk matter and solve problems related to these properties.
- Solve time-dependent quantum mechanical problems and apply these solutions to spectroscopy where light is the time-dependent perturbation.
- Explain angular momentum as possessed by atomic or molecular systems, various descriptions of how angular momentum can be coupled, and how conservation of angular momentum is important to spectroscopy.
- Apply solutions of the Schrödinger equation for simple systems (particle in a box, rigid rotor, harmonic oscillator, etc) to real systems (vibrational, rotational, and electronic energy states) for use in determining the energy of stationary states.
- Explain the origin of selection rules and derive electric and magnetic dipole, quadrupole, etc. selection rules for simple model quantum systems.
- Use symmetry arguments, including group theory and parity, to simplify the interpretation and explanation of atomic and molecular spectra.
- Use solutions to the model systems and the selection rules the predict spectra for atomic and molecular systems.
- Fit experimentally obtained spectra to the mathematical models to obtain physical constants.

CHEM 581 : Advanced Biochemical Methodology 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: CHEM 482

DESCRIPTION: Analytical and structural determination methods used in biochemical research, including mass spectrometry-based proteomics, immunotechniques, atomic force and electron microscopy, NMR and X-ray diffraction.

NOTE: One of two required courses for biochemistry graduate students. May be taken before or after Chem 583.

**Course Outcomes**

- Understand the theory, instrumentation and applications of proteomic, immunological and structural methods currently used to address important biochemical questions.
- Interpret and critique data from these techniques.
- Design appropriate experiments and apply these techniques to their own research problems.
- Recognize important technological advances in proteomic, immunological and structural methods.
- Present findings from the primary literature describing the application of these methods to significant biochemical questions in a professional manner.

CHEM 583 : Advanced Biochemical Methodology 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Maintenance and expression of genetic information, the role of nucleic acids in biology at the chemical and structural level, and methods to study and control nucleic acid function as a means of solving biological problems.

NOTE: One of two required courses for biochemistry graduate students. May be taken before or after Chem 581.

**Course Outcomes**

- Describe how genetic information is stably maintained, how it is expressed, and how that expression is regulated, with an emphasis on the mechanism by which molecular machines perform these processes.
- Understand methods for studying the structure and function of nucleic acids and methods for manipulating gene expression in living systems.
- Interpret and critique data obtained using these methods as reported in the primary scientific literature.
- Communicate this understanding in both oral and written formats. [
- Design appropriate experiments and apply the techniques of nucleic acid biochemistry to their own research problems.

CHEM 584 : Biochemistry Laboratory/Proteins. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 481M; or CHEM 481

DESCRIPTION: Introduction to current biochemical research procedures including spectrophotometry, chromatography, electrophoresis, and immunological techniques. Protein over-expression; isolation and characterization methods. Enzyme kinetics and protein-ligand interactions. Introduction to bioinformatics.

NOTE: May be taken before or after Chem 586.

**Course Outcomes**

- Apply spectroscopic techniques to analyze proteins, both their enzymatic and binding reactions
- Use gel electrophoresis and immunoblotting techniques to determine the presence and purity of proteins in biological samples
- Identify protein binding partners using co-immunoprecipitation methods
- Purify proteins using state-of-the-art separations methods
- Characterize an enzyme using steady state kinetics methods
- Use enzymes as analytical and diagnostic tools
- Properly record and interpret data
- Present data they have collected in an oral presentation and in a written scientific paper
- Understand ethical means of reporting results and giving proper credit to the work of others
- Measure ligand binding to proteins; determine dissociation constants and the degree of cooperativity.

CHEM 586 : Biochemistry Laboratory/Nucleic Acids. (3:1:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 482

DESCRIPTION: Laboratory course covering major techniques involved in isolation, amplification, and cloning of recombinant DNA as well as isolation, synthesis, translation, and identification of RNA.

NOTE: May be taken before or after Chem 584.

**Course Outcomes**

- Understand, design and execute experiments using basic DNA manipulation procedures that include isolation, purification and modification of DNA
- Explain and perform PCR amplification and use this technique to detect the presence of DNA “targets”, DNA cloning (subcloning) and DNA sequencing
- Understand and explain how to isolate, quantitate and manipulate RNA
- Design and perform experiments to reverse transcribe RNA into complementary DNA (cDNA) and assess gene expression by semi- and quantitative PCR
- Isolate total RNA and be able to purify mRNA from this material
- Introduce and express foreign DNA and/or RNA in mammalian cells using the techniques of electroporation, lipid-based transfection, calcium phosphate based transfection and retroviral transduction
- “Knockdown” an expressed gene in mammalian cells using RNA silencing
- Prepare laboratory notebooks that include the objective, results and methods of each laboratory experiment. Additionally, students will provide conclusions to each experiment, including when appropriate, potential explanations to unexpected results

CHEM 594R : General Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Research topics presented by faculty and visiting scientists.

NOTE: Required one semester in residence of all senior BS majors in chemistry and biochemistry.

**Course Outcomes**

- Become familiar with a variety of current research areas by listening to numerous visiting researchers describe their recent research results.

- Prepare for seminar presentations by reading literature articles written by visiting speakers before attending the presentation.
- Improve science-writing skills by writing summaries of research papers.
- Take notes in presentations attended to record thoughts and ideas for future reference.

CHEM 596R : Special Topics in Chemistry. (.5-3:ARR:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

There are no course outcomes available

: Atmospheric Chemistry.

**Course Outcomes**

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Chemistry and Biochemistry Department Home**

**College of Physical and Mathematical Sciences Home**

**Chemistry and Biochemistry Department Home**

**Majors**

- BA in Chemistry
- BS in Biochemistry
- BS in Chemistry
- BS in Chemistry Education

**Minors**

- Minor in Chemistry
- Minor in Chemistry Education

**Course Information**

- Chemistry and Biochemistry Courses

**Faculty**

# Chemistry and Biochemistry Faculty

Show All
Hide All

## Professors

Andrus, Merritt Brooks
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
PhD, University of Utah, 1991

Burton, Gregory F.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1975
MS, Brigham Young University, 1982
PhD, Medical College of Virginia, 1989

Castle, Steven L.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1995
PhD, The Scripps Research Institute, 2000

Dearden, David V.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1983
PhD, California Institute of Technology, 1989

Farnsworth, Paul B.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
PhD, University of Wisconsin, Madison, 1981

Goates, Steven R.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1976
MS, University of Michigan, Ann Arbor, 1977
PhD, University of Michigan, Ann Arbor, 1981

Graves, Steven William
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1969
PhM, Yale University, 1972
PhD, Yale University, 1978

Lamb, John D.
**COLLEGE:** Physical and Mathematical Sciences

**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
PhD, Brigham Young University, 1978

Lee, Milton L.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1971
PhD, Indiana University, 1975

Linford, Matthew R.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Stanford University, 1996
PhD, Stanford University, 1996

Savage, Paul Bennett
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1988
PhD, University of Wisconsin, Madison, 1993

Simmons, Daniel L.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
MS, Brigham Young University, 1980
PhD, University of Wisconsin, Madison, 1986

Willardson, Barry Matthew
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1984
PhD, Purdue University, 1990

Woodfield, Brian F.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, Brigham Young University, 1988
PhD, University of California, Berkeley, 1995

Woolley, Adam T.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1992
PhD, University of California, Berkeley, 1997

## Associate Professors

Austin, Daniel E.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1998
PhD, California Institute of Technology, 2003

Asplund, Matthew Chas
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992

PhD, University of California, Berkeley, 1998

Buskirk, Allen Rowdon

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1999
PhD, Harvard University, 2004

Hansen, Jaron C.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1997
PhD, Purdue University, 2002

Harrison, Roger G.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1986
PhD, University of Utah, 1993

Patterson, James E.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Brigham Young University, 1998
PhD, University of Illinois, Urbana-Champaign, 2004

Peterson, Matt Anders

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1987
BS, Utah State University, 1987
PhD, University of Arizona, 1992

Sevy, Eric T.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MA, Columbia University, 1995
PhM, Columbia University, 1998
PhD, Columbia University, 1999

Shirts, Randall Brent

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1973
AM, Harvard University, 1978
PhD, Harvard University, 1979

Watt, Richard K.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
PhD, University of Wisconsin-Madison, 1998

## Assistant Professors

Anderson, Joshua L.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
**DEGREES:** PhD, University of Utah, 2006

Ess, Daniel H.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
**DEGREES:** PhD, University of California, Los Angeles, 2007

Michaelis, David J.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2005
**DEGREES:** PhD, University of Wisconson—Madison, 2009

Price, John C.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Professor
**DEGREES:** BS/BA, Utah State University, 2001
PhD, Pennyslvania State University, 2005

Price, Joshua L.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2003
PhD, University of Wisconsin, 2008

Prince, John T.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
PhD, University of Texas, Austin, 2008

Smith, Stacey Janel
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2007
PhD, Brigham Young University, 2012

## Teaching Professor

Wood, Steven Glen
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Teaching Professor
**DEGREES:** BS, Brigham Young University, 1973
MS, Brigham Young University, 1975
PhD, Brigham Young University, 1983

## Associate Teaching Professors

Bronson, Robert Todd
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1996
PhD, Brigham Young University, 2003

Macedone, Jeffrey
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1999
PhD, Brigham Young University, 2004

Nielson, Jennifer Burrows

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1988
MS, University of California, San Diego, 1992
PhD, University of California, San Diego, 1997

## Assistant Teaching Professors

Burt, Scott R.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Brigham Young University, 2004
PhD, University of California at Berkeley, 2008

Sansom, Rebecca L.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Chemistry and Biochemistry
**RANK:** Assistant Teaching Professor
**DEGREES:** BS, Boston University, 2001
MS, Harvard University, 2005
MS, Southern Utah University, 2013

**College of Physical and Mathematical Sciences Home**

**Computer Science Department Home**

**Majors**

- BS in Computer Science

Emphases (optional)

- Animation
- Bioinformatics

**Minors**

- Computer Science
- Computer Science Teaching

**Course Information**

- Computer Science (C S) Courses
- Computer Science Animation (CSAnm) Courses

**Faculty**

# Computer Science

Michael Goodrich, Chair
3360 TMCB, (801) 422-6468

College of Physical and Mathematical Sciences Advisement Center
N-179 ESC, (801) 422-2674
1112 TMCB, (801) 422-7253

## Admission to Degree Program

The BS in Computer Science and the Bioinformatics Emphasis degree programs in the Department of Computer Science are open enrollment. The Animation Emphasis is limited enrollment and requires admission. For more information about the CS Animation Emphasis, visit cs.byu.edu/animation.

## The Discipline

Computer science touches virtually every area of human endeavor. Software is responsible for everything from the control of kitchen appliances to sophisticated climate models used in predicting future environmental change. Students in computer science learn to approach complex problems in business, science, and entertainment using their strong background in mathematics, algorithms, and data structures.

The degree programs in the Computer Science Department prepare students to be confident software developers and technical problem solvers. The curriculum also trains students for research into new avenues where computers will have a significant impact.

The BS curriculum is accredited by the Computing Accreditation Commission of ABET.

## Career Opportunities

Graduates pursue exciting opportunities in graphics, artifical intelligence, software engineering, database design, scientific programming, systems administration, and research at universities and national laboratories.

Students completing the animation emphasis will be prepared for technical positions at animation and game programming studios. Students will learn both the technical and artistic side of creating and implementing digital animations and games.

The Bioinformatics emphasis is designed for students who are interested in building software to assist in analyzing biological systems. Students will graduate with a significant background in biology coupled with the software development and analysis skills necessary to implement large bioinformatics applications.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Computer Science** (Program Outcomes)
**Animation Emphasis (optional)** (Program Outcomes)
**Bioinformatics Emphasis (optional)** (Program Outcomes)

**Minor in Computer Science**
**Minor in Computer Science Teaching**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Computer Science
PHD in Computer Science

For more information see the BYU 2014–2015 Graduate Catalog.

## Animation Degree Program

The BFA in animation is an interdisciplinary degree offered by the College of Fine Arts and Communications through the cooperative involvement of the Department of Theatre and Media Arts, the Department of Visual Arts, and the College of Physical and Mathematical Sciences' Computer Science Department. Please see the Visual Arts section of this catalog for degree requirements, or go to the College of Fine Arts and Communications Advisement Center for more information about entrance requirements to this program.

## General Information

Personnel in the College of Physical and Mathematical Sciences Advisement Center will advise regarding core courses and suggested general education. Questions regarding curriculum and career decisions should be directed to the undergraduate advisor in the Computer Science Department.

**Note:** All hours of credit applied toward a major in computer science must be of C– or better. Students may choose to graduate under later requirements by updating their date of entry into the major at the college advisement center.

Although not required, CS 100 is strongly recommended for students who have had very little or no prior programming experience.

College of Physical and Mathematical Sciences Home

Computer Science Department Home

Majors

- BS in Computer Science

Emphases (optional)

- Animation
- Bioinformatics

Minors

- Computer Science
- Computer Science Teaching

Course Information

- Computer Science (C S) Courses
- Computer Science Animation (CSAnm) Courses

Faculty

# BS in Computer Science (74–77 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- are not allowed in major courses.
2. Complete the following:

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

C S 224 : Introduction to Computer Systems. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 142; or instructor's consent.

DESCRIPTION: How a computer works, from hardware to high-level programming. Logic circuits, computer instructions, assembly language, binary arithmetic, C programming, program translation, data structures, and algorithm analysis.

**Course Outcomes**

There are no course outcomes available

C S 235 : Data Structures and Algorithms. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 142

DESCRIPTION: Fundamental data structures and algorithms of computer science; basic algorithm analysis; recursion; sorting and searching; lists, stacks, queues, trees, hashing; object-oriented data abstraction.

**Course Outcomes**

- Use the fundamental data types of computing (lists, stacks, queues, priority queues, sets, maps, trees, etc.).
- Understand the major techniques for implementing the fundamental data types (linked lists, binary search trees, hashing, heaps, etc.) and implement several of them.
- Properly use and select data structures from language-provided data-structure libraries.
- Apply basic algorithm analysis.
- Understand how recursion works and write programs using recursion to solve problems.
- Make informed decisions about which sorting and searching algorithms to use in specific circumstances.
- Write programs that require ~500 lines of code.

C S 236 : Discrete Structures. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: C S 235

DESCRIPTION: Introduction to grammars and parsing; predicate and propositional logic; proof techniques; sets, functions, relations, relational data model; graphs and graph algorithms.

**Course Outcomes**

- Understand and be conversant with basic discrete mathematical structures (finite state machines, regular expressions, grammars, propositional calculus, proof techniques, predicate calculus, sets, relations, functions, graphs).Write complex programs by using mathematical concepts as the basis for solving programming problems (finite state machines for lexical analysis; grammars for parsing; propositional and predicate calculus for logic programming; sets and algebras for relational databases; algebras, graphs, and topological sorting for optimizing datalog query processing).Incrementally build sophisticated programs by a systematic design process based on discrete mathematics.Design a solution for a programming problem and justify the design as one that is maintainable and extendable by other programmers who understand and are conversant with discrete mathematical structures.
- Demonstrate ability to build large programs by writing and integrating code from a diverse spectrum of program components.

C S 240 : Advanced Programming Concepts. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 236

DESCRIPTION: Advanced software development with an object-oriented focus. Design, implementation, and testing of several large programs in a Java and Linux environment using current technologies.

**Course Outcomes**

- a. Use coding, testing, and debugging strategies. b. Follow basic object-oriented design concepts.
- Write programs in an Object Oriented programming language using inheritance, polymorphism and class hierarchies.
- Use the Linux programming environment to execute basic commands and to run the compiler, linker, debugger, memory checker, and profiler.
- Demonstrate the aptitude and work ethic necessary to succeed in computer science.

C S 252 : Introduction to Computational and Probabilistic Models in Computer Science. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 236 or concurrent enrollment.

DESCRIPTION: Computational models: regular grammars, context-free grammars, Turing machines. Complexity theory: big-O and complexity classes P, NP, NP-complete, and f-NP. Probabilistic Models: Introduction to probability theory, random variables, joint distributions, Bayes rules, Bayes networks.

**Course Outcomes**

- Understand the three computing paradigms (DFAs, PDA, Turing Machine) and their language-based equivalents (regular languages,context-free languages, computable algorithms).
- Categorize problems into one of the existing paradigms.
- Understand the difference between and limitations of paradigms.
- Understand the difference between computable (decidable) and practically computable (tractable).
- Design and justify solutions to problems of decidability and tractability.

C S 312 : Algorithm Design and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 240 & C S 252

DESCRIPTION: A study of the design and analysis of algorithms as solutions to problems, including dynamic programming, linear programming, greedy algorithms, divide-and-conquer algorithms, graph algorithms, and intelligent search algorithms.

**Course Outcomes**

There are no course outcomes available

C S 340 : Software Design and Testing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 240

DESCRIPTION: Principles of software design, design patterns, design representation, refactoring. Principles of software quality assurance and testing. Development and testing tools.

**Course Outcomes**

- Articulate the principles of effective software design.
- Know when and how to apply various design patterns.
- Demonstrate how to effectively document and communicate software designs.
- Understand what quality assurance is, know how to build quality into software using review techniques, and demonstrate quality evaluation through testing.
- Use a variety of software development tools, including IDEs, automation tools, static analysis tools, source code control systems, unit testing tools, and documentation tools.
- Work effectively in a group to produce quality software using 1-5 above.

C S 404 : Ethics and Computers in Society. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240 & ENGL 316

DESCRIPTION: Societal impact of computer technology, the computer scientist's place in society, ethical issues. Reading, discussion, and writing seminar.

**Course Outcomes**

- Articulate connections between the gospel of Jesus Christ and their professional life.
- Analyze, write about, and discuss issues and ethical problems related to computing and the application of evolving technologies in society.
- Appreciate the history of computing as a means for students to sharpen their sense of their own future.
- Students will understand the need for continuing education in their careers.

3. Complete one course from the following:

C S 345 : Operating Systems Design. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 224 & C S 240

DESCRIPTION: Principles and concepts of operating systems design and the implementation of an operating system.

**Course Outcomes**

- Describe the basic components of an operating system and their role in implementations for general purpose, real-time, and embedded applications.
- Define the concepts of processes, threads, asynchronous signals and competitive system resource allocation.
- Show how a shell works.
- Explain what multi-tasking is and outline standard scheduling algorithms for multi-tasking.
- Discuss mutual exclusion principles and their use in concurrent programming, including semaphore construction and resource allocation.
- Give an overview of system memory management.
- Explain how file systems are implemented.
- Discuss the features and strengths of various contemporary operating systems.
- Implement a functional, pre-emptive, multi-tasking operating system written in C, including a shell, scheduler, file manager, memory manager, and synchronization components.

C S 360 : Internet Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240

DESCRIPTION: Internet application programming, including sockets, threads, CGI, database, e-commerce, Web services.

**Course Outcomes**

- Design and implement a variety of client-server and web applications.
- Analyze the performance of a web server, write convincingly to support your conclusions and give an oral report to describe your findings.
- Implement a web server using processes, semaphores, threads, sockets and signals.
- Use a set of web programming languages to implement an application.
- Use security to protect their web application.

4. Complete the following supporting courses:

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

RECOMMENDED: Math 290.

DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

5. Complete one course from the following:

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

6. Complete eight courses from the following three options:
   A. Six to eight of the courses could be from the following:

C S 256 : Designing the User Experience. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 142

DESCRIPTION: Studio-critique style course on user experience design. Contextual inquiry to identify user needs. Iterative solution design using sketching and storyboards. Human perception and visual design principles. Rapid prototyping and evaluation of proposed solutions.

**Course Outcomes**

There are no course outcomes available

C S 330 : Concepts of Programming Languages. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240

DESCRIPTION: Principles and concepts characterizing high-level computer programming languages, process and data abstration, encapsulation, inheritance, functional programming, logic programming, scanners, and parsers.

**Course Outcomes**

- Learn the vocabulary of programming language design, syntax, and semantics
- Be able to write programs using non-imperative language paradigms.

C S 345 : Operating Systems Design. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 224 & C S 240
DESCRIPTION: Principles and concepts of operating systems design and the implementation of an operating system.

**Course Outcomes**

- Describe the basic components of an operating system and their role in implementations for general purpose, real-time, and embedded applications.
- Define the concepts of processes, threads, asynchronous signals and competitive system resource allocation.
- Show how a shell works.
- Explain what multi-tasking is and outline standard scheduling algorithms for multi-tasking.
- Discuss mutual exclusion principles and their use in concurrent programming, including semaphore construction and resource allocation.
- Give an overview of system memory management.
- Explain how file systems are implemented.
- Discuss the features and strengths of various contemporary operating systems.
- Implement a functional, pre-emptive, multi-tasking operating system written in C, including a shell, scheduler, file manager, memory manager, and synchronization components.

C S 355 : Interactive Graphics and Image Processing. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: C S 240
DESCRIPTION: Introduces basic concepts of computer graphics, user interfaces and image processing. Includes homogenous coordinate transforms, image transforms, event driven programming and color models. Extends Model-View-Controller architecture.

**Course Outcomes**

There are no course outcomes available

C S 360 : Internet Programming. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: C S 240
DESCRIPTION: Internet application programming, including sockets, threads, CGI, database, e-commerce, Web services.

**Course Outcomes**

- Design and implement a variety of client-server and web applications.
- Analyze the performance of a web server, write convincingly to support your conclusions and give an oral report to describe your findings.
- Implement a web server using processes, semaphores, threads, sockets and signals.
- Use a set of web programming languages to implement an application.
- Use security to protect their web application.

Any 400-level computer science courses (except C S 404, 405, and C S 498R).
EC EN 424 : Computer Systems. (4:3:3)
WHEN TAUGHT: Winter
PREREQUISITE: EC EN 330
DESCRIPTION: Machine-level representations of programs and data, processor architecture, program performance optimizaton, memory hierarchies, virtual memory, linking, exceptions.

**Course Outcomes**

There are no course outcomes available

EC EN 425 : Real-Time Operating Systems. (4:3:3)
WHEN TAUGHT: Fall
PREREQUISITE: EC EN 324; or EC EN 330
DESCRIPTION: Hardware/software interface, real-time kernel internals, implementation of high-level language constructs, issues in real-time application software development.

**Course Outcomes**

- Ability to apply C and assembly programming languages and knowledge of the hardware/software interface to the design and implementation of a real-time kernel.
- Ability to design and implement a real-time application.
- Ability to design and implement a real-time kernel.
- Ability to use C programs, compilers, and debuggers in the design and implementation of real-time application software.
- Ability to write interrupt service routines.
- Ability to use a real-time operating system as a tool in the development of real-time application software.

IT 567 : Cyber Security and Penetration Testing. (3:2:3)
WHEN TAUGHT: Winter
PREREQUISITE: IT 466 or C S 465 or I Sys 560 or equivalent content course from another institution.
DESCRIPTION: Advanced computer systems security. Vulnerabilities and exploits. System and network

attacks. Ethical hacking and penetration testing. Cyber security, cyber weapons, and advanced persistent threats. Legal and regulatory requirements for security and privacy.

**Course Outcomes**

- 1. Explain the regulatory and legal requirements, and rationale for penetration testing
- 2. Hold an in-depth discussion about the ethics of cyber-security and other associated domains.
- 3. Demonstrate the use of various security tools, their application in a penetration test and be able to explain how such tools may be abused.
- 4. Illustrate clearly, by means of a written report and verbal presentation, the results of a penetration test with clear recommendations.
- 5. Explain how exploits and vulnerabilities are discovered and the correct protocols to report these for vendor fixes.
- 6. Be able to discuss new threat-types such as APT's and Cyber-Weapons and use these to explain why lifelong learning is critical for a security professional.

**Note:** If C S 401R is chosen, it must be taken for three hours.

B. One of the eight courses could be from the following:
C S 498R: Special Topics
Any 500-level computer science course.

**Note:** If either C S 498R or 501R is chosen, it must be taken for three hours.

C. One of the eight courses could be from the following career deepening electives:
BIO 130 : Biology. (4:3:1)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: General biology course with laboratory for biology majors. Introduction to disciplines in the life sciences including methods for scientific inquiry, biochemical dynamics, cell structure and function, evolutionary theory, bioenergetics, and ecological interactions.

**Course Outcomes**

- Students will demonstrate basic literacy in the language of science and an understanding of the foundational theories of biology (i.e., be able to formulate appropriate hypotheses and predictions to test specific biological phenomena and use appropriate vocabulary to do so) o Atomic Molecular Theoryo Cell Theoryo Theories of Photosynthesis, Fermentation, and Cellular Respirationo Cell Division and Meiotic Theorieso Chromosomal and Mendelian Theories of Inheritanceo Watson and Crick's Theory of DNA Structure and Replicationo Protein Synthesis Theoryo Darwin's Theory of Natural Selectiono Hardy-Weinberg Theoryo Ecosystem Theoryo Population Growth Theoryo Competitive Exclusion and Behavioral Theory
- Students will demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process.
- Students willappreciate the excitement of discovery that has accompanied important scientific developments.
- Students will demonstrate how scientific methodology can be used to analyze real-world science-related problems.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public-policy science issues that affect their community.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.
- Students will be able to reflect rationally upon the interface between science and religion.
- Students will demonstrate sound scientific reasoning ability.

BIO 165 : Introduction to Bioinformatics. (3:3:0)
WHEN TAUGHT: Winter
DESCRIPTION: Introduction to basic concepts in bioinformatics. Standard bioinformatic applications.

**Course Outcomes**

There are no course outcomes available

BIO 365 : Computational Biology. (3:2:1)
WHEN TAUGHT: Fall
PREREQUISITE: C S 240
DESCRIPTION: Computational analysis of DNA data; introduction to bioinformatics databasing using Perl and SQL; configuration of UNIX workstations for bioinformatics analyses.

**Course Outcomes**

- To provide practical experience in using computational approaches to address biological problems.
- Describe general areas of computational problems in biology (alignment, estimation, tree searches, molecular modeling, gene prediction) and learn about existing computational approaches to these general problems.
- Learn basic computational tools for statistical inference (Bayesian, Maximum likelihood, Markov Chain Monte Carlo, Hidden Markov Chain)
- Apply programming skills to alignment problems through the development of novel tools and software for alignment
- Apply programming skills to tree searching problems through the development of novel tools software
- Apply programming tools to gene prediction problems through the development of novel tools and software
- Develop ability to use existing and write new database code to access and manipulate genetic

data

CHEM 111 : Principles of Chemistry. (4:3:3)

OFFERED: Honors also.

WHEN TAUGHT: Fall

PREREQUISITE: Math 110 or equivalent.

RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.

DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.

NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

: Honors Principles of Chemistry.

**Course Outcomes**

C S 405 : Creating and Managing a Software Business. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: C S 240 & ENGL 316

DESCRIPTION: Entrepreneurship, idea/opportunity generation, strategic planning, legal organization, product development, marketing/sales, customer support, fund raising, and effective management.

**Course Outcomes**

- Students will write a business plan for a company they are proposing.

EC EN 370 : (EC En - Math 431) Probability Theory. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: MATH 313

DESCRIPTION: Axiomatic probability theory, conditional probability, discrete / continuous random variables, expectation, conditional expectation, moments, functions of random variables, multivariate distributions, laws of large numbers, central limit theorem.

**Course Outcomes**

- A basic understanding of probabilistic reasoning and the foundations of probability theory: sample spaces, event algebras, classical probability, and Kolmogorov's axioms.
- An understanding of random variables, distribution functions, probability mass functions, and probability density functions, including the uniform, binomial, Poisson, exponential, and Gaussian distributions.
- An understanding of multivariate distributions, independence, conditioning, and functions of random variables, including the ability to compute expectations, moments, and correlation functions.
- An understanding of characteristic functions and their relationship to linear transformations and independence.
- An understanding of convergence concepts, including the central limit theorem and the law of large numbers.
- The ability to apply probability theory to the analysis of engineering systems.

GEOL 111 : Physical Geology. (4:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Materials, structure, and surface features of the earth and the geologic processes involved in their development. Field trips and lab studies, use of aerial photos.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.
- Learn some fundamental skills in preparation to conduct research and ultimately write research papers in other classes, including:1. Using online databases (GEOREF, Web of Science) to obtain information on a particular topic.2. Using online resources (Refworks) to manage and format

references.3. Reading articles in the primary geologic literature and drawing out primary information such as the topic of and article and its conclusions even if the student is not prepared (at this stage) to understand the methodology employed.4. Appreciate the need to properly format cited literature in a research paper.5. Learn the content and proper voice for the abstract of a research paper.

- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin, distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the role of human activity in climate change.
- 1. Learn or review the large scale features of the Earth's interior and exterior, including the basic features of the tectonic and hydrological systems.2. Appreciate the role of heat transfer, and in particular convection, in making both the hydrosphere and tectonosphere dynamic.

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 313.

DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

MATH 334 : Ordinary Differential Equations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 113 and Math 313.

DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

MATH 355 : Graph Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 313

DESCRIPTION: Maps, graphs and digraphs, coloring problems, applications.

**Course Outcomes**

- Graphs, trees, pathes and cycles, connectedness, chromatic number, planarity conditions, genus of a graph, the Five Color Theorem. Students should also be aware of Kuratowsky's Theorem, and the Four Color Theorem. If there is time, it is good to do the proof of Kuratowski's Theorem. For more detailed information visit the Math 355 Wiki page.

MATH 425 : Mathematical Biology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 112

DESCRIPTION: Using tools in mathematics to help biologists. Motivating new mathematics with questions in biology.

**Course Outcomes**

- Students should gain a familiarity with how the disciplines of mathematics and biology can complement each other. Increasingly, mathematics is used to understand complexbiological systems. Without some familiarity with the mathematicaltechniques, it is difficult to know how to interpret the results. Inthis class a variety of applications to medicine and biology will bestudied, highlighting the different mathematical techniques. Theobjective of the class is not only to introduce the students tovarious applications and methods but also to help determine the strengthsand weaknesses of different methods. For more detailed information visit the Math 425 Wiki page.

MATH 485 : Mathematical Cryptography. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 313

RECOMMENDED: Math 371.

DESCRIPTION: A mathematical introduction to some of the high points of modern cryptography.

**Course Outcomes**

- Students should know the definitions, being familiar with standard examples, and being able to solve mathematical and algorithmic problems by directly using the material taught in the course. This includes appropriate use of Maple, Mathematica, or another appropriate computing language. For more detailed information visit the Math 485 Wiki page.

MMBIO 151 : Introduction to Microbiology. (4:3:3)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Chem 105 or concurrent enrollment.

DESCRIPTION: Principles of prokaryotic biology emphasizing cell structure, function, and metabolism. Introduction to bacterial genetics, microbial diversity, and microbial ecology.

**Course Outcomes**

- Understand what microbes are, what they are composed of, how they are built, and their phylogenetic relationships to the living world. Be able to distinguish between eukaryotes, prokaryotes, and viruses.*Relates to Program Learning Outcome: "Exhibit mastery of four of the following six principal areas of the discipline" five of which are microbial physiology, microbial genetics, microbial ecology, medical microbiology, and virology
- Become familiar with the tools of microbiology through both lecture and labs and demonstrate basic aseptic technique. Develop proficiency in working with bacteria including streaking for isolation and performing growth experiments.*Relates to Program Learning Outcome: "Exhibit mastery of four of the following six principal areas of the discipline" three of which are microbial physiology, microbial genetics, microbial ecology
- Formulate questions, testable hypotheses and implement appropriate experimental protocol. Collect and analyze data and be able to draw appropriate conclusions.*Relates to Program Learning Outcome: “Devise experiments with appropriate hypotheses and controls.”
- Integrate knowledge to make informed judgments on tests, lab reports, lab presentations and lab write-ups*Relates to Program Learning Outcome: "Communicate scientific information using both oral and written methods"
- Obtain a deeper appreciation for the complexity, diversity and purposes of life.*Relates to Program Learning Outcome: "Reflect/discuss/explore how faith in the Lord and Christ-like living are affected by an understanding of fundamental biological principles"

MMBIO 261 : Infection and Immunity. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Principles of infectious organisms (principally bacteria and viruses), the diseases they cause, and the role of host immune responses in health and disease.

**Course Outcomes**

There are no course outcomes available

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 121 or equivalent. Calculus.

DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHSCS 127 : Descriptive Astronomy. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Nonmathematical presentation of knowledge of the content and history of the cosmos, frequently using observatory and planetarium.

**Course Outcomes**

There are no course outcomes available

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MATH 112

RECOMMENDED: Concurrent enrollment in MATH 113.

DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 230 : Analysis of Variance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

RECOMMENDED: Concurrent enrollment in MATH 112.

DESCRIPTION: Scientific method, statistical thinking, sources of variation, completely randomized design, ANOVA, power and sample size considerations, multiple testing, randomized complete blocks, factorial designs, interactions. Introduction to statistical software.

**Course Outcomes**

- Define the experimental unit, response variable, factor(s), and level(s) of a basic experiment
- Understand the role of randomization and replication in inferring causation
- Perform a completely randomized design and construct the ANOVA table in SAS and R
- Compute the minimum number of replicates in a completely randomized design to achieve a given level of power
- Compute pairwise tests of differences in means in SAS and R to understand a significant overall F-test
- Perform a randomized complete block design and construct the ANOVA table in SAS and R
- Perform a factorial design and construct the ANOVA table in SAS and R
- Explain a statistically significant interaction
- Describe the differences between a split plot and a two-way ANOVA

STAT 234 : Methods of Survey Sampling. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Sampling frames; questionnaire design; simple random, systematic, stratified, and cluster sampling methods; comparing domain means; contingency table analysis.

**Course Outcomes**

- Identify and sample using simple random sampling and various forms of stratified sampling, cluster sampling, and systematic sampling
- Accurately identify and perform variance calculations for basic designs
- Participate in a real project involving sampling methodologies and appropriate point estimate and variance calculations
- Create graphical representations of results
- Demonstrate effective written and oral communication skills as they present their findings

STAT 240 : Discrete Probability. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Set theory; discrete probability; conditional probability; finite sample spaces; discrete random variables (pdf, cdf, moments).

**Course Outcomes**

- Apply fundamentals of set theory and basic set operations
- Enumerate the elements of a discrete sample space
- Demonstrate familiarity with counting techniques---sampling with order, without order, binomial coefficients
- Solve probability problems in finite sample spaces
- Solve problems using axioms of probability, conditional probability, independence, and Bayes theorem
- Calculate expected values and variances of discrete random variables
- Understand the assumptions and properties of the named discrete distributions (Bernoulli, binomial, Poisson, geometric)
- Solve problems with the pdf, cdf, moments of discrete univariate random variables

*Hours include courses that may fulfill university core requirements.

Show all Computer Science Courses

**College of Physical and Mathematical Sciences Home**

**Computer Science Department Home**

**Majors**

- BS in Computer Science

Emphases (optional)

- Animation
- Bioinformatics

**Minors**

- Computer Science
- Computer Science Teaching

**Course Information**

- Computer Science (C S) Courses
- Computer Science Animation (CSAnm) Courses

**Faculty**

# BS in Computer Science: Animation Emphasis (81.5–82.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

*This is a limited-enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirements for admission to this program.*

Application deadline: April 15 and October 15 after completing the prerequisite courses listed below.

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- are not allowed in major courses.
2. Complete the following prerequisite courses:

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Knowledge of algebra.
DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

C S 235 : Data Structures and Algorithms. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: C S 142
DESCRIPTION: Fundamental data structures and algorithms of computer science; basic algorithm analysis; recursion; sorting and searching; lists, stacks, queues, trees, hashing; object-oriented data abstraction.

**Course Outcomes**

- Use the fundamental data types of computing (lists, stacks, queues, priority queues, sets, maps, trees, etc.).
- Understand the major techniques for implementing the fundamental data types (linked lists, binary search trees, hashing, heaps, etc.) and implement several of them.
- Properly use and select data structures from language-provided data-structure libraries.
- Apply basic algorithm analysis.
- Understand how recursion works and write programs using recursion to solve problems.
- Make informed decisions about which sorting and searching algorithms to use in specific circumstances.
- Write programs that require ~500 lines of code.

VASTU 101 : Introduction to Art and Drawing for Non-Majors. (3:2:4)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Readings, aesthetic topics, basic drawing techniques and concepts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

No outcomes are available at this time.

3. Apply to the program.

4. Complete the following after being admitted to the program:

C S 224 : Introduction to Computer Systems. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 142; or instructor's consent.

DESCRIPTION: How a computer works, from hardware to high-level programming. Logic circuits, computer instructions, assembly language, binary arithmetic, C programming, program translation, data structures, and algorithm analysis.

**Course Outcomes**

There are no course outcomes available

C S 236 : Discrete Structures. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: C S 235

DESCRIPTION: Introduction to grammars and parsing; predicate and propositional logic; proof techniques; sets, functions, relations, relational data model; graphs and graph algorithms.

**Course Outcomes**

- Understand and be conversant with basic discrete mathematical structures (finite state machines, regular expressions, grammars, propositional calculus, proof techniques, predicate calculus, sets, relations, functions, graphs).Write complex programs by using mathematical concepts as the basis for solving programming problems (finite state machines for lexical analysis; grammars for parsing; propositional and predicate calculus for logic programming; sets and algebras for relational databases; algebras, graphs, and topological sorting for optimizing datalog query processing).Incrementally build sophisticated programs by a systematic design process based on discrete mathematics.Design a solution for a programming problem and justify the design as one that is maintainable and extendable by other programmers who understand and are conversant with discrete mathematical structures.
- Demonstrate ability to build large programs by writing and integrating code from a diverse spectrum of program components.

C S 240 : Advanced Programming Concepts. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 236

DESCRIPTION: Advanced software development with an object-oriented focus. Design, implementation, and testing of several large programs in a Java and Linux environment using current technologies.

**Course Outcomes**

- a. Use coding, testing, and debugging strategies. b. Follow basic object-oriented design concepts.
- Write programs in an Object Oriented programming language using inheritance, polymorphism and class hierarchies.
- Use the Linux programming environment to execute basic commands and to run the compiler, linker, debugger, memory checker, and profiler.
- Demonstrate the aptitude and work ethic necessary to succeed in computer science.

C S 252 : Introduction to Computational and Probabilistic Models in Computer Science. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 236 or concurrent enrollment.

DESCRIPTION: Computational models: regular grammars, context-free grammars, Turing machines. Complexity theory: big-O and complexity classes P, NP, NP-complete, and f-NP. Probabilistic Models: Introduction to probability theory, random variables, joint distributions, Bayes rules, Bayes networks.

**Course Outcomes**

- Understand the three computing paradigms (DFAs, PDA, Turing Machine) and their language-based equivalents (regular languages,context-free languages, computable algorithms).
- Categorize problems into one of the existing paradigms.
- Understand the difference between and limitations of paradigms.
- Understand the difference between computable (decidable) and practically computable (tractable).
- Design and justify solutions to problems of decidability and tractability.

C S 312 : Algorithm Design and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 240 & C S 252

DESCRIPTION: A study of the design and analysis of algorithms as solutions to problems, including dynamic programming, linear programming, greedy algorithms, divide-and-conquer algorithms, graph algorithms, and intelligent search algorithms.

**Course Outcomes**

There are no course outcomes available

C S 340 : Software Design and Testing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 240

DESCRIPTION: Principles of software design, design patterns, design representation, refactoring. Principles of software quality assurance and testing. Development and testing tools.

**Course Outcomes**

- Articulate the principles of effective software design.
- Know when and how to apply various design patterns.
- Demonstrate how to effectively document and communicate software designs.
- Understand what quality assurance is, know how to build quality into software using review techniques, and demonstrate quality evaluation through testing.
- Use a variety of software development tools, including IDEs, automation tools, static analysis tools, source code control systems, unit testing tools, and documentation tools.
- Work effectively in a group to produce quality software using 1-5 above.

C S 355 : Interactive Graphics and Image Processing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240

DESCRIPTION: Introduces basic concepts of computer graphics, user interfaces and image processing. Includes homogenous coordinate transforms, image transforms, event driven programming and color models. Extends Model-View-Controller architecture.

**Course Outcomes**

There are no course outcomes available

C S 360 : Internet Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240

DESCRIPTION: Internet application programming, including sockets, threads, CGI, database, e-commerce, Web services.

**Course Outcomes**

- Design and implement a variety of client-server and web applications.
- Analyze the performance of a web server, write convincingly to support your conclusions and give an oral report to describe your findings.
- Implement a web server using processes, semaphores, threads, sockets and signals.
- Use a set of web programming languages to implement an application.
- Use security to protect their web application.

C S 404 : Ethics and Computers in Society. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240 & ENGL 316

DESCRIPTION: Societal impact of computer technology, the computer scientist's place in society, ethical issues. Reading, discussion, and writing seminar.

**Course Outcomes**

- Articulate connections between the gospel of Jesus Christ and their professional life.
- Analyze, write about, and discuss issues and ethical problems related to computing and the application of evolving technologies in society.
- Appreciate the history of computing as a means for students to sharpen their sense of their own future.
- Students will understand the need for continuing education in their careers.

C S 455 : Computer Graphics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 355 & MATH 313

DESCRIPTION: Interactive computer graphics systems programming and architecture.

**Course Outcomes**

- Students will be proficient in basic computer graphics algorithms such as modeling, trnasformations and rendering.Students will design and code solutions to several programming problems in graphics using algorithms and data structures.In addition, sutudents will use these techniques to program a large semester project.

5. Complete the following supporting courses:

CSANM 150 : Introduction to Three-Dimensional Computer Graphics. (1.5:1.5:1.5)

WHEN TAUGHT: Spring

DESCRIPTION: Fundamentals of modeling, texturing, lighting, and rendering used in exploring principles and elements of three-dimensional design.

**Course Outcomes**

There are no course outcomes available

CSANM 354 : Shader Programming. (3:3:3)

WHEN Fall

TAUGHT:
DESCRIPTION: Shading and rendering techniques for the attainment of desired visual effects: use of shading languages for the realization of both photorealistic and non-photorealistic imaging.
NOTE: Course changed to CSAnm 354 beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 450R : Advanced Senior Film Production 1. (3:3:3)

WHEN TAUGHT: Fall
DESCRIPTION: In-depth experiences creating computer animations and visual effects. Senior film front-end development and introduction to full animation production.
NOTE: Course changed to CSAnm 450 beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a

variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
RECOMMENDED: Math 290.
DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Calculus or concurrent enrollment.
DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

TMA 102 : Introduction to Film. (3:4:2)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Analytical studies for understanding and appreciating media forms and messages, as well as basic history, theory, and aesthetics. Lab required.

**Course Outcomes**

- Students will become active, intelligent film viewers
- Students will be exposed to the practical elements of film
- Students will learn about a wide range of stories and stylistic strategies utilized by film artists and institutions
- Students will become familiar with new and helpful ways of receiving films. They will be able to evaluate and analyze films in a variety of contexts.

TMA 294 : History of Animation. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: TMA 102
DESCRIPTION: Origins and developments of animation internationally to the present, focusing on aesthetic, technical, political, and economic aspects of the medium.

**Course Outcomes**

- Students will learn the historical importance of the formation of the animation industry including visionary individuals that shaped the films we see today.

6. Complete one course from the following:

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread

- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

7. Complete one course from the following:

C S 256 : Designing the User Experience. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 142

DESCRIPTION: Studio-critique style course on user experience design. Contextual inquiry to identify user needs. Iterative solution design using sketching and storyboards. Human perception and visual design principles. Rapid prototyping and evaluation of proposed solutions.

**Course Outcomes**

There are no course outcomes available

C S 330 : Concepts of Programming Languages. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240

DESCRIPTION: Principles and concepts characterizing high-level computer programming languages, process and data abstration, encapsulation, inheritance, functional programming, logic programming, scanners, and parsers.

**Course Outcomes**

- Learn the vocabulary of programming language design, syntax, and semantics
- Be able to write programs using non-imperative language paradigms.

C S 345 : Operating Systems Design. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 224 & C S 240

DESCRIPTION: Principles and concepts of operating systems design and the implementation of an operating system.

**Course Outcomes**

- Describe the basic components of an operating system and their role in implementations for general purpose, real-time, and embedded applications.
- Define the concepts of processes, threads, asynchronous signals and competitive system resource allocation.
- Show how a shell works.
- Explain what multi-tasking is and outline standard scheduling algorithms for multi-tasking.
- Discuss mutual exclusion principles and their use in concurrent programming, including semaphore construction and resource allocation.
- Give an overview of system memory management.
- Explain how file systems are implemented.
- Discuss the features and strengths of various contemporary operating systems.
- Implement a functional, pre-emptive, multi-tasking operating system written in C, including a shell, scheduler, file manager, memory manager, and synchronization components.

EC EN 425 : Real-Time Operating Systems. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 324; or EC EN 330

DESCRIPTION: Hardware/software interface, real-time kernel internals, implementation of high-level language constructs, issues in real-time application software development.

**Course Outcomes**

- Ability to apply C and assembly programming languages and knowledge of the hardware/software interface to the design and implementation of a real-time kernel.
- Ability to design and implement a real-time application.
- Ability to design and implement a real-time kernel.
- Ability to use C programs, compilers, and debuggers in the design and implementation of real-time application software.
- Ability to write interrupt service routines.
- Ability to use a real-time operating system as a tool in the development of real-time application software.

Any of the 400-level computer science courses (except C S 404, 405, 455, and 498R).

**Note:** If C S 401R is chosen, it must be taken for three hours.

8. Complete one course from the following:

C S 498R : Undergraduate Special Projects. (1-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 240

DESCRIPTION: Students identify an interesting problem in computer science and solve it with the aid of faculty members.

**Course Outcomes**

There are no course outcomes available

CSANM 351R : Lighting for Three-Dimensional Graphics. (3:3:3)

WHEN TAUGHT: Winter

DESCRIPTION: Developing lighting and color, and the compiling of the various elements for final images for use in three-dimensional applications.

NOTE: Course changed to CSAnm 351R beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 355 : Photography for Animation. (3:3:3)

WHEN TAUGHT: Spring

DESCRIPTION: Layout, references, camera technology and terminology, application of composition, lighting, and core art skills emphasized.

NOTE: Course changed to CSAnm 355 beginning Fall 2012.

**Course Outcomes**

No outcomes are available at this time.

CSANM 452R : Advanced Senior Film Production 2. (3:3:3)

WHEN TAUGHT: Winter

DESCRIPTION: Portfolio development based on advanced animation/design projects. Senior film production and post production.

NOTE: Course changed to CSAnm 452R beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 458 : Three-Dimensional Visual Effects. (3:3:3)

DESCRIPTION: Exploring procedural and three-dimensional animation methods to create realistic special effects. Applying a large spectrum of animation principles to integrate their effects aesthetically and convincingly into a live action or animated environment.

NOTE: Course changed to CSAnm 458 beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

Any course not used in item 7 above.
Any of the 500-level computer science courses.

**Note:** If either C S 498R or C S 501R is chosen, it must be taken for three hours.

9. Complete one course from the following:

ARTHC 111 : Introduction to Art History. (3:3:0)

OFFERED: Honors also.

DESCRIPTION: Topical approach to art history and appreciation.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

ARTHC 202 : World Civilization Since 1500. (3:3:0)

DESCRIPTION: Survey of Western civilization emphasizing the visual arts from the Renaissance to the twentieth century.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

TECH 201 : History of Creativity and Innovation in the Arts, Science, and Technology 1. (3:3:0)

WHEN TAUGHT: Fall; Spring

DESCRIPTION: Western civilization from Egyptian antiquity to Renaissance from perspective of changes in civilization enabled by technology. Creativity throughout history. How to improve personal creativity.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

## Show all Computer Science Courses

College of Physical and Mathematical Sciences Home

Computer Science Department Home

Majors

- BS in Computer Science

Emphases (optional)

- Animation
- Bioinformatics

Minors

- Computer Science
- Computer Science Teaching

Course Information

- Computer Science (C S) Courses
- Computer Science Animation (CSAnm) Courses

Faculty

# BS in Computer Science: Bioinformatics Emphasis (88 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- are not allowed in major courses.
2. Complete the following:

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

C S 224 : Introduction to Computer Systems. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 142; or instructor's consent.

DESCRIPTION: How a computer works, from hardware to high-level programming. Logic circuits, computer instructions, assembly language, binary arithmetic, C programming, program translation, data structures, and algorithm analysis.

**Course Outcomes**

There are no course outcomes available

C S 235 : Data Structures and Algorithms. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 142

DESCRIPTION: Fundamental data structures and algorithms of computer science; basic algorithm analysis; recursion; sorting and searching; lists, stacks, queues, trees, hashing; object-oriented data abstraction.

**Course Outcomes**

- Use the fundamental data types of computing (lists, stacks, queues, priority queues, sets, maps, trees, etc.).
- Understand the major techniques for implementing the fundamental data types (linked lists, binary search trees, hashing, heaps, etc.) and implement several of them.
- Properly use and select data structures from language-provided data-structure libraries.
- Apply basic algorithm analysis.
- Understand how recursion works and write programs using recursion to solve problems.
- Make informed decisions about which sorting and searching algorithms to use in specific circumstances.
- Write programs that require ~500 lines of code.

C S 236 : Discrete Structures. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: C S 235

DESCRIPTION: Introduction to grammars and parsing; predicate and propositional logic; proof techniques; sets, functions, relations, relational data model; graphs and graph algorithms.

**Course Outcomes**

- Understand and be conversant with basic discrete mathematical structures (finite state machines, regular expressions, grammars, propositional calculus, proof techniques, predicate calculus, sets, relations, functions, graphs).Write complex programs by using mathematical concepts as the basis for solving programming problems (finite state machines for lexical analysis; grammars for parsing; propositional and predicate calculus for logic programming; sets and algebras for relational databases; algebras, graphs, and topological sorting for optimizing datalog query processing).Incrementally build sophisticated programs by a systematic design process based on discrete mathematics.Design a solution for a programming problem and justify the design as one that is maintainable and extendable by other programmers who understand and are conversant with discrete mathematical structures.
- Demonstrate ability to build large programs by writing and integrating code from a diverse spectrum of program components.

C S 240 : Advanced Programming Concepts. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 236

DESCRIPTION: Advanced software development with an object-oriented focus. Design, implementation, and testing of several large programs in a Java and Linux environment using current technologies.

**Course Outcomes**

- a. Use coding, testing, and debugging strategies. b. Follow basic object-oriented design concepts.
- Write programs in an Object Oriented programming language using inheritance, polymorphism and class hierarchies.
- Use the Linux programming environment to execute basic commands and to run the compiler, linker, debugger, memory checker, and profiler.
- Demonstrate the aptitude and work ethic necessary to succeed in computer science.

C S 252 : Introduction to Computational and Probabilistic Models in Computer Science. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 236 or concurrent enrollment.

DESCRIPTION: Computational models: regular grammars, context-free grammars, Turing machines. Complexity theory: big-O and complexity classes P, NP, NP-complete, and f-NP. Probabilistic Models: Introduction to probability theory, random variables, joint distributions, Bayes rules, Bayes networks.

**Course Outcomes**

- Understand the three computing paradigms (DFAs, PDA, Turing Machine) and their language-based equivalents (regular languages,context-free languages, computable algorithms).
- Categorize problems into one of the existing paradigms.
- Understand the difference between and limitations of paradigms.
- Understand the difference between computable (decidable) and practically computable (tractable).
- Design and justify solutions to problems of decidability and tractability.

C S 312 : Algorithm Design and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 240 & C S 252

DESCRIPTION: A study of the design and analysis of algorithms as solutions to problems, including dynamic programming, linear programming, greedy algorithms, divide-and-conquer algorithms, graph algorithms, and intelligent search algorithms.

**Course Outcomes**

There are no course outcomes available

C S 340 : Software Design and Testing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 240

DESCRIPTION: Principles of software design, design patterns, design representation, refactoring. Principles of software quality assurance and testing. Development and testing tools.

**Course Outcomes**

- Articulate the principles of effective software design.
- Know when and how to apply various design patterns.
- Demonstrate how to effectively document and communicate software designs.
- Understand what quality assurance is, know how to build quality into software using review techniques, and demonstrate quality evaluation through testing.
- Use a variety of software development tools, including IDEs, automation tools, static analysis tools, source code control systems, unit testing tools, and documentation tools.
- Work effectively in a group to produce quality software using 1-5 above.

C S 360 : Internet Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240

DESCRIPTION: Internet application programming, including sockets, threads, CGI, database, e-commerce, Web services.

**Course Outcomes**

- Design and implement a variety of client-server and web applications.
- Analyze the performance of a web server, write convincingly to support your conclusions and give an oral report to describe your findings.
- Implement a web server using processes, semaphores, threads, sockets and signals.
- Use a set of web programming languages to implement an application.
- Use security to protect their web application.

C S 404 : Ethics and Computers in Society. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240 & ENGL 316

DESCRIPTION: Societal impact of computer technology, the computer scientist's place in society, ethical issues. Reading, discussion, and writing seminar.

**Course Outcomes**

- Articulate connections between the gospel of Jesus Christ and their professional life.
- Analyze, write about, and discuss issues and ethical problems related to computing and the application of evolving technologies in society.
- Appreciate the history of computing as a means for students to sharpen their sense of their own future.
- Students will understand the need for continuing education in their careers.

C S 418 : Bioinformatics. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department; Spring Contact Department; Summer Contact Department

PREREQUISITE: C S 312

DESCRIPTION: Computational methods for analyzing biological systems. Dynamic programming, Markov models, Neural Networks, and Bayesian analysis are used to predict secondary structure, tertiary structure, and active sites for drug docking given molecular DNA sequence data.

**Course Outcomes**

- Graph Theoretical algorithms, Regulatory Inference
- Large Memory Genomic Mapping, SNP calling
- Develop new research ideas and communicate them effectively

3. Complete the following supporting courses:

BIO 130 : Biology. (4:3:1)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: General biology course with laboratory for biology majors. Introduction to disciplines in the life sciences including methods for scientific inquiry, biochemical dynamics, cell structure and function, evolutionary theory, bioenergetics, and ecological interactions.

**Course Outcomes**

- Students will demonstrate basic literacy in the language of science and an understanding of the foundational theories of biology (i.e., be able to formulate appropriate hypotheses and predictions to test specific biological phenomena and use appropriate vocabulary to do so) o Atomic Molecular Theoryo Cell Theoryo Theories of Photosynthesis, Fermentation, and Cellular Respirationo Cell Division and Meiotic Theorieso Chromosomal and Mendelian Theories of Inheritanceo Watson and Crick's Theory of DNA Structure and Replicationo Protein Synthesis Theoryo Darwin's Theory of Natural Selectiono Hardy-Weinberg Theoryo Ecosystem Theoryo Population Growth Theoryo Competitive Exclusion and Behavioral Theory
- Students will demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process.
- Students willappreciate the excitement of discovery that has accompanied important scientific developments.
- Students will demonstrate how scientific methodology can be used to analyze real-world science-related problems.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public-policy science issues that affect their community.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.
- Students will be able to reflect rationally upon the interface between science and religion.
- Students will demonstrate sound scientific reasoning ability.

BIO 463 : Genetics of Human Disease. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PWS 340

DESCRIPTION: Examining the application of genetics to understanding and treatment of human disease. Functional consequences of mutations; use of model organisms; linkage and association analysis of complex traits; pharmacogenetics; ethical considerations.

**Course Outcomes**

- Understand and explain the different types of genetic variants, how they can be typed and how they can be used to understand the genetic architecture of human disease.

Understand linkage disequilibrium in the human genome and the role it plays in the search for genetic risk factors for human disease
- Understand and use basic statistics and software for analyzing the correlation between genetic markers and risk for disease.
- Understand and explain how model organisms contribute to our understanding of the genetics of human disease.
- Demonstrate the ability to obtain, aggregate and present information about the current knowledge of the genetics of a human disease.

BIO 465 : Bioinformatics and Proteomics. (3:2:1)

WHEN TAUGHT: Winter

PREREQUISITE: BIO 365

DESCRIPTION: 3-D protein structural comparisons, hidden Markov models for database comparisons, homology detection, multiple sequence analyses, and protein family comparisons. Exercises in computer programming in genomics.

**Course Outcomes**

- Students will learn and demonstrate mastery of advanced analytical bioinformatics techniques, including genome assembly, genome annotation, and protein analyses.
- Demonstrate ability to use and evaluate literature databases and primary literature directed to the bioinformatics community in terms of newly developed software, analytical algorithms, application to empirical data, etc.
- Apply and develop computational skills in secondary (i.e., helices, etc.) and tertiary (i.e., folding, etc.) prediction, and 3-dimensional (i.e., x-ray crystal structures, etc.) modeling of protein structures.
- Apply evolutionary concepts to modeling DNA/proteins to evaluate and/or predict function, utilizing 3D structures, physical and chemical amino acid properties, etc.
- Apply existing and develop new tools for genome assembly and annotation from next-generation DNA sequencing projects

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

RECOMMENDED: Math 290.

DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105

DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.

NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion,

both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

4. Complete one course from the following:

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for $\mu$ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for $H0 : \mu = \mu0$ from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment

- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

5. Complete five elective courses from any of the 400-level computer science courses (except 404, 405, and 418).

   **Note:** If C S 401R or C S 498R is chosen, it must be taken for 3 hours.

*Hours include courses that may fulfill university core requirements.

## Show all Computer Science Courses

College of Physical and Mathematical Sciences Home

Computer Science Department Home

Majors

- BS in Computer Science

Emphases (optional)

- Animation
- Bioinformatics

Minors

- Computer Science
- Computer Science Teaching

Course Information

- Computer Science (C S) Courses
- Computer Science Animation (CSAnm) Courses

Faculty

# Minor in Computer Science (19 hours)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Grades below C- are not allowed in minor courses.
2. Complete the following:

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

C S 235 : Data Structures and Algorithms. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 142

DESCRIPTION: Fundamental data structures and algorithms of computer science; basic algorithm analysis; recursion; sorting and searching; lists, stacks, queues, trees, hashing; object-oriented data abstraction.

**Course Outcomes**

- Use the fundamental data types of computing (lists, stacks, queues, priority queues, sets, maps, trees, etc.).
- Understand the major techniques for implementing the fundamental data types (linked lists, binary search trees, hashing, heaps, etc.) and implement several of them.
- Properly use and select data structures from language-provided data-structure libraries.
- Apply basic algorithm analysis.
- Understand how recursion works and write programs using recursion to solve problems.
- Make informed decisions about which sorting and searching algorithms to use in specific circumstances.
- Write programs that require ~500 lines of code.

C S 236 : Discrete Structures. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: C S 235

DESCRIPTION: Introduction to grammars and parsing; predicate and propositional logic; proof techniques; sets, functions, relations, relational data model; graphs and graph algorithms.

**Course Outcomes**

- Understand and be conversant with basic discrete mathematical structures (finite state machines, regular expressions, grammars, propositional calculus, proof techniques, predicate calculus, sets, relations, functions, graphs).Write complex programs by using mathematical concepts as the basis for solving programming problems (finite state machines for lexical analysis; grammars for parsing; propositional and predicate calculus for logic programming; sets and algebras for relational databases; algebras, graphs, and topological sorting for optimizing datalog query processing).Incrementally build sophisticated programs by a systematic design process based on discrete mathematics.Design a solution for a programming problem and justify the design as one that is maintainable and extendable by other programmers who understand and are conversant with discrete mathematical structures.

- Demonstrate ability to build large programs by writing and integrating code from a diverse spectrum of program components.

C S 240 : Advanced Programming Concepts. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 236

DESCRIPTION: Advanced software development with an object-oriented focus. Design, implementation, and testing of several large programs in a Java and Linux environment using current technologies.

**Course Outcomes**

- a. Use coding, testing, and debugging strategies. b. Follow basic object-oriented design concepts.
- Write programs in an Object Oriented programming language using inheritance, polymorphism and class hierarchies.
- Use the Linux programming environment to execute basic commands and to run the compiler, linker, debugger, memory checker, and profiler.
- Demonstrate the aptitude and work ethic necessary to succeed in computer science.

3. Complete two additional computer science courses (except C S 100, 199R, 404, 405).

## Show all Computer Science Courses

**College of Physical and Mathematical Sciences Home**

**Computer Science Department Home**

**Majors**

- BS in Computer Science

Emphases (optional)

- Animation
- Bioinformatics

**Minors**

- Computer Science
- Computer Science Teaching

**Course Information**

- Computer Science (C S) Courses
- Computer Science Animation (CSAnm) Courses

**Faculty**

# Minor in Computer Science Teaching (18 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following:

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

C S 224 : Introduction to Computer Systems. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 142; or instructor's consent.

DESCRIPTION: How a computer works, from hardware to high-level programming. Logic circuits, computer instructions, assembly language, binary arithmetic, C programming, program translation, data structures, and algorithm analysis.

**Course Outcomes**

There are no course outcomes available

C S 235 : Data Structures and Algorithms. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 142

DESCRIPTION: Fundamental data structures and algorithms of computer science; basic algorithm analysis; recursion; sorting and searching; lists, stacks, queues, trees, hashing; object-oriented data abstraction.

**Course Outcomes**

- Use the fundamental data types of computing (lists, stacks, queues, priority queues, sets, maps, trees, etc.).
- Understand the major techniques for implementing the fundamental data types (linked lists, binary search trees, hashing, heaps, etc.) and implement several of them.
- Properly use and select data structures from language-provided data-structure libraries.
- Apply basic algorithm analysis.
- Understand how recursion works and write programs using recursion to solve problems.
- Make informed decisions about which sorting and searching algorithms to use in specific circumstances.

- Write programs that require ~500 lines of code.

C S 236 : Discrete Structures. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: C S 235

DESCRIPTION: Introduction to grammars and parsing; predicate and propositional logic; proof techniques; sets, functions, relations, relational data model; graphs and graph algorithms.

**Course Outcomes**

- Understand and be conversant with basic discrete mathematical structures (finite state machines, regular expressions, grammars, propositional calculus, proof techniques, predicate calculus, sets, relations, functions, graphs).Write complex programs by using mathematical concepts as the basis for solving programming problems (finite state machines for lexical analysis; grammars for parsing; propositional and predicate calculus for logic programming; sets and algebras for relational databases; algebras, graphs, and topological sorting for optimizing datalog query processing).Incrementally build sophisticated programs by a systematic design process based on discrete mathematics.Design a solution for a programming problem and justify the design as one that is maintainable and extendable by other programmers who understand and are conversant with discrete mathematical structures.
- Demonstrate ability to build large programs by writing and integrating code from a diverse spectrum of program components.

C S 240 : Advanced Programming Concepts. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 236

DESCRIPTION: Advanced software development with an object-oriented focus. Design, implementation, and testing of several large programs in a Java and Linux environment using current technologies.

**Course Outcomes**

- a. Use coding, testing, and debugging strategies. b. Follow basic object-oriented design concepts.
- Write programs in an Object Oriented programming language using inheritance, polymorphism and class hierarchies.
- Use the Linux programming environment to execute basic commands and to run the compiler, linker, debugger, memory checker, and profiler.
- Demonstrate the aptitude and work ethic necessary to succeed in computer science.

TEE 377 : Teaching Methods in Technology Education. (2:2:0)

PREREQUISITE: TEE 276B

DESCRIPTION: Developing meaningful and engaging instruction for secondary students in technology education; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Educator Preparation Program OutcomesThis course is part of your preparation for licensure in a major or minor that is part of the BYU Educator Preparation Program (EPP). This course will help you fulfill the EPP Outcomes required for accreditation. Advisors in Education Student Services (350 MCKB / 801-422-3426) can answer questions you have about the licensure requirements (http://education.byu.edu/ess/licensing.html) for your teaching major or minor.As students progress through the Technology and Engineering teacher education program, they should gain knowledge, dispositions and skills that will enable them to become effective teachers. The standards that encompass the knowledge, dispositions and skills that teachers should have are known as the UETS standards and can be found on the TEE Outcomes webpage. The following UETS standards will be addressed in this class (TEE 377).
- UETS Standard 1 - Learner and Development:The teacher understands cognitive, linguistic, social, emotional and physical areas of student development.UETS Standard 3 - Learning Environments:The teacher works with learners to create environments that support individual and collaborative learning, encouraging positive social interaction, active engagement in learning, and self-motivation.UETS Standard 4 - Content Knowledge:The teacher understands the central concepts, tools of inquiry, and structure of the discipline.UETS Standard 5 - Assessment:The teacher uses multiple methods of assessment to engage learners in their own growth, monitor learner progress, guide planning and instruction, and determine whether the outcomes described in the content standards have been met.UETS Standard 6- Instructional Planning:The teacher plans instruction to support students in meeting rigorous learning goals by drawing uopn knowlege of content area, Core Curriculum standards, instructional best practices, and the community context.UETS Standard 7- Instructional Strategies:The teacher uses various instructional strategies to ensure that all learners develop a deep understanding of content areas and their connections, and build skills to apply and extend knowledge in meaningful ways.
- Students will be able to identify the basic theories of student motivation and apply these theories to design classroom instruction for a technology and engineering classroom.Students will be able to identify and differentiate between direct and inquiry- based instruction and to develop lesson plans using both instructional approaches.Students will be able to develop instructional objectives that address cognitive, affective, and psychomotor domains of learning.Students will be able to develop instructional objectives for each of the levels of Blooms taxonomy.Students will be able to develop a disclosure document that outlines classroom procedures and student expectations appropriate for a T&E classroom.Students will be able to identify instructional strategies and teaching methods that might be used in a T&E classroom and to incorporate these strategies into a lesson plan.Students will be able to develop an assessment plan that includes strategies for formative and summative assessment in a T&E classroom.Students will be able to develop a rubric for assessment of a technology and engineering classroom activity.Students will be able to develop a plan for implementing problem solving strategies into their course instruction.Students will be able to identify implications for how students learn; including addressing student pre-conceptions of course content, developing student competence in a content area, and developing strategies for meta-cognition. Students will also be able to identify interventions for each of these areas.Students will be able to identify examples of student multiple intelligences and develop a plan for how this might affect instruction in the classroom.Students will be

able to describe appropriate procedures for implementing cooperative learning into classroom activities.

3. FBI fingerprinting and background clearance must be completed.

## Show all Computer Science Courses

**College of Physical and Mathematical Sciences Home**

**Computer Science Department Home**

**Majors**

- BS in Computer Science

Emphases (optional)

- Animation
- Bioinformatics

**Minors**

- Computer Science
- Computer Science Teaching

**Course Information**

- Computer Science (C S) Courses
- Computer Science Animation (CSAnm) Courses

**Faculty**

# Computer Science (C S)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

C S 100 : Fundamentals of Computing and Information. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Computing, information structures, programming principles, Internet, World Wide Web, text, spreadsheets, data representations for images, sound and video.

NOTE: For nonmajors.

**Course Outcomes**

- Describe how digital information is represented and how that representation affects the way information can be manipulated and stored. This includes lists, tables, records, and trees.
- Manipulate digital information using algorithms written in a programming language. This includes an ability to understand and write assignment statements, loops, conditionals, and functions.
- Explain how the Internet and web pages work. This includes demonstrating skills in web-content creation.
- Explain the purpose of an operating system and the basics of how it carries out its tasks.
- Identify computer hardware components, and, describe how those components work and interact.

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

C S 199R : Academic Internship. (.5-3:0:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Internships or cooperative education experiences with organizations outside BYU.

**Course Outcomes**

- Students will develop familiarity with industrial software development and analysis.

### 200-Level Courses

C S 224 : Introduction to Computer Systems. (3:3:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 142; or instructor's consent.

DESCRIPTION: How a computer works, from hardware to high-level programming. Logic circuits, computer instructions, assembly language, binary arithmetic, C programming, program translation, data structures, and algorithm analysis.

**Course Outcomes**

There are no course outcomes available

C S 235 : Data Structures and Algorithms. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 142

DESCRIPTION: Fundamental data structures and algorithms of computer science; basic algorithm analysis; recursion; sorting and searching; lists, stacks, queues, trees, hashing; object-oriented data abstraction.

**Course Outcomes**

- Use the fundamental data types of computing (lists, stacks, queues, priority queues, sets, maps, trees, etc.).
- Understand the major techniques for implementing the fundamental data types (linked lists, binary search trees, hashing, heaps, etc.) and implement several of them.
- Properly use and select data structures from language-provided data-structure libraries.
- Apply basic algorithm analysis.
- Understand how recursion works and write programs using recursion to solve problems.
- Make informed decisions about which sorting and searching algorithms to use in specific circumstances.
- Write programs that require ~500 lines of code.

C S 236 : Discrete Structures. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: C S 235

DESCRIPTION: Introduction to grammars and parsing; predicate and propositional logic; proof techniques; sets, functions, relations, relational data model; graphs and graph algorithms.

**Course Outcomes**

- Understand and be conversant with basic discrete mathematical structures (finite state machines, regular expressions, grammars, propositional calculus, proof techniques, predicate calculus, sets, relations, functions, graphs).Write complex programs by using mathematical concepts as the basis for solving programming problems (finite state machines for lexical analysis; grammars for parsing; propositional and predicate calculus for logic programming; sets and algebras for relational databases; algebras, graphs, and topological sorting for optimizing datalog query processing).Incrementally build sophisticated programs by a systematic design process based on discrete mathematics.Design a solution for a programming problem and justify the design as one that is maintainable and extendable by other programmers who understand and are conversant with discrete mathematical structures.
- Demonstrate ability to build large programs by writing and integrating code from a diverse spectrum of program components.

C S 240 : Advanced Programming Concepts. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 236

DESCRIPTION: Advanced software development with an object-oriented focus. Design, implementation, and testing of several large programs in a Java and Linux environment using current technologies.

**Course Outcomes**

- a. Use coding, testing, and debugging strategies. b. Follow basic object-oriented design concepts.
- Write programs in an Object Oriented programming language using inheritance, polymorphism and class hierarchies.
- Use the Linux programming environment to execute basic commands and to run the compiler, linker, debugger, memory checker, and profiler.
- Demonstrate the aptitude and work ethic necessary to succeed in computer science.

C S 252 : Introduction to Computational and Probabilistic Models in Computer Science. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 236 or concurrent enrollment.

DESCRIPTION: Computational models: regular grammars, context-free grammars, Turing machines. Complexity theory: big-O and complexity classes P, NP, NP-complete, and f-NP. Probabilistic Models: Introduction to probability theory, random variables, joint distributions, Bayes rules, Bayes networks.

**Course Outcomes**

- Understand the three computing paradigms (DFAs, PDA, Turing Machine) and their language-based equivalents (regular languages,context-free languages, computable algorithms).
- Categorize problems into one of the existing paradigms.
- Understand the difference between and limitations of paradigms.
- Understand the difference between computable (decidable) and practically computable (tractable).
- Design and justify solutions to problems of decidability and tractability.

C S 256 : Designing the User Experience. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 142

DESCRIPTION: Studio-critique style course on user experience design. Contextual inquiry to identify user needs. Iterative solution design using sketching and storyboards. Human perception and visual design principles. Rapid prototyping and evaluation of proposed solutions.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

C S 301R : Topics in Computer Science. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: Instructor's consent.

DESCRIPTION: Undergraduate-level topics as announced.

**Course Outcomes**

There are no course outcomes available

C S 312 : Algorithm Design and Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 240 & C S 252

DESCRIPTION: A study of the design and analysis of algorithms as solutions to problems, including dynamic programming, linear programming, greedy algorithms, divide-and-conquer algorithms, graph algorithms, and intelligent search algorithms.

**Course Outcomes**

There are no course outcomes available

C S 330 : Concepts of Programming Languages. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240

DESCRIPTION: Principles and concepts characterizing high-level computer programming languages, process and data abstration, encapsulation, inheritance, functional programming, logic programming, scanners, and parsers.

**Course Outcomes**

- Learn the vocabulary of programming language design, syntax, and semantics
- Be able to write programs using non-imperative language paradigms.

C S 340 : Software Design and Testing. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 240

DESCRIPTION: Principles of software design, design patterns, design representation, refactoring. Principles of software quality assurance and testing. Development and testing tools.

**Course Outcomes**

- Articulate the principles of effective software design.
- Know when and how to apply various design patterns.
- Demonstrate how to effectively document and communicate software designs.
- Understand what quality assurance is, know how to build quality into software using review techniques, and demonstrate quality evaluation through testing.
- Use a variety of software development tools, including IDEs, automation tools, static analysis tools, source code control systems, unit testing tools, and documentation tools.
- Work effectively in a group to produce quality software using 1-5 above.

C S 345 : Operating Systems Design. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: C S 224 & C S 240

DESCRIPTION: Principles and concepts of operating systems design and the implementation of an operating system.

**Course Outcomes**

- Describe the basic components of an operating system and their role in implementations for general purpose, real-time, and embedded applications.
- Define the concepts of processes, threads, asynchronous signals and competitive system resource allocation.
- Show how a shell works.
- Explain what multi-tasking is and outline standard scheduling algorithms for multi-tasking.
- Discuss mutual exclusion principles and their use in concurrent programming, including semaphore construction and resource allocation.
- Give an overview of system memory management.
- Explain how file systems are implemented.
- Discuss the features and strengths of various contemporary operating systems.
- Implement a functional, pre-emptive, multi-tasking operating system written in C, including a shell, scheduler, file manager, memory manager, and synchronization components.

C S 355 : Interactive Graphics and Image Processing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240

DESCRIPTION: Introduces basic concepts of computer graphics, user interfaces and image processing. Includes homogenous coordinate transforms, image transforms, event driven programming and color models. Extends Model-View-Controller architecture.

**Course Outcomes**

There are no course outcomes available

C S 360 : Internet Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240

DESCRIPTION: Internet application programming, including sockets, threads, CGI, database, e-commerce, Web services.

**Course Outcomes**

- Design and implement a variety of client-server and web applications.
- Analyze the performance of a web server, write convincingly to support your conclusions and give an oral report to describe your findings.
- Implement a web server using processes, semaphores, threads, sockets and signals.
- Use a set of web programming languages to implement an application.
- Use security to protect their web application.

**400-Level Courses**

C S 401R : Topics in Computer Science. (1-3:ARR:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: Instructor's consent.

DESCRIPTION: Undergraduate level subjects as announced before each semester.

**Course Outcomes**

- Students will learn about a topic in Computer Science not covered in the traditional courses.

C S 404 : Ethics and Computers in Society. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 240 & ENGL 316

DESCRIPTION: Societal impact of computer technology, the computer scientist's place in society, ethical issues. Reading, discussion, and writing seminar.

**Course Outcomes**

- Articulate connections between the gospel of Jesus Christ and their professional life.
- Analyze, write about, and discuss issues and ethical problems related to computing and the application of evolving technologies in society.
- Appreciate the history of computing as a means for students to sharpen their sense of their own future.
- Students will understand the need for continuing education in their careers.

C S 405 : Creating and Managing a Software Business. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: C S 240 & ENGL 316

DESCRIPTION: Entrepreneurship, idea/opportunity generation, strategic planning, legal organization, product development, marketing/sales, customer support, fund raising, and effective management.

**Course Outcomes**

- Students will write a business plan for a company they are proposing.

C S 412 : Linear Programming and Convex Optimization. (3:3:0)

PREREQUISITE: C S 312 & MATH 313; or instructor's consent.

DESCRIPTION: Optimization, problem formulation, and solution algorithms, including simplex and interior point methods. Applications from control, data mining, finance, game theory, learning, network flow, operations research, and statistical estimation.

**Course Outcomes**

- Develop a fluency in the mathematical foundations needed to pose optimization problems, including an appreciation for the role of convexity in characterizing solvable problems.
- Develop a fluency with the Simplex Method as a solution technique to Linear Programming problems. Understand how it exploits the linear nature of the problem to yield good average-case performance while failing to be efficient in the worst-case.
- Understand the meaning of weak and strong duality and their role in the design and verification of algorithmic solutions to optimization problems.
- Be able to characterize how to perturb the data of an existing problem so that its solution remains optimal for the new, perturbed problem.
- Develop a fluency with interior point methods for solving Linear Programming problems and understand how these solutions may be extended to solve nonlinear, convex optimization problems.
- Explore the role of Linear and Convex Programming in a variety of applications, including 1) Finance, 2) Game Theory, 3) Regression, and 4) Computer Networking.

C S 418 : Bioinformatics. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department; Spring Contact Department; Summer Contact Department

PREREQUISITE: C S 312

DESCRIPTION: Computational methods for analyzing biological systems. Dynamic programming, Markov models, Neural Networks, and Bayesian analysis are used to predict secondary structure, tertiary structure, and active sites for drug docking given molecular DNA sequence data.

**Course Outcomes**

- Graph Theoretical algorithms, Regulatory Inference
- Large Memory Genomic Mapping, SNP calling
- Develop new research ideas and communicate them effectively

C S 428 : Software Engineering. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: C S 340

DESCRIPTION: Analysis, design, implementation, and testing of significant software systems.

**Course Outcomes**

- Demonstrate the ability to work in a group on a significant project
- Demonstrate practices that result in quality software
- Demonstrate an understanding of how ethics impact software development

C S 431 : Algorithmic Languages and Compilers. (3:3:0)

PREREQUISITE: C S 340

DESCRIPTION: Formal description of algorithmic languages and techniques used in their compilation: semantics, ambiguities, procedures, replication, iteration, recursion.

**Course Outcomes**

- Implement a fully functional compiler for a subset of the Java language that targets an embedded microprocess.
- Apply patterns and common data structures to compiler constructrion including tree traversal, graph algorithms, and proof systems.
- Students are able to synthesis algorithms and techniques from compiler constructor to other problem domains.
- Students have a sound mental model of how an abstract high level language is systematically transformed into a low-level machine langauge or byte code. Students are able to use that understanding to write better application code.

C S 450 : Introduction to Digital Signal and Image Processing. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 312 & C S 355 & MATH 313

RECOMMENDED: Stat 121.

DESCRIPTION: One- and two-dimensional signal-processing fundamentals, including sampling, noise, transforms, filtering, enhancement, and compression. Hands-on experimentation with speech, music, still images, and full-motion video.

**Course Outcomes**

- Understand and apply the following:Sampling and quantization of image informationCamera properties adn the acquisition of imagesMathematics of image-space transformationsFourier transforms adn filtering

C S 452 : Database Modeling Concepts. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 240

DESCRIPTION: Database models: relational, deductive, object-oriented. Integrity constraints, query languages, database design.

**Course Outcomes**

- Be able to use a variety of commercial query languages (SQL, XQuery, SPARQL), both stand-alone and embeded in high-level programming languages. Know how relational algebra and relational calculus provide a basis for commercial query languages.
- Understand performance issues and optimization strategies. This includes query rewriting, secondary storage characteristics, and access strategies.
- Be able to design and develop relational database applications. This includes conceptual modeling and normalization theory.
- Be familiar with some of the current challenges facing database professionals.

C S 453 : Fundamentals of Information Retrieval. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: C S 240

DESCRIPTION: Concepts and terminology of information retrieval (IR) systems. Design methodologies and issues. Fundamental IR models examined: Boolean, Vector Space, Probabilistic models, and evaluation strategies.

**Course Outcomes**

There are no course outcomes available

C S 455 : Computer Graphics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 355 & MATH 313

DESCRIPTION: Interactive computer graphics systems programming and architecture.

**Course Outcomes**

- Students will be proficient in basic computer graphics algorithms such as modeling, trnasformations and rendering.Students will design and code solutions to several programming problems in graphics using algorithms and data structures.In addition, sututents will use these techniques to program a large semester project.

C S 456 : Introduction to User Interface Software. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 256 & C S 355; or C S 301R & C S 355

DESCRIPTION: Introduction to software architectures and techniques for graphical user interfaces. Input devices, windowing systems, event-driven programming, interactive geometry.

**Course Outcomes**

- Understand and apply the following:Multiple mechanisms for receiving information from people and presenting information to people.The geometry of basic shapes and how to use the geometry to solve basic interaction problems.Algorithms for user interface layout management.Models for specifying and evaluating user input dialogs.

C S 460 : Computer Communications and Networking. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: C S 360

DESCRIPTION: Introduction to data communications and computer networking. Communications fundamentals, computer networks, software, architecture, telecommunications, regulation, standards.

**Course Outcomes**

- Understand the principles of the Internet architecture
- Understand how the Internet works, from the transport layer down to the physical layer
- Gain hands-on experience with implementing and simulating transport, routing, and MAC protocols, leading to a deeper understanding of these critical Internet components
- Be capable of reading and understanding research papers in the area of computer networking
- Demonstrate the ability to effectively conduct, describe and report on an experimental research project in the area of computer networking

C S 462 : Large-Scale Distributed System Design. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: C S 340 & C S 360

DESCRIPTION: Designing and implementing client-server enterprise applications. Web servers, application servers, database connectivity, remote procedure calls, transactions, messaging, directory, naming services, threads, security, data formats.

**Course Outcomes**

- Enterprise Web application development

C S 465 : Computer Security. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: C S 360 or concurrent enrollment.

DESCRIPTION: Introduction to computer security fundamentals: confidentiality, integrity, authentication, and access control. Secret key and public key cryptography, network security protocols, viruses, and fire walls.

**Course Outcomes**

- Implement a cryptographic algorithm from a standards specification.
- Demonstrate how attackers compromise real-world systems, and then show how to prevent these attacks.

C S 470 : Introduction to Artificial Intelligence. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: C S 312 & MATH 313 & STAT 121; or instructor's consent.

DESCRIPTION: Introduction to core areas of artifical intelligence; intelligent agents, problem solving and search, knowledge-based systems and inference, planning, uncertainty, learning, and perception.

**Course Outcomes**

- from business, medicine, robotics, gaming, and machine learning
- Does it require basic control?Does it involve uncertain reasoning?Does it have a simple goal, sophisticated utility, or multiple attributes?Does it require sequential choice or planning?How may decision makers are involved?
- What is the internal representation?What performance criteria are relevant?What is the nature of the environment?What are the actuators?What are the sensors?What are the agent's utilities?How is uncertainty represented?
- Uninformed, informed, constraint-satisfaction, hill-climbing, and stochastic (e.g., genetic algorithms) searchMarkov provesses, Bayes rule, Bayes nets, Hidden Markov Models, Grid Filters, and Kalman FiltersExpected utility theoryMulti-attribute utility theorySequential choice under uncertainty: value and policy iterationMinimax solutions from game theory: alpha-beta pruning
- Determine whether your solution is correctExpress the quality of your solutionValue the need to communicate your solution to others

C S 478 : Tools for Machine Learning and Data Mining. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: C S 312 & MATH 313 & STAT 121

DESCRIPTION: Machine learning and data mining models and other mechanisms allowing computers to learn and find knowledge from data.

**Course Outcomes**

- Take your computer to school
- You will be able to recognize when machine learning and data mining tools are applicable.
- You will be able to plan and execute successful machine learning and data mining projects, including selecting an adequate process for your specific task and avoiding the main data mining pitfalls.

C S 479 : Natural Language Processing. (3:3:0)

PREREQUISITE: C S 312 & STAT 121

RECOMMENDED: Ling 330.

DESCRIPTION: Introduction to natural language processing (NLP). Relevant problems include web search, speech recognition, machine translation, spam filtering, text classification, question answering, spell checking. Building real tools, understanding human language, applying techniques beyond NLP.

**Course Outcomes**

- The student will grow in confidence in their mathematical and statistical abilities. In particular, the student will understand the models, methods, and algorithms of statistical Natural Language Processing (NLP) for common NLP tasks, such as speech recognition, machine translation, spam filtering, text classification, and spell checking.The student will implement probabilistic models in code, estimate parameters for such models, and run meaningful experiments to validate such models.
- The student will apply core computer science concepts and algorithms, such as dynamic programming.
- The student will gain understanding of linguistic phenomena and will explore the linguistic features relevant to each NLP task.
- The student will apply the methods to new NLP problems and will be able to apply the methods to problems outside NLP.
- The student will be familiar with some of the NLP literature and will read and suggest improvements to published work. The student will see where opportunities for research await and prepare to conduct research in NLP or related fields.The student will also analyze experimental results and write reports for each course project to develop scientific writing skills.

C S 484 : Parallel Processing. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 360

DESCRIPTION: Theoretical and practical study of parallel processing including multi-core, fine-grained, and clustered architectures, parallel programming languages, and parallel algorithms.

**Course Outcomes**

- Use multiple processors to solve a problem faster
- Understand the metrics that are used to evaluate effective applications.

C S 486 : Verification and Validation. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: C S 312

DESCRIPTION: Foundational topics in verification and validation; the application of logic to building correct systems. Covers logics to formally specify properties of systems, verifications of basic systems, and advanced topics in formal verification for complex systems.

**Course Outcomes**

There are no course outcomes available

C S 498R : Undergraduate Special Projects. (1-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 240

DESCRIPTION: Students identify an interesting problem in computer science and solve it with the aid of faculty members.

**Course Outcomes**

There are no course outcomes available

## 500-Level Graduate Courses (available to advanced undergraduates)

C S 500 : (C S-Chem-Geol-Math-MthEd-Phscs-Stat) Business Career Essentials in Science and Math. (1.5:1.5:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction for science, math, and statistics majors to careers in industry. Project planning, oral and written business presentations, business accounting, and technology readiness.

**Course Outcomes**

- Learn the basics of project management and understand why this is important to business success
- Learn how to read and understand a business financial accounting statement (both internal and external)
- Understand the different levels of technology readiness and the process of moving a project through these levels to completion
- Learn the basics of effective business presentations and writing

C S 501R : Advanced Topics in Computer Science. (1-3:ARR:0)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Advanced undergraduate- and graduate-level subjects as announced before each semester.

**Course Outcomes**

- Students will learn a topic in Computer Science not covered by the regular curriculum.

C S 513 : Robust Control. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Math 313 or equivalent.

RECOMMENDED: C S 312 and 412; Math 334; or equivalents.

DESCRIPTION: Introduction to the analysis and design of feedback systems guaranteed to perform well in spite of model uncertainty.

**Course Outcomes**

There are no course outcomes available

C S 557 : Computer-Aided Geometric Design. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: C S 240, Math 343; or equivalents.

DESCRIPTION: Free-form curves and surfaces; mathematical theory and algorithms. Bezier and B-spline curves and surfaces, subdivision surfaces, T-splines, free-form deformation, and intersection algorithms. Several programming projects.

**Course Outcomes**

- Understand the theory, properties, and algorithms for Bezier curves: de Casteljau algorithm, degree elevation, hodographs, curve intersection algorithms, convex hull property, variationa diminishing property, rational Bezier curves, explicit Bezier curves.
- Understand polar form, the de Boor algorithm, the Boehm algorithm, knot intervals.
- Understand tensor product Bezier and B-Spline surfaces, including the de Casteljau algorithm, partial derivatives, parametric continuity, tesselation.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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**Majors**

- BS in Computer Science

Emphases (optional)

- Animation
- Bioinformatics

**Minors**

- Computer Science
- Computer Science Teaching

**Course Information**

- Computer Science (C S) Courses
- Computer Science Animation (CSAnm) Courses

**Faculty**

# Computer Science Animation (CSAnm)

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## Undergraduate Courses

### 100-Level Courses

CSANM 150 : Introduction to Three-Dimensional Computer Graphics. (1.5:1.5:1.5)

WHEN TAUGHT: Spring

DESCRIPTION: Fundamentals of modeling, texturing, lighting, and rendering used in exploring principles and elements of three-dimensional design.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

CSANM 250 : Intermediate Three-Dimensional Computer Graphics. (2:4:0)

WHEN TAUGHT: Fall

DESCRIPTION: Fundaments of building three-dimensional computer models and setting up model rigs for mobility.

NOTE: Course changed to CSAnm 250 beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 252 : Introduction to Three-Dimensional Animation. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: CSANM 250

DESCRIPTION: Foundational principles and techniques of three-dimensional animation, including timing and pacing, character setup, and dynamics.

NOTE: Course changed to CSAnm 252 beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 258 : Scripting for Animation. (3:3:3)

WHEN TAUGHT: Spring

DESCRIPTION: Developing basic scripting skills to procedurally build intricate systems of models, rigs, and animation. Students learn how to reduce manual hours and efficiently create simple to complex effects.

NOTE: Course changed to CSAnm 258 beginning Fall 2014.

**Course Outcomes**

There are no course outcomes available

### 300-Level Courses

CSANM 350 : Character Animation in 3D. (3:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: CSANM 252

DESCRIPTION: Three-dimensional character animation applying traditional animation principles.

NOTE: Course changed to CSAnm 350 beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 351R : Lighting for Three-Dimensional Graphics. (3:3:3)

WHEN TAUGHT: Winter

DESCRIPTION: Developing lighting and color, and the compiling of the various elements for final images for use in three-dimensional applications.

NOTE: Course changed to CSAnm 351R beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 354 : Shader Programming. (3:3:3)

WHEN TAUGHT: Fall

DESCRIPTION: Shading and rendering techniques for the attainment of desired visual effects: use of shading languages for the realization of both photorealistic and non-photorealistic imaging.

NOTE: Course changed to CSAnm 354 beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 355 : Photography for Animation. (3:3:3)

WHEN TAUGHT: Spring

DESCRIPTION: Layout, references, camera technology and terminology, application of composition, lighting, and core art skills emphasized.

NOTE: Course changed to CSAnm 355 beginning Fall 2012.

**Course Outcomes**

No outcomes are available at this time.

**400-Level Courses**

CSANM 450R : Advanced Senior Film Production 1. (3:3:3)

WHEN TAUGHT: Fall

DESCRIPTION: In-depth experiences creating computer animations and visual effects. Senior film front-end development and introduction to full animation production.

NOTE: Course changed to CSAnm 450 beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 452R : Advanced Senior Film Production 2. (3:3:3)

WHEN TAUGHT: Winter

DESCRIPTION: Portfolio development based on advanced animation/design projects. Senior film production and post production.

NOTE: Course changed to CSAnm 452R beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 453R : Special Topics in Advanced Graphics. (3:3:3)

WHEN TAUGHT: Fall

DESCRIPTION: Researching new technologies in animation and visualization. Topics might include real-time technologies, three-dimensional data acquisition, performance capture, or new entertainment platforms.

NOTE: Course changed to CSAnm 453R beginning Fall 2012.

**Course Outcomes**

No outcomes are available at this time.

CSANM 454 : Advanced Shading. (3:3:3)

WHEN TAUGHT: Fall

DESCRIPTION: Advanced shading, rendering, and lighting methods for creating virtual scenes that emphasize story and innovatively meet an art director's vision through traditional and procedural methods.

NOTE: Course changed to CSAnm 454 beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 458 : Three-Dimensional Visual Effects. (3:3:3)

DESCRIPTION: Exploring procedural and three-dimensional animation methods to create realistic special effects. Applying a large

spectrum of animation principles to integrate their effects aesthetically and convincingly into a live action or animated environment.

NOTE: Course changed to CSAnm 458 beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 459R : Advanced Animation Technology. (1.5:1.5:1.5)

WHEN TAUGHT: Winter

DESCRIPTION: Meeting a variety of complex visual production demands by combining technical ingenuity with artistic creativity. Crafting directable tools with artistic flexibility and using them to create visuals for the production's story.

NOTE: Course changed to CSAnm 459R beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 494R : Special Problems in Animation. (.5-3:Arr:Arr)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Individual study in area of special interest.

NOTE: Course changed to CSAnm 494R beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

CSANM 497R : BFA Final Project. (1-3:Arr:Arr)

PREREQUISITE: BFA advisor's consent.

DESCRIPTION: Advanced individual project with minimum guidance, showing high degree of competence within chosen major.

NOTE: Course changed to CSAnm 497R beginning Fall 2012.

**Course Outcomes**

There are no course outcomes available

**Back to Computer Science Department Home**

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**Computer Science Department Home**

**Majors**

- BS in Computer Science

Emphases (optional)

- Animation
- Bioinformatics

**Minors**

- Computer Science
- Computer Science Teaching

**Course Information**

- Computer Science (C S) Courses
- Computer Science Animation (CSAnm) Courses

**Faculty**

# Computer Science Faculty

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## Professors

Adams, R. Brent
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BUS, University of Utah, 1982
MFA, University of Utah, 1992

Barrett, William A.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1974
PhD, University of Utah, 1978

Burton, Robert Preece
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1969
PhD, University of Utah, 1973

Clement, Mark Joel
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1985
MS, Brigham Young University, 1989
PhD, Oregon State University, 1994

Egbert, Parris
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1986
MS, University of Illinois, Urbana, 1990
PhD, University of Illinois, Urbana, 1992

Embley, David W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1970
MS, University of Utah, 1972
PhD, University of Illinois, 1976

Goodrich, Michael A.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1995
PhD, Brigham Young University, 1996

Martinez, Tony Ramon

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, University of California, Los Angeles, 1983
PhD, University of California, Los Angeles, 1986

Morse, Bryan Stuart
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1986
MA, Brigham Young University, 1990
PhD, University of North Carolina, Chapel Hill, 1995

Olsen, Dan Reed
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1976
MS, Brigham Young University, 1978
PhD, University of Pennsylvania, 1981

Sederberg, Thomas W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1975
MS, Brigham Young University, 1977
PhD, Purdue University, Lafayette, 1983

Snell, Quinn O.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1992
MS, Utah State University, 1993
PhD, Iowa State University, 1997

Ventura, Dan Aaron
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1995
PhD, Brigham Young University, 1998

Woodfield, Scott N.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1975
MS, Brigham Young University, 1978
PhD, Purdue University, Lafayette, 1980

## Associate Professors

Giraud-Carrier, Christophe Gerard
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
MS, Brigham Young University, 1993
PhD, Brigham Young University, 1994

Jones, Michael D.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1995
MS, Brigham Young University, 1997

PhD, University of Utah, 2001

Knutson, Charles Douglas

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1988
MS, Brigham Young University, 1994
PhD, Oregon State University, 1998

Mercer, Eric G.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, University of Utah, 1996
MS, University of Utah, 1999
PhD, University of Utah, 2002

Ng, Yiu-Kai Dennis

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, Brigham Young University, 1984
PhD, Kansas State University, 1991

Ringger, Eric Karl

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, University of Rochester, 1994
PhD, University of Rochester, 2000

Seamons, Kent Eldon

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1986
PhD, University of Illinois, Urbana, 1996

Seppi, Kevin Darrell

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, Santa Clara University, 1987
PhD, University of Texas, Austin, 1990

Warnick, Sean C.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Arizona State University, 1993
MS, Massachusetts Institute of Technology, 1995
PhD, Massachusetts Institute of Technology, 2003

Zappala, Daniel Mark Alexander

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Professor
**DEGREES:** BS, Stanford University, 1990
PhD, University of Southern California, 1997

## Assistant Professor

McCarthy, Jay

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Assistant Professor
**DEGREES:** BS, University of Massachusetts, Lowell,

PhD, Brown University,

## Teaching Professors

Barker, Joseph Cory

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Teaching Professor
**DEGREES:** BS, Brigham Young University, 1982
PhD, Brigham Young University, 1994

Rodham, Kenneth J.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Teaching Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Brigham Young University, 1992
PhD, Brigham Young University, 1995

## Associate Teaching Professor

Roper, Paul Ross

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1976
MS, Brigham Young University, 1979

## Instructor

Holladay, Seth R.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Computer Science
**RANK:** Instructor
**DEGREES:** BS, Brigham Young University, 2004
MS, Brigham Young University, 2007

**College of Physical and Mathematical Sciences Home**

**Geological Sciences Department Home**

**Majors**

- BS in Earth and Space Science Education
- BS in Geology

Emphasis (optional):

- Environmental Geology

**Minors**

- Geology
- Geology Teaching

**Course Information**

- Geology (Geol) Courses

**Faculty**

# Geological Sciences

John H. McBride, Chair
S-389 ESC, (801) 422-3918

College of Physical and Mathematical Sciences Advisement Center
N-181 ESC, (801) 422-2674
1112 TMCB, (801) 422-4214

## Admission to Degree Program

All degree programs in the Department of Geological Sciences are open enrollment. However, special limitations apply for teaching majors.

## The Discipline

Geological sciences are aimed at understanding the Earth's origin and development and the natural processes that have operated upon it and within it from the time of formation of the solar system. With the development of remote sensing technology and the exploration of the solar system by spacecraft, geological sciences have become increasingly important for understanding not only the Earth but the Moon, other planets and their moons, and small bodies that orbit the Sun.

Understanding the dynamic processes of Earth and other planets is relevant to many societal needs, such as assessment and forecasting of natural hazards, environmental change, and discovery of energy and mineral resources. Some of the diverse disciplines that can be studied in this department include general geology, plate tectonics, volcanology, geochemistry, geophysics, paleontology, environmental geology, petroleum geology, hydrogeology, paleoclimatology, and planetary geology.

## Career Opportunities

Graduates have the opportunity to work both outdoors and in the laboratory, pursuing careers in energy, mineral, and water resources or in environmental evaluation with industry, government, or consulting firms. The substantial preparation in basic sciences and mathematics also leads to a broad spectrum of teaching opportunities. Some scholarship money is available for those who pursue a geological sciences degree as a prelaw track. The most marketable terminal degree in geological sciences is the Master of Science. Starting salaries for this degree are often very competitive with those of other disciplines.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Earth and Space Science Education** (Program Outcomes)
**BS in Geology** (Program Outcomes)
**Environmental Geology Emphasis (optional)** (Program Outcomes)

**Minor in Geology**
**Minor in Geology Teaching**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS Geology

For more information see the BYU 2014–2015 Graduate Catalog.

## Global Geology Program

Each year the department provides opportunities for advanced undergraduates and graduate students to examine rocks and geological processes at some premier localities around the world. These one- to two-week field trips allow students to do mentored research projects and develop field expertise rarely available to undergraduate students. Programs that are run every four to five years include:

1. Active volcanism of Hawaii.
2. Carbonate formation in Florida and the Bahamas.
3. Tectonism and plutonism in the northeast Appalachians.

Trips to more distant localities (e.g., Italy, Alaska, India, England) have been interspersed with these recurring trips. Scholarships are available that greatly reduce the cost to students.

College of Physical and Mathematical Sciences Home

Geological Sciences Department Home

Majors

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- BS in Geology

Emphasis (optional):

- Environmental Geology

Minors

- Geology
- Geology Teaching

Course Information

- Geology (Geol) Courses

Faculty

# BS in Earth and Space Science Education (84–86 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following:

GEOL 111 : Physical Geology. (4:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Materials, structure, and surface features of the earth and the geologic processes involved in their development. Field trips and lab studies, use of aerial photos.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.
- Learn some fundamental skills in preparation to conduct research and ultimately write research papers in other classes, including:1. Using online databases (GEOREF, Web of Science) to obtain information on a particular topic.2. Using online resources (Refworks) to manage and format references.3. Reading articles in the primary geologic literature and drawing out primary information such as the topic of and article and its conclusions even if the student is not prepared (at this stage) to understand the methodology employed.4. Appreciate the need to properly format cited literature in a research paper.5. Learn the content and proper voice for the abstract of a research paper.
- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin, distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the role of human activity in climate change.
- 1. Learn or review the large scale features of the Earth's interior and exterior, including the basic features of the tectonic and hydrological systems.2. Appreciate the role of heat transfer, and in particular convection, in making both the hydrosphere and tectonosphere dynamic.

GEOL 112 : Historical Geology. (4:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 111

DESCRIPTION: Developmental history of the earth, its landforms, and life forms, emphasizing the North American continent. Field trips and lab studies.

**Course Outcomes**

- Demonstrate understanding of the fundamentals of uniformitarianism and the scientific methods for determining the relative and absolute ages of Earth materials and events.
- Demonstrate a basic understanding of the origin and historical significance of sedimentary rocks. Be able to identify common clastic and non-clastic sedimentary rock types in hand sample and on outcrop. Be able to determine the depositional environment from rock type and outcrop pattern. Understand the age and significance of Sloss' depositional sequences.
- Be able to recognize the nature and mode of fossil preservation. Be able to identify the major invertebrate fossil groups and signify the environmental significance of each. Use fossils to recognize the age of sedimentary strata.
- Demonstrate a basic knowledge of organic evolution including the key concepts of natural selection and its role in producing the fossil record. Be able to explain the evidence that led Darwin to the theory of natural selection as well as post-Darwinian discoveries.
- Understand that modern Earth is a product of the coevolution of the biosphere, lithosphere, atmosphere,

and hydrosphere over 4.6 billion years of earth history. Demonstrate knowledge of key biological, depositional, tectonic, and climatic events in the context of the geological timescale.
- Be able to decipher the geological history of an area from a geological map.
- Demonstrate mastery of a scientific concept and ability to convey that concept to a body of peers using PowerPoint and/or other professional means.

GEOL 210 : Field Studies. (3:0:9)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111 & GEOL 112

DESCRIPTION: Procedures in observing, collecting, and recording field data concerning properties of rock units.

NOTE: Contact Geological Sciences Department before April 15 for dates of upcoming August trip.

**Course Outcomes**

- Learn how to take accurate and complete field notes.Learn how to use a compass to measure strike and dip on outcrops in the field.Learn how to read topographic and geologic maps and relate the map to what you see in the field.
- Review rocks and minerals learned in earlier courses and be able to accurately identify them in the field.Understand the relationships between igneous rocks and minerals and magmatic processes.Understand the relationships between metamorphic rocks and minerals and the processes that formed them.Understand the significance of sedimentary rocks in understanding depositional systems and regional tectonics.
- Learn the basics of making a geologic map.Learn how to interpret the geology on a map to draw a geologic cross-section.Write up the results of data you collected along with your interpretation in a clear, consise manner.
- Become detailed observers of field geology
- Understand the formative processes of the geology of Utah's National Parks including Zion NP, Bryce Canyon NP, and Capitol Reef NP.
- Develop an understanding of the interelationships of stratigraphy, structural geology, and surficial processes on landscape evolution.

GEOL 411 : Geomorphology and Remote Sensing. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330

DESCRIPTION: Interpretive analysis of landforms and their geologic significance. Use of aerial/satellite images of Earth and other planets, topographic/bathymetric maps, multi-wavelength image data. Field trips.

**Course Outcomes**

- Understand the relationships between landscapes and the processes that created them
- Develop an ability to read and interpret geology and geomorphology from topographic maps, air photos, and satellite data
- Become comfortable with quantitative analyses of landforms and geomorphic processes
- Acquire an appreciation for the unique and complex way the landscapes of Earth and the planets evolved to their present-day morphologies

3. Complete two hours (four enrollments) of the following:

GEOL 491R : Geology Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Seminar on various geologic topics by guest speakers.

**Course Outcomes**

- Demonstrate familiarity with diverse topics in geological sciences addressed by a series of seminar speakers.
- Interact with geoscientists that have specialized in disciplines of interests of like-minded students.

4. Complete three courses from the following:

GEOL 100 : Dinosaurs. (3:1:2)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Hands-on examination of vertebrate fossils -- especially dinosaurs. For nonscience majors. Field trips.

**Course Outcomes**

- Be able participate in meaningful discussions on the relationships of science and religion.
- Confidently explain the relationships between deep time, the diversity of life, and plate tectonics.
- Be able to explain how science works via examples from geology and paleontology.
- Have an infectious sense of awe and wonder for today's biotic and abiotic realms as part of an ever-changing Earth.
- Using cladistic methods be able to explain the basic phylogenetic relationships within Dinosauria, including birds.

GEOL 109 : Geology of the Planets. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Origins and distinctive histories of the planets in our solar system as revealed by study of their surface features.

NOTE: For nonscience and science majors.

**Course Outcomes**

- Learn to piece together new information, draw inferences, reexamine older geological theories based only on our terrestrial experience, and formulate new theories about the way planets behave and how they originated. Finally, you may be able to propose novel ways to test these new ideas.
- Be able to reconstruct the histories of the planets, their moons, and other bodies.
- Understand the fundamental principles of geology by studying the development of the planetsin the solar system.
- Gain a greater appreciation of how our own planet functions and why it is uniquely suited for life.

GEOL 230 : Geological Communications. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111

DESCRIPTION: Introduction to writing within the discipline and designing and creating publishable geologic maps and illustrations. Tools include ArcGIS, Adobe Illustrator, and Photoshop. Student portfolio initiated.

**Course Outcomes**

- Become proficient in using the leading software tools including ArcGIS, Illustrator, Photoshop, Acrobat, and MS Excel.
- Design and create publishable geologic maps,illustrations, figures, and tables from geologic data and models.
- Analyze geologic data through basic statistical techniques and simple numerical models.
- Write concise, scientific descriptions of geologic data and illustrations.

GEOL 351 : Mineralogy. (4:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 112; Chem 105 or 111 or concurrent enrollment.

DESCRIPTION: Principles of crystallography and crystal chemistry. Physical, chemical, and crystallographic properties of minerals.

**Course Outcomes**

- Demonstrate understanding of the fundamental ideas that govern the arrangement of atoms into a crystalline structure (chemical bonding, atomic size, coordination number, polymerization of polyhedra, bond strength and bond valence, stability, etc.)
- Demonstrate a basic understanding of atomic level symmetry. Enumerate and describe the crystal systems in terms of both symmetry and unit-cell metrics, recognize symmetry elements in well-formed natural crystals, and determine crystal classes of such crystals.
- Describe the applications and limitations of important instrumental/analytical methods used in mineralogy.
- Identify specimens of the 60-70 most common minerals at least 70% of the time.
- Demonstrate an understanding of the mechanisms and implications of various mineralogical phenomena, including solid solution, exsolution, polymorphism, atomic ordering, polytypism, color, and twinning.
- Discuss the interrelationships among crystallography, composition, and the physical properties of minerals.
- Demonstrate the ability to apply principles learned to minerals not specifically encountered in the course.
- Use computer software for reduction of mineralogical data and be able to discuss its limitations.
- Demonstrate the ability to work in teams to collect and analyze mineralogical data and incorporate it into an original, high quality research paper on an assigned subject of mineralogical significance.

GEOL 352 : Petrology. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 210 & GEOL 351 & CHEM 105; or GEOL 210 & GEOL 351 & CHEM 111

DESCRIPTION: Compositions, fabrics, and field relations of igneous and metamorphic rocks; behavior of rock-forming systems. Field trips.

**Course Outcomes**

- Explain how magmas form and differentiate at divergent and convergent plate boundaries and at mantle plumes.
- Describe how metamorphic rocks form and their relationships to global tectonics.
- Identify the minerals and rock types using hand samples and thin sections of the major rock types.

GEOL 370 : Sedimentology and Stratigraphy. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 112 & GEOL 210 & GEOL 230

DESCRIPTION: Erosion; sediment entrainment, transport, and deposition; depositional systems and facies analysis; principles of stratigraphy. Field trips.

**Course Outcomes**

- Apply problem solving, critical thinking, and communication skills relative to depositional models and interpreting the stratigraphic record.
- Understand depositional systems, facies relationships, and introductory aspects of sequence stratigraphy.
- Discuss processes and forces that weather, transport, and deposit sedimentary grains under both sunaqueous and subarial conditions.
- Observe and describe sedimentary rocks objectectively. Gain the ability to communicate using appropriate scientific vocabulary.

GEOL 375 : Structural Geology. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 230 & MATH 113; Phscs 105 or concurrent enrollment.

DESCRIPTION: Geometric, kinematic, and dynamic analysis of tectonic features. Practical exercises. Using aerial photos. Field trips.

**Course Outcomes**

- My goal is for each of student to learn to become a part of the ongoing conversation about how Earth's crust deforms. This means learning the language of structural geology and using it to share the discoveries they make for themselves. Discoveries in structural geology come through applying best-fit kinematic and dynamic models to geometric reconstructions of observed geological structure. The discovery is complete when they are communicated effectively through writing, illustrations and oral presentation.
- 1. Identify and measure brittle Structure (extensional and shear fractures, fault-related folds)2. Identify and measure ductile Structure (flow folds, cleavage, foliation and rock fabrics)
- 1. Acquire reliable measurements of the geometry of structures with a compass2. Present and manipulate data using stereographic projection3. Interpret stress and kinematic histories from structural measurements4. Infer geometry of subsurface and missing parts of structures from measurements in order to construct a viable geologic cross-section.
- 1. Identify and interpret sense-of-shear indicators associated with both brittle and ductile structures in the field2. Reconstruct the deformation path of a structural feature or deformed region
- 1. Derive the normal and shear stress components for rock failure from lab data.2. Use these results to derive the constituitive equations for deformation3. Quantify the contribution of each deformational mechanism in a region.
- 1. Measure the orientation, slip rate and direction of the Wasatch Fault2. Combine these measurements with GPS and EDM results on strain accumulation rates3. Determine the most likely location and magnitude of the next large earthquake along the Wasatch Fault.
- 1. Use structural data to predict the best location to drill for water, oil and gas.2. Use structural data to predict the location of mineral resources3. Use structural data to predict the environmental impact of toxic waste disposal

GEOL 405 : Applied Mathematics in the Geological Sciences. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 113 & GEOL 111

RECOMMENDED: Geol 230.

DESCRIPTION: Provides a broad survey of mathematical methods that are relevant for geological problems. Focuses on casting geological problems in mathematical terms and solving them. Strong emphasis on setting up equations and on the quality of written solutions.

**Course Outcomes**

No outcomes are available at this time.

GEOL 435 : Introduction to Groundwater. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330; Math 110 or equivalent.

DESCRIPTION: Introduction to the occurrence, movement, and properties of subsurface water; surface and groundwater relationships.

**Course Outcomes**

- Demonstrate knowledge of the hydrologic cycle by creating a basin-scale water budget.
- Evaluate the relationship between grain size, sorting, and hydraulic conductivity using Darcy's Law.
- Produce a potentiometric surface map and water table map for a well field.
- Evaluate the relationship between mechanical energy, hydraulic head, and force potential.
- Construct a flow net to describe groundwater flow.
- Evaluate different aquifer test methods for calculating aquifer parameters.
- Evaluate different methods for estimating groundwater recharge rates.
- Describe groundwater flow paths for confined and unconfined aquifers.
- Produce a consulting-type report that synthesizes the groundwater resources, flow paths, and aquifer characteristics of a basin.

GEOL 440 : Solid Earth Geophysics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 106 & MATH 112 & GEOL 111

DESCRIPTION: Physics of the earth, including earthquake seismology. Gravity, seismic, magnetic, electrical, and heat flow properties and methods.

**Course Outcomes**

- Understand the fundamental principles of plate motions, seismic waves, gravity, magnetics, heat flow, and mantle convection
- Develop the ability to analyze processes in Earth's interior and on its surface through use of mathematics and problem solving
- Become comfortable with reading scientific papers, analyzing their content, and writing summaries of your analyses
- Acquire an appreciation for the unique and complex processes in Earth's interior and the resulting surface manifestations and implications for development of life

GEOL 445 : Geochemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 106 & CHEM 107 & GEOL 352; or CHEM 112 & GEOL 352
DESCRIPTION: Applying elementary chemical principles to understand geologic processes and materials.

**Course Outcomes**

- Students will mathematically describe geochemical fractionation, mixing, kinetics, transport, and equilibrium.
- Students will solve geochemical problems both analytically and using computer software.
- Students will improve their scientific writing skills.

GEOL 452 : Petrography to Petrogenesis. (3:2:1)

WHEN TAUGHT: Winter Odd Yrs.
PREREQUISITE: GEOL 351 & GEOL 352
DESCRIPTION: Principles of optical mineralogy and their application to the identification of minerals in thin section Petrographic analysis and its relation to rock-forming processes in igneous, metamorphic, and sedimentary rocks.

**Course Outcomes**

There are no course outcomes available

GEOL 460 : Economic and Resource Geology. (3:2:2)

WHEN TAUGHT: Winter
PREREQUISITE: GEOL 352
DESCRIPTION: Nature and genesis of metallic and non-metallic mineral deposits, including laboratory study of economic minerals. Field trips.

**Course Outcomes**

- Identify important ore-forming minerals, textures, and structures in hand sample and in the field.
- Compare and contrast the principal ore-forming processes: magmatic, hydrothermal, and sedimentary.
- Use observed characteristics of an ore deposit to develop a genetic model for its origin.
- Develop an exploration strategy for an ore deposit based on a genetic model.

GEOL 476 : Introduction to Seismic Interpretation. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: GEOL 370 & GEOL 375
DESCRIPTION: Fundamental techniques; analyzing seismic reflection data. Reviewing fundamentals of seismic trace and geologic implications. Basic mapping of subsurface structure and stratigraphy.

**Course Outcomes**

- Understand and able to explain what a reflection wavelet is. i.e. polarity, phase and amplitude
- Able to identify and interpret, using colored pencils, seismic reflectors on a set of intersecting 2D seismic lines.
- Uses geologic knowledge to infer structure and stratigraphy from seismic reflection data.
- Develop three-dimensional thinking skills.
- Able to coherently and concisely prepare and present technical presentations from:1) Scientific articles2) Seismic interpretation and research
- Generation of a hand-drawn time-structure map using the interpretation generated in Learning Outcome "2D Interpretation"
- Learning of 3D interpretation software. Able to interpret 3D data and generate digital time-structure map.

GEOL 480 : Paleontology. (3:3:2)

WHEN TAUGHT: Fall
PREREQUISITE: GEOL 112
DESCRIPTION: Distribution, morphology, paleoecology, evolution, and stratigraphic significance of organisms in the geologic record. Field trips.

**Course Outcomes**

- Demonstrate understanding of the nature of fossils and types of fossilization that turn organic remains into fossils.
- Be able to explain the incompleteness of the fossil record and the taphonomic processes that affect fossils between death and burial and burial and discovery.
- Be able to recognize the major groups of invertebrate fossils on the basis of their morphology and be able to identify key index fossils to the species level.
- Demonstrate understanding of the uses of fossils in solving geological problems: paleoenvironments, relative age, paleocology.
- Understand the role of fossils in demonstrating the patterns of evolution through time.

5. Complete one of the following options:

**Either**

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.
DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements;

reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

**Or**

CHEM 111 : Principles of Chemistry. (4:3:3)

OFFERED: Honors also.

WHEN TAUGHT: Fall

PREREQUISITE: Math 110 or equivalent.

RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.

DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.

NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

: Honors Principles of Chemistry.

**Course Outcomes**

CHEM 112 : Principles of Chemistry. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: Chem 111 or Chem 105 or equivalent.

DESCRIPTION: Continuation of Chem 111.

NOTE: Tutorial included.

**Course Outcomes**

- Students will be able to use thermodynamic principles and their application to physical and chemical equilibria to calculate entropic and enthalpic contributions to physical changes and reactions and predict equilibria given entropic and enthalpic changes.
- Students will be able to apply acid-base theory, including interactions of strong and weak acids and bases, to determination of pH values of solutions, calculating buffering capacity and performance of acid-base titrations. They will be able to use structural features of molecules to estimate acid and base strength.
- Students will demonstrate an understanding of electrochemistry in designing simple electrodes and will use reduction/oxidation potentials to characterize electrodes.
- Students will be able to apply transition state theory to reaction kinetics. Students will be able to model mathematically rates of multiple reaction types.
- Students will be able to apply the periodic nature of the elements to classify elements and identify the compositions of inorganic salts.

6. Complete the following:

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

PHIL 423 : History and Philosophy of Science. (3:3:0)

PREREQUISITE: Phy S 100 or instructor's consent; Phil 300.
DESCRIPTION: Scientific explanation, concepts, and models. Philosophical assumptions and criteria for theory selection, as exemplified by historical development of basic ideas in science.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in the history and philosophy of Western science from antiquity to the contemporary era.
- Read and critically discuss figures and texts in the philosophy of science.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of science.
- Be able to explain the practice and value of philosophy of science.

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: High school algebra and trigonometry.
RECOMMENDED: Concurrent enrollment in Phscs 107.
DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 105 or equivalent.
RECOMMENDED: Concurrent enrollment in Phscs 108.
DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 105 or concurrent enrollment.
DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 106 or concurrent enrollment
DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 127 : Descriptive Astronomy. (3:3:1)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Nonmathematical presentation of knowledge of the content and history of the cosmos, frequently using observatory and planetarium.

**Course Outcomes**

There are no course outcomes available

PHSCS 137 : Severe and Hazardous Weather. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: Phy S 100 or high school/college physics.
DESCRIPTION: Nonmathematical introduction to meteorology. Atmospheric structure and dynamic behavior, focusing on short-term violent weather and longer-term hazards: drought, floods, heat waves, cold waves, and climate change, including human environmental impact.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

7. Complete the Professional Education Component:
   - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.
DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.

- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

PHY S 276 : Exploration of Teaching. (4:4:0)

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

- Students will become familiar with the four moral dimensions of education as outlined by the McKay School of Education
- Engage in the exploration of teachers and students in the public school to come to a conclusion if teaching physical science is a career path you want to pursue.
- Complete PIBS, CDS, Field Experience Demographic forms in Mackay School date collection program.

PHY S 377 : Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHY S 276

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Using Science Standards as a quide develop Assessments, Lesson Plans, Outlines, and all parts of a unit of science instruction.
- Inquiry, Constructivism, Lab, Activities, Projects and other methods to engage students in learning. These teaching methods will be modeled and practiced by the students.
- Students will complete Transition 2 level toward teaching license.

PHY S 378 : Practicum in Secondary Education. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in Phy S 377.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- 30 practicum hours where you teach a unit of instruction with guidance public school mentor.

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.

- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or HIth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.

DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

**Note:** FBI fingerprint and background clearance must be completed before enrollment in Phy S 276.

- Complete 12 hours from one of the following:

SC ED 476R : Secondary Student-Teaching. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will put into practice the theories they have learned in content and pedagogy courses including planning lessons, assessing students of all abilities and cultural backgrounds, using a variety of instructional strategies, and collaborating with other teachers and with the community.

: Secondary Student Teaching - Art.

**Course Outcomes**

: Secondary Student Teaching - Foreign Language. (12:ARR:ARR)

**Course Outcomes**

: Secondary Student Teaching - French.

**Course Outcomes**

: Secondary Student Teaching - Mathematics.

**Course Outcomes**

: Secondary Student Teaching - Physical Science.

**Course Outcomes**

: Secondary Student Teaching - Social Science.

**Course Outcomes**

: Secondary Student Teaching - Spanish.

**Course Outcomes**

SC ED 496R : Academic Internship: Secondary Education. (12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will demonstrate that they can teach, manage, and assess content area knowledge and skills in the 7-12 classroom.
- Foster relationships with school colleagues, parents, and the larger community.

: Academic Internship: Social Sciences.

**Course Outcomes**

: Academic Internship: English.

**Course Outcomes**

: Academic Internship: Mathematics.

**Course Outcomes**

: Academic Internship: Biological Sciences.

**Course Outcomes**

: Academic Internship: Physical Sciences.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

## Show all Geological Sciences (Geol) Courses

College of Physical and Mathematical Sciences Home

Geological Sciences Department Home

Majors

- BS in Earth and Space Science Education
- BS in Geology

Emphasis (optional):

- Environmental Geology

Minors

- Geology
- Geology Teaching

Course Information

- Geology (Geol) Courses

Faculty

# BS in Geology (74–75 hours*)

Show All Course Descriptions
Hide All Course Descriptions

This basic degree in geology prepares graduates for professional employment in industry or government or for advanced studies in geology, business, or law.

## Program Requirements | View MAP | View Program Outcomes

1. No D credit is allowed in major courses.
2. Complete the following:

GEOL 111 : Physical Geology. (4:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Materials, structure, and surface features of the earth and the geologic processes involved in their development. Field trips and lab studies, use of aerial photos.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.
- Learn some fundamental skills in preparation to conduct research and ultimately write research papers in other classes, including:1. Using online databases (GEOREF, Web of Science) to obtain information on a particular topic.2. Using online resources (Refworks) to manage and format references.3. Reading articles in the primary geologic literature and drawing out primary information such as the topic of and article and its conclusions even if the student is not prepared (at this stage) to understand the methodology employed.4. Appreciate the need to properly format cited literature in a research paper.5. Learn the content and proper voice for the abstract of a research paper.
- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin, distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the role of human activity in climate change.
- 1. Learn or review the large scale features of the Earth's interior and exterior, including the basic features of the tectonic and hydrological systems.2. Appreciate the role of heat transfer, and in particular convection, in making both the hydrosphere and tectonosphere dynamic.

GEOL 112 : Historical Geology. (4:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 111

DESCRIPTION: Developmental history of the earth, its landforms, and life forms, emphasizing the North American continent. Field trips and lab studies.

**Course Outcomes**

- Demonstrate understanding of the fundamentals of uniformitarianism and the scientific methods for determining the relative and absolute ages of Earth materials and events.
- Demonstrate a basic understanding of the origin and historical significance of sedimentary rocks. Be able to identify common clastic and non-clastic sedimentary rock types in hand sample and on outcrop. Be able to determine the depositional environment from rock type and outcrop pattern. Understand the age and significance of Sloss' depositional sequences.
- Be able to recognize the nature and mode of fossil preservation. Be able to identify the major invertebrate fossil groups and signify the environmental significance of each. Use fossils to recognize the age of sedimentary strata.
- Demonstrate a basic knowledge of organic evolution including the key concepts of natural selection and its role in producing the fossil record. Be able to explain the evidence that led Darwin to the theory of natural selection as well as post-Darwinian discoveries.
- Understand that modern Earth is a product of the coevolution of the biosphere, lithosphere, atmosphere, and hydrosphere over 4.6 billion years of earth history. Demonstrate knowledge of key biological, depositional, tectonic, and climatic events in the context of the geological timescale.

- Be able to decipher the geological history of an area from a geological map.
- Demonstrate mastery of a scientific concept and ability to convey that concept to a body of peers using PowerPoint and/or other professional means.

GEOL 210 : Field Studies. (3:0:9)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111 & GEOL 112

DESCRIPTION: Procedures in observing, collecting, and recording field data concerning properties of rock units.

NOTE: Contact Geological Sciences Department before April 15 for dates of upcoming August trip.

**Course Outcomes**

- Learn how to take accurate and complete field notes.Learn how to use a compass to measure strike and dip on outcrops in the field.Learn how to read topographic and geologic maps and relate the map to what you see in the field.
- Review rocks and minerals learned in earlier courses and be able to accurately identify them in the field.Understand the relationships between igneous rocks and minerals and magmatic processes.Understand the relationships between metamorphic rocks and minerals and the processes that formed them.Understand the significance of sedimentary rocks in understanding depositional systems and regional tectonics.
- Learn the basics of making a geologic map.Learn how to interpret the geology on a map to draw a geologic cross-section.Write up the results of data you collected along with your interpretation in a clear, consise manner.
- Become detailed observers of field geology
- Understand the formative processes of the geology of Utah's National Parks including Zion NP, Bryce Canyon NP, and Capitol Reef NP.
- Develop an understanding of the interelationships of stratigraphy, structural geology, and surficial processes on landscape evolution.

GEOL 230 : Geological Communications. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111

DESCRIPTION: Introduction to writing within the discipline and designing and creating publishable geologic maps and illustrations. Tools include ArcGIS, Adobe Illustrator, and Photoshop. Student portfolio initiated.

**Course Outcomes**

- Become proficient in using the leading software tools including ArcGIS, Illustrator, Photoshop, Acrobat, and MS Excel.
- Design and create publishable geologic maps,illustrations, figures, and tables from geologic data and models.
- Analyze geologic data through basic statistical techniques and simple numerical models.
- Write concise, scientific descriptions of geologic data and illustrations.

GEOL 351 : Mineralogy. (4:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 112; Chem 105 or 111 or concurrent enrollment.

DESCRIPTION: Principles of crystallography and crystal chemistry. Physical, chemical, and crystallographic properties of minerals.

**Course Outcomes**

- Demonstrate understanding of the fundamental ideas that govern the arrangement of atoms into a crystalline structure (chemical bonding, atomic size, coordination number, polymerization of polyhedra, bond strength and bond valence, stability, etc.)
- Demonstrate a basic understanding of atomic level symmetry. Enumerate and describe the crystal systems in terms of both symmetry and unit-cell metrics, recognize symmetry elements in well-formed natural crystals, and determine crystal classes of such crystals.
- Describe the applications and limitations of important instrumental/analytical methods used in mineralogy.
- Identify specimens of the 60-70 most common minerals at least 70% of the time.
- Demonstrate an understanding of the mechanisms and implications of various mineralogical phenomena, including solid solution, exsolution, polymorphism, atomic ordering, polytypism, color, and twinning.
- Discuss the interrelationships among crystallography, composition, and the physical properties of minerals.
- Demonstrate the ability to apply principles learned to minerals not specifically encountered in the course.
- Use computer software for reduction of mineralogical data and be able to discuss its limitations.
- Demonstrate the ability to work in teams to collect and analyze mineralogical data and incorporate it into an original, high quality research paper on an assigned subject of mineralogical significance.

GEOL 352 : Petrology. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 210 & GEOL 351 & CHEM 105; or GEOL 210 & GEOL 351 & CHEM 111

DESCRIPTION: Compositions, fabrics, and field relations of igneous and metamorphic rocks; behavior of rock-forming systems. Field trips.

**Course Outcomes**

- Explain how magmas form and differentiate at divergent and convergent plate boundaries and at mantle plumes.
- Describe how metamorphic rocks form and their relationships to global tectonics.
- Identify the minerals and rock types using hand samples and thin sections of the major rock types.

GEOL 370 : Sedimentology and Stratigraphy. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 112 & GEOL 210 & GEOL 230

DESCRIPTION: Erosion; sediment entrainment, transport, and deposition; depositional systems and facies analysis; principles of stratigraphy. Field trips.

**Course Outcomes**

- Apply problem solving, critical thinking, and communication skills relative to depositional models and interpreting the stratigraphic record.
- Understand depositional systems, facies relationships, and introductory aspects of sequence stratigraphy.
- Discuss processes and forces that weather, transport, and deposit sedimentary grains under both sunaqueous and subarial conditions.
- Observe and describe sedimentary rocks objectectively. Gain the ability to communicate using appropriate scientific vocabulary.

GEOL 375 : Structural Geology. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 230 & MATH 113; Phscs 105 or concurrent enrollment.

DESCRIPTION: Geometric, kinematic, and dynamic analysis of tectonic features. Practical exercises. Using aerial photos. Field trips.

**Course Outcomes**

- My goal is for each of student to learn to become a part of the ongoing conversation about how Earth's crust deforms. This means learning the language of structural geology and using it to share the discoveries they make for themselves. Discoveries in structural geology come through applying best-fit kinematic and dynamic models to geometric reconstructions of observed geological structure. The discovery is complete when they are communicated effectively through writing, illustrations and oral presentation.
- 1. Identify and measure brittle Structure (extensional and shear fractures, fault-related folds)2. Identify and measure ductile Structure (flow folds, cleavage, foliation and rock fabrics)
- 1. Acquire reliable measurements of the geometry of structures with a compass2. Present and manipulate data using stereographic projection3. Interpret stress and kinematic histories from structural measurements4. Infer geometry of subsurface and missing parts of structures from measurements in order to construct a viable geologic cross-section.
- 1. Identify and interpret sense-of-shear indicators associated with both brittle and ductile structures in the field2. Reconstruct the deformation path of a structural feature or deformed region
- 1. Derive the normal and shear stress components for rock failure from lab data.2. Use these results to derive the constituitive equations for deformation3. Quantify the contribution of each deformational mechanism in a region.
- 1. Measure the orientation, slip rate and direction of the Wasatch Fault2. Combine these measurements with GPS and EDM results on strain accumulation rates3. Determine the most likely location and magnitude of the next large earthquake along the Wasatch Fault.
- 1. Use structural data to predict the best location to drill for water, oil and gas.2. Use structural data to predict the location of mineral resources3. Use structural data to predict the environmental impact of toxic waste disposal

GEOL 410 : Geological Field Methods. (6:0:46)

WHEN TAUGHT: Spring

PREREQUISITE: GEOL 352 & GEOL 370 & GEOL 375; Phscs 105 or concurrent enrollment.

DESCRIPTION: Methods used to observe, collect, and interpret field data in geologic and environmental investigations.

NOTE: Fee.

**Course Outcomes**

- Acquire the fundamental skills to successfully produce a geologic map.Learn how to effectively collect information on structure, stratigraphy, and rock units in the field.Construct a geologic map and cross-section from data you have collected in the field.

3. Complete 2 hours (four enrollments) of the following:

GEOL 491R : Geology Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Seminar on various geologic topics by guest speakers.

**Course Outcomes**

- Demonstrate familiarity with diverse topics in geological sciences addressed by a series of seminar speakers.
- Interact with geoscientists that have specialized in disciplines of interests of like-minded students.

4. Complete four courses from the following:

GEOL 405 : Applied Mathematics in the Geological Sciences. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 113 & GEOL 111

RECOMMENDED: Geol 230.

DESCRIPTION: Provides a broad survey of mathematical methods that are relevant for geological problems.

Focuses on casting geological problems in mathematical terms and solving them. Strong emphasis on setting up equations and on the quality of written solutions.

**Course Outcomes**

No outcomes are available at this time.

GEOL 411 : Geomorphology and Remote Sensing. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330

DESCRIPTION: Interpretive analysis of landforms and their geologic significance. Use of aerial/satellite images of Earth and other planets, topographic/bathymetric maps, multi-wavelength image data. Field trips.

**Course Outcomes**

- Understand the relationships between landscapes and the processes that created them
- Develop an ability to read and interpret geology and geomorphology from topographic maps, air photos, and satellite data
- Become comfortable with quantitative analyses of landforms and geomorphic processes
- Acquire an appreciation for the unique and complex way the landscapes of Earth and the planets evolved to their present-day morphologies

GEOL 435 : Introduction to Groundwater. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330; Math 110 or equivalent.

DESCRIPTION: Introduction to the occurrence, movement, and properties of subsurface water; surface and groundwater relationships.

**Course Outcomes**

- Demonstrate knowledge of the hydrologic cycle by creating a basin-scale water budget.
- Evaluate the relationship between grain size, sorting, and hydraulic conductivity using Darcy's Law.
- Produce a potentiometric surface map and water table map for a well field.
- Evaluate the relationship between mechanical energy, hydraulic head, and force potential.
- Construct a flow net to describe groundwater flow.
- Evaluate different aquifer test methods for calculating aquifer parameters.
- Evaluate different methods for estimating groundwater recharge rates.
- Describe groundwater flow paths for confined and unconfined aquifers.
- Produce a consulting-type report that synthesizes the groundwater resources, flow paths, and aquifer characteristics of a basin.

GEOL 440 : Solid Earth Geophysics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 106 & MATH 112 & GEOL 111

DESCRIPTION: Physics of the earth, including earthquake seismology. Gravity, seismic, magnetic, electrical, and heat flow properties and methods.

**Course Outcomes**

- Understand the fundamental principles of plate motions, seismic waves, gravity, magnetics, heat flow, and mantle convection
- Develop the ability to analyze processes in Earth's interior and on its surface through use of mathematics and problem solving
- Become comfortable with reading scientific papers, analyzing their content, and writing summaries of your analyses
- Acquire an appreciation for the unique and complex processes in Earth's interior and the resulting surface manifestations and implications for development of life

GEOL 445 : Geochemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 106 & CHEM 107 & GEOL 352; or CHEM 112 & GEOL 352

DESCRIPTION: Applying elementary chemical principles to understand geologic processes and materials.

**Course Outcomes**

- Students will mathematically describe geochemical fractionation, mixing, kinetics, transport, and equilibrium.
- Students will solve geochemical problems both analytically and using computer software.
- Students will improve their scientific writing skills.

GEOL 452 : Petrography to Petrogenesis. (3:2:1)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: GEOL 351 & GEOL 352

DESCRIPTION: Principles of optical mineralogy and their application to the identification of minerals in thin section Petrographic analysis and its relation to rock-forming processes in igneous, metamorphic, and sedimentary rocks.

**Course Outcomes**

There are no course outcomes available

GEOL 460 : Economic and Resource Geology. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 352

DESCRIPTION: Nature and genesis of metallic and non-metallic mineral deposits, including laboratory study of economic minerals. Field trips.

**Course Outcomes**

- Identify important ore-forming minerals, textures, and structures in hand sample and in the field.
- Compare and contrast the principal ore-forming processes: magmatic, hydrothermal, and sedimentary.
- Use observed characteristics of an ore deposit to develop a genetic model for its origin.
- Develop an exploration strategy for an ore deposit based on a genetic model.

GEOL 476 : Introduction to Seismic Interpretation. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 370 & GEOL 375

DESCRIPTION: Fundamental techniques; analyzing seismic reflection data. Reviewing fundamentals of seismic trace and geologic implications. Basic mapping of subsurface structure and stratigraphy.

**Course Outcomes**

- Understand and able to explain what a reflection wavelet is. i.e. polarity, phase and amplitude
- Able to identify and interpret, using colored pencils, seismic reflectors on a set of intersecting 2D seismic lines.
- Uses geologic knowledge to infer structure and stratigraphy from seismic reflection data.
- Develop three-dimensional thinking skills.
- Able to coherently and concisely prepare and present technical presentations from:1) Scientific articles2) Seismic interpretation and research
- Generation of a hand-drawn time-structure map using the interpretation generated in Learning Outcome "2D Interpretation"
- Learning of 3D interpretation software. Able to interpret 3D data and generate digital time-structure map.

GEOL 480 : Paleontology. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 112

DESCRIPTION: Distribution, morphology, paleoecology, evolution, and stratigraphic significance of organisms in the geologic record. Field trips.

**Course Outcomes**

- Demonstrate understanding of the nature of fossils and types of fossilization that turn organic remains into fossils.
- Be able to explain the incompleteness of the fossil record and the taphonomic processes that affect fossils between death and burial and burial and discovery.
- Be able to recognize the major groups of invertebrate fossils on the basis of their morphology and be able to identify key index fossils to the species level.
- Demonstrate understanding of the uses of fossils in solving geological problems: paleoenvironments, relative age, paleocology.
- Understand the role of fossils in demonstrating the patterns of evolution through time.

5. Complete one of the following options:

**Either**

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN Fall; Winter; Summer

TAUGHT:
PREREQUISITE: CHEM 105; or CHEM 111
DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.
NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.
DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.
NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

**Or**

CHEM 111 : Principles of Chemistry. (4:3:3)
OFFERED: Honors also.
WHEN TAUGHT: Fall
PREREQUISITE: Math 110 or equivalent.
RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.
DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.
NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

: Honors Principles of Chemistry.

**Course Outcomes**

CHEM 112 : Principles of Chemistry. (3:3:2)
WHEN TAUGHT: Winter
PREREQUISITE: Chem 111 or Chem 105 or equivalent.
DESCRIPTION: Continuation of Chem 111.
NOTE: Tutorial included.

**Course Outcomes**

- Students will be able to use thermodynamic principles and their application to physical and chemical equilibria to calculate entropic and enthalpic contributions to physical changes and reactions and predict equilibria given entropic and enthalpic changes.
- Students will be able to apply acid-base theory, including interactions of strong and weak acids and bases, to determination of pH values of solutions, calculating buffering capacity and performance of acid-base titrations. They will be able to use structural features of molecules to estimate acid and base strength.
- Students will demonstrate an understanding of electrochemistry in designing simple electrodes and will use reduction/oxidation potentials to characterize electrodes.
- Students will be able to apply transition state theory to reaction kinetics. Students will be able to model mathematically rates of multiple reaction types.
- Students will be able to apply the periodic nature of the elements to classify elements and identify the compositions of inorganic salts.

6. Complete the following:
ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

MATH 112 : Calculus 1. (4:5:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

PHSCS 105 : General Physics 1. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: High school algebra and trigonometry.
RECOMMENDED: Concurrent enrollment in Phscs 107.
DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 105 or equivalent.
RECOMMENDED: Concurrent enrollment in Phscs 108.
DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

7. All students are required to construct a portfolio of their work that includes samples of their writing, scientific data analysis, and presentations--both oral and written. The portfolio will be evaluated during the semester before graduation.

*Hours include courses that may fulfill university core requirements.

## Show all Geological Sciences (Geol) Courses

**College of Physical and Mathematical Sciences Home**

**Geological Sciences Department Home**

**Majors**

- BS in Earth and Space Science Education
- BS in Geology

Emphasis (optional):

- Environmental Geology

**Minors**

- Geology
- Geology Teaching

**Course Information**

- Geology (Geol) Courses

**Faculty**

# BS in Geology: Environmental Geology Emphasis (74–75 hours*)

Show All Course Descriptions
Hide All Course Descriptions

Increasing concern with environmental degradation and natural geologic hazards has led to a demand for geologists who are both well grounded in the fundamentals of the science of geology and specifically prepared to address environmental problems. This degree prepares students for careers either in the environmental services industry or government or for advanced studies.

## Program Requirements | View MAP | View Program Outcomes

1. No D credit is allowed in major courses.
2. Complete the following:

GEOL 111 : Physical Geology. (4:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Materials, structure, and surface features of the earth and the geologic processes involved in their development. Field trips and lab studies, use of aerial photos.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.
- Learn some fundamental skills in preparation to conduct research and ultimately write research papers in other classes, including:1. Using online databases (GEOREF, Web of Science) to obtain information on a particular topic.2. Using online resources (Refworks) to manage and format references.3. Reading articles in the primary geologic literature and drawing out primary information such as the topic of and article and its conclusions even if the student is not prepared (at this stage) to understand the methodology employed.4. Appreciate the need to properly format cited literature in a research paper.5. Learn the content and proper voice for the abstract of a research paper.
- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin, distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the role of human activity in climate change.
- 1. Learn or review the large scale features of the Earth's interior and exterior, including the basic features of the tectonic and hydrological systems.2. Appreciate the role of heat transfer, and in particular convection, in making both the hydrosphere and tectonosphere dynamic.

GEOL 112 : Historical Geology. (4:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 111

DESCRIPTION: Developmental history of the earth, its landforms, and life forms, emphasizing the North American continent. Field trips and lab studies.

**Course Outcomes**

- Demonstrate understanding of the fundamentals of uniformitarianism and the scientific methods for determining the relative and absolute ages of Earth materials and events.
- Demonstrate a basic understanding of the origin and historical significance of sedimentary rocks. Be able to identify common clastic and non-clastic sedimentary rock types in hand sample and on outcrop. Be able to determine the depositional environment from rock type and outcrop pattern. Understand the age and significance of Sloss' depositional sequences.
- Be able to recognize the nature and mode of fossil preservation. Be able to identify the major invertebrate fossil groups and signify the environmental significance of each. Use fossils to recognize the age of sedimentary strata.
- Demonstrate a basic knowledge of organic evolution including the key concepts of natural selection and its role in producing the fossil record. Be able to explain the evidence that led Darwin to the theory of natural selection as well as post-Darwinian discoveries.
- Understand that modern Earth is a product of the coevolution of the biosphere, lithosphere, atmosphere, and hydrosphere over 4.6 billion years of earth history. Demonstrate knowledge of key biological,

depositional, tectonic, and climatic events in the context of the geological timescale.
- Be able to decipher the geological history of an area from a geological map.
- Demonstrate mastery of a scientific concept and ability to convey that concept to a body of peers using PowerPoint and/or other professional means.

GEOL 210 : Field Studies. (3:0:9)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111 & GEOL 112

DESCRIPTION: Procedures in observing, collecting, and recording field data concerning properties of rock units.

NOTE: Contact Geological Sciences Department before April 15 for dates of upcoming August trip.

**Course Outcomes**

- Learn how to take accurate and complete field notes.Learn how to use a compass to measure strike and dip on outcrops in the field.Learn how to read topographic and geologic maps and relate the map to what you see in the field.
- Review rocks and minerals learned in earlier courses and be able to accurately identify them in the field.Understand the relationships between igneous rocks and minerals and magmatic processes.Understand the relationships between metamorphic rocks and minerals and the processes that formed them.Understand the significance of sedimentary rocks in understanding depositional systems and regional tectonics.
- Learn the basics of making a geologic map.Learn how to interpret the geology on a map to draw a geologic cross-section.Write up the results of data you collected along with your interpretation in a clear, consise manner.
- Become detailed observers of field geology
- Understand the formative processes of the geology of Utah's National Parks including Zion NP, Bryce Canyon NP, and Capitol Reef NP.
- Develop an understanding of the interelationships of stratigraphy, structural geology, and surficial processes on landscape evolution.

GEOL 230 : Geological Communications. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111

DESCRIPTION: Introduction to writing within the discipline and designing and creating publishable geologic maps and illustrations. Tools include ArcGIS, Adobe Illustrator, and Photoshop. Student portfolio initiated.

**Course Outcomes**

- Become proficient in using the leading software tools including ArcGIS, Illustrator, Photoshop, Acrobat, and MS Excel.
- Design and create publishable geologic maps,illustrations, figures, and tables from geologic data and models.
- Analyze geologic data through basic statistical techniques and simple numerical models.
- Write concise, scientific descriptions of geologic data and illustrations.

GEOL 351 : Mineralogy. (4:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 112; Chem 105 or 111 or concurrent enrollment.

DESCRIPTION: Principles of crystallography and crystal chemistry. Physical, chemical, and crystallographic properties of minerals.

**Course Outcomes**

- Demonstrate understanding of the fundamental ideas that govern the arrangement of atoms into a crystalline structure (chemical bonding, atomic size, coordination number, polymerization of polyhedra, bond strength and bond valence, stability, etc.)
- Demonstrate a basic understanding of atomic level symmetry. Enumerate and describe the crystal systems in terms of both symmetry and unit-cell metrics, recognize symmetry elements in well-formed natural crystals, and determine crystal classes of such crystals.
- Describe the applications and limitations of important instrumental/analytical methods used in mineralogy.
- Identify specimens of the 60-70 most common minerals at least 70% of the time.
- Demonstrate an understanding of the mechanisms and implications of various mineralogical phenomena, including solid solution, exsolution, polymorphism, atomic ordering, polytypism, color, and twinning.
- Discuss the interrelationships among crystallography, composition, and the physical properties of minerals.
- Demonstrate the ability to apply principles learned to minerals not specifically encountered in the course.
- Use computer software for reduction of mineralogical data and be able to discuss its limitations.
- Demonstrate the ability to work in teams to collect and analyze mineralogical data and incorporate it into an original, high quality research paper on an assigned subject of mineralogical significance.

GEOL 352 : Petrology. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 210 & GEOL 351 & CHEM 105; or GEOL 210 & GEOL 351 & CHEM 111

DESCRIPTION: Compositions, fabrics, and field relations of igneous and metamorphic rocks; behavior of rock-forming systems. Field trips.

**Course Outcomes**

- Explain how magmas form and differentiate at divergent and convergent plate boundaries and at mantle plumes.
- Describe how metamorphic rocks form and their relationships to global tectonics.

- Identify the minerals and rock types using hand samples and thin sections of the major rock types.

GEOL 370 : Sedimentology and Stratigraphy. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 112 & GEOL 210 & GEOL 230

DESCRIPTION: Erosion; sediment entrainment, transport, and deposition; depositional systems and facies analysis; principles of stratigraphy. Field trips.

**Course Outcomes**

- Apply problem solving, critical thinking, and communication skills relative to depositional models and interpreting the stratigraphic record.
- Understand depositional systems, facies relationships, and introductory aspects of sequence stratigraphy.
- Discuss processes and forces that weather, transport, and deposit sedimentary grains under both sunaqueous and subarial conditions.
- Observe and describe sedimentary rocks objectectively. Gain the ability to communicate using appropriate scientific vocabulary.

GEOL 375 : Structural Geology. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 230 & MATH 113; Phscs 105 or concurrent enrollment.

DESCRIPTION: Geometric, kinematic, and dynamic analysis of tectonic features. Practical exercises. Using aerial photos. Field trips.

**Course Outcomes**

- My goal is for each of student to learn to become a part of the ongoing conversation about how Earth's crust deforms. This means learning the language of structural geology and using it to share the discoveries they make for themselves. Discoveries in structural geology come through applying best-fit kinematic and dynamic models to geometric reconstructions of observed geological structure. The discovery is complete when they are communicated effectively through writing, illustrations and oral presentation.
- 1. Identify and measure brittle Structure (extensional and shear fractures, fault-related folds)2. Identify and measure ductile Structure (flow folds, cleavage, foliation and rock fabrics)
- 1. Acquire reliable measurements of the geometry of structures with a compass2. Present and manipulate data using stereographic projection3. Interpret stress and kinematic histories from structural measurements4. Infer geometry of subsurface and missing parts of structures from measurements in order to construct a viable geologic cross-section.
- 1. Identify and interpret sense-of-shear indicators associated with both brittle and ductile structures in the field2. Reconstruct the deformation path of a structural feature or deformed region
- 1. Derive the normal and shear stress components for rock failure from lab data.2. Use these results to derive the constituitive equations for deformation3. Quantify the contribution of each deformational mechanism in a region.
- 1. Measure the orientation, slip rate and direction of the Wasatch Fault2. Combine these measurements with GPS and EDM results on strain accumulation rates3. Determine the most likely location and magnitude of the next large earthquake along the Wasatch Fault.
- 1. Use structural data to predict the best location to drill for water, oil and gas.2. Use structural data to predict the location of mineral resources3. Use structural data to predict the environmental impact of toxic waste disposal

GEOL 410 : Geological Field Methods. (6:0:46)

WHEN TAUGHT: Spring

PREREQUISITE: GEOL 352 & GEOL 370 & GEOL 375; Phscs 105 or concurrent enrollment.

DESCRIPTION: Methods used to observe, collect, and interpret field data in geologic and environmental investigations.

NOTE: Fee.

**Course Outcomes**

- Acquire the fundamental skills to successfully produce a geologic map.Learn how to effectively collect information on structure, stratigraphy, and rock units in the field.Construct a geologic map and cross-section from data you have collected in the field.

GEOL 435 : Introduction to Groundwater. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330; Math 110 or equivalent.

DESCRIPTION: Introduction to the occurrence, movement, and properties of subsurface water; surface and groundwater relationships.

**Course Outcomes**

- Demonstrate knowledge of the hydrologic cycle by creating a basin-scale water budget.
- Evaluate the relationship between grain size, sorting, and hydraulic conductivity using Darcy's Law.
- Produce a potentiometric surface map and water table map for a well field.
- Evaluate the relationship between mechanical energy, hydraulic head, and force potential.
- Construct a flow net to describe groundwater flow.
- Evaluate different aquifer test methods for calculating aquifer parameters.
- Evaluate different methods for estimating groundwater recharge rates.
- Describe groundwater flow paths for confined and unconfined aquifers.
- Produce a consulting-type report that synthesizes the groundwater resources, flow paths, and aquifer characteristics of a basin.

GEOL 445 : Geochemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 106 & CHEM 107 & GEOL 352; or CHEM 112 & GEOL 352

DESCRIPTION: Applying elementary chemical principles to understand geologic processes and materials.

**Course Outcomes**

- Students will mathematically describe geochemical fractionation, mixing, kinetics, transport, and equilibrium.
- Students will solve geochemical problems both analytically and using computer software.
- Students will improve their scientific writing skills.

3. Complete two hours (four enrollments) of the following:

GEOL 491R : Geology Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Seminar on various geologic topics by guest speakers.

**Course Outcomes**

- Demonstrate familiarity with diverse topics in geological sciences addressed by a series of seminar speakers.
- Interact with geoscientists that have specialized in disciplines of interests of like-minded students.

4. Complete two courses from the following:

CE EN 351 : Environmental Engineering. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: CHEM 105

DESCRIPTION: Environmental concerns, problems, and evaluation methodology; pollution control and engineering management approaches; material balance and separations; reactor design.

**Course Outcomes**

- Be able to setup and solve material balance calculations for environmental engineering problems.
- Understand zero, first, and second order reactions equations and be able to solve simple problems using these concepts. Understand half-life and doubling time and how it applies to reactor design.
- Understand and solve problems using mixed-batch, plug-flow, and completely mixed mixing models. Solve simple design problems for mix-batch, plug-flow, and completly mixed flow reactors.
- Understand and solve simple problems of energy balance. This will include units of meausre, conversion, energy equivalance, and power production.
- Understand the concept of an ecosystem. This includes material and energy flows.
- Understand basic water quality measures: dissolved oxygen, oxygen demand, solids, nitrogen, and bacteria measurements. Be introduced to water quality standards for drinking water, effluents, and surface waters.
- Understand and solve basic engineering problems related to water treatment processes including softening, coagulation and floculation, settling, filtration, and disinfection.
- Understand and solve basic engineering problems related to waste water treatment. This will include understanding the basic unit operations: preliminary and primary treatment, secondary treatment, tertiary treatment, and sludge treatment and disposal. Understand and be able to solve basic engineering problems related to activated sludge systems, including reactor design and solids separation.
- Understand the basic processes and issues related to air quality, this includes major air pollutants, sources of air pollution, and air quality standards.
- Understand the basic issues and regulations related to hazardous and radioactive waste. This includes legal definitions and approaches.

GEOL 405 : Applied Mathematics in the Geological Sciences. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 113 & GEOL 111

RECOMMENDED: Geol 230.

DESCRIPTION: Provides a broad survey of mathematical methods that are relevant for geological problems. Focuses on casting geological problems in mathematical terms and solving them. Strong emphasis on setting up equations and on the quality of written solutions.

**Course Outcomes**

No outcomes are available at this time.

GEOL 411 : Geomorphology and Remote Sensing. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330

DESCRIPTION: Interpretive analysis of landforms and their geologic significance. Use of aerial/satellite images of Earth and other planets, topographic/bathymetric maps, multi-wavelength image data. Field trips.

**Course Outcomes**

- Understand the relationships between landscapes and the processes that created them
- Develop an ability to read and interpret geology and geomorphology from topographic maps, air photos, and satellite data
- Become comfortable with quantitative analyses of landforms and geomorphic processes

- Acquire an appreciation for the unique and complex way the landscapes of Earth and the planets evolved to their present-day morphologies

GEOL 440 : Solid Earth Geophysics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 106 & MATH 112 & GEOL 111

DESCRIPTION: Physics of the earth, including earthquake seismology. Gravity, seismic, magnetic, electrical, and heat flow properties and methods.

**Course Outcomes**

- Understand the fundamental principles of plate motions, seismic waves, gravity, magnetics, heat flow, and mantle convection
- Develop the ability to analyze processes in Earth's interior and on its surface through use of mathematics and problem solving
- Become comfortable with reading scientific papers, analyzing their content, and writing summaries of your analyses
- Acquire an appreciation for the unique and complex processes in Earth's interior and the resulting surface manifestations and implications for development of life

GEOL 535 : Contaminant Hydrogeology. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Geology 435 or equivalent.

DESCRIPTION: Principles, tools, and applications used to solve heavy metal, organic, and radionuclide groundwater contamination problems. Topics include regulations, mass transport, multiphase flow, transformation, retardation, and attenuation.

**Course Outcomes**

- 1. Learn the fundamental processes by which contaminants are transported in groundwater, including: diffusion, advection, and dispersion.2. Understand process that delay or limit contaminant transport, including: sorption, reaction, decay (chemical and radioactive), and colloid transport.3. Learn the fundamentals of tranport in the vadose zone, as well as multiphase flow.4. Appreciate the processes involved in the transport of inorganic (including radionuclides) and organic compounds.5. Understand the fundamental principles of ground water monitoring, site characterization, and remediation, including the major federal laws that govern such actions.

PWS 303 : Soils Conservation and Resources. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 282 & CHEM 105; or PWS 282 & CHEM 101; PWS 100 or equivalent; Math 110 or equivalent.

RECOMMENDED: Geol 111.

DESCRIPTION: Taxonomy of world soils; conservation and management of agricultural, wildland, wetland, and urban soils.

**Course Outcomes**

- Understand soil physics, chemistry, taxonomy, and water movement to maintain natural resources.
- Apply soil conservation practices and principles to regions sensitive to soil degradation.
- Understand the history, development, and terminology associated with USDA Soil Taxonomy and be familiar with other soil taxonomic systems. Recognize soil orders and suborders from the physical and chemical characteristics of the soil

5. Complete the following:

ENGL 316 : Technical Communication. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: High school algebra and trigonometry.

RECOMMENDED: Concurrent enrollment in Phscs 107.

DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Phscs 105 or equivalent.

RECOMMENDED: Concurrent enrollment in Phscs 108.

DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

6. Complete one of the following options:

**Either**

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

**Or**

CHEM 111 : Principles of Chemistry. (4:3:3)

OFFERED: Honors also.

WHEN TAUGHT: Fall

PREREQUISITE: Math 110 or equivalent.

RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.

DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.

NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.

- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

: Honors Principles of Chemistry.

**Course Outcomes**

CHEM 112 : Principles of Chemistry. (3:3:2)

WHEN TAUGHT: Winter
PREREQUISITE: Chem 111 or Chem 105 or equivalent.
DESCRIPTION: Continuation of Chem 111.
NOTE: Tutorial included.

**Course Outcomes**

- Students will be able to use thermodynamic principles and their application to physical and chemical equilibria to calculate entropic and enthalpic contributions to physical changes and reactions and predict equilibria given entropic and enthalpic changes.
- Students will be able to apply acid-base theory, including interactions of strong and weak acids and bases, to determination of pH values of solutions, calculating buffering capacity and performance of acid-base titrations. They will be able to use structural features of molecules to estimate acid and base strength.
- Students will demonstrate an understanding of electrochemistry in designing simple electrodes and will use reduction/oxidation potentials to characterize electrodes.
- Students will be able to apply transition state theory to reaction kinetics. Students will be able to model mathematically rates of multiple reaction types.
- Students will be able to apply the periodic nature of the elements to classify elements and identify the compositions of inorganic salts.

7. All students are required to construct a portfolio of their work that includes samples of their writing, scientific data analysis, and presentations--both oral and written. The porfolio will be evaluated during the semester before graduation.

*Hours include courses that may fulfill university core requirements.

## Show all Geological Sciences (Geol) Courses

**College of Physical and Mathematical Sciences Home**

**Geological Sciences Department Home**

**Majors**

- BS in Earth and Space Science Education
- BS in Geology

Emphasis (optional):

- Environmental Geology

**Minors**

- Geology
- Geology Teaching

**Course Information**

- Geology (Geol) Courses

**Faculty**

# Minor in Geology (16 hours)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. When all of the geology credit required for a minor is transferred from another school, at least one course in geology must be taken at BYU.
2. No D credit is allowed in minor courses.
3. Complete the following:

GEOL 111 : Physical Geology. (4:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Materials, structure, and surface features of the earth and the geologic processes involved in their development. Field trips and lab studies, use of aerial photos.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.
- Learn some fundamental skills in preparation to conduct research and ultimately write research papers in other classes, including:1. Using online databases (GEOREF, Web of Science) to obtain information on a particular topic.2. Using online resources (Refworks) to manage and format references.3. Reading articles in the primary geologic literature and drawing out primary information such as the topic of and article and its conclusions even if the student is not prepared (at this stage) to understand the methodology employed.4. Appreciate the need to properly format cited literature in a research paper.5. Learn the content and proper voice for the abstract of a research paper.
- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin, distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the role of human activity in climate change.
- 1. Learn or review the large scale features of the Earth's interior and exterior, including the basic features of the tectonic and hydrological systems.2. Appreciate the role of heat transfer, and in particular convection, in making both the hydrosphere and tectonosphere dynamic.

GEOL 112 : Historical Geology. (4:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 111

DESCRIPTION: Developmental history of the earth, its landforms, and life forms, emphasizing the North American continent. Field trips and lab studies.

**Course Outcomes**

- Demonstrate understanding of the fundamentals of uniformitarianism and the scientific methods for determining the relative and absolute ages of Earth materials and events.
- Demonstrate a basic understanding of the origin and historical significance of sedimentary rocks. Be able to identify common clastic and non-clastic sedimentary rock types in hand sample and on outcrop. Be able to determine the depositional environment from rock type and outcrop pattern. Understand the age and significance of Sloss' depositional sequences.
- Be able to recognize the nature and mode of fossil preservation. Be able to identify the major invertebrate fossil groups and signify the environmental significance of each. Use fossils to recognize the age of sedimentary strata.
- Demonstrate a basic knowledge of organic evolution including the key concepts of natural selection and its role in producing the fossil record. Be able to explain the evidence that led Darwin to the theory of natural selection as well as post-Darwinian discoveries.
- Understand that modern Earth is a product of the coevolution of the biosphere, lithosphere, atmosphere, and hydrosphere over 4.6 billion years of earth history. Demonstrate knowledge of key biological, depositional, tectonic, and climatic events in the context of the geological timescale.
- Be able to decipher the geological history of an area from a geological map.
- Demonstrate mastery of a scientific concept and ability to convey that concept to a body of peers using PowerPoint and/or other professional means.

4. Complete eight hours from the following:

GEOL 100 : Dinosaurs. (3:1:2)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Hands-on examination of vertebrate fossils -- especially dinosaurs. For nonscience majors. Field trips.

**Course Outcomes**

- Be able participate in meaningful discussions on the relationships of science and religion.
- Confidently explain the relationships between deep time, the diversity of life, and plate tectonics.
- Be able to explain how science works via examples from geology and paleontology.
- Have an infectious sense of awe and wonder for today's biotic and abiotic realms as part of an ever-changing Earth.
- Using cladistic methods be able to explain the basic phylogenetic relationships within Dinosauria, including birds.

GEOL 109 : Geology of the Planets. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Origins and distinctive histories of the planets in our solar system as revealed by study of their surface features.

NOTE: For nonscience and science majors.

**Course Outcomes**

- Learn to piece together new information, draw inferences, reexamine older geological theories based only on our terrestrial experience, and formulate new theories about the way planets behave and how they originated. Finally, you may be able to propose novel ways to test these new ideas.
- Be able to reconstruct the histories of the planets, their moons, and other bodies.
- Understand the fundamental principles of geology by studying the development of the planetsin the solar system.
- Gain a greater appreciation of how our own planet functions and why it is uniquely suited for life.

GEOL 210 : Field Studies. (3:0:9)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111 & GEOL 112

DESCRIPTION: Procedures in observing, collecting, and recording field data concerning properties of rock units.

NOTE: Contact Geological Sciences Department before April 15 for dates of upcoming August trip.

**Course Outcomes**

- Learn how to take accurate and complete field notes.Learn how to use a compass to measure strike and dip on outcrops in the field.Learn how to read topographic and geologic maps and relate the map to what you see in the field.
- Review rocks and minerals learned in earlier courses and be able to accurately identify them in the field.Understand the relationships between igneous rocks and minerals and magmatic processes.Understand the relationships between metamorphic rocks and minerals and the processes that formed them.Understand the significance of sedimentary rocks in understanding depositional systems and regional tectonics.
- Learn the basics of making a geologic map.Learn how to interpret the geology on a map to draw a geologic cross-section.Write up the results of data you collected along with your interpretation in a clear, consise manner.
- Become detailed observers of field geology
- Understand the formative processes of the geology of Utah's National Parks including Zion NP, Bryce Canyon NP, and Capitol Reef NP.
- Develop an understanding of the interelationships of stratigraphy, structural geology, and surficial processes on landscape evolution.

GEOL 351 : Mineralogy. (4:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 112; Chem 105 or 111 or concurrent enrollment.

DESCRIPTION: Principles of crystallography and crystal chemistry. Physical, chemical, and crystallographic properties of minerals.

**Course Outcomes**

- Demonstrate understanding of the fundamental ideas that govern the arrangement of atoms into a crystalline structure (chemical bonding, atomic size, coordination number, polymerization of polyhedra, bond strength and bond valence, stability, etc.)
- Demonstrate a basic understanding of atomic level symmetry. Enumerate and describe the crystal systems in terms of both symmetry and unit-cell metrics, recognize symmetry elements in well-formed natural crystals, and determine crystal classes of such crystals.
- Describe the applications and limitations of important instrumental/analytical methods used in mineralogy.
- Identify specimens of the 60-70 most common minerals at least 70% of the time.
- Demonstrate an understanding of the mechanisms and implications of various mineralogical phenomena, including solid solution, exsolution, polymorphism, atomic ordering, polytypism, color, and twinning.
- Discuss the interrelationships among crystallography, composition, and the physical properties of minerals.
- Demonstrate the ability to apply principles learned to minerals not specifically encountered in the course.
- Use computer software for reduction of mineralogical data and be able to discuss its limitations.
- Demonstrate the ability to work in teams to collect and analyze mineralogical data and incorporate it into an original, high quality research paper on an assigned subject of mineralogical significance.

GEOL 352 : Petrology. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 210 & GEOL 351 & CHEM 105; or GEOL 210 & GEOL 351 & CHEM 111

DESCRIPTION: Compositions, fabrics, and field relations of igneous and metamorphic rocks; behavior of rock-forming systems. Field trips.

**Course Outcomes**

- Explain how magmas form and differentiate at divergent and convergent plate boundaries and at mantle plumes.
- Describe how metamorphic rocks form and their relationships to global tectonics.
- Identify the minerals and rock types using hand samples and thin sections of the major rock types.

GEOL 370 : Sedimentology and Stratigraphy. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 112 & GEOL 210 & GEOL 230

DESCRIPTION: Erosion; sediment entrainment, transport, and deposition; depositional systems and facies analysis; principles of stratigraphy. Field trips.

**Course Outcomes**

- Apply problem solving, critical thinking, and communication skills relative to depositional models and interpreting the stratigraphic record.
- Understand depositional systems, facies relationships, and introductory aspects of sequence stratigraphy.
- Discuss processes and forces that weather, transport, and deposit sedimentary grains under both sunaqueous and subarial conditions.
- Observe and describe sedimentary rocks objectectively. Gain the ability to communicate using appropriate scientific vocabulary.

GEOL 375 : Structural Geology. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 230 & MATH 113; Phscs 105 or concurrent enrollment.

DESCRIPTION: Geometric, kinematic, and dynamic analysis of tectonic features. Practical exercises. Using aerial photos. Field trips.

**Course Outcomes**

- My goal is for each of student to learn to become a part of the ongoing conversation about how Earth's crust deforms. This means learning the language of structural geology and using it to share the discoveries they make for themselves. Discoveries in structural geology come through applying best-fit kinematic and dynamic models to geometric reconstructions of observed geological structure. The discovery is complete when they are communicated effectively through writing, illustrations and oral presentation.
- 1. Identify and measure brittle Structure (extensional and shear fractures, fault-related folds)2. Identify and measure ductile Structure (flow folds, cleavage, foliation and rock fabrics)
- 1. Acquire reliable measurements of the geometry of structures with a compass2. Present and manipulate data using stereographic projection3. Interpret stress and kinematic histories from structural measurements4. Infer geometry of subsurface and missing parts of structures from measurements in order to construct a viable geologic cross-section.
- 1. Identify and interpret sense-of-shear indicators associated with both brittle and ductile structures in the field2. Reconstruct the deformation path of a structural feature or deformed region
- 1. Derive the normal and shear stress components for rock failure from lab data.2. Use these results to derive the constituitive equations for deformation3. Quantify the contribution of each deformational mechanism in a region.
- 1. Measure the orientation, slip rate and direction of the Wasatch Fault2. Combine these measurements with GPS and EDM results on strain accumulation rates3. Determine the most likely location and magnitude of the next large earthquake along the Wasatch Fault.
- 1. Use structural data to predict the best location to drill for water, oil and gas.2. Use structural data to predict the location of mineral resources3. Use structural data to predict the environmental impact of toxic waste disposal

GEOL 405 : Applied Mathematics in the Geological Sciences. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 113 & GEOL 111

RECOMMENDED: Geol 230.

DESCRIPTION: Provides a broad survey of mathematical methods that are relevant for geological problems. Focuses on casting geological problems in mathematical terms and solving them. Strong emphasis on setting up equations and on the quality of written solutions.

**Course Outcomes**

No outcomes are available at this time.

GEOL 411 : Geomorphology and Remote Sensing. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330

DESCRIPTION: Interpretive analysis of landforms and their geologic significance. Use of aerial/satellite images of Earth and other planets, topographic/bathymetric maps, multi-wavelength image data. Field

trips.

**Course Outcomes**

- Understand the relationships between landscapes and the processes that created them
- Develop an ability to read and interpret geology and geomorphology from topographic maps, air photos, and satellite data
- Become comfortable with quantitative analyses of landforms and geomorphic processes
- Acquire an appreciation for the unique and complex way the landscapes of Earth and the planets evolved to their present-day morphologies

GEOL 435 : Introduction to Groundwater. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330; Math 110 or equivalent.

DESCRIPTION: Introduction to the occurrence, movement, and properties of subsurface water; surface and groundwater relationships.

**Course Outcomes**

- Demonstrate knowledge of the hydrologic cycle by creating a basin-scale water budget.
- Evaluate the relationship between grain size, sorting, and hydraulic conductivity using Darcy's Law.
- Produce a potentiometric surface map and water table map for a well field.
- Evaluate the relationship between mechanical energy, hydraulic head, and force potential.
- Construct a flow net to describe groundwater flow.
- Evaluate different aquifer test methods for calculating aquifer parameters.
- Evaluate different methods for estimating groundwater recharge rates.
- Describe groundwater flow paths for confined and unconfined aquifers.
- Produce a consulting-type report that synthesizes the groundwater resources, flow paths, and aquifer characteristics of a basin.

GEOL 440 : Solid Earth Geophysics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 106 & MATH 112 & GEOL 111

DESCRIPTION: Physics of the earth, including earthquake seismology. Gravity, seismic, magnetic, electrical, and heat flow properties and methods.

**Course Outcomes**

- Understand the fundamental principles of plate motions, seismic waves, gravity, magnetics, heat flow, and mantle convection
- Develop the ability to analyze processes in Earth's interior and on its surface through use of mathematics and problem solving
- Become comfortable with reading scientific papers, analyzing their content, and writing summaries of your analyses
- Acquire an appreciation for the unique and complex processes in Earth's interior and the resulting surface manifestations and implications for development of life

GEOL 445 : Geochemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 106 & CHEM 107 & GEOL 352; or CHEM 112 & GEOL 352

DESCRIPTION: Applying elementary chemical principles to understand geologic processes and materials.

**Course Outcomes**

- Students will mathematically describe geochemical fractionation, mixing, kinetics, transport, and equilibrium.
- Students will solve geochemical problems both analytically and using computer software.
- Students will improve their scientific writing skills.

GEOL 452 : Petrography to Petrogenesis. (3:2:1)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: GEOL 351 & GEOL 352

DESCRIPTION: Principles of optical mineralogy and their application to the identification of minerals in thin section Petrographic analysis and its relation to rock-forming processes in igneous, metamorphic, and sedimentary rocks.

**Course Outcomes**

There are no course outcomes available

GEOL 460 : Economic and Resource Geology. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 352

DESCRIPTION: Nature and genesis of metallic and non-metallic mineral deposits, including laboratory study of economic minerals. Field trips.

**Course Outcomes**

- Identify important ore-forming minerals, textures, and structures in hand sample and in the field.
- Compare and contrast the principal ore-forming processes: magmatic, hydrothermal, and sedimentary.

Use observed characteristics of an ore deposit to develop a genetic model for its origin.
- Develop an exploration strategy for an ore deposit based on a genetic model.

GEOL 480 : Paleontology. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 112

DESCRIPTION: Distribution, morphology, paleoecology, evolution, and stratigraphic significance of organisms in the geologic record. Field trips.

**Course Outcomes**

- Demonstrate understanding of the nature of fossils and types of fossilization that turn organic remains into fossils.
- Be able to explain the incompleteness of the fossil record and the taphonomic processes that affect fossils between death and burial and burial and discovery.
- Be able to recognize the major groups of invertebrate fossils on the basis of their morphology and be able to identify key index fossils to the species level.
- Demonstrate understanding of the uses of fossils in solving geological problems: paleoenvironments, relative age, paleocology.
- Understand the role of fossils in demonstrating the patterns of evolution through time.

## Show all Geological Sciences (Geol) Courses

**College of Physical and Mathematical Sciences Home**

**Geological Sciences Department Home**

**Majors**

- BS in Earth and Space Science Education
- BS in Geology

  Emphasis (optional):
  - Environmental Geology

**Minors**

- Geology
- Geology Teaching

**Course Information**

- Geology (Geol) Courses

**Faculty**

# Minor in Geology Teaching (20-21 hours)

Show All Course Descriptions
Hide All Course Descriptions

*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. When all of the geology credit required for a minor is transferred from another school, at least one course in geology must be taken at BYU.
2. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
3. Complete the following:

GEOL 111 : Physical Geology. (4:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Materials, structure, and surface features of the earth and the geologic processes involved in their development. Field trips and lab studies, use of aerial photos.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.
- Learn some fundamental skills in preparation to conduct research and ultimately write research papers in other classes, including:1. Using online databases (GEOREF, Web of Science) to obtain information on a particular topic.2. Using online resources (Refworks) to manage and format references.3. Reading articles in the primary geologic literature and drawing out primary information such as the topic of and article and its conclusions even if the student is not prepared (at this stage) to understand the methodology employed.4. Appreciate the need to properly format cited literature in a research paper.5. Learn the content and proper voice for the abstract of a research paper.
- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin, distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the role of human activity in climate change.
- 1. Learn or review the large scale features of the Earth's interior and exterior, including the basic features of the tectonic and hydrological systems.2. Appreciate the role of heat transfer, and in particular convection, in making both the hydrosphere and tectonosphere dynamic.

GEOL 112 : Historical Geology. (4:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 111

DESCRIPTION: Developmental history of the earth, its landforms, and life forms, emphasizing the North American continent. Field trips and lab studies.

**Course Outcomes**

- Demonstrate understanding of the fundamentals of uniformitarianism and the scientific methods for determining the relative and absolute ages of Earth materials and events.
- Demonstrate a basic understanding of the origin and historical significance of sedimentary rocks. Be able to identify common clastic and non-clastic sedimentary rock types in hand sample and on outcrop. Be able to determine the depositional environment from rock type and outcrop pattern. Understand the age and significance of Sloss' depositional sequences.
- Be able to recognize the nature and mode of fossil preservation. Be able to identify the major invertebrate fossil groups and signify the environmental significance of each. Use fossils to recognize the age of sedimentary strata.
- Demonstrate a basic knowledge of organic evolution including the key concepts of natural selection and

its role in producing the fossil record. Be able to explain the evidence that led Darwin to the theory of natural selection as well as post-Darwinian discoveries.
- Understand that modern Earth is a product of the coevolution of the biosphere, lithosphere, atmosphere, and hydrosphere over 4.6 billion years of earth history. Demonstrate knowledge of key biological, depositional, tectonic, and climatic events in the context of the geological timescale.
- Be able to decipher the geological history of an area from a geological map.
- Demonstrate mastery of a scientific concept and ability to convey that concept to a body of peers using PowerPoint and/or other professional means.

PHY S 377 : Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHY S 276

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Using Science Standards as a quide develop Assessments, Lesson Plans, Outlines, and all parts of a unit of science instruction.
- Inquiry, Constructivism, Lab, Activities, Projects and other methods to engage students in learning. These teaching methods will be modeled and practiced by the students.
- Students will complete Transition 2 level toward teaching license.

4. Complete three courses from the following:

GEOL 100 : Dinosaurs. (3:1:2)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Hands-on examination of vertebrate fossils -- especially dinosaurs. For nonscience majors. Field trips.

**Course Outcomes**

- Be able participate in meaningful discussions on the relationships of science and religion.
- Confidently explain the relationships between deep time, the diversity of life, and plate tectonics.
- Be able to explain how science works via examples from geology and paleontology.
- Have an infectious sense of awe and wonder for today's biotic and abiotic realms as part of an ever-changing Earth.
- Using cladistic methods be able to explain the basic phylogenetic relationships within Dinosauria, including birds.

GEOL 109 : Geology of the Planets. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Origins and distinctive histories of the planets in our solar system as revealed by study of their surface features.

NOTE: For nonscience and science majors.

**Course Outcomes**

- Learn to piece together new information, draw inferences, reexamine older geological theories based only on our terrestrial experience, and formulate new theories about the way planets behave and how they originated. Finally, you may be able to propose novel ways to test these new ideas.
- Be able to reconstruct the histories of the planets, their moons, and other bodies.
- Understand the fundamental principles of geology by studying the development of the planetsin the solar system.
- Gain a greater appreciation of how our own planet functions and why it is uniquely suited for life.

GEOL 210 : Field Studies. (3:0:9)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111 & GEOL 112

DESCRIPTION: Procedures in observing, collecting, and recording field data concerning properties of rock units.

NOTE: Contact Geological Sciences Department before April 15 for dates of upcoming August trip.

**Course Outcomes**

- Learn how to take accurate and complete field notes.Learn how to use a compass to measure strike and dip on outcrops in the field.Learn how to read topographic and geologic maps and relate the map to what you see in the field.
- Review rocks and minerals learned in earlier courses and be able to accurately identify them in the field.Understand the relationships between igneous rocks and minerals and magmatic processes.Understand the relationships between metamorphic rocks and minerals and the processes that formed them.Understand the significance of sedimentary rocks in understanding depositional systems and regional tectonics.
- Learn the basics of making a geologic map.Learn how to interpret the geology on a map to draw a geologic cross-section.Write up the results of data you collected along with your interpretation in a clear, consise manner.
- Become detailed observers of field geology
- Understand the formative processes of the geology of Utah's National Parks including Zion NP, Bryce Canyon NP, and Capitol Reef NP.
- Develop an understanding of the interelationships of stratigraphy, structural geology, and surficial processes on landscape evolution.

GEOL 351 : Mineralogy. (4:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 112; Chem 105 or 111 or concurrent enrollment.

DESCRIPTION: Principles of crystallography and crystal chemistry. Physical, chemical, and crystallographic properties of minerals.

**Course Outcomes**

- Demonstrate understanding of the fundamental ideas that govern the arrangement of atoms into a crystalline structure (chemical bonding, atomic size, coordination number, polymerization of polyhedra, bond strength and bond valence, stability, etc.)
- Demonstrate a basic understanding of atomic level symmetry. Enumerate and describe the crystal systems in terms of both symmetry and unit-cell metrics, recognize symmetry elements in well-formed natural crystals, and determine crystal classes of such crystals.
- Describe the applications and limitations of important instrumental/analytical methods used in mineralogy.
- Identify specimens of the 60-70 most common minerals at least 70% of the time.
- Demonstrate an understanding of the mechanisms and implications of various mineralogical phenomena, including solid solution, exsolution, polymorphism, atomic ordering, polytypism, color, and twinning.
- Discuss the interrelationships among crystallography, composition, and the physical properties of minerals.
- Demonstrate the ability to apply principles learned to minerals not specifically encountered in the course.
- Use computer software for reduction of mineralogical data and be able to discuss its limitations.
- Demonstrate the ability to work in teams to collect and analyze mineralogical data and incorporate it into an original, high quality research paper on an assigned subject of mineralogical significance.

GEOL 352 : Petrology. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 210 & GEOL 351 & CHEM 105; or GEOL 210 & GEOL 351 & CHEM 111

DESCRIPTION: Compositions, fabrics, and field relations of igneous and metamorphic rocks; behavior of rock-forming systems. Field trips.

**Course Outcomes**

- Explain how magmas form and differentiate at divergent and convergent plate boundaries and at mantle plumes.
- Describe how metamorphic rocks form and their relationships to global tectonics.
- Identify the minerals and rock types using hand samples and thin sections of the major rock types.

GEOL 370 : Sedimentology and Stratigraphy. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 112 & GEOL 210 & GEOL 230

DESCRIPTION: Erosion; sediment entrainment, transport, and deposition; depositional systems and facies analysis; principles of stratigraphy. Field trips.

**Course Outcomes**

- Apply problem solving, critical thinking, and communication skills relative to depositional models and interpreting the stratigraphic record.
- Understand depositional systems, facies relationships, and introductory aspects of sequence stratigraphy.
- Discuss processes and forces that weather, transport, and deposit sedimentary grains under both sunaqueous and subarial conditions.
- Observe and describe sedimentary rocks objectectively. Gain the ability to communicate using appropriate scientific vocabulary.

GEOL 375 : Structural Geology. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 230 & MATH 113; Phscs 105 or concurrent enrollment.

DESCRIPTION: Geometric, kinematic, and dynamic analysis of tectonic features. Practical exercises. Using aerial photos. Field trips.

**Course Outcomes**

- My goal is for each of student to learn to become a part of the ongoing conversation about how Earth's crust deforms. This means learning the language of structural geology and using it to share the discoveries they make for themselves. Discoveries in structural geology come through applying best-fit kinematic and dynamic models to geometric reconstructions of observed geological structure. The discovery is complete when they are communicated effectively through writing, illustrations and oral presentation.
- 1. Identify and measure brittle Structure (extensional and shear fractures, fault-related folds)2. Identify and measure ductile Structure (flow folds, cleavage, foliation and rock fabrics)
- 1. Acquire reliable measurements of the geometry of structures with a compass2. Present and manipulate data using stereographic projection3. Interpret stress and kinematic histories from structural measurements4. Infer geometry of subsurface and missing parts of structures from measurements in order to construct a viable geologic cross-section.
- 1. Identify and interpret sense-of-shear indicators associated with both brittle and ductile structures in the field2. Reconstruct the deformation path of a structural feature or deformed region
- 1. Derive the normal and shear stress components for rock failure from lab data.2. Use these results to derive the constituitive equations for deformation3. Quantify the contribution of each deformational mechanism in a region.
- 1. Measure the orientation, slip rate and direction of the Wasatch Fault2. Combine these measurements with GPS and EDM results on strain accumulation rates3. Determine the most likely location and magnitude of the next large earthquake along the Wasatch Fault.
- 1. Use structural data to predict the best location to drill for water, oil and gas.2. Use structural data to

predict the location of mineral resources3. Use structural data to predict the environmental impact of toxic waste disposal

GEOL 405 : Applied Mathematics in the Geological Sciences. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 113 & GEOL 111

RECOMMENDED: Geol 230.

DESCRIPTION: Provides a broad survey of mathematical methods that are relevant for geological problems. Focuses on casting geological problems in mathematical terms and solving them. Strong emphasis on setting up equations and on the quality of written solutions.

**Course Outcomes**

No outcomes are available at this time.

GEOL 411 : Geomorphology and Remote Sensing. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330

DESCRIPTION: Interpretive analysis of landforms and their geologic significance. Use of aerial/satellite images of Earth and other planets, topographic/bathymetric maps, multi-wavelength image data. Field trips.

**Course Outcomes**

- Understand the relationships between landscapes and the processes that created them
- Develop an ability to read and interpret geology and geomorphology from topographic maps, air photos, and satellite data
- Become comfortable with quantitative analyses of landforms and geomorphic processes
- Acquire an appreciation for the unique and complex way the landscapes of Earth and the planets evolved to their present-day morphologies

GEOL 435 : Introduction to Groundwater. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330; Math 110 or equivalent.

DESCRIPTION: Introduction to the occurrence, movement, and properties of subsurface water; surface and groundwater relationships.

**Course Outcomes**

- Demonstrate knowledge of the hydrologic cycle by creating a basin-scale water budget.
- Evaluate the relationship between grain size, sorting, and hydraulic conductivity using Darcy's Law.
- Produce a potentiometric surface map and water table map for a well field.
- Evaluate the relationship between mechanical energy, hydraulic head, and force potential.
- Construct a flow net to describe groundwater flow.
- Evaluate different aquifer test methods for calculating aquifer parameters.
- Evaluate different methods for estimating groundwater recharge rates.
- Describe groundwater flow paths for confined and unconfined aquifers.
- Produce a consulting-type report that synthesizes the groundwater resources, flow paths, and aquifer characteristics of a basin.

GEOL 440 : Solid Earth Geophysics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 106 & MATH 112 & GEOL 111

DESCRIPTION: Physics of the earth, including earthquake seismology. Gravity, seismic, magnetic, electrical, and heat flow properties and methods.

**Course Outcomes**

- Understand the fundamental principles of plate motions, seismic waves, gravity, magnetics, heat flow, and mantle convection
- Develop the ability to analyze processes in Earth’s interior and on its surface through use of mathematics and problem solving
- Become comfortable with reading scientific papers, analyzing their content, and writing summaries of your analyses
- Acquire an appreciation for the unique and complex processes in Earth’s interior and the resulting surface manifestations and implications for development of life

GEOL 445 : Geochemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 106 & CHEM 107 & GEOL 352; or CHEM 112 & GEOL 352

DESCRIPTION: Applying elementary chemical principles to understand geologic processes and materials.

**Course Outcomes**

- Students will mathematically describe geochemical fractionation, mixing, kinetics, transport, and equilibrium.
- Students will solve geochemical problems both analytically and using computer software.
- Students will improve their scientific writing skills.

GEOL 452 : Petrography to Petrogenesis. (3:2:1)

WHEN TAUGHT: Winter Odd Yrs.
PREREQUISITE: GEOL 351 & GEOL 352
DESCRIPTION: Principles of optical mineralogy and their application to the identification of minerals in thin section Petrographic analysis and its relation to rock-forming processes in igneous, metamorphic, and sedimentary rocks.

**Course Outcomes**

There are no course outcomes available

GEOL 460 : Economic and Resource Geology. (3:2:2)

WHEN TAUGHT: Winter
PREREQUISITE: GEOL 352
DESCRIPTION: Nature and genesis of metallic and non-metallic mineral deposits, including laboratory study of economic minerals. Field trips.

**Course Outcomes**

- Identify important ore-forming minerals, textures, and structures in hand sample and in the field.
- Compare and contrast the principal ore-forming processes: magmatic, hydrothermal, and sedimentary.
- Use observed characteristics of an ore deposit to develop a genetic model for its origin.
- Develop an exploration strategy for an ore deposit based on a genetic model.

GEOL 480 : Paleontology. (3:3:2)

WHEN TAUGHT: Fall
PREREQUISITE: GEOL 112
DESCRIPTION: Distribution, morphology, paleoecology, evolution, and stratigraphic significance of organisms in the geologic record. Field trips.

**Course Outcomes**

- Demonstrate understanding of the nature of fossils and types of fossilization that turn organic remains into fossils.
- Be able to explain the incompleteness of the fossil record and the taphonomic processes that affect fossils between death and burial and burial and discovery.
- Be able to recognize the major groups of invertebrate fossils on the basis of their morphology and be able to identify key index fossils to the species level.
- Demonstrate understanding of the uses of fossils in solving geological problems: paleoenvironments, relative age, paleocology.
- Understand the role of fossils in demonstrating the patterns of evolution through time.

## Show all Geological Sciences (Geol) Courses

College of Physical and Mathematical Sciences Home

Geological Sciences Department Home

Majors

- BS in Earth and Space Science Education
- BS in Geology

Emphasis (optional):

- Environmental Geology

Minors

- Geology
- Geology Teaching

Course Information

- Geology (Geol) Courses

Faculty

# Geological Sciences (Geol) Courses

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

GEOL 100 : Dinosaurs. (3:1:2)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Hands-on examination of vertebrate fossils -- especially dinosaurs. For nonscience majors. Field trips.

**Course Outcomes**

- Be able participate in meaningful discussions on the relationships of science and religion.
- Confidently explain the relationships between deep time, the diversity of life, and plate tectonics.
- Be able to explain how science works via examples from geology and paleontology.
- Have an infectious sense of awe and wonder for today's biotic and abiotic realms as part of an ever-changing Earth.
- Using cladistic methods be able to explain the basic phylogenetic relationships within Dinosauria, including birds.

GEOL 101 : Introduction to Geology. (3:2:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Cultural focus on physical and environmental geology for nonscience majors; rocks and minerals. Field trips.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- 1. Understand the difference between minerals and rocks.2. Be able to identify common rocks and minerals.3. Know where and when the basic rock and mineral types form and how they are related to the hydrologic and tectonic systems.
- 1. Understand how the hydrologic system helps to shape the Earth and how the different sub-systems interact.2. Learn the reasons for climate change in both ancient and modern times.
- 1. Learn the basic evidences and ideas that support the Theory of Plate Tectonics.2. Understand how the plate tectonic system works, including the role of the different types of plate boundaries and the forces that help to drive the system.3. Learn how the plate tectonic system has helped to shape the Earth's surface.
- 1. Gain a greater insight into the enormous length of geologic time and the evidences that support this claim.2. Learn the different ways that scientists can determine geologic ages.
- Learn how and why the other planets and moons in our solar system are different from Earth.

GEOL 102 : Geological Field Studies. (3:6:0)

WHEN TAUGHT: Fall Contact Department; Summer Contact Department

DESCRIPTION: Outdoor examination of geological processes via afternoon canyon hikes and other hands-on activities.

NOTE: For nonscience majors. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- 1. Understand the difference between minerals and rocks.2. Be able to identify common rocks and minerals.3. Know where and when the basic rock and mineral types form and how they are related to the hydrologic and tectonic systems.
- 1. Understand how the hydrologic system helps to shape the Earth and how the different sub-systems interact.2. Learn the reasons for climate change in both ancient and modern times.
- 1. Learn the basic evidences and ideas that support the Theory of Plate Tectonics.2. Understand how the plate tectonic system works, including the role of the different types of plate boundaries and the forces that help to drive the system.3. Learn how the plate tectonic system has helped to shape the Earth's surface.
- 1. Gain a greater insight into the enormous length of geologic time and the evidences that support this claim.2. Learn the different ways that scientists can determine geologic ages.

GEOL 103 : Life of the Past. (3:2:1)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Cultural focus on historical geology for nonscience majors; fossils. Field trips.

**Course Outcomes**

There are no course outcomes available

GEOL 108 : Climate and the Earth System. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Chemical, physical, and biological processes shaping the Earth's surface and climate, emphasizing quantitative methods for measuring and evaluating contemporary climate and environmental changes relative to the last several thousand years.

**Course Outcomes**

There are no course outcomes available

GEOL 109 : Geology of the Planets. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Origins and distinctive histories of the planets in our solar system as revealed by study of their surface features.

NOTE: For nonscience and science majors.

**Course Outcomes**

- Learn to piece together new information, draw inferences, reexamine older geological theories based only on our terrestrial experience, and formulate new theories about the way planets behave and how they originated. Finally, you may be able to propose novel ways to test these new ideas.
- Be able to reconstruct the histories of the planets, their moons, and other bodies.
- Understand the fundamental principles of geology by studying the development of the planetsin the solar system.
- Gain a greater appreciation of how our own planet functions and why it is uniquely suited for life.

GEOL 110 : Geological Science Laboratory. (1:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: GEOL 101

DESCRIPTION: Minerals, rocks, and landforms; the use of topographic and geologic maps; the interpretation of aerial photos.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks. Demonstrate this by completing lab activities treating this subject.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory. Successfully complete lab activities that elucidate these concepts.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.
- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin, distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the role of human activity in climate change.6.Complete lab activities that demonstrate the relationship between geological processes and human activities.

GEOL 111 : Physical Geology. (4:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Materials, structure, and surface features of the earth and the geologic processes involved in their development. Field trips and lab studies, use of aerial photos.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.
- Learn some fundamental skills in preparation to conduct research and ultimately write research papers in other classes, including:1. Using online databases (GEOREF, Web of Science) to obtain information on a particular topic.2. Using online resources (Refworks) to manage and format references.3. Reading articles in the primary geologic literature and drawing out primary information such as the topic of and article and its conclusions even if the student is not prepared (at this stage) to understand the methodology employed.4. Appreciate the need to properly format cited literature in a research paper.5. Learn the content and proper voice for the abstract of a research paper.
- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin, distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the role of human activity in climate change.
- 1. Learn or review the large scale features of the Earth's interior and exterior, including the basic features of the tectonic and hydrological systems.2. Appreciate the role of heat transfer, and in particular convection, in making both the hydrosphere and tectonosphere dynamic.

GEOL 112 : Historical Geology. (4:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 111

DESCRIPTION: Developmental history of the earth, its landforms, and life forms, emphasizing the North American continent. Field trips and lab studies.

**Course Outcomes**

- Demonstrate understanding of the fundamentals of uniformitarianism and the scientific methods for determining the relative and absolute ages of Earth materials and events.
- Demonstrate a basic understanding of the origin and historical significance of sedimentary rocks. Be able to identify common clastic and non-clastic sedimentary rock types in hand sample and on outcrop. Be able to determine the depositional environment from rock type and outcrop pattern. Understand the age and significance of Sloss' depositional sequences.
- Be able to recognize the nature and mode of fossil preservation. Be able to identify the major invertebrate fossil groups and signify the environmental significance of each. Use fossils to recognize the age of sedimentary strata.
- Demonstrate a basic knowledge of organic evolution including the key concepts of natural selection and its role in producing the fossil record. Be able to explain the evidence that led Darwin to the theory of natural selection as well as post-Darwinian discoveries.
- Understand that modern Earth is a product of the coevolution of the biosphere, lithosphere, atmosphere, and hydrosphere over 4.6 billion years of earth history. Demonstrate knowledge of key biological, depositional, tectonic, and climatic events in the context of the geological timescale.
- Be able to decipher the geological history of an area from a geological map.
- Demonstrate mastery of a scientific concept and ability to convey that concept to a body of peers using PowerPoint and/or other professional means.

### 200-Level Courses

GEOL 210 : Field Studies. (3:0:9)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111 & GEOL 112

DESCRIPTION: Procedures in observing, collecting, and recording field data concerning properties of rock units.

NOTE: Contact Geological Sciences Department before April 15 for dates of upcoming August trip.

**Course Outcomes**

- Learn how to take accurate and complete field notes.Learn how to use a compass to measure strike and dip on outcrops in the field.Learn how to read topographic and geologic maps and relate the map to what you see in the field.
- Review rocks and minerals learned in earlier courses and be able to accurately identify them in the field.Understand the relationships between igneous rocks and minerals and magmatic processes.Understand the relationships between metamorphic rocks and minerals and the processes that formed them.Understand the significance of sedimentary rocks in understanding depositional systems and regional tectonics.
- Learn the basics of making a geologic map.Learn how to interpret the geology on a map to draw a geologic cross-section.Write up the results of data you collected along with your interpretation in a clear, consise manner.
- Become detailed observers of field geology
- Understand the formative processes of the geology of Utah's National Parks including Zion NP, Bryce Canyon NP, and Capitol Reef NP.
- Develop an understanding of the interelationships of stratigraphy, structural geology, and surficial processes on landscape evolution.

GEOL 230 : Geological Communications. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111

DESCRIPTION: Introduction to writing within the discipline and designing and creating publishable geologic maps and illustrations. Tools include ArcGIS, Adobe Illustrator, and Photoshop. Student portfolio initiated.

**Course Outcomes**

- Become proficient in using the leading software tools including ArcGIS, Illustrator, Photoshop, Acrobat, and MS Excel.
- Design and create publishable geologic maps,illustrations, figures, and tables from geologic data and models.
- Analyze geologic data through basic statistical techniques and simple numerical models.
- Write concise, scientific descriptions of geologic data and illustrations.

### 300-Level Courses

GEOL 330 : Geology for Engineers. (3:2:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Geological processes and materials bearing on engineering practices. Field trips.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.4. Understand the structural and engineering aspects of these materials.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.3. Understand geological hazards and engineering concerns related to the operation of the tectonic system.
- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin, distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the

role of human activity in climate change.

GEOL 351 : Mineralogy. (4:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 112; Chem 105 or 111 or concurrent enrollment.

DESCRIPTION: Principles of crystallography and crystal chemistry. Physical, chemical, and crystallographic properties of minerals.

**Course Outcomes**

- Demonstrate understanding of the fundamental ideas that govern the arrangement of atoms into a crystalline structure (chemical bonding, atomic size, coordination number, polymerization of polyhedra, bond strength and bond valence, stability, etc.)
- Demonstrate a basic understanding of atomic level symmetry. Enumerate and describe the crystal systems in terms of both symmetry and unit-cell metrics, recognize symmetry elements in well-formed natural crystals, and determine crystal classes of such crystals.
- Describe the applications and limitations of important instrumental/analytical methods used in mineralogy.
- Identify specimens of the 60-70 most common minerals at least 70% of the time.
- Demonstrate an understanding of the mechanisms and implications of various mineralogical phenomena, including solid solution, exsolution, polymorphism, atomic ordering, polytypism, color, and twinning.
- Discuss the interrelationships among crystallography, composition, and the physical properties of minerals.
- Demonstrate the ability to apply principles learned to minerals not specifically encountered in the course.
- Use computer software for reduction of mineralogical data and be able to discuss its limitations.
- Demonstrate the ability to work in teams to collect and analyze mineralogical data and incorporate it into an original, high quality research paper on an assigned subject of mineralogical significance.

GEOL 352 : Petrology. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 210 & GEOL 351 & CHEM 105; or GEOL 210 & GEOL 351 & CHEM 111

DESCRIPTION: Compositions, fabrics, and field relations of igneous and metamorphic rocks; behavior of rock-forming systems. Field trips.

**Course Outcomes**

- Explain how magmas form and differentiate at divergent and convergent plate boundaries and at mantle plumes.
- Describe how metamorphic rocks form and their relationships to global tectonics.
- Identify the minerals and rock types using hand samples and thin sections of the major rock types.

GEOL 370 : Sedimentology and Stratigraphy. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 112 & GEOL 210 & GEOL 230

DESCRIPTION: Erosion; sediment entrainment, transport, and deposition; depositional systems and facies analysis; principles of stratigraphy. Field trips.

**Course Outcomes**

- Apply problem solving, critical thinking, and communication skills relative to depositional models and interpreting the stratigraphic record.
- Understand depositional systems, facies relationships, and introductory aspects of sequence stratigraphy.
- Discuss processes and forces that weather, transport, and deposit sedimentary grains under both sunaqueous and subarial conditions.
- Observe and describe sedimentary rocks objectectively. Gain the ability to communicate using appropriate scientific vocabulary.

GEOL 375 : Structural Geology. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 230 & MATH 113; Phscs 105 or concurrent enrollment.

DESCRIPTION: Geometric, kinematic, and dynamic analysis of tectonic features. Practical exercises. Using aerial photos. Field trips.

**Course Outcomes**

- My goal is for each of student to learn to become a part of the ongoing conversation about how Earth's crust deforms. This means learning the language of structural geology and using it to share the discoveries they make for themselves. Discoveries in structural geology come through applying best-fit kinematic and dynamic models to geometric reconstructions of observed geological structure. The discovery is complete when they are communicated effectively through writing, illustrations and oral presentation.
- 1. Identify and measure brittle Structure (extensional and shear fractures, fault-related folds)2. Identify and measure ductile Structure (flow folds, cleavage, foliation and rock fabrics)
- 1. Acquire reliable measurements of the geometry of structures with a compass2. Present and manipulate data using stereographic projection3. Interpret stress and kinematic histories from structural measurements4. Infer geometry of subsurface and missing parts of structures from measurements in order to construct a viable geologic cross-section.
- 1. Identify and interpret sense-of-shear indicators associated with both brittle and ductile structures in the field2. Reconstruct the deformation path of a structural feature or deformed region
- 1. Derive the normal and shear stress components for rock failure from lab data.2. Use these results to derive the constituitive equations for deformation3. Quantify the contribution of each deformational mechanism in a region.
- 1. Measure the orientation, slip rate and direction of the Wasatch Fault2. Combine these measurements with GPS and EDM results on strain accumulation rates3. Determine the most likely location and magnitude of the next large earthquake along the Wasatch Fault.
- 1. Use structural data to predict the best location to drill for water, oil and gas.2. Use structural data to predict the location of mineral resources3. Use structural data to predict the environmental impact of toxic waste disposal

GEOL 399R : Academic Internship. (.5-9:0:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

- Gain experience in a real world work or research lab that will strengthen your understanding of the concepts learned in class.

### 400-Level Courses

GEOL 405 : Applied Mathematics in the Geological Sciences. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 113 & GEOL 111

RECOMMENDED: Geol 230.

DESCRIPTION: Provides a broad survey of mathematical methods that are relevant for geological problems. Focuses on casting geological problems in mathematical terms and solving them. Strong emphasis on setting up equations and on the quality of written solutions.

**Course Outcomes**

No outcomes are available at this time.

GEOL 410 : Geological Field Methods. (6:0:46)

WHEN TAUGHT: Spring

PREREQUISITE: GEOL 352 & GEOL 370 & GEOL 375; Phscs 105 or concurrent enrollment.

DESCRIPTION: Methods used to observe, collect, and interpret field data in geologic and environmental investigations.

NOTE: Fee.

**Course Outcomes**

- Acquire the fundamental skills to successfully produce a geologic map.Learn how to effectively collect information on structure, stratigraphy, and rock units in the field.Construct a geologic map and cross-section from data you have collected in the field.

GEOL 411 : Geomorphology and Remote Sensing. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330

DESCRIPTION: Interpretive analysis of landforms and their geologic significance. Use of aerial/satellite images of Earth and other planets, topographic/bathymetric maps, multi-wavelength image data. Field trips.

**Course Outcomes**

- Understand the relationships between landscapes and the processes that created them
- Develop an ability to read and interpret geology and geomorphology from topographic maps, air photos, and satellite data
- Become comfortable with quantitative analyses of landforms and geomorphic processes
- Acquire an appreciation for the unique and complex way the landscapes of Earth and the planets evolved to their present-day morphologies

GEOL 430 : Senior Thesis. (3:ARR:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: GEOL 352 & GEOL 370 & GEOL 375

DESCRIPTION: Faculty-supervised research on a project of limited scope. Project is chosen and completed by the student. Written and oral presentation of findings required.

**Course Outcomes**

- 1. Gain a greater understanding of your area of interest by working on a mentored research project under the supervision of a faculty member.2. Learn better writing and communication skills by compiling your research into a senior thesis.

GEOL 435 : Introduction to Groundwater. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111; or GEOL 330; Math 110 or equivalent.

DESCRIPTION: Introduction to the occurrence, movement, and properties of subsurface water; surface and groundwater relationships.

**Course Outcomes**

- Demonstrate knowledge of the hydrologic cycle by creating a basin-scale water budget.
- Evaluate the relationship between grain size, sorting, and hydraulic conductivity using Darcy's Law.
- Produce a potentiometric surface map and water table map for a well field.
- Evaluate the relationship between mechanical energy, hydraulic head, and force potential.
- Construct a flow net to describe groundwater flow.
- Evaluate different aquifer test methods for calculating aquifer parameters.
- Evaluate different methods for estimating groundwater recharge rates.
- Describe groundwater flow paths for confined and unconfined aquifers.
- Produce a consulting-type report that synthesizes the groundwater resources, flow paths, and aquifer characteristics of a basin.

GEOL 440 : Solid Earth Geophysics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 106 & MATH 112 & GEOL 111

DESCRIPTION: Physics of the earth, including earthquake seismology. Gravity, seismic, magnetic, electrical, and heat flow properties and methods.

**Course Outcomes**

- Understand the fundamental principles of plate motions, seismic waves, gravity, magnetics, heat flow, and mantle convection
- Develop the ability to analyze processes in Earth's interior and on its surface through use of mathematics and problem solving
- Become comfortable with reading scientific papers, analyzing their content, and writing summaries of your analyses
- Acquire an appreciation for the unique and complex processes in Earth's interior and the resulting surface manifestations and implications for development of life

GEOL 445 : Geochemistry. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHEM 106 & CHEM 107 & GEOL 352; or CHEM 112 & GEOL 352

DESCRIPTION: Applying elementary chemical principles to understand geologic processes and materials.

**Course Outcomes**

- Students will mathematically describe geochemical fractionation, mixing, kinetics, transport, and equilibrium.
- Students will solve geochemical problems both analytically and using computer software.
- Students will improve their scientific writing skills.

GEOL 452 : Petrography to Petrogenesis. (3:2:1)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: GEOL 351 & GEOL 352

DESCRIPTION: Principles of optical mineralogy and their application to the identification of minerals in thin section Petrographic analysis and its relation to rock-forming processes in igneous, metamorphic, and sedimentary rocks.

**Course Outcomes**

There are no course outcomes available

GEOL 460 : Economic and Resource Geology. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 352

DESCRIPTION: Nature and genesis of metallic and non-metallic mineral deposits, including laboratory study of economic minerals. Field trips.

**Course Outcomes**

- Identify important ore-forming minerals, textures, and structures in hand sample and in the field.
- Compare and contrast the principal ore-forming processes: magmatic, hydrothermal, and sedimentary.
- Use observed characteristics of an ore deposit to develop a genetic model for its origin.
- Develop an exploration strategy for an ore deposit based on a genetic model.

GEOL 476 : Introduction to Seismic Interpretation. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 370 & GEOL 375

DESCRIPTION: Fundamental techniques; analyzing seismic reflection data. Reviewing fundamentals of seismic trace and geologic implications. Basic mapping of subsurface structure and stratigraphy.

**Course Outcomes**

- Understand and able to explain what a reflection wavelet is. i.e. polarity, phase and amplitude
- Able to identify and interpret, using colored pencils, seismic reflectors on a set of intersecting 2D seismic lines.
- Uses geologic knowledge to infer structure and stratigraphy from seismic reflection data.
- Develop three-dimensional thinking skills.
- Able to coherently and concisely prepare and present technical presentations from:1) Scientific articles2) Seismic interpretation and research
- Generation of a hand-drawn time-structure map using the interpretation generated in Learning Outcome "2D Interpretation"
- Learning of 3D interpretation software. Able to interpret 3D data and generate digital time-structure map.

GEOL 480 : Paleontology. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 112

DESCRIPTION: Distribution, morphology, paleoecology, evolution, and stratigraphic significance of organisms in the geologic record. Field trips.

**Course Outcomes**

Demonstrate understanding of the nature of fossils and types of fossilization that turn organic remains into fossils.
- Be able to explain the incompleteness of the fossil record and the taphonomic processes that affect fossils between death and burial and burial and discovery.
- Be able to recognize the major groups of invertebrate fossils on the basis of their morphology and be able to identify key index fossils to the species level.
- Demonstrate understanding of the uses of fossils in solving geological problems: paleoenvironments, relative age, paleocology.
- Understand the role of fossils in demonstrating the patterns of evolution through time.

GEOL 490R : Short Courses. (.5-3:ARR:0)

WHEN TAUGHT: Contact Department. Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Short, undergraduate-level courses and extended field trips offered on an irregular basis.

NOTE: Fee.

**Course Outcomes**

- Gain a greater understanding of a particular geologic topic.

GEOL 491R : Geology Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Seminar on various geologic topics by guest speakers.

**Course Outcomes**

- Demonstrate familiarity with diverse topics in geological sciences addressed by a series of seminar speakers.
- Interact with geoscientists that have specialized in disciplines of interests of like-minded students.

GEOL 492R : Career Pathways Seminar. (.5:1:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Seminar on graduate school and career opportunities by guest speakers.

**Course Outcomes**

There are no course outcomes available

GEOL 497R : Geological Research. (.5-4:Arr.:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Supervisor's consent.

DESCRIPTION: Conducting original research under faculty supervision. Project must be approved before registration or starting project.

**Course Outcomes**

- Learn research methods and techniques through faculty mentored research.

GEOL 499R : Honors Thesis. (.5-6:ARR:ARR)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

- 1. Be able to design a scientific study that involves the collection, analysis, and interpretation of data.
- Complete a thesis that describes and contextualizes original observational and/or theoretical work in the geosciences.
- 1. Be able to frame a scientific problem within the current literature on that subject.2. Be able to conduct a search for publications on a particular topic.
- 1. Demonstrate competence in data collections.2. Become familiar with the analytic techniques germaine to the Honor's thesis.
- Learn some fundamental skills in preparation to conduct research and ultimately write research papers in other classes, including:1. Using online databases (GEOREF, Web of Science) to obtain information on a particular topic.2. Using online resources (Refworks) to manage and format references.3. Reading articles in the primary geologic literature and drawing out primary information such as the topic of and article and its conclusions even if the student is not prepared (at this stage) to understand the methodology employed.4. Appreciate the need to properly format cited literature in a research paper.5. Learn the content and proper voice for the abstract of a research paper.

## 500-Level Graduate Courses (available to advanced undergraduates)

GEOL 500 : (Geol-Chem-C S-Math-MthEd-Phscs-Stat) Business Career Essentials in Science and Math. (1.5:1.5:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction for science, math, and statistics majors to careers in industry. Project planning, oral and written business presentations, business accounting, and technology readiness.

**Course Outcomes**

- Demonstrate knowledge of business skills needed to function as a scientist working in industry.Be able to explain how corporate politics can affect your career.
- Learn how to present concepts and ideas in a clear and effective manner in both oral and written form.

Learn to read and understand corporate accounting statements and data and understand the basic ideas of project and portfolio management.Learn the steps to moving an idea from concept to completion in a business setting.

GEOL 504R : Global Geology Field Studies. (1-3:Arr.:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Any senior-level geology course; instructor's consent.

DESCRIPTION: In-depth study of classic geologic localities, such as Hawaii, the Bahamas, and the Appalachians, preliminary to on-site field study.

**Course Outcomes**

No outcomes are available at this time.

GEOL 521 : Borehole Geophysics and Geology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Instructor's consent.

RECOMMENDED: Phscs 105, 106, Geol 351, 370; or equivalents.

DESCRIPTION: Applied well log analysis, including conventional and new techniques. Subsurface geology and lithology determined from many logs. Determining porosity, permeability, and fluid saturation with hydrology, and hydrocarbon applications.

**Course Outcomes**

- Understand the theoretical basis of well-logging tools that recover information about subsurface rocks and their fluids.
- Be able to interpret the results of well-logging operations.
- Have real-world experiences in classroom and outdoor “lab” settings that will mimic a professional environment.

GEOL 525 : Petroleum Systems Analysis. (4:4:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Geol 370 or equivalent.

DESCRIPTION: Properties of petroleum; exploration methods; generation and migration of hydrocarbons, reservoirs, traps, and seals; sedimentary basin classification; energy resources. Extended field trip required.

**Course Outcomes**

- Understand the 5 critical ingredients of any petroleum accumulation. Understand to a basic level how these 5 criteria are risked in an economicic evaluation of any proposed well. Understand the dynamics and interconnectivity of a petroleum system.
- Understand the variety of conventional and non-conventional resource plays. Understand some of the technologies required to produce these resources.
- Investigate and present to peers the hydrocarbon system of a significant petroleum field or play.
- Understand sedimentary basin types as dictated by their tectonic setting. Under, to a basic level, the hydrocarbon potential of these various basins and the variables that determine their potential or lack of potential. Understand the importance of looking for the exception to the rule.

GEOL 530 : Geological Communications Laboratory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Instructor's consent; graduate status.

DESCRIPTION: Designing and creating a variety of student-selected geological illustrations emphasizing maps and cross-sections.

**Course Outcomes**

- Become proficient in using the leading software tools including ArcGIS, Illustrator, Photoshop, Acrobat, and MS Excel.
- Design and create publishable geologic maps, illustrations, figures, and tables from geologic data and models.
- Analyze geologic data through basic statistical techniques and simple numerical models.
- Write concise, scientific descriptions of geologic data, illustrations, and analyses.

GEOL 531 : Geoscience Data Analysis. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Stat 121 or equivalent.

DESCRIPTION: Basic scientific computing skills in MATLAB, and application of statistical and numerical modeling techniques to geoscientific problems.

**Course Outcomes**

There are no course outcomes available

GEOL 535 : Contaminant Hydrogeology. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Geology 435 or equivalent.

DESCRIPTION: Principles, tools, and applications used to solve heavy metal, organic, and radionuclide groundwater contamination problems. Topics include regulations, mass transport, multiphase flow, transformation, retardation, and attenuation.

**Course Outcomes**

- 1. Learn the fundamental processes by which contaminants are transported in groundwater, including:

diffusion, advection, and dispersion.2. Understand process that delay or limit contaminant transport, including: sorption, reaction, decay (chemical and radioactive), and colloid transport.3. Learn the fundamentals of tranport in the vadose zone, as well as multiphase flow.4. Appreciate the processes involved in the transport of inorganic (including radionuclides) and organic compounds.5. Understand the fundamental principles of ground water monitoring, site characterization, and remediation, including the major federal laws that govern such actions.

GEOL 540 : Principles of Glaciology. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Geophysical problems involving ice in the environment and its role in global change. Topics include atmospheric ice, snow pack, glaciers, ice sheets, sea ice, permafrost, and ice age theories.

**Course Outcomes**

- Describe the components of the cryosphere, their geographical extent, and their physical and chemical properties.
- Apply principles of physics and chemistry to quantify the formation of ice in the environment, mass and energy budgets of cryospheric components, dynamics of large ice masses, and the processes and rates of landscape evolution that result from ice dynamics.
- Evaluate the role of the cryospheric components in global environmental change and discuss the importance of cryospheric change on society.
- Demonstrate the ability to quantify cryospheric formation, dynamics, sensitivities, and interactions through rigorous numerical problem sets and laboratory exercises.
- Demonstrate the ability to work in teams to collect and analyze glaciological data, incorporate it into an original, high quality research poster on a student-chosen topic of significance, and present the research and results orally in a poster session.

GEOL 545 : Isotope Geochemistry-High Temperature Applications. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: Geol 352 or equivalent.

DESCRIPTION: Use of stable and radioactive isotope systematics in geochronology in investigation of the origins of igneous and metamorphic rocks and in the study of tectonics.

**Course Outcomes**

There are no course outcomes available

GEOL 546 : Isotope Geochemistry-Low Temperature Applications. (3:2:Arr)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Geol 445 or equivalent.

RECOMMENDED: Geol 435.

DESCRIPTION: Use of stable, radioactive, and radiogenic isotope systematics in geochronology and in investigation of the origins of fluid, sediment, and organic matters in low temperature settings.

**Course Outcomes**

There are no course outcomes available

GEOL 550 : Environmental Soil Chemistry. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: Chem 105, 106, 107; or equivalents.

DESCRIPTION: Chemistry of soil systems at macroscopic and microscopic scales, examined from the perspective of scientists interested in environmental assessment and remediation.

**Course Outcomes**

- Students will competently organize and write a scientific report.
- Students will demonstrate the ability to apply fundamental chemical principles (equilibrium, kinetics, redox) to soil systems.
- Students will demonstrate familiarity with the identity and behavior of the main chemical species that control soil-chemical conditions.
- Students will demonstrate knowledge of environmental impacts of soil contamination, and associated remediation strategies.

GEOL 551 : Advanced Mineralogy. (3:2:2)

WHEN TAUGHT: Winter Contact Department

PREREQUISITE: Geol 351 or equivalent.

DESCRIPTION: Crystallography, structure, and crystal chemistry of major silicate mineral groups.

**Course Outcomes**

There are no course outcomes available

GEOL 552 : Igneous Petrology. (3:4:3)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: Geol 352 or equivalent.

DESCRIPTION: Origin and evolution of magmas, emphasizing trace element and isotopic compositions and intensive properties as calculated from mineral compositions.

**Course Outcomes**

- Identify the nature and causes of volcanic eruptions.
- Understand the link between tectonic setting and igneous rock composition.
- Explain how mineral compositions can be used to deduce intensive parameters
- Understand the use of analytical equipment and interpretation of analytical data
- Develop quantitative skills using calculations in a spreadsheet to model igneous processes.
- Refine ability to make oral and written presentations.

GEOL 553 : Metamorphic Petrology. (3:2:1)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: GEOL 352

DESCRIPTION: Principles of metamorphism, including chemical equilibrium and thermodynamics of metamorphic reactions, geothermobarometery, origin and interpretation of zoned metamorphic minerals, pressure-temperature paths, and metamorphism of pelites, mafic, ultramafic and carbonate rocks. Additional subjects based on interest of the students.

**Course Outcomes**

No outcomes are available at this time.

GEOL 555 : Volcanoes and Ore Deposits. (1-3:Arr:Arr)

WHEN TAUGHT: Fall Contact Department

PREREQUISITE: Geol 352 or equivalent.

DESCRIPTION: Examination of the role of volcanic rocks and processes in the generation of ore deposits.

**Course Outcomes**

There are no course outcomes available

GEOL 560 : Reflection Seismology Theory (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Instructor's consent.

RECOMMENDED: Geol 375, Phscs 105, 106; or equivalents.

DESCRIPTION: Principles, tools, and methods used in seismic geophysics, with exploration, engineering, environmental, and hydrological applications.

**Course Outcomes**

- Introduction tothe seismic method, especially for the reflection case.
- Provide a quantitative and theoreticalunderstanding of how the seismic method operates.
- Enable students to comprehend how reflection data are acquired, processed, and interpreted.
- Process seismic reflection data acquired by USGS/ BYU using state-of-the-art tools.

GEOL 561 : Geophysical Field Methods. (3:3:0)

WHEN TAUGHT: Fall Contact Department

PREREQUISITE: Instructor's consent.

RECOMMENDED: Geol 375, Phscs 105, 106; or equivalents.

DESCRIPTION: Geophysical data acquisition processing and computer-assisted interpretation, emphasizing field deployment techniques, use of commercial data processing, and visualization software.

**Course Outcomes**

- Become expert at using an exploration seismograph and ground-penetrating radar (GPR) for subsurface surveying.
- Be able to design and supervise a seismic/GPR survey.
- Have real-world experiences in mostly outdoor “lab” settings that will mimic a professional environment.
- Become acquainted with basic data processing and modeling software tools.

GEOL 565R : Special Topics in Geology. (.5-4:ARR:ARR)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: Instructor's consent.

DESCRIPTION: The following topics may be offered on demand: geology for teachers, ore deposits, solid-water interface chemistry, X-ray crystallography.

**Course Outcomes**

- Demonstrate competence in a specific topic within the geological sciences.

GEOL 571 : Sedimentology and Ecology of Modern Carbonate Systems. (1-3:Arr:Arr)

WHEN TAUGHT: Winter Contact Department

PREREQUISITE: Geol 370 or equivalent.

DESCRIPTION: Field course in the Caribbean emphasizing factors that produce carbonate sediments. Investigation of tidal flat to off-shore barrier reef environments and Pleistocene outcrops.

**Course Outcomes**

There are no course outcomes available

GEOL 574 : Advanced Stratigraphy. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: Geol 370 or equivalent.

RECOMMENDED: Geol 480.

DESCRIPTION: Studying the stratigraphic record through modern methods of correlating stratal packages, emphasizing concepts of sequence and seismic stratigraphy, and utilizing methods of chronostratigraphy, biostratigraphy, lithostratigraphy, and absolute dating. Extended field trip required.

**Course Outcomes**

- Understand the vocabulary and fundemental concepts of sequence stratigraphy as they apply to outcrop, core, and seismic sections. Understand how the fundementals of these concepts change when working in siliciclastic depositional systems as compared to carbonate depositional systems.
- A basic understanding of the stratigraphic record and the stratigraphic methods that researchers use to understand Earth history through strata. These methods include biostratigraphy, lithostratigraphy, magnetostratigraphy, seismic stratigraphy, and sequence/chronostratigraphy. The student should understand the fragmentary nature of the straigraphic record and the importance of recognizing hiatuses and unconformities.
- Students will demonstrate their understanding by working through problems associated with field trips to outcrops and core repositories. A term presentation on the sequence or seismic stratigraphy of a given unit of rock is given to further demonstrate that understanding.

GEOL 575 : Advanced Structural Geology. (3:2:3)

WHEN TAUGHT: Winter

PREREQUISITE: Geol 375, 410; or equivalents.

DESCRIPTION: In-depth discussions of a variety of topics in structural geology, emphasizing current literature and problems.

**Course Outcomes**

- 1. Use primarily the scientific literature to discover various deformational features and mechanisms at a variety of spatial and temporal scales2. Use analog and numerical models to investigate how rocks and regions deform

GEOL 576 : Three-Dimensional Subsurface Mapping and Evaluation. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 476

DESCRIPTION: Advanced interpretation of 3D seismic reflection data. Integrating well and seismic data to interpret complex geologic systems. Implications for understanding hydrocarbon reservoirs.

**Course Outcomes**

- Ability to relate basic well log information to seismic character and reflections.
- Improvement of team interaction skills to understand that teamwork yields greater insights. i.e "the sum is greater than the addition of the parts"
- Able to coherently and concisely prepare and present technical presentations from:1) Scientific articles2) Seismic interpretation and research
- 1) Interpretation of assigned 3D dataset(s):2) Ability to determine structural and stratigraphic history/timing.
- Able to effectively:define project objectivesdefine timelines for deliverablesmanage time and effort to deliver/report project results

GEOL 580 : Principles of Paleontology. (3:3:0)

WHEN TAUGHT: Winter Contact Department

PREREQUISITE: Geol 480 or equivalent.

DESCRIPTION: Modern approaches to fossil study applied to areas of evolution, paleoecology, and biostratigraphy.

**Course Outcomes**

No outcomes are available at this time.

GEOL 586 : Vertebrate Paleontology. (4:3:2)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: Instructor's consent.

DESCRIPTION: Paleobiology, osteology, and phylogeny of the vertebrates. Field trips required. Lab studies.

**Course Outcomes**

- Demonstrate your understanding of how science works by writing a four page history of paleontological methodologies, including contributions of significant scientists, and how the methods evolved from the early 1800's to present.
- Understand (1) the goals of taphonomy, (2) the basics elements of how to conduct a taphonomic analysis of a vertebrate site, and (3) the process of perminerization.
- Be able to identify (1) the bones in an amniote skeleton, and(2) the major histologic components of bone.
- (1) Understand core principles of phylogenetic systematics, (2) be able to interpret and construct cladograms, and (3), be able to explain to a peer the derived diagnostic osteologic characters for major vertebrate clades, (i.e., Craniata, Tetrapoda, Amniota, Sauropsida, Diapsida, and so on).
- Be able to locate, collect, document, and interpret fossils in the field and curate specimens once in a repository with a level of competence equal to that of an entry-level field technician.
- Be able to explain to a biology graduate the impact of plate tectonics on biodiversity though deep time using examples from the fossil record and extant mammals.
- Be able participate in meaningful discussions on the relationships of science and religion.

GEOL 590R : Short Courses. (1-3:3:3)

WHEN TAUGHT: Contact Department. Fall; Winter; Spring; Summer

DESCRIPTION: Short graduate-level courses offered on a random basis.

NOTE: Fee.

**Course Outcomes**

- Demonstrate competence in a specific topic within the geological sciences, to be specified by the instructor.

GEOL 591R : Seminar. (.5:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Seminar on various geologic topics by guest speakers.

NOTE: Total of 1 credit hour required.

**Course Outcomes**

- Demonstrate familiarity with diverse topics in geological sciences addressed by a series of seminar speakers.

GEOL 592R : Career Pathways Seminar. (.5:1:0)

WHEN TAUGHT: Fall Even Yrs.; Winter Contact Department

DESCRIPTION: Seminar on graduate school and career opportunities by guest speakers.

**Course Outcomes**

There are no course outcomes available

GEOL 599R : Academic Internship. (1-9:0:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

- Gain experience in a real world work or research lab that will strengthen your understanding of the concepts learned in class.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Geological Sciences Department Home**

**College of Physical and Mathematical Sciences Home**

**Geological Sciences Department Home**

**Majors**

- BS in Earth and Space Science Education
- BS in Geology

Emphasis (optional):

- Environmental Geology

**Minors**

- Geology
- Geology Teaching

**Course Information**

- Geology (Geol) Courses

**Faculty**

# Geological Sciences Faculty

Show All
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## Professors

Bickmore, Barry R.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1994
PhD, Virginia Polytechnic Inst, 1999

Christiansen, Eric H.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
ScM, Brown University, 1981
PhD, Arizona State University, 1981

Harris, Ron

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, University of Oregon, 1982
MS, University of Alaska, Fairbanks, 1985
PhD, University of London, 1989

Keith, Jeffrey Davis

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
MS, University of Wisconsin, Madison, 1980
PhD, University of Wisconsin, Madison, 1982

Kowallis, Bart J.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1977
MS, University of Wisconsin, Madison, 1979
PhD, University of Wisconsin, Madison, 1981

McBride, John Henry

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, University of Arkansas, 1978
MS, University of Arkansas, 1980
PhD, Cornell University, 1987

Morris, Thomas H.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, University of Wisconsin, Madison, 1983
PhD, University of Wisconsin, Madison, 1986

Nelson, Stephen Tracy

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1984
MS, Brigham Young University, 1987
PhD, University of California, Los Angeles, 1991

Ritter, Scott M.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, Brigham Young University, 1983
PhD, University of Wisconsin, 1986

## Associate Professors

Britt, Brooks Bradley

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1982
MS, Brigham Young University, 1987
PhD, University of Calgary, 1993

Radebaugh, Jani

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MS, Brigham Young University, 1999
PhD, University of Arizona, 2005

Rupper, Summer

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 2000
MS, University of Washington, 2003
PhD, University of Washington, Seattle, 2007

## Assistant Professor

Carling, Gregory T.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2005
MS, Brigham Young University, 2007
PhD, University of Utah, 2012

## Associate Teaching Professor

Skinner, Malcolm R.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1996

## Research Professors

Dorais, Michael John

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Research Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, University of Oregon, 1983
PhD, University of Georgia, 1987

Tingey, David G.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Geological Sciences
**RANK:** Research Professor
**DEGREES:** BS, Brigham Young University, 1983
MS, Brigham Young University, 1989

## Emeriti

Baer, James L.
Best, Myron G.
Griffen, Dana
Hintze, Lehi F.
Mayo, Alan L.
Miller, Wade
Petersen, Morris S.
Phillips, W. Revell

**College of Physical and Mathematical Sciences Home**

**Mathematics Department Home**

**Majors**

- BS in Mathematics

  Emphasis (optional):
  - Applied and Computational Mathematics

**Minors**

- Mathematics

**Course Information**

- Mathematics (Math) Courses

**Faculty**

# Mathematics

Robin Roundy, Chair
279 TMCB, (801) 422-1747

College of Physical and Mathematical Sciences Advisement Center
N-179 ESC, (801) 422-6270

## Admission to Degree Program

The degree program in the Department of Mathematics is open enrollment.

## The Discipline

Mathematics is a means of dealing with order, pattern, and number as seen in the world around us. The abilities to compute, to think logically, and to take a reasoned approach to solving problems are highly valued in society and are characteristics of any educated person. Mathematics is not just a body of knowledge, but a process of analysis, reasoning, comparison, deduction, generalization, and problem solving.

A mathematician's stock in trade is the ability to solve problems and to explain the solutions to others. Having once determined what the right questions are, solving problems involves analyzing both concrete and abstract situations, relating them to mathematical ideas, and using mathematical techniques to work toward solutions. Explaining the solution involves pointing out what has been solved and why the solution is valid.

## Career Opportunities

Majors in mathematics (BS) prepare for a wide variety of careers. Some enter graduate school or professional schools and prepare for careers in such fields as college teaching, consulting, research and development, law, medicine, and business administration. Others take positions in government agencies, industrial laboratories, information management firms, or business organizations. All of them spend much time communicating with colleagues about the problems they are solving as they continue to learn more mathematics and share mathematical ideas with others.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Mathematics** (Program Outcomes)
**Applied and Computational Mathematics Emphasis (optional)** (Program Outcomes)

**Minor in Mathematics**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Mathematics
PhD in Mathematics

For more information see the BYU 2014–2015 Graduate Catalog.

## Advisement

Students whose grade point average is less than a B in Math 112, 113, 290, 313 and 314 need to realize that advanced courses require much more depth of understanding and may be difficult for them. All students are encouraged to meet regularly with a faculty advisor.

Students who are considering graduate work in mathematics may also receive advice from the graduate coordinator.

## General Information

1. It is recommended that a student complete the following courses in high school:
    - 4 units of English
    - 1 unit of physics or chemistry.
    - 4 units of mathematics, including 2.5 units of algebra, 1 unit of geometry, and .5 unit of trigonometry. This qualifies a student to begin college mathematics with Math 112. If calculus is available in high school, a student planning to major in mathematics is strongly encouraged to take it; doing so requires completing one of the preceding algebra units before high school.
    - Advanced Placement (AP) credit is available in mathematics as follows:
        - A score of 3 on the calculus AB exam gives credit in Math 110 and 111; a score of 4 or 5 on the calculus AB exam gives credit in Math 110 and 112.
        - A score of 3 on the calculus BC exam gives credit in Math 110 and 111; a score of 4 on the calculus BC exam gives credit in Math 110 and 112; a score of 5 on the calculus BC exam gives credit in Math 112 and 113.
        - An AP student without credit in Math 112 must begin with Math 112; an AP student without credit in Math 113 must begin with Math 112 or 113.
    - AP students should direct Educational Testing Service (ETS) to report scores to BYU to have credit posted.

Questions regarding placement should be directed to the Mathematics Department, 292 TMCB.

College of Physical and Mathematical Sciences Home

Mathematics Department Home

Majors

- BS in Mathematics

Emphasis (optional):

- Applied and Computational Mathematics

Minors

- Mathematics

Course Information

- Mathematics (Math) Courses

Faculty

# BS in Mathematics (53.5 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Grades of C- or below will not be acceptable in major courses.
2. Complete the following core requirements:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 191 : Seminar in Mathematics 1. (.5:1:0)

WHEN TAUGHT: Fall
RECOMMENDED: Math 113.
DESCRIPTION: Careers, topics, and problems in mathematics.

**Course Outcomes**

There are no course outcomes available

MATH 290 : Fundamentals of Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Math 112 or concurrent enrollment with instructor's consent.
DESCRIPTION: Achieving maturity in mathematical communication. Introduction to mathematical proof; methods of proof; analysis of proof; induction; logical reasoning.

**Course Outcomes**

- This course is aimed at undergraduate mathematics and mathematics education majors. It is a first course in mathematical thinking. It is intended as an introduction to mathematical proof, and students who finish the course should achieve maturity in mathematical communication. For more detailed information visit the Math 290 Wiki page.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
RECOMMENDED: Math 290.
DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 313.
DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

MATH 334 : Ordinary Differential Equations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 113 and Math 313.
DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

MATH 341 : Theory of Analysis 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Math 113 and Math 290.
DESCRIPTION: Rigorous treatment of calculus of a single real variable: topology, order, completeness of real numbers; continuity, differentiability, integrability, and convergence of functions.

**Course Outcomes**

- The main purpose of this course is to provide students with an understanding of the real number system and of real-valued functions of a single real variable, with the focus being on the theoretical and logical foundations of single-variable calculus. A secondary purpose of this course is to reinforce students' prior training in discovering and writing valid mathematical proofs.For more detailed information visit the Math 341 Wiki.

MATH 342 : Theory of Analysis 2. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MATH 313 & MATH 341
DESCRIPTION: Rigorous treatment of calculus of several real variables; metric spaces, geometry and topology of Euclidean space, differentiation implicity function theorem, integration on sets and manifolds.

**Course Outcomes**

- Math 342 is the multivariable sequel to Math 341. Itprovides a rigorous treatment of multivariable calculus. Unlike the case with Math 341, Math 342 students are not required to have had an introductory course in the subject matter, so Math 342 needs to treat both computation and theory in some depth.For more detailed information visit the Math 342 Wiki entry.

MATH 352 : Introduction to Complex Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MATH 290; Math 341 or concurrent enrollment.
DESCRIPTION: Complex algebra, analytic functions, integration in the complex plane, infinite series, theory of residues, conformal mapping.

**Course Outcomes**

- This course is aimed at graduates majoring in mathematical and physical sciences and engineering. In addition to being an important branch of mathematics in its own right, complex analysis is an important tool for differential equations (ordinary and partial), algebraic geometry and number theory. Thus it is a core requirement for all mathematics majors. It contributes to all the expected learning outcomes of the Mathematics BS degree.For more detailed information visit the Math 352 Wiki page.
- Students will master complex numbers, limits, analytic functions, elementary functions in the complex plane, contour integrals, Taylor series, Laurent series, isolated singularities, residue theory and applications, and conformal mappings.

MATH 371 : Abstract Algebra 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 290 & MATH 313

DESCRIPTION: Groups, group homomorphisms, rings, ideals, and polynomials.

**Course Outcomes**

- This course is aimed at undergraduate mathematics and mathematics education majors. It is a first course in abstract algebra. In addition to being an important branch of mathematics in its own right, abstract algebra is now an essential tool in number theory, geometry, topology, and, to a lesser extent, analysis. Thus it is a core requirement for all mathematics majors. Outside of mathematics, algebra also has applications in cryptography, coding theory, quantum chemistry, and physics. For more detailed information visit the Math 371 Wiki page.

3. Complete the following:

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

4. Complete one of the following:

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MATH 112

RECOMMENDED: Concurrent enrollment in MATH 113.

DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable

- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

STAT 370 : Statistical Theory for Actuaries. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: STAT 340; Concurrent enrollment in MATH 314

DESCRIPTION: Probability theory; discrete, continuous, mixture random variables; loss distributions; moment-generating functions; conditional probability, expectation; total probability; stochastic independence; transformations. Prepares for SOA Exam P.

**Course Outcomes**

- The assumptions and properties of the following named distributions: Bernoulli, Binomial, Hypergeometric, Negative Binomial, Poisson, Uniform, Gamma, Exponential, Normal, and Pareto
- Probability density functions, cumulative distribution functions, moment generating functions, and moments of univariate random variables
- The properties of joint, conditional, and marginal distributions
- The transformation of random variables using the CDF technique, change of variables, sums of random variables, convolution, and the MGF technique

5. Complete fifteen hours from the following:

C S 235 : Data Structures and Algorithms. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: C S 142

DESCRIPTION: Fundamental data structures and algorithms of computer science; basic algorithm analysis; recursion; sorting and searching; lists, stacks, queues, trees, hashing; object-oriented data abstraction.

**Course Outcomes**

- Use the fundamental data types of computing (lists, stacks, queues, priority queues, sets, maps, trees, etc.).
- Understand the major techniques for implementing the fundamental data types (linked lists, binary search trees, hashing, heaps, etc.) and implement several of them.
- Properly use and select data structures from language-provided data-structure libraries.
- Apply basic algorithm analysis.
- Understand how recursion works and write programs using recursion to solve problems.
- Make informed decisions about which sorting and searching algorithms to use in specific circumstances.
- Write programs that require ~500 lines of code.

MATH 300 : (Math-MthEd) History and Philosophy of Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Math 113.

DESCRIPTION: Historical development of important mathematical ideas and philosophies; implications for the mathematical curriculum.

**Course Outcomes**

- Students understand and can describe the major approaches—cultural, philosophical, and psychological—to explaining the origin and nature of mathematics and its relation to understanding and modeling the physical world.
- Students understand and can describe the major historical periods of development of mathematical thought, as well as the contributions of various cultures and individuals within those periods.
- Students understand and can describe the historical development of concepts and practices central to school mathematics, including numeration, arithmetic, algebra, geometry, calculus, and probability.
- Through understanding the complex relationship between mathematical practices and human experience, students appreciate the complexity of teaching and learning mathematics and the different approaches and experiences adolescents will bring to learning those practices.

MATH 355 : Graph Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 313

DESCRIPTION: Maps, graphs and digraphs, coloring problems, applications.

**Course Outcomes**

- Graphs, trees, pathes and cycles, connectedness, chromatic number, planarity conditions, genus of a graph, the Five Color Theorem. Students should also be aware of Kuratowsky's Theorem, and the Four Color Theorem. If there is time, it is good to do the proof of Kuratowski's Theorem. For more detailed information visit the Math 355 Wiki page.

MATH 362 : (Math-MthEd) Survey of Geometry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 290

DESCRIPTION: Logical and historical development of Euclidean and non-Euclidean geometry, transformations and symmetry; relationships among axiomatic systems; use of software and other geometric models; proofs and Van Hiele levels.

**Course Outcomes**

- Students understand central objects, concepts, relationships, definitions, and theorems of Euclidean geometry, how adolescents come to understand these, and the canonical examples and alternative approaches germane to teaching secondary school geometry.
- Students can communicate geometric ideas effectively using a variety of appropriate representations and can construct valid proofs of geometric theorems within a given axiom system.
- Students understand and can describe the relationships among neutral, Euclidean, and non-Euclidean geometries in terms of fundamental geometric concepts, objects, and properties (particularly parallelism), and can use the fundamental properties of axiom systems and models to provide convincing arguments about these relationships.

MATH 372 : Abstract Algebra 2. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 371

DESCRIPTION: Fields, Galois theory, solvability of polynomials by radicals.

**Course Outcomes**

- Students should achieve mastery of the topics listed in the minimal learning outcomes on the Math 372 Wiki page. This means that they should know all relevant definitions, correct statements of the major theorems (including their hypotheses and limitations), and examples and non-examples of the various concepts. The students should be able to demonstrate their mastery by solving non-trivial problems related to these concepts, and by proving simple (but non-trivial) theorems about the below concepts, related to, but not identical to, statements proven by the text or instructor.

Any 400- or 500-level mathematics courses (except Math 500).

6. Students are required to take either the GRE Mathematics Subject Test or the Mathematics Major Field Test the last semester before they graduate. The tests are ETS (Educational Testing Service) standardized assessment tests of undergraduate mathematics. Go to ETS Math Subject Test or ETS Major Field Tests for a test description and sample problems. These tests do not appear on the transcript or affect the GPA.
7. Students must participate in an exit interview before graduation.

## Recommended Courses

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.

Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

**Note 1**: The courses recommended above can be used to fill General Education requirements.

**Note 2**: Students who continue toward graduate work should complete Math 372, Math 541, and Math 553.

**Note 3**: Students who do not plan to pursue a Ph.D. in mathematics are strongly encouraged to complete CS 235.

*Hours include courses that may fulfill university core requirements.

## Show all Mathematics (Math) Courses

College of Physical and Mathematical Sciences Home

Mathematics Department Home

Majors

- BS in Mathematics

Emphasis (optional):

- Applied and Computational Mathematics

Minors

- Mathematics

Course Information

- Mathematics (Math) Courses

Faculty

# BS in Mathematics: Applied and Computational Mathematics Emphasis (70 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. Complete the following pre-core requirements before junior year.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 290 : Fundamentals of Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Math 112 or concurrent enrollment with instructor's consent.

DESCRIPTION: Achieving maturity in mathematical communication. Introduction to mathematical proof; methods of proof; analysis of proof; induction; logical reasoning.

**Course Outcomes**

- This course is aimed at undergraduate mathematics and mathematics education majors. It is a first course in mathematical thinking. It is intended as an introduction to mathematical proof, and students who finish the course should achieve maturity in mathematical communication. For more detailed information visit the Math 290 Wiki page.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.
RECOMMENDED: Math 290.
DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

MATH 314 : Calculus of Several Variables. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 313.
DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

MATH 334 : Ordinary Differential Equations. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 113 and Math 313.
DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

MATH 341 : Theory of Analysis 1. (3:3:0)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Math 113 and Math 290.
DESCRIPTION: Rigorous treatment of calculus of a single real variable: topology, order, completeness of real numbers; continuity, differentiability, integrability, and convergence of functions.

**Course Outcomes**

- The main purpose of this course is to provide students with an understanding of the real number system and of real-valued functions of a single real variable, with the focus being on the theoretical and logical foundations of single-variable calculus. A secondary purpose of this course is to reinforce students' prior training in discovering and writing valid mathematical proofs.For more detailed information visit the Math 341 Wiki.

C S 142 : Introduction to Computer Programming. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Knowledge of algebra.
DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

2. Complete the following core requirements during fall semester, junior year:

MATH 320 : Computation and Optimization 1. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: MATH 290 & MATH 313 & MATH 314; concurrent enrollment in Math 321, 334, 344.
DESCRIPTION: A treatment of algorithms used to solve these problems. Topics include complexity and data, approximation theory, recursive algorithms, linear optimization, unconstrained optimization, constrained optimization, global optimization.

**Course Outcomes**

There are no course outcomes available

MATH 321 : Computation and Optimization 1 Laboratory. (1:0:2)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Math 320, 345.

DESCRIPTION: Programming algorithms and using functions to implement the optimization algorithms taught in Math 320. Applications presented. Developing models and applying results of computations to the application domain.

**Course Outcomes**

There are no course outcomes available

MATH 344 : Linear and Nonlinear Analysis 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 290 & MATH 313 & MATH 314; concurrent enrollment in Math 334, 345.

DESCRIPTION: Development of theory of vector spaces, linear maps, inner product spaces, spectral theory, metric space topology, differentiation, contraction mappings and convex analysis.

**Course Outcomes**

There are no course outcomes available

MATH 345 : Linear and Nonlinear Analysis 1 Laboratory. (1:0:2)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Math 344.

DESCRIPTION: Programming algorithms to implement the key mathematical methods taught in Math 344. Applications presented. Developing models and applying results of computations to the application domain.

**Course Outcomes**

There are no course outcomes available

3. Complete the following core requirements during winter semester, junior year:

MATH 322 : Computation and Optimization 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 320; concurrent enrollment in Math 323, 346.

DESCRIPTION: Algorithms used to solve dynamic programming problems and advanced computing problems. Topics include finite-horizon and infinite-horizon dynamic programming, discrete transforms, compressed sensing, heuristics, branch and bound, conditioning and stability.

**Course Outcomes**

There are no course outcomes available

MATH 323 : Computation and Optimization 2 Laboratory. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 321; concurrent enrollment in Math 322, 347.

DESCRIPTION: Using existing software and writing code for algorithms taught in Math 322. Applications presented. Developing models and applying results to the application domain.

**Course Outcomes**

There are no course outcomes available

MATH 346 : Linear and Nonlinear Analysis 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 344; concurrent enrollment in Math 347.

DESCRIPTION: Theory of Riemann-Darboux integration, calculus on curves and surfaces, complex integration, spectral calculus, generalized inverses of matrices, basic matrix perturbation theory, groups of permutations and matrices. Time permitting, exterior calculus and differential forms.

**Course Outcomes**

There are no course outcomes available

MATH 347 : Linear and Nonlinear Analysis 2 Laboratory. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 345; concurrent enrollment in Math 346.

DESCRIPTION: Programming algorithms and using functions to implement the mathematical methods taught in Math 346. Applications presented. Developing models and applying results of computations to the

application domain.

**Course Outcomes**

There are no course outcomes available

4. Complete the following core requirements during spring/summer terms, junior year:

MATH 402 : Probability and Statistics 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 322 & MATH 346; concurrent enrollment in Math 403.

DESCRIPTION: Theory of probability and stochastic processes, emphasizing topics used in applications. Random spaces and variables, probability distributions, limit theorems, martingales, diffusion, Markov, Poisson and queuing processes, renewal theory, and information theory.

**Course Outcomes**

There are no course outcomes available

MATH 403 : Probability and Statistics 1 Laboratory. (1:0:2)

WHEN TAUGHT: Fall

PREREQUISITE: C S 142 & MATH 323 & MATH 347; concurrent enrollment in Math 402.

DESCRIPTION: Using and developing algorithms for the content of Math 402; developing I/O wrappers for numerical libraries. Applications presented. Developing models and applying results of computations.

**Course Outcomes**

There are no course outcomes available

MATH 436 : Differential and Integral Equations 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 322 & MATH 341 & MATH 346; concurrent enrollment in Math 437.

DESCRIPTION: Theory and applicatiions of dynamic systems and partial differential equations. Topics include dynamic systems; bifurcation theory; control theory; hyperbolic, parabolic, and elliptic partial differential equations; commonly-used algorithms.

**Course Outcomes**

There are no course outcomes available

MATH 437 : Differential and Integral Equations 1 Laboratory. (1:0:2)

WHEN TAUGHT: Fall

PREREQUISITE: C S 142 & MATH 323 & MATH 347; concurrent enrollment in Math 436.

DESCRIPTION: Using and developing software to implement the content of Math 436. Developing models and applying results of computations to several application domains. Introduction to parallel computation.

**Course Outcomes**

There are no course outcomes available

5. Complete the following core requirements during winter semester, senior year:

MATH 404 : Probability and Statistics 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 402; concurrent enrollment in Math 405.

DESCRIPTION: First course in mathematical statistics, focusing on mathematical aspects. Topics include estimation, inference, analysis of variance, regression, multivariate statistics, Bayesian statistics, state estimation, Kalman filtering, time series, GARCH models.

**Course Outcomes**

There are no course outcomes available

MATH 405 : Probability and Statistics 2 Laboratory. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 403; concurrent enrollment in Math 404.

DESCRIPTION: Using and developing software to implement the content of Math 404 and handle large data sets. Applications presented. Designing and executing statistical tests and applying computations to application domains.

**Course Outcomes**

There are no course outcomes available

MATH 438 : Differential and Integral Equations 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 402 & MATH 436; concurrent enrollment in Math 404, 439.

DESCRIPTION: Introduction to integral equations, calculus of variations, stochastic differential equatons, optimal stochastic control; common algorithms used for these systems.

**Course Outcomes**

There are no course outcomes available

MATH 439 : Differential and Integral Equations 2 Laboratory. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 437; concurrent enrollment in Math 405, 438.

DESCRIPTION: Using and developing software for problems in the calculus of variations, stochastic differential equations, and stochastic optimal control. Developing models and applying the results of computations to several application domains.

**Course Outcomes**

There are no course outcomes available

6. Students are required to complete a concentration in an area to which the mathematical and computational tools that they are learning can be applied. The list of the Approved Concentrations is found at http://math.byu.edu/concentrations.

*Hours include courses that may fulfill university core requirements.

## Show all Mathematics (Math) Courses

**College of Physical and Mathematical Sciences Home**

**Mathematics Department Home**

**Majors**

- BS in Mathematics

Emphasis (optional):

- Applied and Computational Mathematics

**Minors**

- Mathematics

**Course Information**

- Mathematics (Math) Courses

**Faculty**

# Minor in Mathematics (20–22 hours*)

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## Program Requirements

1. Grades of C- or below will not be accepted.
2. Complete the following courses:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 290 : Fundamentals of Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Math 112 or concurrent enrollment with instructor's consent.
DESCRIPTION: Achieving maturity in mathematical communication. Introduction to mathematical proof; methods of proof; analysis of proof; induction; logical reasoning.

**Course Outcomes**

- This course is aimed at undergraduate mathematics and mathematics education majors. It is a first course in mathematical thinking. It is intended as an introduction to mathematical proof, and students who finish the course should achieve maturity in mathematical communication. For more detailed information visit the Math 290 Wiki page.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.
RECOMMENDED: Math 290.
DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

3. Complete one course from the following:

MATH 302 : Mathematics for Engineering 1. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Math 113.
DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

MATH 314 : Calculus of Several Variables. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 313.
DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

4. Complete one course from the following:

MATH 303 : Mathematics for Engineering 2. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MATH 302
DESCRIPTION: ODEs, Laplace transforms, Fourier series, PDEs.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For a more detailed course description, visit Math 303 Wiki.

MATH 334 : Ordinary Differential Equations. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 113 and Math 313.
DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

MATH 341 : Theory of Analysis 1. (3:3:0)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Math 113 and Math 290.
DESCRIPTION: Rigorous treatment of calculus of a single real variable: topology, order, completeness of real numbers; continuity, differentiability, integrability, and convergence of functions.

**Course Outcomes**

- The main purpose of this course is to provide students with an understanding of the real number system and of real-valued functions of a single real variable, with the focus being on the theoretical and logical foundations of single-variable calculus. A secondary purpose of this course is to reinforce students' prior training in discovering and writing valid mathematical proofs.For more detailed information visit the Math 341 Wiki.

MATH 342 : Theory of Analysis 2. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MATH 313 & MATH 341
DESCRIPTION: Rigorous treatment of calculus of several real variables; metric spaces, geometry and topology of

Euclidean space, differentiation implicity function theorem, integration on sets and manifolds.

**Course Outcomes**

- Math 342 is the multivariable sequel to Math 341. Itprovides a rigorous treatment of multivariable calculus. Unlike the case with Math 341, Math 342 students are not required to have had an introductory course in the subject matter, so Math 342 needs to treat both computation and theory in some depth.For more detailed information visit the Math 342 Wiki entry.

MATH 352 : Introduction to Complex Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 290; Math 341 or concurrent enrollment.

DESCRIPTION: Complex algebra, analytic functions, integration in the complex plane, infinite series, theory of residues, conformal mapping.

**Course Outcomes**

- This course is aimed at graduates majoring in mathematical and physical sciences and engineering. In addition to being an important branch of mathematics in its own right, complex analysis is an important tool for differential equations (ordinary and partial), algebraic geometry and number theory. Thus it is a core requirement for all mathematics majors. It contributes to all the expected learning outcomes of the Mathematics BS degree.For more detailed information visit the Math 352 Wiki page.
- Students will master complex numbers, limits, analytic functions, elementary functions in the complex plane, contour integrals, Taylor series, Laurent series, isolated singularities, residue theory and applications, and conformal mappings.

MATH 355 : Graph Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 313

DESCRIPTION: Maps, graphs and digraphs, coloring problems, applications.

**Course Outcomes**

- Graphs, trees, pathes and cycles, connectedness, chromatic number, planarity conditions, genus of a graph, the Five Color Theorem. Students should also be aware of Kuratowsky's Theorem, and the Four Color Theorem. If there is time, it is good to do the proof of Kuratowski's Theorem. For more detailed information visit the Math 355 Wiki page.

MATH 362 : (Math-MthEd) Survey of Geometry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 290

DESCRIPTION: Logical and historical development of Euclidean and non-Euclidean geometry, transformations and symmetry; relationships among axiomatic systems; use of software and other geometric models; proofs and Van Hiele levels.

**Course Outcomes**

- Students understand central objects, concepts, relationships, definitions, and theorems of Euclidean geometry, how adolescents come to understand these, and the canonical examples and alternative approaches germane to teaching secondary school geometry.
- Students can communicate geometric ideas effectively using a variety of appropriate representations and can construct valid proofs of geometric theorems within a given axiom system.
- Students understand and can describe the relationships among neutral, Euclidean, and non-Euclidean geometries in terms of fundamental geometric concepts, objects, and properties (particularly parallelism), and can use the fundamental properties of axiom systems and models to provide convincing arguments about these relationships.

MATH 371 : Abstract Algebra 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 290 & MATH 313

DESCRIPTION: Groups, group homomorphisms, rings, ideals, and polynomials.

**Course Outcomes**

- This course is aimed at undergraduate mathematics and mathematics education majors. It is a first course in abstract algebra. In addition to being an important branch of mathematics in its own right, abstract algebra is now an essential tool in number theory, geometry, topology, and, to a lesser extent, analysis. Thus it is a core requirement for all mathematics majors. Outside of mathematics, algebra also has applications in cryptography, coding theory, quantum chemistry, and physics. For more detailed information visit the Math 371 Wiki page.

MATH 372 : Abstract Algebra 2. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 371

DESCRIPTION: Fields, Galois theory, solvability of polynomials by radicals.

**Course Outcomes**

- Students should achieve mastery of the topics listed in the minimal learning outcomes on the Math 372 Wiki page. This means that they should know all relevant definitions, correct statements of the major theorems (including their hypotheses and limitations), and examples and non-examples of the various concepts. The students should be able to demonstrate their mastery by solving non-trivial problems

related to these concepts, and by proving simple (but non-trivial) theorems about the below concepts, related to, but not identical to, statements proven by the text or instructor.

or any 400- or 500-level mathematics course of three credit hours or more except Math 495R, 499R, or 500.

*Hours include courses that may fulfill university core requirements.

## Show all Mathematics (Math) Courses

**College of Physical and Mathematical Sciences Home**

**Mathematics Department Home**

**Majors**

- BS in Mathematics

Emphasis (optional):

- Applied and Computational Mathematics

**Minors**

- Mathematics

**Course Information**

- Mathematics (Math) Courses

**Faculty**

# Mathematics (Math)

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## Undergraduate Courses

**Note:** for courses containing material preparatory to Math 97 (up through beginning algebra) please refer to Independent Study.

MATH 097 : Intermediate Algebra. (0:2:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: High school algebra.

DESCRIPTION: Elementary logic, real number system, equations and inequalities (linear, polynomial, rational, and radical expressions), graphing, function notation, inverse function, exponential functions, systems of equations, variations.

NOTE: Fee.

**Course Outcomes**

- This course is not offered on BYU campus, but is available only through BYU Independent Study.Elementary logic, real number system, equations and inequalities (linear, polynomial, rational, and radical expressions), graphing, function notation, inverse functions, exponential functions, systems of equations, variations. 56 lessons, 2 assignment submissions, all instructor-graded; 4 proctored midcourse exams, all computer-graded Speedback; proctored computer-graded final exam.For more detailed information, visit the Math 97 Independent Study website.

### 100-Level Courses

MATH 102 : Quantitative Reasoning. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Practicing and applying quantitative reasoning: personal finance, consumer statistics, etc.

NOTE: For students who do not need developmental algebra for subsequent courses.

**Course Outcomes**

- For students who do not need developmental algebra for subsequent courses. For more detailed information, visit the Math 102 Wiki page.

MATH 110 : College Algebra. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 97 or equivalent (see Independent Study).

DESCRIPTION: Functions, polynomials, theory of equations, exponential and logarithmic functions, matrices, systems of linear equations, permutations, combinations, binomial theorem.

**Course Outcomes**

- Graph functions using horizontal and vertical shiftsGraph functions using compressions and stretchesGraph functions using reflections about the x-axis or y-axisForm composite functions and find the domainDetermine the inverse of a function and graph an inverse function from the graph of a function
- This course prepares students to take courses in calculus, statistics, mathematics for elementary education majors, and other areas where algebra skills are required. Fluent skills in algebra are necessary for success in any area that uses mathematical analysis. The mastery of college algebra requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. College Algebra develops the concepts of graphing functions, polynomial and rational functions, exponential and logarithmic functions, conic sections, solving systems of equations, the binomial theorem, permutations, combinations, and probability. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information, visit the Math 110 Wiki page.
- Quadratic functionsPolynomial functionsRational functionsPolynomial and rational inequalitiesThe real zeros of a polynomial functionComplex zeros and the Fundamental Theorem of Algebra
- Exponential functionsLogarithmic functionsProperties of LogarithmsLogarithmic and exponential equationsCompound interestExponential growth and decay
- Graph parabolas, ellipses, and hyperbolasFind the equation of parabolas, ellipses, and hyperbolasDiscuss the equation of conic sections to find vertices, foci, asymptotes, and the directrixWork with conic sections that are not centered at the origin
- Solve systems of linear equations using substitution and eliminationSolve systems of non-linear equations using substitution and eliminationDecompose rational functions using partial fractions
- Find terms in a sequence using a formula and a recursive definitionFind a formula for terms in an arithmetic sequence and be able to add the terms of a finite arithmetic sequenceFind a formula for the terms in a geometric sequence and be able to find the sum of finite and infinite geometric seriesProve statements using mathematical induction

- Work with operations on sets such as union, intersection and complement and count the number of elements in a setCompute permutations and combinationsEvaluate binomial coefficients and expand binomials using the Binomial TheoremCompute probabilities of equally likely outcomes

MATH 111 : Trigonometry. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 or equivalent.

DESCRIPTION: Circular functions, triangle relationships, identities, inverse trig functions, trigonometric equations, vectors, complex numbers, DeMoivre's theorem.

**Course Outcomes**

- Students should gain familiarity and proficiency with the basic theorems of trigonometry.For more detailed information, visit the Math 111 Wiki page.

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 116 : Essentials of Calculus. (1:2:0)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: Math 110.

DESCRIPTION: Review of algebra, graph of line, slope. Limits and derivatives (standard functions, compositions of such functions), derivative for polynomials, exponentials, logarithms. Product, quotient and chain rule. Optimization (extrema), application to business problems. Newton's method.

**Course Outcomes**

- Students receive a brief overview of differential calculus. Topics covered include limits, derivatives, and applications of differentiation to optimization of functions.For more detailed information visit the Math 116 Wiki page.

MATH 118 : Finite Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110.

DESCRIPTION: Language of set theory, counting and combinations. Probability theory, elementary stochastic processes, conditional probabilities. Repeated experiments, random variables, expectation, variance, linear equations, matrix algebra, application to economics or similar. Linear programming. Markov chains including applications.

**Course Outcomes**

- Prepares students for a broad range of applications in business, the life sciences, and the social sciences.For more detailed information visit the Math 118 Wiki page.

MATH 119 : Introduction to Calculus. (4:4:1)

OFFERED: Independent Study only.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 and Math 111; or equivalent.

DESCRIPTION: Introduction to plane analytic geometry and calculus.

**Course Outcomes**

- This course is designed to provide beginning undergraduate students a first exposure to Calculus concepts, theorems, and techniques. In general, theorems will not be proved. An understanding of the theorems and their applications to solve calculus problems will be taught. Students will be expected to develop effective problem solving skills based on their understanding of the theory and not just memorize a set of routines to solve problems. For a more detailed course description, visit the Math 119 Wiki page.

MATH 191 : Seminar in Mathematics 1. (.5:1:0)

WHEN TAUGHT: Fall

RECOMMENDED: Math 113.

DESCRIPTION: Careers, topics, and problems in mathematics.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

MATH 222 : Seminar in Mathematics 2. (.5:1:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: MATH 191

DESCRIPTION: Careers, topics, and problems in mathematics. Use of Maple, Mathematica, and TeX in mathematics.

**Course Outcomes**

- Scholarships, undergraduate research, departmental activities, and summer programs available to BYU mathematics majors.Career options available to mathematics majors;Several current research topics in mathematics; andAspects of the culture of the mathematics community.

MATH 290 : Fundamentals of Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Math 112 or concurrent enrollment with instructor's consent.

DESCRIPTION: Achieving maturity in mathematical communication. Introduction to mathematical proof; methods of proof; analysis of proof; induction; logical reasoning.

**Course Outcomes**

- This course is aimed at undergraduate mathematics and mathematics education majors. It is a first course in mathematical thinking. It is intended as an introduction to mathematical proof, and students who finish the course should achieve maturity in mathematical communication. For more detailed information visit the Math 290 Wiki page.

### 300-Level Courses

MATH 300 : (Math-MthEd) History and Philosophy of Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Math 113.

DESCRIPTION: Historical development of important mathematical ideas and philosophies; implications for the mathematical curriculum.

**Course Outcomes**

- Students understand and can describe the major approaches—cultural, philosophical, and psychological—to explaining the origin and nature of mathematics and its relation to understanding and modeling the physical world.
- Students understand and can describe the major historical periods of development of mathematical thought, as well as the contributions of various cultures and individuals within those periods.
- Students understand and can describe the historical development of concepts and practices central to school mathematics, including numeration, arithmetic, algebra, geometry, calculus, and probability.
- Through understanding the complex relationship between mathematical practices and human experience, students appreciate the complexity of teaching and learning mathematics and the different approaches and experiences adolescents will bring to learning those practices.

MATH 302 : Mathematics for Engineering 1. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Math 113.

DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

MATH 303 : Mathematics for Engineering 2. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 302

DESCRIPTION: ODEs, Laplace transforms, Fourier series, PDEs.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For a more detailed course description, visit Math 303 Wiki.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

RECOMMENDED: Math 290.

DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

: Honors Elementary Linear Algebra. (3:3:1)

**Course Outcomes**

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 313.

DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

MATH 320 : Computation and Optimization 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 290 & MATH 313 & MATH 314; concurrent enrollment in Math 321, 334, 344.

DESCRIPTION: A treatment of algorithms used to solve these problems. Topics include complexity and data, approximation theory, recursive algorithms, linear optimization, unconstrained optimization, constrained optimization, global optimization.

**Course Outcomes**

There are no course outcomes available

MATH 321 : Computation and Optimization 1 Laboratory. (1:0:2)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Math 320, 345.

DESCRIPTION: Programming algorithms and using functions to implement the optimization algorithms taught in Math 320. Applications presented. Developing models and applying results of computations to the application domain.

**Course Outcomes**

There are no course outcomes available

MATH 322 : Computation and Optimization 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 320; concurrent enrollment in Math 323, 346.

DESCRIPTION: Algorithms used to solve dynamic programming problems and advanced computing problems. Topics include finite-horizon and infinite-horizon dynamic programming, discrete transforms, compressed sensing, heuristics, branch and bound, conditioning and stability.

**Course Outcomes**

There are no course outcomes available

MATH 323 : Computation and Optimization 2 Laboratory. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 321; concurrent enrollment in Math 322, 347.

DESCRIPTION: Using existing software and writing code for algorithms taught in Math 322. Applications presented. Developing models and applying results to the application domain.

**Course Outcomes**

There are no course outcomes available

MATH 334 : Ordinary Differential Equations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 113 and Math 313.

DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

MATH 341 : Theory of Analysis 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Math 113 and Math 290.

DESCRIPTION: Rigorous treatment of calculus of a single real variable: topology, order, completeness of real numbers; continuity, differentiability, integrability, and convergence of functions.

**Course Outcomes**

- The main purpose of this course is to provide students with an understanding of the real number system and of real-valued functions of a single real variable, with the focus being on the theoretical and logical foundations of single-variable calculus. A secondary purpose of this course is to reinforce students' prior training in discovering and writing valid mathematical proofs.For more detailed information visit the Math 341 Wiki.

MATH 342 : Theory of Analysis 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 313 & MATH 341

DESCRIPTION: Rigorous treatment of calculus of several real variables; metric spaces, geometry and topology of Euclidean space, differentiation implicity function theorem, integration on sets and manifolds.

**Course Outcomes**

- Math 342 is the multivariable sequel to Math 341. Itprovides a rigorous treatment of multivariable calculus. Unlike the case with Math 341, Math 342 students are not required to have had an introductory course in the subject matter, so Math 342 needs to treat both computation and theory in some depth.For more detailed information visit the Math 342 Wiki entry.

MATH 344 : Linear and Nonlinear Analysis 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 290 & MATH 313 & MATH 314; concurrent enrollment in Math 334, 345.

DESCRIPTION: Development of theory of vector spaces, linear maps, inner product spaces, spectral theory, metric space topology, differentiation, contraction mappings and convex analysis.

**Course Outcomes**

There are no course outcomes available

MATH 345 : Linear and Nonlinear Analysis 1 Laboratory. (1:0:2)

WHEN TAUGHT: Fall

PREREQUISITE: Concurrent enrollment in Math 344.

DESCRIPTION: Programming algorithms to implement the key mathematical methods taught in Math 344. Applications presented. Developing models and applying results of computations to the application domain.

**Course Outcomes**

There are no course outcomes available

MATH 346 : Linear and Nonlinear Analysis 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 344; concurrent enrollment in Math 347.

DESCRIPTION: Theory of Riemann-Darboux integration, calculus on curves and surfaces, complex integration, spectral calculus, generalized inverses of matrices, basic matrix perturbation theory, groups of permutations and matrices. Time permitting, exterior calculus and differential forms.

**Course Outcomes**

There are no course outcomes available

MATH 347 : Linear and Nonlinear Analysis 2 Laboratory. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 345; concurrent enrollment in Math 346.

DESCRIPTION: Programming algorithms and using functions to implement the mathematical methods taught in Math 346. Applications presented. Developing models and applying results of computations to the application domain.

**Course Outcomes**

There are no course outcomes available

MATH 352 : Introduction to Complex Analysis. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 290; Math 341 or concurrent enrollment.

DESCRIPTION: Complex algebra, analytic functions, integration in the complex plane, infinite series, theory of residues, conformal mapping.

**Course Outcomes**

- This course is aimed at graduates majoring in mathematical and physical sciences and engineering. In addition to being an important branch of mathematics in its own right, complex analysis is an important tool for differential equations (ordinary and partial), algebraic geometry and number theory. Thus it is a core requirement for all mathematics majors. It contributes to all the expected learning outcomes of the Mathematics BS degree.For more detailed information visit the Math 352 Wiki page.
- Students will master complex numbers, limits, analytic functions, elementary functions in the complex plane, contour integrals, Taylor series, Laurent series, isolated singularities, residue theory and applications, and conformal mappings.

MATH 355 : Graph Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 313

DESCRIPTION: Maps, graphs and digraphs, coloring problems, applications.

**Course Outcomes**

- Graphs, trees, pathes and cycles, connectedness, chromatic number, planarity conditions, genus of a graph, the Five Color Theorem. Students should also be aware of Kuratowsky's Theorem, and the Four Color Theorem. If there is time, it is good to do the proof of Kuratowski's Theorem. For more detailed information visit the Math 355 Wiki page.

MATH 362 : (Math-MthEd) Survey of Geometry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 290

DESCRIPTION: Logical and historical development of Euclidean and non-Euclidean geometry, transformations and symmetry; relationships among axiomatic systems; use of software and other geometric models; proofs and Van Hiele levels.

**Course Outcomes**

- Students understand central objects, concepts, relationships, definitions, and theorems of Euclidean geometry, how adolescents come to understand these, and the canonical examples and alternative approaches germane to teaching secondary school geometry.
- Students can communicate geometric ideas effectively using a variety of appropriate representations and can construct valid proofs of geometric theorems within a given axiom system.
- Students understand and can describe the relationships among neutral, Euclidean, and non-Euclidean geometries in terms of fundamental geometric concepts, objects, and properties (particularly parallelism), and can use the fundamental properties of axiom systems and models to provide convincing arguments about these relationships.

MATH 371 : Abstract Algebra 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 290 & MATH 313

DESCRIPTION: Groups, group homomorphisms, rings, ideals, and polynomials.

**Course Outcomes**

- This course is aimed at undergraduate mathematics and mathematics education majors. It is a first course in abstract algebra. In addition to being an important branch of mathematics in its own right, abstract algebra is now an essential tool in number theory, geometry, topology, and, to a lesser extent, analysis. Thus it is a core requirement for all mathematics majors. Outside of mathematics, algebra also has applications in cryptography, coding theory, quantum chemistry, and physics. For more detailed information visit the Math 371 Wiki page.

MATH 372 : Abstract Algebra 2. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 371

DESCRIPTION: Fields, Galois theory, solvability of polynomials by radicals.

**Course Outcomes**

- Students should achieve mastery of the topics listed in the minimal learning outcomes on the Math 372 Wiki page. This means that they should know all relevant definitions, correct statements of the major theorems

(including their hypotheses and limitations), and examples and non-examples of the various concepts. The students should be able to demonstrate their mastery by solving non-trivial problems related to these concepts, and by proving simple (but non-trivial) theorems about the below concepts, related to, but not identical to, statements proven by the text or instructor.

MATH 391R : Seminar in Mathematics. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Topics from classical problems of antiquity, combinatorial mathematics, graph theory, real functions, number theory, functional equations.

**Course Outcomes**

- Specified by the instructor on a case-by-case basis. Topics may be drawn from any area of mathematics. Typical topics include the Putnam Examination, dynamic systems, combinatorial mathematics, graph theory, real functions, number theory, functional equations, etc.

MATH 393 : Survey of Advanced Mathematics. (.5:1:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Majors only.

DESCRIPTION: A series of lectures designed to give students an overview of active research areas in advanced mathematics.

**Course Outcomes**

No outcomes are available at this time.

MATH 399R : Academic Internship. (.5-9:9:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: On-the-job experience.

**Course Outcomes**

- To be defined by the professor on a case-by-case basis. In general, via the internship the student should obtain additional mathematical knowledge, and/or apply non-trivial mathematical techniques in creative ways.

### 400-Level Courses

MATH 402 : Probability and Statistics 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 322 & MATH 346; concurrent enrollment in Math 403.

DESCRIPTION: Theory of probability and stochastic processes, emphasizing topics used in applications. Random spaces and variables, probability distributions, limit theorems, martingales, diffusion, Markov, Poisson and queuing processes, renewal theory, and information theory.

**Course Outcomes**

There are no course outcomes available

MATH 403 : Probability and Statistics 1 Laboratory. (1:0:2)

WHEN TAUGHT: Fall

PREREQUISITE: C S 142 & MATH 323 & MATH 347; concurrent enrollment in Math 402.

DESCRIPTION: Using and developing algorithms for the content of Math 402; developing I/O wrappers for numerical libraries. Applications presented. Developing models and applying results of computations.

**Course Outcomes**

There are no course outcomes available

MATH 404 : Probability and Statistics 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 402; concurrent enrollment in Math 405.

DESCRIPTION: First course in mathematical statistics, focusing on mathematical aspects. Topics include estimation, inference, analysis of variance, regression, multivariate statistics, Bayesian statistics, state estimation, Kalman filtering, time series, GARCH models.

**Course Outcomes**

There are no course outcomes available

MATH 405 : Probability and Statistics 2 Laboratory. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 403; concurrent enrollment in Math 404.

DESCRIPTION: Using and developing software to implement the content of Math 404 and handle large data sets. Applications presented. Designing and executing statistical tests and applying computations to application domains.

**Course Outcomes**

There are no course outcomes available

MATH 406R : Topics in Mathematics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Topics selected from various aspects of mathematics. Possibilities include, but are not limited to, combinatorial theory, factorization and primality testing, game theory, harmonic analysis, hyperbolic geometry, linear programming, Lie groups, p-adic numbers, set theory and mathematical logic stochastic processes, supply chain management, voting theory.

**Course Outcomes**

No outcomes are available at this time.

MATH 410 : Introduction to Numerical Methods. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 314; C S 142 or equivalent.

DESCRIPTION: Root finding, interpolation, curve fitting, numerical differentiation and integration, multiple integrals, direct solvers for linear systems, least squares, rational approximations, Fourier and other orthogonal methods.

**Course Outcomes**

- Root finding, interpolation, curve fitting, numerical differentiation and integration, multiple integrals, direct solvers for linear systems, least squares, rational approximations, Fourier and other orthogonal methods. [This official course description appears to differ with current standard practice, in that iterative solvers of linear systems are taught in this course, while "Fourier and other orthogonal methods" are postponed until Math 411.] For more detailed information visit the Math 410 Wiki page.
- Students will master numerical solution of equations of one variable, interpolation, numerical differentiation, numerical integration, and numerical solution of linear systems.

MATH 411 : Numerical Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 334

DESCRIPTION: Iterative solvers for linear systems, eigenvalue, eigenvector approximations, numerical solutions to nonlinear systems, numerical techniques for initial and boundary value problems, elementary solvers for PDEs.

**Course Outcomes**

- Students should be able to describe, derive, and implement the numerical methods listed on the Math 411 Wiki page. They should be able to explain the advantages and disadvantages of each method. They should understand error analysis and be able to make practical decisions based on the outcomes of that analysis.

MATH 425 : Mathematical Biology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 112

DESCRIPTION: Using tools in mathematics to help biologists. Motivating new mathematics with questions in biology.

**Course Outcomes**

- Students should gain a familiarity with how the disciplines of mathematics and biology can complement each other. Increasingly, mathematics is used to understand complexbiological systems. Without some familiarity with the mathematicaltechniques, it is difficult to know how to interpret the results. Inthis class a variety of applications to medicine and biology will bestudied, highlighting the different mathematical techniques. Theobjective of the class is not only to introduce the students tovarious applications and methods but also to help determine the strengthsand weaknesses of different methods. For more detailed information visit the Math 425 Wiki page.

MATH 431 : (Math - EC En 370) Probability Theory. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: MATH 313

DESCRIPTION: Axiomatic probability theory, conditional probability, discrete / continuous random variables, expectation, conditional expectation, moments, functions of random variables, multivariate distributions, laws of large numbers, central limit theorem.

**Course Outcomes**

There are no course outcomes available

MATH 435 : Mathematical Finance. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: MATH 431; or STAT 370

DESCRIPTION: The binomial asset pricing model (discrete probability). Martingales, pricing of derivative securities, random walk in financial models, random interest rates.

**Course Outcomes**

- The minimal expectation for this course is that students learn about mathematical financein the context of

discrete time and finite state-spaces.It is therefore not required that students be taught about Brownian motion, the Black-Scholes model, etc. For more detailed information visit the Math 435 Wiki page.

MATH 436 : Differential and Integral Equations 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 322 & MATH 341 & MATH 346; concurrent enrollment in Math 437.

DESCRIPTION: Theory and applicatiions of dynamic systems and partial differential equations. Topics include dynamic systems; bifurcation theory; control theory; hyperbolic, parabolic, and elliptic partial differential equations; commonly-used algorithms.

**Course Outcomes**

There are no course outcomes available

MATH 437 : Differential and Integral Equations 1 Laboratory. (1:0:2)

WHEN TAUGHT: Fall

PREREQUISITE: C S 142 & MATH 323 & MATH 347; concurrent enrollment in Math 436.

DESCRIPTION: Using and developing software to implement the content of Math 436. Developing models and applying results of computations to several application domains. Introduction to parallel computation.

**Course Outcomes**

There are no course outcomes available

MATH 438 : Differential and Integral Equations 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 402 & MATH 436; concurrent enrollment in Math 404, 439.

DESCRIPTION: Introduction to integral equations, calculus of variations, stochastic differential equatons, optimal stochastic control; common algorithms used for these systems.

**Course Outcomes**

There are no course outcomes available

MATH 439 : Differential and Integral Equations 2 Laboratory. (1:0:2)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 437; concurrent enrollment in Math 405, 438.

DESCRIPTION: Using and developing software for problems in the calculus of variations, stochastic differential equations, and stochastic optimal control. Developing models and applying the results of computations to several application domains.

**Course Outcomes**

There are no course outcomes available

MATH 447 : Introduction to Partial Differential Equations. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: MATH 303; or MATH 314 & MATH 334

DESCRIPTION: Boundary value problems; transform methods; Fourier series; Bessel functions; Legendre polynomials.

**Course Outcomes**

- The main purpose of this course is to teach students how to solve the canonical linear second-order partial differential equations on simple domains. Secondarily, students should be introduced to the theory concerning the validity of such solutions.For more detailed information visit the Math 447 Wiki page.

MATH 450 : Combinatorics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 371

DESCRIPTION: Permutations, combinations, recurrence relations, applications.

**Course Outcomes**

- Permutations and combinations basics, including the Pigeonhole Principle, binomial coefficients and the Binomial Theorem, Stirling's Approximation, Inclusion/exclusion, Generating functions and recurrence relations (rational functions), Groups, permutations and counting problems -- Polya's Theorem. For more detailed information visit the Math 450 Wiki page.

MATH 451 : Introduction to Topology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 341

DESCRIPTION: Developing topological concepts, beginning from a linear setting. Developing proofs or counterexamples from axioms to a structured sequence of topological propositions using only notes provided.

**Course Outcomes**

- Developing topological concepts, beginning from a linear setting. Developing proofs or counterexamples from axioms to a structured sequence of topological propositions using only notes provided. For more detailed information visit the Math 451 Wiki page.

MATH 465 : Differential Geometry. (3:3:0)

PREREQUISITE: MATH 314; Math 341 or equivalent.

RECOMMENDED: Math 342 or equivalent.

DESCRIPTION: Geometry of smooth curves and surfaces. Topics include the first and second fundamental forms, the Gauss map, orientability of surfaces, Gaussian and mean curvature, geodesics, minimal surfaces and the Gauss-Bonnet Theorem.

**Course Outcomes**

- The main purpose of this course is to provide students with an understanding of the geometry of curves and surfaces, with the focus being on the theoretical and logical foundations of differential geometry. For more detailed information visit the Math 465 Wiki page.

MATH 473 : Group Representation Theory. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: MATH 371

DESCRIPTION: FG-modules; Maschke's theorem; Schur's lemma; characters of groups; orthogonality relations of characters; induced, lifted and restricted characters; construction of character tables; Burnside's theorem.

**Course Outcomes**

- Students should know all relevant definitions, correct statements of the major theorems (including their hypotheses and limitations), and examples and non-examples of the various concepts The students should be able to demonstrate their mastery by solving non-trivial problems related to these concepts, and by proving simple (but non-trivial) theorems about the below concepts, related to, but not identical to, statements proven by the text or instructor. For more detailed information visit the Math 473 Wiki page.

MATH 485 : Mathematical Cryptography. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 313

RECOMMENDED: Math 371.

DESCRIPTION: A mathematical introduction to some of the high points of modern cryptography.

**Course Outcomes**

- Students should know the definitions, being familiar with standard examples, and being able to solve mathematical and algorithmic problems by directly using the material taught in the course. This includes appropriate use of Maple, Mathematica, or another appropriate computing language. For more detailed information visit the Math 485 Wiki page.

MATH 487 : Number Theory. (3:3:0)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: MATH 371

DESCRIPTION: Foundations; congruences; quadratic reciprocity; unique factorization, prime distribution or Diophantine equations.

**Course Outcomes**

- Students should know all relevant definitions, correct statements of the major theorems (including their hypotheses and limitations), and examples and non-examples of the various concepts The students should be able to demonstrate their mastery by solving non-trivial problems related to these concepts, and by proving simple (but non-trivial) theorems about the below concepts, related to, but not identical to, statements proven by the text or instructor. For more detailed information visit the Math 487 Wiki page.

MATH 495R : Readings in Mathematics. (.5-2:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Directed readings beyond the scope of usual undergraduate courses.

**Course Outcomes**

- To be defined by the professor on a case-by-case basis. In general, a significant, coherent set of readings will be defined, and the student's base of mathematical knowledge and expertise will increase in notable, measurable ways.

MATH 499R : Senior Thesis. (.5-3:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- The student will complete a strong Senior Thesis which is compatible with the policies of the Honors Program and meets the standards set by the student's thesis advisor.

## 500-Level Graduate Courses (available to advanced undergraduates)

MATH 500 : (Math-Chem-C S-Geol-MthEd-Phscs-Stat) Business Career Essentials in Science and Math. (1.5:1.5:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction for science, math, and statistics majors to careers in industry. Project planning, oral and written business presentations, business accounting, and technology readiness.

**Course Outcomes**

- Demonstrate knowledge of business skills necessary to function as a scientist working in industry.Be able to explain how corporate politics can affect your career.
- Learn how to present concepts and ideas in a clear and effective manner in both oral and written form.
- Learn to read and understand corporate accounting statements and data and understand the basic ideas of project and portfolio management.Learn the steps to moving an idea from concept to completion in a business setting.

MATH 510 : Numerical Methods for Linear Algebra. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Math 410 or equivalent.

DESCRIPTION: Numerical matrix algebra, orthogonalization and least squares methods, unsymmetric and symmetric eigenvalue problems, iterative methods, advanced solvers for partial differential equations.

**Course Outcomes**

- This course is designed to prepare students to solve linear algebra problems arising from many applications such as mathematical models of physical or engineering processes. Students are introduced to modern concepts and methodologies in numerical linear algebra, with particular emphasis on t methods that can be used to solve very large scale problems. In depth discussion of theoretical aspects such as stability and convergence will be used to enhance student understanding of the numerical methods. Students will also be required to perform some programming and computation so as to gain experience in implementing and observing the numerical performance of the various numerical methods.The course addresses the University goal of developing the skills of sound thinking, effective communication and quantitative reasoning. The course also allow students, especially undergraduate students, to develop some depth and consequently competence in an important area of applied mathematics.This course requires knowledge of higher level courses in mathematics. The course also serves as an introductory graduate level course to prepare the students to apply the methods learned in their research projects. For more detailed information visit the Math 510 Wiki page.

MATH 511 : Numerical Methods for Partial Differential Equations. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Math 303 or 447; 410; or equivalents.

DESCRIPTION: Finite difference and finite volume methods for partial differential equations. Stability, consistency, and convergence theory.

**Course Outcomes**

- This course is designed to prepare students to solve mathematical models represented by initial or boundary value problems involving partial differential equations that cannot be solved directly using standard mathematical techniques but are amenable to a computational approach. Numerical solution of partial differential equations has important applications in many application areas. Students are introduced to the discretization methodologies, with particular emphasis on the finite difference method, that allows the construction of accurate and stable numerical schemes. In depth discussion of theoretical aspects such as stability analysis and convergence will be used to enhance the students' understanding of the numerical methods. Students will also be required to perform some programming and computation so as to gain experience in implementing the schemes and to be able to observe the numerical performance of the various numerical methods.The course addresses the University goal of developing the skills of sound thinking, effective communication and quantitative reasoning. The course also allow students, especially undergraduate students, to develop some depth and consequently competence in an important area of applied mathematics.This course requires knowledge of higher level courses in mathematics and serves as an introductory graduate level course to prepare the students to apply the methods learned in their research projects.

MATH 513R : Advanced Topics in Applied Mathematics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- Students should gain a familiarity with a particular area of applied mathematics selected by the instructor. In general, a significant, coherent set of readings will be defined, and the student's base of mathematical knowledge and expertise will increase in notable, measurable ways. The students is expected to demonstrate mastery of the material in a manner that is acceptable to the professor.

MATH 521 : Methods of Applied Mathematics 1. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Math 334 or equivalent.

DESCRIPTION: Possible topics include variational, integral, and partial differential equations; spectral and transform methods; nonlinear waves; Green's functions; scaling and asymptotic analysis; perturbation theory; continuum mechanics.

**Course Outcomes**

- The object of this course is to familiarize students with classical techniques in applied mathematics and demonstrate their application to specific problems. Possible topics include variational, integral, and partial differential equations; spectral and transform methods; nonlinear waves; Green's functions; scaling and asymptotic analysis; perturbation theory; continuum mechanics. For more detailed information visit the Math 521 Wiki page.

MATH 522 : Methods of Applied Mathematics 2. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Math 521 or equivalent.

DESCRIPTION: Possible topics include variational, integral, and partial differential equations; spectral and transform methods; nonlinear waves; Green's functions; scaling and asymptotic analysis; perturbation theory; continuum mechanics.

**Course Outcomes**

- The object of this course is to familiarize students with classical techniques in applied mathematics and demonstrate their application to specific problems. Possible topics include variational, integral, and partial differential equations; spectral and transform methods; nonlinear waves; Green's functions; scaling and asymptotic analysis; perturbation theory; continuum mechanics. For more detailed information visit the Math 522 Wiki page.

MATH 532 : Complex Analysis. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Math 352 or instructor's consent.

DESCRIPTION: Introduction to theory of complex analysis at beginning graduate level. Topics: Cauchy integral equations, Riemann surfaces, Picard's theorem, etc.

**Course Outcomes**

- Students should be familiar with the minimal learning outcomes listed on the Math 532 Math Wiki page. They should know the technical terms, and be able to implement the methods taught in the course to work associated problems, including proving simple results.

MATH 534 : Introduction to Dynamical Systems 1. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: Math 334, 341; or equivalents.

DESCRIPTION: Discrete dynamical systems; iterations of maps on the line and the plane; bifurcation theory; chaos, Julia sets, and fractals. Computational experimentation.

**Course Outcomes**

- Discrete dynamical systems; iterations of maps on the line and the plane; bifurcation theory; chaos, Julia sets, and fractals. Computational experimentation.

MATH 540 : Linear Analysis. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Math 342 or equivalent.

DESCRIPTION: Normed vector spaces and linear maps between them.

**Course Outcomes**

- Students should obtain a thorough understanding of the topics listed on the Math 540 Wiki page. In particular they should be able to define and use relevant terminology, compare and contrast closely-related concepts, and state (and, where feasible, prove) major theorems.

MATH 541 : Real Analysis. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Math 341; 314 or 342; or equivalents.

DESCRIPTION: Rigorous treatment of differentiation and integration theory; Lebesque measure; Banach spaces.

**Course Outcomes**

- Students should understand the topics outlined in the minimal learning outcomes on the Math 541 Wiki page. As evidence of that understanding, students should be able to demonstrate mastery of all relevant vocabulary, familiarity with common examples and counterexamples, knowledge of the content of the major theorems, understanding of the ideas in their proofs, and ability to make direct application of those results to related problems.

MATH 543 : Advanced Probability 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Math 314 and Math 341; and Math 431 or Stat 370.

DESCRIPTION: Foundations of the modern theory of probability with applications. Probability spaces, random variables, independence, conditioning, expectation, generating functions, and Markov chains.

**Course Outcomes**

- Students should understand the topics listed in the minimal learning outcomes on the Math 543 Wiki page. As evidence of that understanding, students should be able to demonstrate mastery of all relevant vocabulary, familiarity with common examples and counterexamples, knowledge of the content of the major theorems, understanding of the ideas in their proofs, and ability to make direct application of those results to related problems.

MATH 544 : Advanced Probability 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 543

RECOMMENDED: Math 341, 342, 431; or equivalents.

DESCRIPTION: Advanced concepts in modern probability. Convergence theorems and laws of large numbers. Stationary processes and ergodic theorems. Martingales. Diffusion processes and stochastic integration.

**Course Outcomes**

- Students should understand the topics outlined in the minimal learning outcomes on theMath 544 Wiki page. As evidence of that understanding, students should be able to demonstrate mastery of all relevant vocabulary, familiarity with common examples and counterexamples, knowledge of the content of the major theorems, understanding of the ideas in their proofs, and ability to make direct application of those results to related problems.

MATH 547 : Partial Differential Equations 1. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Math 334, 342; or equivalents.

DESCRIPTION: Methods of analysis for hyperbolic, elliptic, and parabolic equations, including characteristic manifolds, distributions, Green's functions, maximum principles and Fourier analysis.

**Course Outcomes**

- Students should understand the topics listed in the minimal learning outcomes on the Math 547 Wiki page. As evidence of that understanding, students should be able to demonstrate mastery of all relevant vocabulary, familiarity with common examples and counterexamples, knowledge of the content of the major theorems, and ability to make direct application of those results to related problems, including calculations.

MATH 553 : Foundations of Topology 1. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 341

DESCRIPTION: Naive set theory, topological spaces, product spaces, subspaces, continuous functions, connectedness, compactness, countability, separation axioms, metrization, complete metric spaces, function spaces, and Baire spaces.

**Course Outcomes**

- Students should gain a familiarity with the general topology that is used throughout mathematics.For more detailed information visit the Math 553 Wiki page.

MATH 554 : Foundations of Topology 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Math 553 or instructor's consent.

DESCRIPTION: Fundamental group, retractions and fixed points, homotopy types, separation theorems, classification of surfaces, Seifert-van Kampen Theorem, classification of covering spaces, and applications to group theory.

**Course Outcomes**

- Students should gain a familiarity with surfaces, fundamental group, and covering spaces.For more detailed information visit the Math 554 Wiki page.

MATH 561 : Introduction to Algebraic Geometry 1. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Math 671 or concurrent enrollment.

DESCRIPTION: Basic definitions and theorems on affine, projective, and quasi-projective varieties.

**Course Outcomes**

There are no course outcomes available

MATH 562 : Introduction to Algebraic Geometry 2. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: MATH 561

DESCRIPTION: Local properties of quasi-projective varieties. Divisors and differential forms.

**Course Outcomes**

There are no course outcomes available

MATH 565 : Differential Geometry. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Math 342 or equivalent.

DESCRIPTION: A rigorous treatment of the theory of differential geometry.

**Course Outcomes**

- Students should achieve mastery of the topics listed in the minimal learning outcomes section of the Math 565 Wiki page. This means that they should know all relevant definitions, full statements of the major theorems, and examples of the various concepts. Further, students should be able to solve non-trivial problems related to these concepts, and prove theorems in analogy to proofs given by the instructor.

MATH 570 : Matrix Analysis. (3:3:0)

PREREQUISITE: Math 302 or 313 or equivalent.

DESCRIPTION: Special classes of matrices, canonical forms, matrix and vector norms, localization of eigenvalues, matrix functions, applications.

**Course Outcomes**

- The minimal learning outcomes section of the Math 570 Wiki page outlines material which all students in Math 570 should understand. As evidence of that understanding, students should be able to demonstrate mastery of relevant vocabulary, familiarity with common examples and counterexamples, knowledge of the major theorems, understanding of the ideas in their proofs, and ability to make direct application of those results to related problems.

MATH 571 : Algebra 1. (3:3:0)

PREREQUISITE: Math 372 or equivalent.

DESCRIPTION: Group theory, ring theory.

**Course Outcomes**

There are no course outcomes available

MATH 572 : Algebra 2. (3:3:0)

PREREQUISITE: MATH 571

DESCRIPTION: Modules, vector spaces, field theory, Galois theory.

**Course Outcomes**

There are no course outcomes available

MATH 586 : Introduction to Algebraic Number Theory. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Math 372 or equivalent.

DESCRIPTION: Algebraic integers; different and discriminant; decomposition of primes; class group; Dirichlet unit theorem; Dedekind zeta function; cyclotomic fields; valuations; completions.

**Course Outcomes**

- Students should achieve an advanced mastery of the topics listed on the 586 Math Wiki page. This means that they should know all relevant definitions, correct statements and proofs of the major theorems (including their hypotheses and limitations), and examples and non-examples of the various concepts. The students should be able to demonstrate their mastery by solving difficult problems related to these concepts, and by proving theorems about the below concepts, even if the theorems go beyond the material in the text.

MATH 587 : Introduction to Analytic Number Theory. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Math 352 or equivalent.

DESCRIPTION: Arithmetical functions; distribution of primes; Dirichlet characters; Dirichlet's theorem; Gauss sums; primitive roots; Dirichlet L-functions; Riemann zeta-function; prime number theorem; partitions.

**Course Outcomes**

- Students should be familiar with the concepts listed on the Math 587 Wiki page. They should know the technical terms, and be able to implement the methods taught in the course to work associated problems, including proving simple results.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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College of Physical and Mathematical Sciences Home

Mathematics Department Home

Majors

- BS in Mathematics

Emphasis (optional):

- Applied and Computational Mathematics

Minors

- Mathematics

Course Information

- Mathematics (Math) Courses

Faculty

# Mathematics Faculty

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## Professors

Baker, Roger C.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Birkbeck College, London, 1968
PhD, Birkbeck College, London, 1971

Barrett, Wayne Walton
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1968
MS, New York University, 1975
PhD, New York University, 1975

Cannon, James W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1967
PhD, University of Utah, 1969

Cardon, David Alan
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
MS, Stanford University, 1993
PhD, Stanford University, 1996

Chahal, Jasbir S.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** MA, Punjab University, India 1970
PhD, Johns Hopkins University, 1979

Conner, Gregory
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BA, Humboldt State University, 1987
MS, University of Utah, 1989
PhD, University of Utah, 1992

Dallon, John Carlile
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BA, University of Utah, 1989
MS, University of Utah, 1991
PhD, University of Utah, 1996

Dorff, Michael John

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1986
MS, University of New Hampshire, 1992
PhD, University of Kentucky, Lexington, 1997

Doud, Darrin M.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1993
MS, University of Illinois, Urbana-Champaign, 1999
PhD, University of Illinois, Urbana-Champaign, 1999

Fearnley, Lawrence
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, University of London, 1953
PhD, University of Utah, 1959

Forcade, Rodney W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, University of Chicago, 1961
MS, University of Chicago, 1963
PhD, University of Washington, 1971

Halverson, Denise M.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1989
MS, Brigham Young University, 1994
PhD, University of Tennessee, Knoxville, 1999

Humphries, Stephen P.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BSc, University of Wales, 1974
MSc, University of Wales, 1978
PhD, University of Wales, 1983

Jarvis, Tyler J.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1989
MS, Brigham Young University, 1990
MA, Princeton University, 1992
PhD, Princeton University, 1994

Kuttler, Kenneth L.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, Brigham Young University, 1976
PhD, University of Texas, Austin, 1981

Lang, William E.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BA, Carleton College, 1974
MS, Yale University, 1975
PhD, Harvard University, 1978

Li, Xian-Jin
**COLLEGE:** Physical and Mathematical Sciences

**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Hunan Normal University, China, 1982
MS, Academia Sinica, Beijing, China, 1985
PhD, Purdue University, 1993

Lu, Kening
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Sichuan University, China, 1982
MS, Sichuan University, China, 1985
PhD, Michigan State University, 1988

Ouyang, Tiancheng
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** MS, Nankai University, China, 1981
PhD, University of Minnesota, Minneapolis, 1989

Roundy, Robin O.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
MS, Brigham Young University, 1980
PhD, Stanford University, 1984

Smith, William V.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, University of Utah, 1973
PhD, University of Utah, 1978

Wright, David Grant
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1970
MA, University of Wisconsin, Madison, 1972
PhD, University of Wisconsin, Madison, 1973

## Associate Professors

Bakker, Lennard Frank
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, University of Victoria, Canada, 1991
MS, University of Victoria, Canada, 1993
PhD, Queen's University, Canada, 1997

Chow, Shue-Sum
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, University of Canterbury, New Zealand, 1979
PhD, Australian National University, Australia, 1983

Fisher, Todd
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1998
MS, Brigham Young University, 1999
PhD, Northwestern University, 2004

Glasgow, Scott Alan
**COLLEGE:** Physical and Mathematical Sciences

**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1988
PhD, University of Arizona, 1993

Grant, Christopher P.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1986
MS, Brigham Young University, 1988
PhD, University of Utah, 1991

Humpherys, Jeffrey C.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1995
MA, Indiana University, 1997
PhD, Indiana University, 2002

Lawlor, Gary
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1984
PhD, Stanford University, 1988

Purcell, Jessica
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BA, University of Utah, 1998
MS, University of Michigan, 1999
PhD, Stanford University, 2004

Swenson, Eric Lewis
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1987
PhD, Brigham Young University, 1993

Villamizar, Vianey
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Professor
**DEGREES:** BS, Universidad Central de Venezuela, 1977
MS, Universidad Central de Venezuela, 1983
PhD, Rensselaer Polytechnic Institute, 1987

## Assistant Professors

Jenkins, Paul M.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
MS, Brigham Young University, 2002
PhD, University of Wisconsin, Madison, 2006

Nielsen, Pace
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
PhD, University of California, Berkeley, 2006

# Associate Teaching Professor

McKay, Steven M.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Utah State University, 1983
MS, Utah State University, 1985
PhD, Colorado State University, 1990

**College of Physical and Mathematical Sciences Home**

**Mathematics Education Department Home**

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**Minors**

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- Mathematics Education (MthEd) Courses

**Faculty**

# Mathematics Education

Blake Peterson, Chair
167A TMCB, (801) 422-7784

College of Physical and Mathematical Sciences Advisement Center
N-179 ESC, (801) 422-6270

## Admission to Degree Program

Candidates for all teacher preparation programs are required to complete an application that includes core criteria for each program.

## The Discipline

Mathematics is the discipline through which we make sense of the order, patterns, and quantitative situations we perceive in the world around us. The foundational skills of this discipline—the abilities to formulate, focus, and solve problems; to articulate, test, and justify conjectures; to communicate one's reasoning about quantities and the relationships between them; and to see connections between different mathematical ideas and real-world contexts—are highly valued in society and are characteristics of any educated person. Mathematics is not only a body of knowledge but also a process of analysis, reasoning, comparison, deduction, generalization, and problem solving.

Mathematics educators depend heavily upon their own understanding of mathematics in order to identify and articulate the mathematical ideas they want students to learn, to assess which concepts their students already understand that might serve as a foundation for learning, and to develop activities that help students develop rich understandings. They also use their understanding of the nature of the discipline to structure a culture of inquiry, reasoning, and problem solving in their classrooms.

Courses in the undergraduate program are designed to help prospective teachers plan, manage, and implement classroom activities that facilitate students' learning of mathematics. Specific program goals include (1) mastery of the foundational skills of mathematics, (2) deep reflection on mathematics learning at all levels through observation of and participation in high-quality classroom practice, (3) increased autonomy and confidence as an investigator, active learner, and productive thinker, and (4) extended field experience, informed by the best current understanding.

Program faculty include educational and mathematical researchers, specialists in both preservice and inservice teacher education, and school practitioners, spanning a broad range of interest and experience.

## Career Opportunities

Majors in mathematics education prepare for careers in teaching at the middle school and junior and high school levels or for graduate studies in the field.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Mathematics Education** (Program Outcomes)

**Minor in Mathematics Education**

Students should see their college advisement center and department advisors for information concerning the undergraduate programs.

## Graduate Programs and Degrees

MA in Mathematics Education

For more information see the BYU 2014–2015 Graduate Catalog.

## Advisement

Upon completion of the calculus sequence (Math 112 [honors section] and Math 113 [honors section], or equivalent AP credit), undergraduate majors are strongly encouraged to meet with the department undergraduate advisor to make a graduation plan.

Students who are considering graduate work in mathematics education may receive advice from the graduate coordinator.

## General Information

It is recommended that a student complete the following courses in high school:

- 4 units of English.
- 1 unit of physics or chemistry.
- 4 units of mathematics, including 2.5 units of algebra, 1 unit of geometry, and .5 unit of trigonometry. This qualifies a student to begin college mathematics with Math 112 (honors section). If calculus is available in high school, a student planning to major in mathematics education is strongly encouraged to take it; doing so requires completing one of the preceding algebra units before high school.
- Advanced Placement (AP) credit is available in mathematics as follows:
    - A score of 3 on the calculus AB exam gives credit in Math 110 and 111; a score of 4 or 5 on the calculus AB exam gives credit in Math 110 and 112.
    - A score of 3, 4, or 5 on the calculus BC exam gives credit in Math 112 and 113.
    - An AP student without credit in Math 112 must begin with Math 112 (honors section); an AP student without credit in Math 113 must begin with Math 112 or 113 (honors sections).
    - AP students with credit in Math 113 are urged to begin with Math 113 (honors section) anyway, unless they scored 5 on the calculus BC exam.
    - AP students should direct Educational Testing Service (ETS) to report scores to BYU to have credit posted.

Questions regarding placement should be directed to the Mathematics Education Department, 167 TMCB.

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**Mathematics Education Department Home**

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**Minors**

- Minor in Mathematics Education

**Course Information**

- Mathematics Education (MthEd) Courses

**Faculty**

# BS in Mathematics Education (74 hours*, including licensure hours)

Show All Course Descriptions
Hide All Course Descriptions

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following core requirements:

MTHED 177 : Critical Review of School Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 113

DESCRIPTION: Strengthen understanding of high-school mathematics; gain awareness as mathematics learners in learning communities; learn how to support collaborative communities as teachers.

**Course Outcomes**

- Students have a deep understanding of select central concepts in middle school mathematics as well as core representations, canonical examples, and alternative algorithms germane to teaching these select concepts.
- Students can engage in meaningful mathematical exploration, are willing and able to approach and solve challenging mathematics problems, and can reflect on their own learning to make inferences about how adolescents learn mathematics.
- Students know and can describe what it means to understand mathematics relationally, can demonstrate mathematical understanding by creating and evaluating conceptually-oriented mathematical explanations, and can explain why conceptually-oriented mathematics instruction is essential for supporting adolescents' learning of mathematics.
- Students recognize that mathematics instruction that does not build relational understanding has failed a majority of adolescents, even themselves, and that they have a moral obligation to seek the necessary knowledge and expertise to teach mathematics in ways that enable all adolescents to develop conceptual understanding, procedural fluency, and facility with authentic mathematical practices.

MTHED 276 : Exploration of Mathematics Teaching. (4:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 290 & MATH 313 & MTHED 117; or MATH 290 & MATH 313 & MTHED 177; FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching mathematics to secondary students.

**Course Outcomes**

- Students understand authentic mathematical practices and use them to engage in meaningful mathematical exploration and reflect on their own use of these practices to make inferences about how adolescents might engage in mathematical tasks.
- Students articulate a philosophy of teaching and learning mathematics based on the professional standards for teaching mathematics, the moral dimensions of teaching, and the INTASC standards.
- Students can use curriculum guides such as the NCTM content standards or the Common Core State Standards to trace the K-12 development of a select central concept of mathematics as a means for planning instruction appropriate to a particular grade level and topic.
- Students can analyze and describe the mathematical experiences of adolescents in terms of the tasks, discourse and learning environments they observe in public school classrooms, and can reconcile the theoretical principles of their university experience with the reality of a secondary classroom.

MTHED 277 : Task Design and Assessment of Student Understanding. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MTHED 177 & MTHED 276; or MTHED 117 & MTHED 276

DESCRIPTION: Building tasks that elicit important mathematical ideas. Reflecting on and assessing the success of tasks through questioning and other methods of formative assessment.

**Course Outcomes**

- Students have a deep understanding of select central concepts in high school mathematics as well as core representations, canonical examples, and alternative algorithms germane to teaching these concepts.
- Students can analyze a section in a textbook or curricular unit, a specific mathematical topic, or a task to identify and describe the important mathematical concepts and procedures related to that section, topic, or task.
- Students can use their knowledge of mathematics and how adolescents learn mathematics to analyze a task in order to anticipate the type of mathematics learning it might foster or reveal.
- Students understand how mathematical tasks can support adolescents' development of conceptual understanding and procedural fluency, and can use that understanding to design mathematical tasks that allow adolescents to use their prior knowledge and experiences to develop understanding of particular concepts and procedures.
- Students understand how formative and summative assessment can be used to support adolescents' development of conceptual understanding and procedural fluency, and can use that understanding to design assessment tasks that provide evidence of and insight into adolescents' understanding of particular concepts and procedures.
- Students recognize and can explain how the thoughtful use of mathematical tasks can enable them to reflect on and improve their instruction, and how such use can nurture and empower adolescents to draw upon their divine potential, intelligence, and capabilities to learn and do mathematics.

MTHED 308 : Mathematics Teaching with Technology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 313 & MATH 362

DESCRIPTION: Using technology to teach and understand mathematics. Math-specific software and calculators used to investigate Euclidean geometry, non-Euclidean geometry, algorithms, probabilities, etc., research regarding effectiveness.

**Course Outcomes**

- Students have a deep understanding of select central concepts in secondary mathematics as well as core representations, canonical examples, and alternative algorithms germane to teaching these select concepts.
- Students can use technology to engage in meaningful mathematical exploration and can reflect on their own learning to make inferences about how adolescents learn mathematics with technology.
- Students can articulate and represent their mathematical thinking in technological environments in ways that are appropriate for their intended audience.
- Students understand the affordances and constraints of technology in teaching mathematics and can apply this knowledge to design learning opportunities involving the use of technology to support adolescents' mathematical learning.

MTHED 377 : Mathematics Teaching in the Public Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MTHED 277; Departmental consent.

DESCRIPTION: Mathematics teaching practice in grades 7-12, including lesson/task design, curriculum evaluation, and classroom management in context of practice teaching.

**Course Outcomes**

- Students understand the central concepts, tools of inquiry, and structures of the discipline of mathematics as well as core representations, canonical examples, and alternative algorithms germane to teaching secondary school mathematics.
- Students can analyze a task, a section in a textbook or curricular unit, or a specific mathematical topic to identify and describe the related important mathematical concepts and procedures, and can design relevant tasks that foster conceptual understanding, procedural fluency, and authentic mathematical practices.
- Students understand how to create lesson plans that involve meaningful tasks in the context of a given unit, that anticipate student thinking and how the lesson might build on that thinking, and that articulate how they will orchestrate each phase of the lesson (launch, explore, discuss, unpack).
- Students can use their lesson plans to engage adolescents in the day's activities (launch), facilitate meaningful exploration of mathematics (explore), orchestrate discussion that builds on and extends adolescents' emerging mathematical conceptions (discuss) and ensure the important mathematical concepts and procedures related to the goals of the lesson are made explicit (unpack).
- Students understand how to design and use formative assessment that monitors the learner's progress, informs instructional decisions, and engages adolescents in assessing their own mathematical learning.
- Students demonstrate their professionalism through maintaining appropriate relationships and behavior in the MthEd 377 classroom setting; improving practice through reflection and by providing, soliciting and incorporating feedback; and contributing to the professional learning community of the classroom.

MTHED 378 : Practicum in Mathematics Education. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in MthEd 377.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Students understand that adolescents develop mathematical knowledge by building on prior knowledge and experience; that adolescents differ cognitively, linguistically, socially, emotionally, and physically; and that adolescents learn best when given regular opportunities to reason about and make sense of mathematics in an environment of high expectations and strong support.
- Students understand how to design learning environments and mathematical experiences that engage all adolescents in the exploration and development of mathematical ideas, as well as how to effectively foster these environments and orchestrate these experiences by promoting conceptual understanding, procedural fluency, and authentic mathematical practices.

Students can analyze and describe the mathematical experiences of adolescents in terms of the tasks, discourse and learning environments they observe in public school classrooms, and can reconcile the theoretical principles of their university experience with the reality of a secondary classroom.
- Students demonstrate their professionalism through maintaining appropriate relationships and behavior in the school setting, and improve their practice through reflection and by providing, soliciting and incorporating feedback.

**Note 1:** Prerequisites for all mathematics education courses will be strictly adhered to.

**Note 2:** FBI fingerprint and background clearance must be completed prior to enrollment in MthEd 276.

3. Complete the following:

MATH 112 : Honors Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

MATH 113 : Honors Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 290 : Fundamentals of Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Math 112 or concurrent enrollment with instructor's consent.
DESCRIPTION: Achieving maturity in mathematical communication. Introduction to mathematical proof; methods of proof; analysis of proof; induction; logical reasoning.

**Course Outcomes**

- This course is aimed at undergraduate mathematics and mathematics education majors. It is a first course in mathematical thinking. It is intended as an introduction to mathematical proof, and students who finish the course should achieve maturity in mathematical communication. For more detailed information visit the Math 290 Wiki page.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
RECOMMENDED: Math 290.
DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 313.
DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

MATH 334 : Ordinary Differential Equations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 113 and Math 313.

DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

MATH 341 : Theory of Analysis 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Math 113 and Math 290.

DESCRIPTION: Rigorous treatment of calculus of a single real variable: topology, order, completeness of real numbers; continuity, differentiability, integrability, and convergence of functions.

**Course Outcomes**

- The main purpose of this course is to provide students with an understanding of the real number system and of real-valued functions of a single real variable, with the focus being on the theoretical and logical foundations of single-variable calculus. A secondary purpose of this course is to reinforce students' prior training in discovering and writing valid mathematical proofs.For more detailed information visit the Math 341 Wiki.

MATH 371 : Abstract Algebra 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 290 & MATH 313

DESCRIPTION: Groups, group homomorphisms, rings, ideals, and polynomials.

**Course Outcomes**

- This course is aimed at undergraduate mathematics and mathematics education majors. It is a first course in abstract algebra. In addition to being an important branch of mathematics in its own right, abstract algebra is now an essential tool in number theory, geometry, topology, and, to a lesser extent, analysis. Thus it is a core requirement for all mathematics majors. Outside of mathematics, algebra also has applications in cryptography, coding theory, quantum chemistry, and physics. For more detailed information visit the Math 371 Wiki page.

MTHED 300 : (MthEd-Math) History and Philosophy of Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 113

DESCRIPTION: Historical development of important mathematical ideas and philosophies; implications for the mathematical curriculum.

**Course Outcomes**

- Students understand and can describe the major approaches—cultural, philosophical, and psychological—to explaining the origin and nature of mathematics and its relation to understanding and modeling the physical world.
- Students understand and can describe the major historical periods of development of mathematical thought, as well as the contributions of various cultures and individuals within those periods.
- Students understand and can describe the historical development of concepts and practices central to school mathematics, including numeration, arithmetic, algebra, geometry, calculus, and probability.
- Through understanding the complex relationship between mathematical practices and human experience, students appreciate the complexity of teaching and learning mathematics and the different approaches and experiences adolescents will bring to learning those practices.

MTHED 362 : (MthEd-Math) Survey of Geometry. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 290

DESCRIPTION: Logical and historical development of Euclidean and non-Euclidean geometry, transformations and symmetry; relationships among axiomatic systems; use of software and other geometric models; proofs and Van Hiele levels.

**Course Outcomes**

- Students understand central objects, concepts, relationships, definitions, and theorems of Euclidean geometry, how adolescents come to understand these, and the canonical examples and alternative approaches germane to teaching secondary school geometry.
- Students can communicate geometric ideas effectively using a variety of appropriate representations and can construct valid proofs of geometric theorems within a given axiom system.
- Students understand and can describe the relationships among neutral, Euclidean, and non-Euclidean

geometries in terms of fundamental geometric concepts, objects, and properties (particularly parallelism), and can use the fundamental properties of axiom systems and models to provide convincing arguments about these relationships.

STAT 301 : Statistics and Probability for Secondary Educators. (3:3:2)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: MATH 113

DESCRIPTION: Statistics and probability, emphasizing secondary-specific curriculum. Principles of counting, probability distributions, density functions, graphical methods, descriptive and inferential statistics, computer package.

**Course Outcomes**

- Identify and provide examples of basic statistical terminology, such as population, sample, and random variable
- Construct, read, and interpret data displays and decide the most appropriate procedure for data analysis
- Summarize data graphically and numerically
- Identify elements and distinguish between observational studies and experiments
- Compute probabilities for simple events
- Create and interpret by application of a random variable discrete and normal probability distributions
- Model situations by using experimental or theoretical probabilities
- Become aware of misconceptions and errors about statistics and probability
- Make inferences, draw conclusions, and evaluate arguments from a data analysis
- Explain the need for statistics in understanding real-world processes (i.e., by accounting)
- Develop simple activities to reinforce basic statistical topics to middle school and high school students

**Note:** Math 112 and 113 must be honors sections.

4. Complete one course from the following:

MATH 355 : Graph Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 313

DESCRIPTION: Maps, graphs and digraphs, coloring problems, applications.

**Course Outcomes**

- Graphs, trees, pathes and cycles, connectedness, chromatic number, planarity conditions, genus of a graph, the Five Color Theorem. Students should also be aware of Kuratowsky's Theorem, and the Four Color Theorem. If there is time, it is good to do the proof of Kuratowski's Theorem. For more detailed information visit the Math 355 Wiki page.

MATH 450 : Combinatorics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: MATH 371

DESCRIPTION: Permutations, combinations, recurrence relations, applications.

**Course Outcomes**

- Permutations and combinations basics, including the Pigeonhole Principle, binomial coefficients and the Binomial Theorem, Stirling's Approximation, Inclusion/exclusion, Generating functions and recurrence relations (rational functions), Groups, permutations and counting problems -- Polya's Theorem. For more detailed information visit the Math 450 Wiki page.

MATH 487 : Number Theory. (3:3:0)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: MATH 371

DESCRIPTION: Foundations; congruences; quadratic reciprocity; unique factorization, prime distribution or Diophantine equations.

**Course Outcomes**

- Students should know all relevant definitions, correct statements of the major theorems (including their hypotheses and limitations), and examples and non-examples of the various concepts The students should be able to demonstrate their mastery by solving non-trivial problems related to these concepts, and by proving simple (but non-trivial) theorems about the below concepts, related to, but not identical to, statements proven by the text or instructor. For more detailed information visit the Math 487 Wiki page.

5. A teaching minor is not needed for licensure. However, students interested in teaching an academic subject in addition to mathematics should consider pursuing a teaching minor in that discipline.

6. Complete the Professional Education Component:
   - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.

DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

- Complete 12 hours of one of the following:

MTHED 476 : Secondary Student Teaching in Mathematics. (12:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching mathematics to secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

MTHED 496 : Academic Internship: Secondary Mathematics Education. (12:Arr:Arr)

WHEN TAUGHT: Fall

PREREQUISITE: Completion of all course work or departmental approval.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching mathematics to secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

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# Minor in Mathematics Education (33 hours*)

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*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 290 : Fundamentals of Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Math 112 or concurrent enrollment with instructor's consent.
DESCRIPTION: Achieving maturity in mathematical communication. Introduction to mathematical proof; methods of proof; analysis of proof; induction; logical reasoning.

**Course Outcomes**

- This course is aimed at undergraduate mathematics and mathematics education majors. It is a first course in mathematical thinking. It is intended as an introduction to mathematical proof, and students

who finish the course should achieve maturity in mathematical communication. For more detailed information visit the Math 290 Wiki page.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
RECOMMENDED: Math 290.
DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

MATH 362 : (Math-MthEd) Survey of Geometry. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: MATH 290
DESCRIPTION: Logical and historical development of Euclidean and non-Euclidean geometry, transformations and symmetry; relationships among axiomatic systems; use of software and other geometric models; proofs and Van Hiele levels.

**Course Outcomes**

- Students understand central objects, concepts, relationships, definitions, and theorems of Euclidean geometry, how adolescents come to understand these, and the canonical examples and alternative approaches germane to teaching secondary school geometry.
- Students can communicate geometric ideas effectively using a variety of appropriate representations and can construct valid proofs of geometric theorems within a given axiom system.
- Students understand and can describe the relationships among neutral, Euclidean, and non-Euclidean geometries in terms of fundamental geometric concepts, objects, and properties (particularly parallelism), and can use the fundamental properties of axiom systems and models to provide convincing arguments about these relationships.

MTHED 177 : Critical Review of School Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MATH 113
DESCRIPTION: Strengthen understanding of high-school mathematics; gain awareness as mathematics learners in learning communities; learn how to support collaborative communities as teachers.

**Course Outcomes**

- Students have a deep understanding of select central concepts in middle school mathematics as well as core representations, canonical examples, and alternative algorithms germane to teaching these select concepts.
- Students can engage in meaningful mathematical exploration, are willing and able to approach and solve challenging mathematics problems, and can reflect on their own learning to make inferences about how adolescents learn mathematics.
- Students know and can describe what it means to understand mathematics relationally, can demonstrate mathematical understanding by creating and evaluating conceptually-oriented mathematical explanations, and can explain why conceptually-oriented mathematics instruction is essential for supporting adolescents' learning of mathematics.
- Students recognize that mathematics instruction that does not build relational understanding has failed a majority of adolescents, even themselves, and that they have a moral obligation to seek the necessary knowledge and expertise to teach mathematics in ways that enable all adolescents to develop conceptual understanding, procedural fluency, and facility with authentic mathematical practices.

MTHED 277 : Task Design and Assessment of Student Understanding. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: MTHED 177 & MTHED 276; or MTHED 117 & MTHED 276
DESCRIPTION: Building tasks that elicit important mathematical ideas. Reflecting on and assessing the success of tasks through questioning and other methods of formative assessment.

**Course Outcomes**

- Students have a deep understanding of select central concepts in high school mathematics as well as core representations, canonical examples, and alternative algorithms germane to teaching these concepts.
- Students can analyze a section in a textbook or curricular unit, a specific mathematical topic, or a task to identify and describe the important mathematical concepts and procedures related to that section, topic, or task.
- Students can use their knowledge of mathematics and how adolescents learn mathematics to analyze a task in order to anticipate the type of mathematics learning it might foster or reveal.
- Students understand how mathematical tasks can support adolescents' development of conceptual understanding and procedural fluency, and can use that understanding to design mathematical tasks that allow adolescents to use their prior knowledge and experiences to develop understanding of particular concepts and procedures.
- Students understand how formative and summative assessment can be used to support adolescents' development of conceptual understanding and procedural fluency, and can use that understanding to design assessment tasks that provide evidence of and insight into adolescents' understanding of

particular concepts and procedures.
- Students recognize and can explain how the thoughtful use of mathematical tasks can enable them to reflect on and improve their instruction, and how such use can nurture and empower adolescents to draw upon their divine potential, intelligence, and capabilities to learn and do mathematics.

MTHED 308 : Mathematics Teaching with Technology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 313 & MATH 362

DESCRIPTION: Using technology to teach and understand mathematics. Math-specific software and calculators used to investigate Euclidean geometry, non-Euclidean geometry, algorithms, probabilities, etc., research regarding effectiveness.

**Course Outcomes**

- Students have a deep understanding of select central concepts in secondary mathematics as well as core representations, canonical examples, and alternative algorithms germane to teaching these select concepts.
- Students can use technology to engage in meaningful mathematical exploration and can reflect on their own learning to make inferences about how adolescents learn mathematics with technology.
- Students can articulate and represent their mathematical thinking in technological environments in ways that are appropriate for their intended audience.
- Students understand the affordances and constraints of technology in teaching mathematics and can apply this knowledge to design learning opportunities involving the use of technology to support adolescents' mathematical learning.

MTHED 377 : Mathematics Teaching in the Public Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MTHED 277; Departmental consent.

DESCRIPTION: Mathematics teaching practice in grades 7-12, including lesson/task design, curriculum evaluation, and classroom management in context of practice teaching.

**Course Outcomes**

- Students understand the central concepts, tools of inquiry, and structures of the discipline of mathematics as well as core representations, canonical examples, and alternative algorithms germane to teaching secondary school mathematics.
- Students can analyze a task, a section in a textbook or curricular unit, or a specific mathematical topic to identify and describe the related important mathematical concepts and procedures, and can design relevant tasks that foster conceptual understanding, procedural fluency, and authentic mathematical practices.
- Students understand how to create lesson plans that involve meaningful tasks in the context of a given unit, that anticipate student thinking and how the lesson might build on that thinking, and that articulate how they will orchestrate each phase of the lesson (launch, explore, discuss, unpack).
- Students can use their lesson plans to engage adolescents in the day's activities (launch), facilitate meaningful exploration of mathematics (explore), orchestrate discussion that builds on and extends adolescents' emerging mathematical conceptions (discuss) and ensure the important mathematical concepts and procedures related to the goals of the lesson are made explicit (unpack).
- Students understand how to design and use formative assessment that monitors the learner's progress, informs instructional decisions, and engages adolescents in assessing their own mathematical learning.
- Students demonstrate their professionalism through maintaining appropriate relationships and behavior in the MthEd 377 classroom setting; improving practice through reflection and by providing, soliciting and incorporating feedback; and contributing to the professional learning community of the classroom.

MTHED 378 : Practicum in Mathematics Education. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in MthEd 377.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Students understand that adolescents develop mathematical knowledge by building on prior knowledge and experience; that adolescents differ cognitively, linguistically, socially, emotionally, and physically; and that adolescents learn best when given regular opportunities to reason about and make sense of mathematics in an environment of high expectations and strong support.
- Students understand how to design learning environments and mathematical experiences that engage all adolescents in the exploration and development of mathematical ideas, as well as how to effectively foster these environments and orchestrate these experiences by promoting conceptual understanding, procedural fluency, and authentic mathematical practices.
- Students can analyze and describe the mathematical experiences of adolescents in terms of the tasks, discourse and learning environments they observe in public school classrooms, and can reconcile the theoretical principles of their university experience with the reality of a secondary classroom.
- Students demonstrate their professionalism through maintaining appropriate relationships and behavior in the school setting, and improve their practice through reflection and by providing, soliciting and incorporating feedback.

STAT 301 : Statistics and Probability for Secondary Educators. (3:3:2)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: MATH 113

DESCRIPTION: Statistics and probability, emphasizing secondary-specific curriculum. Principles of counting, probability distributions, density functions, graphical methods, descriptive and inferential statistics, computer package.

**Course Outcomes**

- Identify and provide examples of basic statistical terminology, such as population, sample, and random variable
- Construct, read, and interpret data displays and decide the most appropriate procedure for data analysis
- Summarize data graphically and numerically
- Identify elements and distinguish between observational studies and experiments
- Compute probabilities for simple events
- Create and interpret by application of a random variable discrete and normal probability distributions
- Model situations by using experimental or theoretical probabilities
- Become aware of misconceptions and errors about statistics and probability
- Make inferences, draw conclusions, and evaluate arguments from a data analysis
- Explain the need for statistics in understanding real-world processes (i.e., by accounting)
- Develop simple activities to reinforce basic statistical topics to middle school and high school students

*Hours include courses that may fulfill university core requirements.

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## Undergraduate Courses

### 100-Level Courses

MTHED 177 : Critical Review of School Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 113

DESCRIPTION: Strengthen understanding of high-school mathematics; gain awareness as mathematics learners in learning communities; learn how to support collaborative communities as teachers.

**Course Outcomes**

- Students have a deep understanding of select central concepts in middle school mathematics as well as core representations, canonical examples, and alternative algorithms germane to teaching these select concepts.
- Students can engage in meaningful mathematical exploration, are willing and able to approach and solve challenging mathematics problems, and can reflect on their own learning to make inferences about how adolescents learn mathematics.
- Students know and can describe what it means to understand mathematics relationally, can demonstrate mathematical understanding by creating and evaluating conceptually-oriented mathematical explanations, and can explain why conceptually-oriented mathematics instruction is essential for supporting adolescents' learning of mathematics.
- Students recognize that mathematics instruction that does not build relational understanding has failed a majority of adolescents, even themselves, and that they have a moral obligation to seek the necessary knowledge and expertise to teach mathematics in ways that enable all adolescents to develop conceptual understanding, procedural fluency, and facility with authentic mathematical practices.

### 200-Level Courses

MTHED 276 : Exploration of Mathematics Teaching. (4:2:4)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 290 & MATH 313 & MTHED 117; or MATH 290 & MATH 313 & MTHED 177; FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching mathematics to secondary students.

**Course Outcomes**

- Students understand authentic mathematical practices and use them to engage in meaningful mathematical exploration and reflect on their own use of these practices to make inferences about how adolescents might engage in mathematical tasks.
- Students articulate a philosophy of teaching and learning mathematics based on the professional standards for teaching mathematics, the moral dimensions of teaching, and the INTASC standards.
- Students can use curriculum guides such as the NCTM content standards or the Common Core State Standards to trace the K-12 development of a select central concept of mathematics as a means for planning instruction appropriate to a particular grade level and topic.
- Students can analyze and describe the mathematical experiences of adolescents in terms of the tasks, discourse and learning environments they observe in public school classrooms, and can reconcile the theoretical principles of their university experience with the reality of a secondary classroom.

MTHED 277 : Task Design and Assessment of Student Understanding. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MTHED 177 & MTHED 276; or MTHED 117 & MTHED 276

DESCRIPTION: Building tasks that elicit important mathematical ideas. Reflecting on and assessing the success of tasks through questioning and other methods of formative assessment.

**Course Outcomes**

- Students have a deep understanding of select central concepts in high school mathematics as well as core representations, canonical examples, and alternative algorithms germane to teaching these concepts.
- Students can analyze a section in a textbook or curricular unit, a specific mathematical topic, or a task to identify and describe the important mathematical concepts and procedures related to that section, topic, or task.

- Students can use their knowledge of mathematics and how adolescents learn mathematics to analyze a task in order to anticipate the type of mathematics learning it might foster or reveal.
- Students understand how mathematical tasks can support adolescents' development of conceptual understanding and procedural fluency, and can use that understanding to design mathematical tasks that allow adolescents to use their prior knowledge and experiences to develop understanding of particular concepts and procedures.
- Students understand how formative and summative assessment can be used to support adolescents' development of conceptual understanding and procedural fluency, and can use that understanding to design assessment tasks that provide evidence of and insight into adolescents' understanding of particular concepts and procedures.
- Students recognize and can explain how the thoughtful use of mathematical tasks can enable them to reflect on and improve their instruction, and how such use can nurture and empower adolescents to draw upon their divine potential, intelligence, and capabilities to learn and do mathematics.

**300-Level Courses**

MTHED 300 : (MthEd-Math) History and Philosophy of Mathematics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 113

DESCRIPTION: Historical development of important mathematical ideas and philosophies; implications for the mathematical curriculum.

**Course Outcomes**

- Students understand and can describe the major approaches—cultural, philosophical, and psychological—to explaining the origin and nature of mathematics and its relation to understanding and modeling the physical world.
- Students understand and can describe the major historical periods of development of mathematical thought, as well as the contributions of various cultures and individuals within those periods.
- Students understand and can describe the historical development of concepts and practices central to school mathematics, including numeration, arithmetic, algebra, geometry, calculus, and probability.
- Through understanding the complex relationship between mathematical practices and human experience, students appreciate the complexity of teaching and learning mathematics and the different approaches and experiences adolescents will bring to learning those practices.

MTHED 305 : Basic Concepts of Mathematics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Math 110 or equivalent; permission from Teacher Education Department.

DESCRIPTION: Concept-oriented exploration of number, measurement, and informal geometry in relation to children's learning.

NOTE: Required of prospective elementary school teachers.

**Course Outcomes**

- Students have a deep understanding of central concepts in elementary school mathematics related to whole numbers and whole number operations, number theory, integers and integer operations, geometry, and measurement; as well as core representations, canonical examples, patterns in children's thinking, and alternative algorithms germane to teaching these concepts.
- Students understand mathematics as a sense-making activity, can solve problems by employing conceptual understanding and mathematical reasoning, and can reflect on their own learning to make inferences about how children experience and understand mathematics.
- Students engage productively in mathematical inquiry, effectively communicate their mathematical ideas and reasoning with their peers, and reflect on the teaching practices modeled in the MthEd 305 classroom to make inferences about teaching practices that help children learn mathematics.

MTHED 306 : Concepts of Mathematics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MTHED 305; Permission from Teacher Education Department.

DESCRIPTION: Concept-oriented exploration of rational numbers and proportional reasoning, probability, and early algebraic reasoning in relation to children's learning.

NOTE: Required of prospective elementary school teachers.

**Course Outcomes**

- Students have a deep understanding of central concepts in elementary school mathematics related to fractions and fraction operations, probability, and early algebraic reasoning; as well as core representations, canonical examples, patterns in children's thinking, and alternative algorithms germane to teaching these concepts.
- Students engage productively in mathematical inquiry, effectively communicate their mathematical ideas and reasoning with their peers, and reflect on the teaching practices modeled in the MthEd 306 classroom to make inferences about teaching practices that help children learn mathematics.
- Students understand mathematics as a sense-making activity, can solve problems by employing conceptual understanding and mathematical reasoning, and can reflect on their own learning to make inferences about how children experience and understand mathematics.

MTHED 308 : Mathematics Teaching with Technology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 313 & MATH 362

DESCRIPTION: Using technology to teach and understand mathematics. Math-specific software and calculators used to investigate Euclidean geometry, non-Euclidean geometry, algorithms, probabilities, etc., research regarding effectiveness.

**Course Outcomes**

- Students have a deep understanding of select central concepts in secondary mathematics as well as core

representations, canonical examples, and alternative algorithms germane to teaching these select concepts.
- Students can use technology to engage in meaningful mathematical exploration and can reflect on their own learning to make inferences about how adolescents learn mathematics with technology.
- Students can articulate and represent their mathematical thinking in technological environments in ways that are appropriate for their intended audience.
- Students understand the affordances and constraints of technology in teaching mathematics and can apply this knowledge to design learning opportunities involving the use of technology to support adolescents' mathematical learning.

MTHED 362 : (MthEd-Math) Survey of Geometry. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 290

DESCRIPTION: Logical and historical development of Euclidean and non-Euclidean geometry, transformations and symmetry; relationships among axiomatic systems; use of software and other geometric models; proofs and Van Hiele levels.

**Course Outcomes**

- Students understand central objects, concepts, relationships, definitions, and theorems of Euclidean geometry, how adolescents come to understand these, and the canonical examples and alternative approaches germane to teaching secondary school geometry.
- Students can communicate geometric ideas effectively using a variety of appropriate representations and can construct valid proofs of geometric theorems within a given axiom system.
- Students understand and can describe the relationships among neutral, Euclidean, and non-Euclidean geometries in terms of fundamental geometric concepts, objects, and properties (particularly parallelism), and can use the fundamental properties of axiom systems and models to provide convincing arguments about these relationships.

MTHED 377 : Mathematics Teaching in the Public Schools. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MTHED 277; Departmental consent.

DESCRIPTION: Mathematics teaching practice in grades 7-12, including lesson/task design, curriculum evaluation, and classroom management in context of practice teaching.

**Course Outcomes**

- Students understand the central concepts, tools of inquiry, and structures of the discipline of mathematics as well as core representations, canonical examples, and alternative algorithms germane to teaching secondary school mathematics.
- Students can analyze a task, a section in a textbook or curricular unit, or a specific mathematical topic to identify and describe the related important mathematical concepts and procedures, and can design relevant tasks that foster conceptual understanding, procedural fluency, and authentic mathematical practices.
- Students understand how to create lesson plans that involve meaningful tasks in the context of a given unit, that anticipate student thinking and how the lesson might build on that thinking, and that articulate how they will orchestrate each phase of the lesson (launch, explore, discuss, unpack).
- Students can use their lesson plans to engage adolescents in the day's activities (launch), facilitate meaningful exploration of mathematics (explore), orchestrate discussion that builds on and extends adolescents' emerging mathematical conceptions (discuss) and ensure the important mathematical concepts and procedures related to the goals of the lesson are made explicit (unpack).
- Students understand how to design and use formative assessment that monitors the learner's progress, informs instructional decisions, and engages adolescents in assessing their own mathematical learning.
- Students demonstrate their professionalism through maintaining appropriate relationships and behavior in the MthEd 377 classroom setting; improving practice through reflection and by providing, soliciting and incorporating feedback; and contributing to the professional learning community of the classroom.

MTHED 378 : Practicum in Mathematics Education. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in MthEd 377.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Students understand that adolescents develop mathematical knowledge by building on prior knowledge and experience; that adolescents differ cognitively, linguistically, socially, emotionally, and physically; and that adolescents learn best when given regular opportunities to reason about and make sense of mathematics in an environment of high expectations and strong support.
- Students understand how to design learning environments and mathematical experiences that engage all adolescents in the exploration and development of mathematical ideas, as well as how to effectively foster these environments and orchestrate these experiences by promoting conceptual understanding, procedural fluency, and authentic mathematical practices.
- Students can analyze and describe the mathematical experiences of adolescents in terms of the tasks, discourse and learning environments they observe in public school classrooms, and can reconcile the theoretical principles of their university experience with the reality of a secondary classroom.
- Students demonstrate their professionalism through maintaining appropriate relationships and behavior in the school setting, and improve their practice through reflection and by providing, soliciting and incorporating feedback.

**400-Level Courses**

MTHED 476 : Secondary Student Teaching in Mathematics. (12:Arr:Arr)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval.
DESCRIPTION: Capstone, field-based, semester-long experience in teaching mathematics to secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

MTHED 495R : Readings in Mathematics Education. (.5-2:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.
DESCRIPTION: Directed readings beyond scope of usual undergraduate courses.

**Course Outcomes**

- Students have a deeper understanding of important issues and/or research in the field of mathematics education, and can use this new understanding to reevaluate their past and present experiences in mathematics classrooms, make connections to other important issues and problems in mathematics education, function more effectively in their role as an undergraduate research assistant, and/or reimagine their future experiences as a mathematics teacher.
- Students recognize that there is an extensive body of literature on the learning and teaching of mathematics; can identify important authors, papers, issues, findings, theories, and limitations in a subfield of the literature; and recognize and value the need to remain current with developments in the field of mathematics education.

MTHED 496 : Academic Internship: Secondary Mathematics Education. (12:Arr:Arr)

WHEN TAUGHT: Fall
PREREQUISITE: Completion of all course work or departmental approval.
DESCRIPTION: Capstone, field-based, semester-long experience in teaching mathematics to secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

There are no course outcomes available

MTHED 497R : Research in Mathematics Education. (1-3:0:Arr)

WHEN TAUGHT: Contact Department.
RECOMMENDED: MthEd 117, 218, Sc Ed 276R.
DESCRIPTION: Undergraduate research experience. Faculty-supervised research. Written and oral presentation of findings required.

**Course Outcomes**

- Students have a deeper understanding of the nature, design, and methods of research in the field of mathematics education; can make valuable contributions under limited supervision to the data collection and/or data analysis stages of faculty-directed mathematics education research; and can communicate their understanding of research in general, as well as of this specific research, through a scholarly oral or written report.
- Students have a deeper understanding of a key issue or problem in the field of mathematics education, and can use this new understanding to reevaluate their past and present experiences in mathematics classrooms, make connections to other important issues and problems in mathematics education, function more effectively in their role as an undergraduate research assistant, and/or reimagine their future experiences as a mathematics teacher.
- Students can identify their personal strengths and weaknesses in regards to conducting research in mathematics education, and have a sense for whether or not they would like to pursue more research opportunities through graduate study.

## 500-Level Graduate Courses (available to advanced undergraduates)

MTHED 500 : (MthEd-Chem-C S-Geol-Math-Phscs-Stat) Business Practices for Science and Mathematics Majors. (1.5:1.5:0)

WHEN TAUGHT: Winter
DESCRIPTION: (Math-Chem-C S-Geol-MthEd-Phscs-Stat) Introduction for science, math, and statistics majors to careers in industry. Project planning, oral and written business presentations, business accounting, and technology readiness.

**Course Outcomes**

- Demonstrate knowledge of business skills necessary to function as a scientist working in industry.Be able to explain how corporate politics can affect your career.
- Learn how to present concepts and ideas in a clear and effective manner in both oral and written form.
- Learn to read and understand corporate accounting statements and data and understand the basic ideas of project and portfolio management.Learn the steps to moving an idea from concept to completion in a business setting.

MTHED 550 : Problem Solving. (3:3:0)

PREREQUISITE: Strong background in undergraduate mathematics; instructor's consent.
DESCRIPTION: Solving and building explanations and presenting solutions to conceptually important problems. Analyzing research on problem solving and its role in teaching and learning mathematics.

**Course Outcomes**

- Students understand and can evaluate important issues, current and historical trends, theories, paradigms of research, and research findings in the field of mathematical problem solving, as well as their implications for the teaching and learning of problem solving explicitly and implicitly in the public schools, mathematics teacher

development, and participation in mathematics education scholarship.
- Students can apply principles of quality research to analyze and critique research on the mathematical process of problem solving, and understand the affordances and constraints of research paradigms and methodologies in this body of research.
- Students understand general approaches to and a variety of heuristics in the problem solving process and can apply these to solve various problems in mathematics as well as other areas of life.
- Students understand the pitfalls of teaching problem solving as a distinct content area of mathematics and the benefits of using problem solving as a process in the teaching of all mathematics. They understand how to design instruction to teach mathematics through problem solving.
- Students recognize the key role that problem solving plays in the field of mathematics as well as in the learning of school mathematics. They see the valuable insights provided by the literature on the teaching and learning of mathematics through problem solving, and feel a desire to continually seek opportunities to improve their ability to teach mathematics through problem solving and promote better instruction in schools by incorporating problem solving as a process for learning mathematics.
- Students strive to follow the example of Jesus Christ in both their personal and professional lives, seek consistency between their understanding of our trials here on earth as related to the restored gospel of Jesus Christ and principles of mathematical problem solving processes. Graduates use this enriched understanding problem solving as a method for teaching and learning mathematics by giving all students the agency and opportunity to solve mathematical problems on their own.

MTHED 562 : Euclidean Geometry: Content, Learning, and Teaching. (3:3:0)

PREREQUISITE: MthEd 362 or equivalent.

DESCRIPTION: Euclidean geometry, including classical problems, polyhedra, transformations, congruence, similarity, integer geometry, minimization; technology in geometry, Van Hiele levels, role of proof, and high school curriculum.

**Course Outcomes**

- Students understand and can evaluate the role of proof in geometry and in mathematics in general, the theories of how students progress through the van Hiele levels in learning geometry and how these two topics are related. They can use this knowledge to evaluate current instructional, curricular, and policy recommendations of leaders in mathematics education regrading the teaching of geometry in the public schools.
- Students can apply principles of quality research to analyze and critique research on the teaching and learning of geometry, and understand the affordances and constraints of research paradigms and methodologies in this body of research.
- Students understand the central concepts, conditions, definitions, theorems, assumptions, structure and extensions of high school (Euclidean) geometry. They can use these understandings to prove general cases of geometric theorems and apply these theorems to solve problems in Euclidean geometry.
- Students can assess the van Hiele level at which their students are operating and design tasks and lessons to move learners to a higher van Hiele level, eventually to the level of deduction and proof. Throughout the instruction at different van Hiele levels, students can continually evaluate the role that proof is playing for the learners and understand how to adjust their instruction to ensure that proof activities are meaningful. Students can use their knowledge of the van Hiele levels, proof, and the NCTM Standards to evaluate geometry curriculum for appropriate sequencing.
- Students recognize the key role that geometry should play in school mathematics and the valuable insights provided by the literature on the teaching and learning of geometry, and feel a desire to continually seek opportunities to improve their own teaching of geometry and promote better instruction of geometry in the schools by seeking to adapt the instruction to the van Hiele level of the students.
- Students strive to follow the example of Jesus Christ in both their personal and professional lives, seek consistency between their understanding of the restored gospel of Jesus Christ and principles of geometry teaching and learning, and use this enriched understanding of teaching and learning to nurture the divine potential of all in their spheres of influence.

MTHED 590 : Foundational Issues in Learning Mathematics. (3:2:2)

WHEN TAUGHT: Fall

PREREQUISITE: Teaching certificate or completion of student teaching.

DESCRIPTION: Introduction to research in mathematics learning; mathematical thinking; cognitive, social, and philosophical approaches to describing mathematics learning.

**Course Outcomes**

- Students understand and can evaluate important issues, trends, theories, paradigms of research, and research findings in the field of mathematics education, as well as their implications for the teaching and learning of mathematics in the public schools, mathematics teacher development, and participation in mathematics education scholarship.
- Students understand the importance of situating research problems and questions in the literature, and can identify important research problems and relate them to appropriate issues, trends, theories, paradigms, and findings in the literature.
- Students can use their understanding of the important issues, trends, theories, paradigms, and findings in the field of mathematics to evaluate, reflect on, and improve their mathematics instruction.
- Students perceive themselves as emerging scholars and leaders in the field, and feel responsibility for and commitment to their own growth and the growth of the field.
- Students strive to follow the example of Jesus Christ in both their personal and professional lives, seek consistency between their understanding of the restored gospel of Jesus Christ and principles of mathematics teaching and learning, and use this enriched understanding of teaching and learning to nurture the divine potential of all in their spheres of influence.

MTHED 591 : Scholarly Inquiry in Mathematics Education. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: MTHED 590

DESCRIPTION: Introduction to scholarly inquiry in mathematics education; issues in research methodology.

**Course Outcomes**

- Students understand and can evaluate important issues, trends, theories, paradigms of research, and research findings in the field of mathematics education, as well as their implications for the teaching and learning of mathematics in the public schools, mathematics teacher development, and participation in mathematics education scholarship.

- Graduates understand research methods in mathematics education and can a) locate an interesting and important problem; b) conduct a literature review to situate the problem; c) develop a conceptual framework; d) establish focused research questions; e) choose and implement appropriate methods for collecting and analyzing data; f) address issues of research quality such as validity, reliability, and significance; and g) effectively communicate their work both orally and in writing.
- Students understand the affordances and constraints of research paradigms and methodologies commonly used in mathematics education research and can analyze and critique research on teaching and learning mathematics according to principles of quality research.
- Students understand how to meaningfully apply research on teaching and learning mathematics in their teaching and use scholarly inquiry as a lens to reflect on that teaching.
- Students have developed knowledge and beliefs that enable and compel them to continually seek opportunities to improve their own practice, keep abreast of advances and developments in the field both locally and nationally, and provide leadership in professional, school, and community organizations.
- Students strive to follow the example of Jesus Christ in both their personal and professional lives, seek consistency between their understanding of the restored gospel of Jesus Christ and principles of mathematics teaching and learning studied in this course, and use this enriched understanding of teaching and learning to nurture the divine potential of all in their spheres of influence.

MTHED 598R : Topics in Mathematics Education. (.5-3:ARR:ARR)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Includes specific research areas and curriculum studies of school mathematics topics (i.e. geometry, algebra, and calculus).

**Course Outcomes**

- Students understand and can evaluate important issues, trends, theories, paradigms of research, and research findings in the field of mathematics education related to the particular topic of study, as well as their implications for the teaching and learning of mathematics in the public schools, mathematics teacher development, and/or participation in mathematics education scholarship.
- Students can apply principles of quality research to analyze and critique research on the topic of study, and understand the affordances and constraints of research paradigms and methodologies in this body of research.
- Students understand mathematical content that illustrates important issues in the research on the topic of study.
- Students can use their understanding of the research on the topic of study to evaluate, reflect on, and improve their own teaching.
- Students recognize the key role that the topic of study plays in the learning and teaching of mathematics, and feel a desireto continually seek opportunities to improve their own practice, keep abreast of advances and developments in the field both locally and nationally, and/or provide leadership in professional, school, and community organizations.
- Students strive to follow the example of Jesus Christ in both their personal and professional lives, seek consistency between their understanding of the restored gospel of Jesus Christ and principles of mathematics teaching and learning studied in this course, and use this enriched understanding of teaching and learning to nurture the divine potential of all in their spheres of influence.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Mathematics Education Department Home**

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**Majors**

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**Minors**

- Minor in Mathematics Education

**Course Information**

- Mathematics Education (MthEd) Courses

**Faculty**

# Mathematics Education Faculty

Show All
Hide All

## Professors

Peterson, Blake E.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Professor
**DEGREES:** BA, Utah State University, 1986
MS, Washington State University, 1990
PhD, Washington State University, 1993

Williams, Steven R.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, Brigham Young University, 1983
PhD, University of Wisconsin, Madison, 1989

## Associate Professors

Corey, Douglas L.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1999
MA, Brigham Young University, 2001
MA, University of Michigan, 2004
PhD, University of Michigan, 2007

Leatham, Keith R.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Associate Professor
**DEGREES:** AS, Brigham Young University—Idaho, 1989
BS, Utah State University, 1992
MS, Utah State University, 1998
PhD, University of Georgia, 2002

Siebert, Daniel K.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1989
MS, Brigham Young University, 1993
PhD, University of California, San Diego, 2000

## Assistant Professors

Johnson, Kate R.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Assistant Professor
**DEGREES:** BA, Miami University, Ohio, 2002
MEd, University of Pittsburgh, 2004
PhD, Michigan State University, 2013

Jones, Steven R.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2003
MS, Brigham Young University, 2005
PhD, University of Maryland, 2010

Teuscher, Dawn

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1994
MS, University of Utah, 2000
PhD, University of Missouri, 2008

## Associate Teaching Professor

Hendrickson, Scott

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Associate Teaching Professor
**DEGREES:** BA, Brigham Young University, 1979
MA, Brigham Young University, 1984

## Assistant Teaching Professor

Tanner, Amy

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Mathematics Education
**RANK:** Assistant Teaching Professor
**DEGREES:** BA, Brigham Young University, 2002
MA, Brigham Young University, 2005
PhD, University of Michigan, 2010

## Emeriti

Armstrong, Gerald M.
Speiser, Robert
Voyles, Jacqueline Taylor
Walter, Charles N.
Walter, Janet G.

# Physical Science

Jeannette Lawler, Phy S 100 Coordinator
N237 ESC, (801) 422-3849

Duane Merrell, Teaching Physical Science Coordinator
N143 ESC, (801) 422-2255

College of Physical and Mathematical Sciences Advisement Center
N-181 ESC, (801) 422-2674

## Admission to Degree Program

Special limitations apply for this teaching major.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.85
- Be in good standing with the Honor Code Office

## Undergraduate Program / Degree

**BS in Teaching Physical Science** (Program Outcomes)

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**Majors**

- BS in Teaching Physical Science

**Course Information**

- Physical Science (Phy S) Courses

# BS in Teaching Physical Science (77.5–78.5 hours*, including licensure hours)

Show All Course Descriptions
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*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following:

BIO 100 : Principles of Biology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Introductory course for general education students.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.
DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.
NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: CHEM 105; or CHEM 111
DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.
NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

CHEM 107 : General College Chemistry Laboratory. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Chem 106 or Chem 112 or concurrent enrollment.

DESCRIPTION: Chemical properties, chemical reactions, collection and interpretation of data, preparation of reports.

NOTE: Required for most students needing one year of general chemistry.

**Course Outcomes**

- Through laboratory experiments, students will demonstrate that they can use precise scientific instrumentation to find quantitative answers to significant problems within the total precision allowed by the equipment.
- Students will demonstrate that they can perform simple experiments, observe the outcomes accurately, then make reasoned, accurate decisions about the meanings of the results.

CHEM 201 : Chemical Handling and Safe Laboratory Practices. (.5:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Safe handling of chemicals and safe practices in chemistry laboratories.

**Course Outcomes**

- Discuss regulations that govern a chemists activities: OSHO, EPA, DOT, CDC, NRC, and state agencies and specifically, the OSHA Laboratory Standard CFR 29 1910.1450 and EPA RCRA regulations (CFR 40) requiring “cradle to grave” responsibility
- Identify chemical hazard classes and follow administrative guidelines to work safely in a laboratory environment and properly store and dispose of chemicals. These guidelines include regulated exposure limits PEL, STEL, IDLH, Ceiling and other measurable standards, such as the TLV, LD50, LC50, SADT, and guidelines for use of compressed gases and cryogenic materials.
- Demonstrate usage of protective equipment available for chemical exposure.
- Respond to laboratory accidents, such as spills, fires, and cuts, and clean up a mercury spill.
- Recognize fire hazards and put out a fire using an ABC fire extinguisher.
- Discuss biological and radiological safety, including biosafety levels, management of biological waste, lasers, and radionuclides.

CHEM 223 : Quantitative and Qualitative Analysis. (4:2:6)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: CHEM 107; or CHEM 113

DESCRIPTION: Principles of chemical equilibrium, quantitative chemical measurements, and qualitative detection of selected chemical species.

NOTE: Primarily for majors in molecular biology and the life sciences.

**Course Outcomes**

- Course Objectives: The course is designed to develop research skills. The labwork will have a somewhat bioanalytical focus, e.g. the chemical analysis of biological molecules or biologically related ions and the use of biomolecules in assays. We will work to develop good laboratory practice, both conceptually and practically, and consider how to do good science. The combined lecture/lab approach will be used to help you understand quantitative approaches to analysis, sources of error, and the utility but also limitations of laboratory measurements. You will be asked to apply a portion of this knowledge to your own laboratory determinations. We will also discuss more advanced analytical methods involving chemical separations and instrumental analyses. This course fills one of the requirements for a minor in chemistry.

CHEM 351 : Organic Chemistry. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Chemical bonds and molecular structure, conformation and configuration, functional classes, reactions and mechanisms, syntheses.

NOTE: Primarily for majors in chemical engineering and the biological sciences.

**Course Outcomes**

- Recognize functional group classes commonly encountered in organic chemistry and name representative molecules from each class using IUPAC rules for organic nomenclature.
- Predict structure and reactivity of alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, epoxides, and alkylhalides based on such factors as carbon atom hybridization, bond length, bond strength, and bond polarity.
- Recognize and provide curved arrow mechanisms for the following types of organic reactions: additions, substitutions, and eliminations.
- Predict the energetically preferred conformation for straight-chain and branched alkanes, and for substituted cycloalkanes.
- Determine R and S configurations for chiral molecules and distinguish between enantiomers, diastereomers, meso compounds, and conformational isomers.
- Interpret 1H NMR, 13C NMR, IR, UV, and mass spectra and use these data to determine the structure of organic molecules.
- Predict the relative energies of reactive intermediates such as radicals, carbocations, and carbanions, based on structural considerations such as orbital hybridization, hyperconjugation, and resonance stabilization.

GEOL 111 : Physical Geology. (4:3:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Materials, structure, and surface features of the earth and the geologic processes involved in their development. Field trips and lab studies, use of aerial photos.

**Course Outcomes**

- 1. Learn the basic mineral types, how they form, and how they differ structurally.2. Understand how minerals are put together to form rocks.3. Learn the names and how to recognize the basic sedimentary, igneous, and metamorphic rock types.
- 1. Understand the basic atmospheric and hydrologic systems and how they affect the Earth's rocks.2. Learn how man has influenced these systems and what the possible future outcomes of this influence might be.
- 1. Learn the basic workings of the Earth's tectonic system and the evidences that support the plate tectonic theory.2. Understand how to interpret geologic structures and rocks in terms of the tectonic system.
- Learn some fundamental skills in preparation to conduct research and ultimately write research papers in other classes, including:1. Using online databases (GEOREF, Web of Science) to obtain information on a particular topic.2. Using online resources (Refworks) to manage and format references.3. Reading articles in the primary geologic literature and drawing out primary information such as the topic of and article and its conclusions even if the student is not prepared (at this stage) to understand the methodology employed.4. Appreciate the need to properly format cited literature in a research paper.5. Learn the content and proper voice for the abstract of a research paper.
- 1. Understand the nature of fossil fuel resources, their origin, and the magnitude of reserves of coal, oil, natural gas, etc.2. Understand the nature of metallic resources, including their origin, distribution across the globe, and the magnitude of reserves.3. Appreciate the environmental consequences of fossil fuel and metallic resource extraction.4. Become aware of the major hazards posed by earthquakes, volcanic eruptions, and their attendant phenomena.5. Understand the fundamental processes that regulate the climate, as well as the role of human activity in climate change.
- 1. Learn or review the large scale features of the Earth's interior and exterior, including the basic features of the tectonic and hydrological systems.2. Appreciate the role of heat transfer, and in particular convection, in making both the hydrosphere and tectonosphere dynamic.

GEOL 112 : Historical Geology. (4:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 111

DESCRIPTION: Developmental history of the earth, its landforms, and life forms, emphasizing the North American continent. Field trips and lab studies.

**Course Outcomes**

- Demonstrate understanding of the fundamentals of uniformitarianism and the scientific methods for determining the relative and absolute ages of Earth materials and events.
- Demonstrate a basic understanding of the origin and historical significance of sedimentary rocks. Be able to identify common clastic and non-clastic sedimentary rock types in hand sample and on outcrop. Be able to determine the depositional environment from rock type and outcrop pattern. Understand the age and significance of Sloss' depositional sequences.
- Be able to recognize the nature and mode of fossil preservation. Be able to identify the major invertebrate fossil groups and signify the environmental significance of each. Use fossils to recognize the age of sedimentary strata.
- Demonstrate a basic knowledge of organic evolution including the key concepts of natural selection and its role in producing the fossil record. Be able to explain the evidence that led Darwin to the theory of natural selection as well as post-Darwinian discoveries.
- Understand that modern Earth is a product of the coevolution of the biosphere, lithosphere, atmosphere, and hydrosphere over 4.6 billion years of earth history. Demonstrate knowledge of key biological, depositional, tectonic, and climatic events in the context of the geological timescale.
- Be able to decipher the geological history of an area from a geological map.
- Demonstrate mastery of a scientific concept and ability to convey that concept to a body of peers using PowerPoint and/or other professional means.

GEOL 210 : Field Studies. (3:0:9)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 111 & GEOL 112

DESCRIPTION: Procedures in observing, collecting, and recording field data concerning properties of rock units.

NOTE: Contact Geological Sciences Department before April 15 for dates of upcoming August trip.

**Course Outcomes**

- Learn how to take accurate and complete field notes.Learn how to use a compass to measure strike and dip on outcrops in the field.Learn how to read topographic and geologic maps and relate the map to what you see in the field.
- Review rocks and minerals learned in earlier courses and be able to accurately identify them in the field.Understand the relationships between igneous rocks and minerals and magmatic processes.Understand the relationships between metamorphic rocks and minerals and the processes that formed them.Understand the significance of sedimentary rocks in understanding depositional systems and regional tectonics.
- Learn the basics of making a geologic map.Learn how to interpret the geology on a map to draw a geologic cross-section.Write up the results of data you collected along with your interpretation in a clear, consise manner.
- Become detailed observers of field geology
- Understand the formative processes of the geology of Utah's National Parks including Zion NP, Bryce Canyon NP, and Capitol Reef NP.
- Develop an understanding of the interelationships of stratigraphy, structural geology, and surficial processes on landscape evolution.

PHIL 423 : History and Philosophy of Science. (3:3:0)

PREREQUISITE: Phy S 100 or instructor's consent; Phil 300.

DESCRIPTION: Scientific explanation, concepts, and models. Philosophical assumptions and criteria for theory selection, as exemplified by historical development of basic ideas in science.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in the history and philosophy of Western science from antiquity to the contemporary era.
- Read and critically discuss figures and texts in the philosophy of science.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of science.
- Be able to explain the practice and value of philosophy of science.

PHSCS 105 : General Physics 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: High school algebra and trigonometry.
RECOMMENDED: Concurrent enrollment in Phscs 107.
DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 105 or equivalent.
RECOMMENDED: Concurrent enrollment in Phscs 108.
DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 105 or concurrent enrollment.
DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 106 or concurrent enrollment
DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 127 : Descriptive Astronomy. (3:3:1)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Nonmathematical presentation of knowledge of the content and history of the cosmos, frequently using observatory and planetarium.

**Course Outcomes**

There are no course outcomes available

PHSCS 137 : Severe and Hazardous Weather. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: Phy S 100 or high school/college physics.
DESCRIPTION: Nonmathematical introduction to meteorology. Atmospheric structure and dynamic behavior, focusing on short-term violent weather and longer-term hazards: drought, floods, heat waves, cold waves, and climate change, including human environmental impact.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

3. Complete one course from the following:
   GEOL 100 : Dinosaurs. (3:1:2)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Hands-on examination of vertebrate fossils -- especially dinosaurs. For nonscience majors. Field trips.

**Course Outcomes**

- Be able participate in meaningful discussions on the relationships of science and religion.
- Confidently explain the relationships between deep time, the diversity of life, and plate tectonics.
- Be able to explain how science works via examples from geology and paleontology.
- Have an infectious sense of awe and wonder for today's biotic and abiotic realms as part of an ever-changing Earth.
- Using cladistic methods be able to explain the basic phylogenetic relationships within Dinosauria, including birds.

GEOL 351 : Mineralogy. (4:2:4)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 112; Chem 105 or 111 or concurrent enrollment.

DESCRIPTION: Principles of crystallography and crystal chemistry. Physical, chemical, and crystallographic properties of minerals.

**Course Outcomes**

- Demonstrate understanding of the fundamental ideas that govern the arrangement of atoms into a crystalline structure (chemical bonding, atomic size, coordination number, polymerization of polyhedra, bond strength and bond valence, stability, etc.)
- Demonstrate a basic understanding of atomic level symmetry. Enumerate and describe the crystal systems in terms of both symmetry and unit-cell metrics, recognize symmetry elements in well-formed natural crystals, and determine crystal classes of such crystals.
- Describe the applications and limitations of important instrumental/analytical methods used in mineralogy.
- Identify specimens of the 60-70 most common minerals at least 70% of the time.
- Demonstrate an understanding of the mechanisms and implications of various mineralogical phenomena, including solid solution, exsolution, polymorphism, atomic ordering, polytypism, color, and twinning.
- Discuss the interrelationships among crystallography, composition, and the physical properties of minerals.
- Demonstrate the ability to apply principles learned to minerals not specifically encountered in the course.
- Use computer software for reduction of mineralogical data and be able to discuss its limitations.
- Demonstrate the ability to work in teams to collect and analyze mineralogical data and incorporate it into an original, high quality research paper on an assigned subject of mineralogical significance.

GEOL 370 : Sedimentology and Stratigraphy. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: GEOL 112 & GEOL 210 & GEOL 230

DESCRIPTION: Erosion; sediment entrainment, transport, and deposition; depositional systems and facies analysis; principles of stratigraphy. Field trips.

**Course Outcomes**

- Apply problem solving, critical thinking, and communication skills relative to depositional models and interpreting the stratigraphic record.
- Understand depositional systems, facies relationships, and introductory aspects of sequence stratigraphy.
- Discuss processes and forces that weather, transport, and deposit sedimentary grains under both sunaqueous and subarial conditions.
- Observe and describe sedimentary rocks objectectively. Gain the ability to communicate using appropriate scientific vocabulary.

GEOL 480 : Paleontology. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: GEOL 112

DESCRIPTION: Distribution, morphology, paleoecology, evolution, and stratigraphic significance of organisms in the geologic record. Field trips.

**Course Outcomes**

- Demonstrate understanding of the nature of fossils and types of fossilization that turn organic remains into fossils.
- Be able to explain the incompleteness of the fossil record and the taphonomic processes that affect fossils between death and burial and burial and discovery.
- Be able to recognize the major groups of invertebrate fossils on the basis of their morphology and be able to identify key index fossils to the species level.
- Demonstrate understanding of the uses of fossils in solving geological problems: paleoenvironments, relative age, paleocology.
- Understand the role of fossils in demonstrating the patterns of evolution through time.

4. Complete the teacher licensure requirements. Contact Education Student Services (120 MCKB, 801-422-3426) to schedule the final interview to clear your application for the secondary teaching license. You should be registered for your last semester at BYU prior to the scheduled appointment.

5. Complete the Professional Education Component:
    - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

PHY S 276 : Exploration of Teaching. (4:4:0)

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

- Students will become familiar with the four moral dimensions of education as outlined by the McKay School of Education
- Engage in the exploration of teachers and students in the public school to come to a conclusion if teaching physical science is a career path you want to pursue.
- Complete PIBS, CDS, Field Experience Demographic forms in Mackay School date collection program.

PHY S 377 : Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHY S 276

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Using Science Standards as a quide develop Assessments, Lesson Plans, Outlines, and all parts of a unit of science instruction.
- Inquiry, Constructivism, Lab, Activities, Projects and other methods to engage students in learning. These teaching methods will be modeled and practiced by the students.
- Students will complete Transition 2 level toward teaching license.

PHY S 378 : Practicum in Secondary Education. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in Phy S 377.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- 30 practicum hours where you teach a unit of instruction with guidance public school mentor.

SC ED 353 : Multicultural Education. (2:2:0)

WHEN Fall; Winter; Spring; Summer

TAUGHT:
PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.
DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.
DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

**Note:** FBI fingerprint and background clearance must be completed prior to enrollment in Phy S 276.

- Complete 12 hours of one of the following:

SC ED 476R : Secondary Student-Teaching. (1-12:ARR:ARR)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.
DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will put into practice the theories they have learned in content and pedagogy courses including planning lessons, assessing students of all abilities and cultural backgrounds, using a variety of instructional strategies, and collaborating with other teachers and with the community.

: Secondary Student Teaching - Art.

**Course Outcomes**

: Secondary Student Teaching - Foreign Language. (12:ARR:ARR)

**Course Outcomes**

: Secondary Student Teaching - French.

**Course Outcomes**

: Secondary Student Teaching - Mathematics.

**Course Outcomes**

: Secondary Student Teaching - Physical Science.

**Course Outcomes**

: Secondary Student Teaching - Social Science.

**Course Outcomes**

: Secondary Student Teaching - Spanish.

**Course Outcomes**

SC ED 496R : Academic Internship: Secondary Education. (12:ARR:ARR)
WHEN TAUGHT: Fall
PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.
DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students;

demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will demonstrate that they can teach, manage, and assess content area knowledge and skills in the 7-12 classroom.
- Foster relationships with school colleagues, parents, and the larger community.

: Academic Internship: Social Sciences.

**Course Outcomes**

: Academic Internship: English.

**Course Outcomes**

: Academic Internship: Mathematics.

**Course Outcomes**

: Academic Internship: Biological Sciences.

**Course Outcomes**

: Academic Internship: Physical Sciences.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

## Show all Physical Science (Phy S) Courses

College of Physical and Mathematical Sciences Home

Physical Science Program Home

Majors

- BS in Teaching Physical Science

Course Information

- Physical Science (Phy S) Courses

# Physical Science (Phy S)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

PHY S 100 : Physical Science. (3:3:ARR)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Conceptual lectures and demonstrations of the most significant and universal laws and models describing the physical world by faculty from the Physics and Astronomy, Chemistry and Biochemistry, and Geology departments.

NOTE: Satisfies GE Physical Science requirement.

**Course Outcomes**

- Students will be able to recognize and apply the fundamental principles presented in this course to simple physical situations.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.
- Students will be able to explain how scientific observations led to the development of these few principles and the models built on them.
- Students will be able to explain how these principles and models in turn lead to further scientific questions.
- Students will be able to reflect rationally upon the interface between science and religion.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public policy issues that affect their community.

### 200-Level Courses

PHY S 276 : Exploration of Teaching. (4:4:0)

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

- Students will become familiar with the four moral dimensions of education as outlined by the McKay School of Education
- Engage in the exploration of teachers and students in the public school to come to a conclusion if teaching physical science is a career path you want to pursue.
- Complete PIBS, CDS, Field Experience Demographic forms in Mackay School date collection program.

### 300-Level Courses

PHY S 377 : Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHY S 276

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Using Science Standards as a quide develop Assessments, Lesson Plans, Outlines, and all parts of a unit of science instruction.
- Inquiry, Constructivism, Lab, Activities, Projects and other methods to engage students in learning. These teaching methods will be modeled and practiced by the students.
- Students will complete Transition 2 level toward teaching license.

PHY S 378 : Practicum in Secondary Education. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in Phy S 377.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem

solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- 30 practicum hours where you teach a unit of instruction with guidance public school mentor.

**Back to Physical Science Department Home**

**College of Physical and Mathematical Sciences Home**

**Physics and Astronomy Department Home**

**Majors**

- BS in Applied Physics
- BS in Physics
- BS in Physics-Astronomy
- BS in Physics Teaching

**Minors**

- Astronomy
- Physics
- Physics Teaching

**Course Information**

- Physics and Astronomy (Phscs) Courses

**Faculty**

# Physics and Astronomy

Richard Vanfleet, Chair
N-281A ESC, (801) 422-1702

College of Physical and Mathematical Sciences Advisement Center
N-179 ESC, (801) 422-6270
1112 TMCB, (801) 422-4214

## Admission to Degree Program

All degree programs in the Department of Physics and Astronomy are open enrollment. However, special limitations apply for teaching majors.

## The Discipline

Over the centuries physicists and astronomers have studied the fundamental principles that govern the structure and dynamics of matter and energy in the physical world, from subatomic particles to the cosmos. Physicists also apply this understanding to the development of new technologies. For example, physicists invented the first lasers and semiconductor electronic devices.

Physics and astronomy students learn to approach complex problems in science and technology from a broad background in mechanics, electricity and magnetism, statistical and thermal physics, quantum mechanics, relativity, and optics. The tools they develop at BYU include problem solving by mathematical and computational modeling, as well as experimental discovery and analysis. All students gain professional experience in a research, capstone, or internship project, usually in close association with faculty. Together these experiences can provide excellent preparation for employment or for graduate studies in physics, other sciences, engineering, medicine, law, or business.

Most physicists and astronomers work in research and development in industrial, government, or university labs to solve new problems in technology and science. They also share the beauty discovered in our physical universe by teaching in high schools, colleges, and universities.

## Career Opportunities

> "More than most other majors, a physics degree is a passport into a broad range of science, engineering, and education careers." — Sloan Foundation

A degree in physics or physics–astronomy can provide:

1. Preparation for those who intend to enter industrial or governmental service as engineers, technicians, physicists or astronomers.
2. Education for those who intend to pursue graduate work in physics or astronomy.
3. Education in the subject matter of physics for prospective teachers of the physical sciences.
4. Undergraduate education for those who will pursue graduate work in the professions: business (e.g., an MBA), law (especially patent law), medicine, medical physics, etc.
5. Science, technical, and research background for graduate school in engineering, biophysics, or physical sciences.
6. Physics fundamentals required by the biological science, medical, dental, nursing, and related programs.

For more information about careers for physics and astronomy majors, see Careers for Physics Majors.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Applied Physics** (Program Outcomes)
**BS in Physics** (Program Outcomes)
**BS in Physics-Astronomy** (Program Outcomes)
**BS in Physics Teaching** (Program Outcomes)

**Minor in Astronomy**

**Minor in Physics**
**Minor in Physics Teaching**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Physics
PhD in Physics
PhD in Physics and Astronomy

For more information see the BYU 2014–2015 Graduate Catalog.

## General Information

1. It is recommended that a student complete the following courses in high school:
   - 3 units of English
   - 1 unit of physical science, either chemistry or physics.
   - 4 units of mathematics, consisting of algebra, geometry, trigonometry, and calculus. This should qualify students to begin college mathematics with Math 113, Calculus 2.

   Because mathematics provides the foundation for all work in the physical and mathematical sciences, high school preparation in this subject is of particular importance.
2. Students in physics should take mathematics beginning the first semester of the freshman year. Most physics majors begin with Math 113. If calculus was not studied in high school, students can take Math 112 concurrently with Phscs 121 during the fall semester; then continue with 113 in winter semester.
3. Students are strongly urged to gain experience in computer programming.

College of Physical and Mathematical Sciences Home

Physics and Astronomy Department Home

Majors

- BS in Applied Physics
- BS in Physics
- BS in Physics-Astronomy
- BS in Physics Teaching

Minors

- Astronomy
- Physics
- Physics Teaching

Course Information

- Physics and Astronomy (Phscs) Courses

Faculty

# BS in Applied Physics (61–65 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. No more than 3 hours of D credit is allowed in major courses.
2. Consult with a faculty advisor as early as possible to choose electives.
3. Complete the following:

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 121 or equivalent. Calculus.

DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular

reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHSCS 140 : Electronics Lab. (1:1:2)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Introduction to analog and digital circuits.

**Course Outcomes**

- Build and debug basic analog circuits that are of practical use in experimental physics such as voltage dividers, diode rectifiers, inverting and non-inverting op amp circuits, and transistor switches.
- Demonstrate understanding of electrical concepts of voltage, current, resistance, power, and input and output resistance through the analysis of simple circuits.
- Demonstrate proper use and limitations of electrical sources and test equipment including DC power supplies, multimeters, oscilloscopes, and function generators.
- Build and debug basic digital circuits that use components such as digital gates, flipflops, counters, and digital to analog converters.

PHSCS 145 : Experimental Methods in Physics. (1:0:3)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: PHSCS 140; Phscs 121 or equivalent.

DESCRIPTION: Introduction to physical measurement and analysis, optics, sensors, actuators, and computer-based data acquisition.

**Course Outcomes**

- Demonstrate good practices in experimental physics documentation and communication such as data collection, record keeping, and presentation.
- Demonstrate the ability to analyze experimental data this includes techniques such as error estimation, error propagation, model selection, and curve fitting.
- Use simple optical devices (e.g. lenses, mirrors, slits and gratings, polarizers) to explore the geometric and wave properties of light.
- Apply AC concepts such as frequency response, frequency filtering, fourier transform analysis, and impedance to sinusoidally-driven electrical, mechanical, optical, and acoustical systems.

PHSCS 191 : Introduction to Physics Careers and Research 1. (.5:1:0)

DESCRIPTION: Survey of BYU undergraduate physics and astronomy programs, careers in physics and astronomy, and current physics and astronomy research.

NOTE: Take first semester after registered as physics major.

**Course Outcomes**

- Describe the major subfields of physics and the breadth of interdisciplinary research to which physicists contribute.
- Describe examples of current research in physics or astronomy, explaining what questions are being asked by the investigators and why these questions are interesting.
- Describe career opportunities available in physics and astronomy and the specific preparation necessary for these careers.
- Develop a draft of an educational plan for both undergraduate and graduate training.

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

PHSCS 222 : Modern Physics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHSCS 123 & PHSCS 220; Phscs 121 or equivalent.

DESCRIPTION: Quantum physics, atoms, molecules, condensed matter, nuclei, elementary particles, and selected topics in contemporary physics.

**Course Outcomes**

- Demonstrate their understanding of the fundamental postulates and principles of special relativity and quantum mechanics.
- Apply the principles of quantum mechanics to predict the results of measurements in simple systems such as a free particle, simple potential wells, and central potentials.
- Solve problems and answer conceptual questions applying the principles of quantum mechanics and special relativity to topics in modern physics such as atomic physics, molecular physics, the physics of solids, statistical physics, nuclear physics, radioactivity, and particle physics.

PHSCS 230 : Computational Physics Lab 1. (1:0:3)

WHEN Fall; Winter

TAUGHT:
PREREQUISITE: MATH 113
DESCRIPTION: Introduction to numerical and symbolic computation and graphical analysis using a symbolic mathematics program. Applications to mechanics, optics, and special relativity.

**Course Outcomes**

- Demonstrate the ability to apply calculus, linear algebra, and complex analysis to solve undergraduate-level physics problems.
- Demonstrate the ability to use programming constructs such as looping, conditional execution, and iteration to solve physics problems.
- Solve equations, including systems of equation, related to physical phenomena both symbolically and numerically.
- Demonstrate the ability to visualize, analyze, and interpret equations, data, and physical models.

PHSCS 240 : Design, Fabrication, and Use of Scientific Apparatus. (2:0:6)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: PHSCS 123 & PHSCS 145
DESCRIPTION: Machining, computer interfacing, controls, and vacuum systems.

**Course Outcomes**

- Design, build, and interface experimental apparatus.
- Make involved physical measurements and analyze experimental results.
- Document in a personal lab notebook the procedures, methods, results, and analysis of laboratory exercises.
- Present work in writing and through oral presentations.
- Demonstrate understanding of professional ethics guidelines for research activities and presentation of results.

PHSCS 245 : Experiments in Contemporary Physics. (2:0:6)
WHEN TAUGHT: Fall; Winter; Spring Odd Yrs.
PREREQUISITE: PHSCS 220 & PHSCS 240
DESCRIPTION: In-depth, multi-period experiments in contemporary physics, using advanced instrumentation.

**Course Outcomes**

- Demonstrate the use and assembly of experimental systems using contemporary instrumentation components to perform experiments in areas such as coherent optical systems, microfabrication, and vacuum systems.
- Independently design and carry out multi-period in-depth projects.
- Present research results through oral presentations.

PHSCS 291 : Introduction to Physics Careers and Research 2. (.5:1:0)
PREREQUISITE: PHSCS 123; Phscs 191 or concurrent enrollment.
DESCRIPTION: Career opportunities for physicists in industry, interdisciplinary research, national labs and observatories, and professions such as medicine, law, and business. Personal planning for research or internship involvement.
NOTE: Take first semester as a sophomore.

**Course Outcomes**

- Describe career opportunities for physicists in industry, interdisciplinary research, national labs and observatories, and professions such as medicine, law and business.
- Learn how to prepare for and succeed in such careers from physicists working in them.
- Develop a plan for research or internship involvement.
- Develop a plan for graduate school (if the student's career path requires it).

PHSCS 318 : Introduction to Mathematical Physics. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MATH 303 & PHSCS 230; or MATH 334 & PHSCS 230
DESCRIPTION: Partial differential equations, classical field equations, algebra of complex variables, Fourier analysis, integral transforms, and orthogonal functions.

**Course Outcomes**

- Solve partial differential equations in Cartesian, cylindrical, and spherical coordinates using separation of variables and expansions in orthogonal functions. Apply boundary conditions appropriate for physical systems.
- Perform algebraic computations involving complex numbers and functions.
- Use the properties (such as recursion relations, derivative relationships, and orthogonality conditions) of various special functions, including trigonometric functions, Bessel functions, and Legendre polynomials to solve problems involving those functions.
- Use Fourier series and transforms to expand functions and solve partial differential equations on appropriate domains.

PHSCS 321 : Mechanics. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: PHSCS 121 & PHSCS 230 & MATH 302; or PHSCS 121 & PHSCS 230 & MATH 314; Math 303 or 334 or concurrent enrollment.
RECOMMENDED: Concurrent enrollment in Phscs 330.
DESCRIPTION: Newton's laws applied to particles and systems of particles, including rigid bodies. Conservation principles and Lagrange's and Hamilton's equations.

**Course Outcomes**

- Use Newtonian mechanics with forces and torques to solve problems in Cartesian and curvilinear coordinates.
- Solve mechanics problems using work-energy, and conservation of energy, momentum and angular momentum.
- Solve and analyze rigid-body problems and problems in non-inertial frames.
- Use Lagrangian and Hamiltonian mechanics to obtain the equations of motion for a variety of problems, including the use of generalized coordinates and cyclic coordinates.
- Use perturbation and similar techniques to linearize equations of motion to analyze stability and study coupled systems using normal modes.

PHSCS 330 : Computational Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: PHSCS 121 & PHSCS 230; Math 303 or 334 or equivalent; CS 142 or equivalent.

DESCRIPTION: Numerical solution of ordinary differential equations, linear algebra and eigenvalues, chaos theory. Applications to dynamics. Introduction to programming in Matlab.

**Course Outcomes**

- Demonstrate proficiency in using MATLAB and show that the student can write working programs.
- Be able to qualitatively explain how differential equations generate their solution curves.
- Use a symbolic mathematics programs and MATLAB to solve ordinary differential equations to simulate dynamical systems.

PHSCS 430 : Computational Physics Lab 3. (1:0:3)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: PHSCS 222 & PHSCS 318 & PHSCS 330

DESCRIPTION: Static and dynamic boundary value problems, partial differential equations. Applications in electrostatics, thermodynamics, waves, and quantum mechanics. Programming with Matlab.

**Course Outcomes**

- Numerically solve physics problems involving partial differential equations using Mathematica and MATLAB.
- Apply the basic programming concepts of looping and conditional branching to numerical problems.

PHSCS 441 : Electrostatics and Magnetism. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: PHSCS 220 & PHSCS 318

DESCRIPTION: Classical theory of static electric and magnetic fields.

**Course Outcomes**

- Demonstrate the ability to apply the concepts of vector calculus as used in Maxwell's equations.
- Demonstrate the ability to integrate over a source distribution to calculate time-independent fields and potentials for both electricity and magnetism. Also demonstrate the ability to use Gauss's law and Amperes law to find electric and magnetic fields in symmetric situations.
- Demonstrate the ability to use vacuum harmonics, image charges, and image currents to solve for time-independent electric and magnetic potentials and fields.
- Demonstrate the ability to calculate electric and magnetic fields in the presence of matter which can be electrically and magnetically polarized, including the ability to solve problems involving torques and potential energies of electric and magnetic dipoles.

**Note:** Phscs 191 should be taken the first semester as a freshman. Phscs 291 should be taken the first semester as a sophomore.

4. Complete one course from the following:

EC EN 466 : Introduction to Optical Engineering. (2:3:1)

PREREQUISITE: EC EN 462

DESCRIPTION: Introduces principles and practices of optical engineering including optical communications system and components.

**Course Outcomes**

- Application of differential equations to solve metallic and dielectric waveguide problems.
- Application of integral calculus to solve diffraction problems.
- Application of linear algebra to find propagation characteristics in anisotropic media.
- Ability to apply modern optical test equipment to measure optical communication system parameters.

PHSCS 442 : Electrodynamics. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: PHSCS 441

DESCRIPTION: Maxwell's equations, radiation, interaction of electromagnetic fields with matter, and special relativity.

**Course Outcomes**

- Demonstrate the ability to calculate time-dependent electric fields using Faraday's law and the ability to calculate time-dependent magnetic fields using Maxwell's displacement current.

- Demonstrate the ability to solve problems involving electric and magnetic energy densities and the Maxwell stress tensor.
- Demonstrate the ability to use Maxwell's equations to solve problems involving electromagnetic waves in vacuum and in matter.
- Demonstrate the ability to use the concept of retarded time to compute radiation potentials.
- Demonstrate the ability to solve problems involving the special theory of relativity, including 4-vectors, form invariance, and the electromagnetic field tensor.

PHSCS 471 : Principles of Optics. (3:3:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: PHSCS 121 & PHSCS 220 & MATH 302; or PHSCS 121 & PHSCS 220 & MATH 314; Math 303 or 334 or concurrent enrollment.

RECOMMENDED: Phscs 318.

DESCRIPTION: Electromagnetic wave phenomena, including polarization effects, interference, coherence, dispersion, ray theory, diffraction; introduction to quantum nature of light. Laboratory component emphasizes applications.

**Course Outcomes**

- Use mathematical and conceptual descriptions of propagation of light in matter, reflection/transmission at boundaries, polarization effects, interference, dispersion, coherence, image formation, diffraction, and quantum aspects of light to analyze and predict optical phenomena.
- Manipulate and measure properties of light in a laboratory setting.
- Apply mathematical tools such as vector calculus, complex numbers, matrices, and Fourier transforms (1D and 2D) to optical problems.

5. After gaining department chair's approval of courses selected to define an option, complete an additional 12 hours of electives (cannot include any courses already taken above). These 12 hours must consist of a coherent set of upper-division courses with an identified educational goal. Nine hours must be upper division (300-level or above); three hours must be 200-level or above.

6. Complete one of the following options:

**Either**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 302 : Mathematics for Engineering 1. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Math 113.

DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

**Or**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
RECOMMENDED: Math 290.
DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 313.
DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

7. Complete one course from the following:

MATH 303 : Mathematics for Engineering 2. (4:4:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MATH 302
DESCRIPTION: ODEs, Laplace transforms, Fourier series, PDEs.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For a more detailed course description, visit Math 303 Wiki.

MATH 334 : Ordinary Differential Equations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 113 and Math 313.
DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

8. Complete a capstone project or senior thesis, including the following:
   a. Choose a research mentor and group as early as possible, starting with information in Phscs 191 and 291, and discussions with faculty, your advisor, and the capstone project coordinator or senior thesis coordinator. It is best to start as a freshman or sophomore. Interdisciplinary work in other departments or in internships is possible.
   b. Complete 2 hours of one of the following

PHSCS 492R : Capstone Project in Applied Physics. (2:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Conducting and reporting original research or appropriate creative work. Mentored career experience combining physics and the chosen area of interest. Project must be approved by the department capstone project coordinator or the associate chair before registration or starting project.

**Course Outcomes**

- Students will produce, in both verbal and written form, a report of what was accomplished in his or her capstone project.

PHSCS 498R : Senior Thesis. (.5-3:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Conducting and reporting research under a department faculty mentor or other professionals.
NOTE: Thesis topic must be cleared by faculty member before registration.

**Course Outcomes**

- Perform significant research in physics or astronomy under the direction of a faculty or internship mentor.
- Present their research in a written document that follows professional standards in the field.
- Do the above within professional ethical standards.

- **Note 1:** Students planning careers in experimental, applied, or industrial physics should complete STAT 201.
- **Note 2:** All students will benefit, through courses or individual study, by learning programming skills and numerical methods beyond what you are taught in C S 142 and our computational physics courses. Consider the following: C S courses, MATH 410, ME EN 373.

## Sample Elective Courses

There is great flexibility in choosing elective courses. As soon as possible, meet with the assistant chair to define an emphasis and choose 12 credit hours of electives that meet career goals. The tracks below are only suggested. Students are free to design their own tracks or modify those below.

*Acoustics:*

PHSCS 461 : Introduction to Acoustics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 121 & PHSCS 123 & MATH 303; or PHSCS 121 & PHSCS 123 & MATH 334

RECOMMENDED: Concurrent enrollment in Phscs 318 or equivalent.

DESCRIPTION: Mathematical descriptions of physical phenomena in generation, propagation, and reception of acoustic waves. Fundamental acoustical instrumentation and analysis techniques. Application of physical principles and mathematical models to realistic problems.

**Course Outcomes**

- Demonstrate a conceptual and mathematical understanding of acoustical phenomena, including source radiation, transmission, absorption, and reflection.
- Perform acoustical measurements, interpret the data, and document the results in the form of technical laboratory reports.
- Appropriately calculate various measures of sound, including sound pressure level, transmission loss, sound power, weighted levels, and noise criteria.

And choose from among:

EC EN 380 : Signals and Systems. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 240 & MATH 334

DESCRIPTION: Time and frequency domain analysis of discrete or continuous systems subjected to periodic or nonperiodic input signals.

**Course Outcomes**

- Application of integral calculus, differential equations, complex variables, to transform analysis of a continuous-time LTI system.
- Application of integral calculus, differential equations, complex variables, to transform analysis of a discrete-time LTI system.
- Application of integral calculus to solve continuous-time convolution problems.
- Application of discrete math to solve discrete-time convolution problems.
- Ability to use Matlab or similar tools to analyze, model, simulate, and experiment with linear systems.
- Ability to interpret and synthesize signals and systems in both the time and frequency domains.
- Ability to recognize the mathematical properties of signals and systems including linearity, time invariance, causality, stability, etc.
- An understanding of the consequences and principles associated with digitally sampling and reconstructing analog signals.

EC EN 487 : Introduction to Discrete-Time Signal Processing. (4:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 370 & EC EN 380

DESCRIPTION: Digital signal processing, fast Fourier transforms, digital filter design, spectrum analysis. Applications in speech processing, SONAR, communications, etc.

**Course Outcomes**

- Ability to apply principles of probablity theory for analysis and numerical estimation of power spectral densities.
- Ability to use basic DSP functions and algorithms (i.e., FIR filters, IIR filters, polyphase systems, windows, FFTs, etc.) to formulate and solve engineering problems.
- Ability to perform experiments with real-world signals and DSP systems, including discrete-time filters, spectrum analyzer, acoustic direction finding, etc.
- Ability to use software tools such as Matlab (R) to design, implement, and debug DSP functions.
- Application of integral calculus, discrete math, and complex variables, and transform theory to discrete-time signal processing.

ME EN 312 : Fluid Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: ME EN 321; Concurrent enrollment in Me En 363, 373.

DESCRIPTION: Physics and modeling of fluid flow; fluid statics, dimensional analysis, momentum, internal and external viscous flow, compressible flow, and fluid machinery.

**Course Outcomes**

- 1. Understand viscosity as a fluid property and be able to compute shear stress involving Newtonian fluids. Understand the different types of fluids and the phenomena of surface tension and cavitation.
- 2. Understand the variation in pressure, and determine pressure at a point in a static gas or liquid. Be able to compute hydrostatic forces on fully and partially submerged surfaces, and be able to determine the location of the center of pressure.
- 3. Understand field variables and be able to evaluate the local, convective, and total acceleration in flowing fluids. Recognize Lagrangian and Eulerian frames of reference.
- 4. Understand pressure distributions normal to, and parallel to, streamlines in flowing fluids. Be able to appropriately apply Bernoulli's principle to fluid dynamic situations and recognize the limitations of this principle.
- 5. Be able to derive the integral form of the conservation of mass principle from the Reynolds Transport Theorem and appropriately apply it to steady and unsteady flow situations with uniform or two-dimensional velocity distributions. Recognize and be able to utilize the differential form of conservation of mass.
- 6. Be able to derive the integral form of the linear momentum principle from the Reynolds Transport Theorem and apply global force/momentum balances for stationary and constant velocity frames of reference with uniform or two-dimensional velocity distributions. Recognize the Navier-Stokes equations and solve them for simplified viscous flows.
- 7. Be able to determine appropriate dimensionless variables for a given dynamical situation. Understand the usefulness in presenting experimental data using dimensional analysis. Predict prototype analysis based on similitude and understand the pitfalls of modeling.
- 8. Understand the mechanical energy equation and be able to apply it to laminar and turbulent flow with minor and major losses through pipe networks.
- 9. Understand and predict velocity distributions and boundary layer growth for flat plate boundary layers with laminar or turbulent flow. Understand flow separation, be able to predict skin friction and pressure drag for laminar and turbulent flows, and describe methods of drag reduction.

ME EN 335 : Dynamic System Modeling and Analysis. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: ME EN 363 & ME EN 373 & CE EN 204

DESCRIPTION: Formulating mathematical models for mechanical, electrical, fluid, and combined systems; numerical solution of motion equations; first- and second-order systems, frequency response, and transfer functions.

**Course Outcomes**

- 1. Students should have a knowledge of fundamental systems concepts required to develop lumped element models for basic mechanical systems, including inertia, compliance, dissipation, and power sources, and obtain equations of motion for linear motion and fixed-axis rotation.
- 2. Students should have a knowledge of fundamental systems concepts required to develop lumped element models for basic electrical systems, including inductance, capacitance, resistance, power sources and amplifiers.
- 3. Students should have a knowledge of fundamental systems concepts required to develop lumped element models for basic fluid systems, including inertance, capacitance, resistance, and pumps.
- 4. Students should have a knowledge of fundamental concepts of multi-domain modeling of electromechanical and fluid/mechanical systems and be able to develop lumped element models of these mixed systems.
- 5. Students should know how to place equations of motion into state variable form, and to develop a simulation for basic non linear and linear systems using Matlab or some other simulation software.
- 6. Students should know how to manipulate a system of linear differential equations to obtain transfer functions and poles.
- 7. Students should know how to interpret poles to define natural frequencies, damping ratios, time constants, and the natural response, step response, and impulse response of a system.
- 8. Students should understand the concept of frequency response. They should understand the relationship between transfer functions and frequency response, and should be able to obtain frequency response plots for their system models using Matlab.

ME EN 363 : Elementary Instrumentation. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ENG T 231 & MATH 303 & EC EN 301; or ENG T 231 & MATH 314 & EC EN 301; Concurrent enrollment in Engl 316.

DESCRIPTION: Fundamentals of mechanical measuring systems; sensors, signal conditioning, statistical error analysis, dynamic response, standards.

**Course Outcomes**

- 1. Students should have a knowledge of fundamental concepts of measurement including accuracy, precision, bias error, random error, DC offset, static sensitivity (DC gain), etc. Students should be able to calibrate (statically) a measurement system.
- 2. Students should understand the concept of time and frequency response as it applies to measurement systems. Students should understand the fundamentals of first- and second-order systems and should be able to characterize the behavior of such systems through the measurement of the time constant, natural frequency, and damping ratio.
- 3. Students should be familiar with the fundamental theory and techniques of data acquisition and signal conditioning. Students should understand the sampling process,

how aliasing can occur, and how to prevent aliasing with analog prefilters. Students should be able to use a Wheatstone bridge to condition signals from variable resistance devices. Students should be able to construct basic signal conditioning circuits using op-amps and electrical components (e.g., voltage divider, amplifier, differential amplifier, low-pass filter).

- 4. Through laboratory exercises and projects, students should gain hands-on familiarity with a variety of transducers, such as strain gages, thermocouples, and optical sensors. Students should understand the governing principles of their operation and how they influence their behavior.
- 5. Students should know basic statistical analysis principles that apply to measurement. Students should be able to apply concepts of infinite statistics to characterize large populations of measurement data. Similarly, they should be able to apply concepts of finite statistics to small samples of measurement data. Students should be able to apply least-squares analysis for curve-fitting purposes.
- 6. Students should be able to perform a basic uncertainty analysis for a measurement system. This includes the ability to perform a design-stage uncertainty analysis for a component of a sensor system, the ability to apply root-sum-of-squares methods to estimate uncertainty for multi-component systems, and the ability to determine how uncertainties are propagated in a calculated result.
- 7. Students should gain experience in documenting experimental work. Students should learn how to write a memo report and a full formal report.

*Aerospace Engineering (preparation for graduate school in engineering):*

CE EN 103 : Engineering Mechanics--Statics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: MATH 112; or MATH 111 & MATH 119; or concurrent enrollment.

DESCRIPTION: Concepts of mechanics: force systems in equilibrium, resultants, friction, centroids, utilization of vector algebra, simple trusses, shear and bending moment diagrams, moments of inertia.

**Course Outcomes**

- Be able to manipulate basic engineering units in both the International and US Customary Systems of Units in engineering analysis and be able to convert between the two.
- Be able to perform basic vector operations using standard vector notation.
- Be able to conceptualize and draw a conventional free-body diagram which identifies and applies all known and unknown forces.
- Understand the nature of forces(s) and their manipulation in engineering analysis, including moments, couples, transmissibility and resultants.
- Understand the conditions for equilibrium for both a particle and a rigid body.
- Be able to determine the axial forces in the members of a statically determinant truss.
- Be able to calculate the center of gravity for 2 and 3 dimensional rigid bodies.
- Be able to both calculate and draw diagrams for the internal shear forces and bending moments in straight, statically determinant beams.
- Understand the nature of friction and be able to solve problems involving friction and shear on horizontal and inclined planes.
- Be able to use calculus to compute centroids of lines, areas and volumes.
- Demonstrate competence in basic engineering analysis.

CE EN 203 : Engineering Mechanics--Mechanics of Materials. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: CE EN 103

DESCRIPTION: Fundamental concepts of elastic stress and strain, including transformations and stress-strain relations; beam/column theories (axial, flexure, torsion, and shear loads and deformations); shear and bending moment relationships; column stability; and cylindrical and spherical pressure vessels.

**Course Outcomes**

- Students will be able to calculate and transform axial stress (e.g., Mohr's Circle), shear stress, bearing stress, thermal stress, bending stress, and combined stress.
- Students will be able to calculate strain, transform strain (e.g., Mohr's Circle), apply stress-strain relations (e.g., Hooke's Law), and solve statically indeterminate problems.
- Students will be able to analyze deflections due to axial, torsion, bending, and shear loads, and manipulate relations between shear and bending moment.
- Students will be able to design beams and columns to carry specified axial, flexure, and shear loads, and predict their deformation and elastic stability (i.e., buckling).
- Students will be able to predict stresses in pressure vessels.

ME EN 415 : Applied Aerodynamics and Flight Mechanics. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: ME EN 312

DESCRIPTION: Modern applied aerodynamics, including performance, stability, and control of aerospace vehicles.

**Course Outcomes**

- Aerodynamic design of an airplane.
- Designing an airplane with specific performance requirements.
- Designing an airplane for stable and controlled flight.
- Designing an airplane propulsion system.
- Airplane structural design.

Consider capstone project with engineering research group.

*Biophysics:*

Biology
Biochemistry
PDBIO 568 : Cellular Electrophysiology and Biophysics. (3:2:3)
WHEN TAUGHT: Fall
PREREQUISITE: PDBIO 362 & PHSCS 140; or PDBIO 362 & PHSCS 220
DESCRIPTION: Using electrophysiology and biophysics as an approach to study of physiology. Extensive look at ion channels and cell signaling.

**Course Outcomes**

- Students will demonstrate biophysical knowledge gained in specific areas including membrane properties, voltage and ligand-gated receptors, neurotransmission and mathematical modeling.
- Students will apply the biophysical knowledge gained in a laboratory setting.
- Students will demonstrate critical thinking and evaluation skills gained in the course by preparing a competent and clearly written research proposal.
- Students will demonstrate knowledge of a particular research topic and presentation skills in a clear and informative oral presentation.

*Computer Science / Computer Engineering / Scientific Computing:*

Courses in computer programming, information technology, networks, numerical analysis (math), computer engineering that fit career goals.

*Electrical Engineering (graduate school preparation):*

EC EN 320 : Digital System Design. (4:3:3)
WHEN TAUGHT: Winter
PREREQUISITE: EC EN 220 & EC EN 240
DESCRIPTION: Advanced digital design, including hardware description languages, electrical properties of digital circuits, synchronous and asynchronous circuits, computer arithmetic, and interfacing to external circuitry.

**Course Outcomes**

- Ability to describe a digital system in VHDL.
- Ability to simulate and debug a digital system described in VHDL.
- Ability to read and interpret a data sheet.
- Ability to implement logic using an FPGA.
- Ability to synchronize asynchronous inputs into a synchronous system and analyze the MTBF.

EC EN 380 : Signals and Systems. (4:3:3)
WHEN TAUGHT: Fall
PREREQUISITE: EC EN 240 & MATH 334
DESCRIPTION: Time and frequency domain analysis of discrete or continuous systems subjected to periodic or nonperiodic input signals.

**Course Outcomes**

- Application of integral calculus, differential equations, complex variables, to transform analysis of a continuous-time LTI system.
- Application of integral calculus, differential equations, complex variables, to transform analysis of a discrete-time LTI system.
- Application of integral calculus to solve continuous-time convolution problems.
- Application of discrete math to solve discrete-time convolution problems.
- Ability to use Matlab or similar tools to analyze, model, simulate, and experiment with linear systems.
- Ability to interpret and synthesize signals and systems in both the time and frequency domains.
- Ability to recognize the mathematical properties of signals and systems including linearity, time invariance, causality, stability, etc.
- An understanding of the consequences and principles associated with digitally sampling and reconstructing analog signals.

and 400-level courses.

Consider capstone project with engineering research group.

*Materials Science (graduate school preparation):*

PHSCS 451 : Quantum Mechanics. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: PHSCS 222 & PHSCS 318
DESCRIPTION: Analytical foundations of quantum mechanics.

**Course Outcomes**

- Understand the mechanics of operators, eigenstates and eigenvalues. Learn how to build wave functions, estimate expectation values and standard deviations, and apply the Heisenberg uncertainty principle.
- Manipulate the Schrödinger equation to solve for wave functions.
- Develop free-particle and bound-state solutions to the Schrödinger equation. (In particular, harmonic oscillator, infinite and finite square-well, finite barrier potentials…).
- Construct simple solutions for Hydrogen atom, angular momentum and spin systems, atoms and solids.

PHSCS 452 : Applications of Quantum Mechanics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 451

DESCRIPTION: Applications of quantum mechanics to atomic, molecular, statistical, condensed-matter, and nuclear physics; elementary particles.

**Course Outcomes**

- Apply techniques such as time-independent perturbation theory, variational methods, time-dependent perturbation theory, and scattering theory to quantum systems.
- Describe and quantify fine, hyperfine, and Zeeman level splittings in atoms.
- Characterize emission and absorption of radiation by atoms, and derive the associated selection rules.
- Solve quantum scattering and tunneling problems.

PHSCS 581 : Solid-State Physics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Phscs 222 or equivalent.

DESCRIPTION: Introduction to the physics of solids. Crystal structure and symmetry, X-ray diffraction, lattice vibrations, metals and semiconductors, superconductivity, thermal properties, magnetic properties, and dielectric and optical properties.

**Course Outcomes**

- Explain the following basic concepts underlying the topics in solid state physics: (1) crystal symmetry, (2) reciprocal lattice and the first Brillouin zone in k-space, and (3) the quantum behavior of electrons, Pauli's exclusion principle, and the Fermi-Dirac distribution function.
- Use these basic concepts to explain crystal structure, x-ray diffraction, lattice vibrations, behavior of electrons in metals and semiconductors, and thermal, magnetic, dielectric and optical properties of materials.
- Show their understanding of these topics and their underlying concepts by solving problems using a variety of mathematical tools.

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.

DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.

NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 106 : General College Chemistry. (3:4:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: CHEM 105; or CHEM 111

DESCRIPTION: Continuation of Chem 105 but covering most of the topics in a more quantitative way. Detailed treatment of thermodynamics and equilibria.

NOTE: Three lectures and one recitation section per week.

**Course Outcomes**

- Students will demonstrate an expanded mastery of the concepts that were learned in Chemistry 105 including: kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, thermodynamics, organic, biochemistry, and nuclear chemistry.
- Students will demonstrate the ability to solve mathematical problems, typically using algebra, in kinetics, chemical equilibrium, acids and bases, solubility and complexation equilibrium, electrochemistry, and thermodynamics.

or

CHEM 111 : Principles of Chemistry. (4:3:3)

OFFERED: Honors also.

WHEN TAUGHT: Fall

PREREQUISITE: Math 110 or equivalent.

RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.

DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.

NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

: Honors Principles of Chemistry.

**Course Outcomes**

CHEM 112 : Principles of Chemistry. (3:3:2)

WHEN TAUGHT: Winter
PREREQUISITE: Chem 111 or Chem 105 or equivalent.
DESCRIPTION: Continuation of Chem 111.
NOTE: Tutorial included.

**Course Outcomes**

- Students will be able to use thermodynamic principles and their application to physical and chemical equilibria to calculate entropic and enthalpic contributions to physical changes and reactions and predict equilibria given entropic and enthalpic changes.
- Students will be able to apply acid-base theory, including interactions of strong and weak acids and bases, to determination of pH values of solutions, calculating buffering capacity and performance of acid-base titrations. They will be able to use structural features of molecules to estimate acid and base strength.
- Students will demonstrate an understanding of electrochemistry in designing simple electrodes and will use reduction/oxidation potentials to characterize electrodes.
- Students will be able to apply transition state theory to reaction kinetics. Students will be able to model mathematically rates of multiple reaction types.
- Students will be able to apply the periodic nature of the elements to classify elements and identify the compositions of inorganic salts.

*Microelectronics/Semiconductor Devices:*

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.
DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.
NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

PHSCS 281 : Principles of Solid State Physics. (3:3:1)

WHEN TAUGHT: Fall
PREREQUISITE: PHSCS 220; Phscs 121 or equivalent.
DESCRIPTION: Introduction to physics of solids, including laboratory experience.
NOTE: For students in science, computer science, technology, and engineering.

**Course Outcomes**

- Use the concepts of lattices, unit cells, and the atomic basis to describe the structure of crystals.
- Apply the concept of reciprocal lattices and the first Brillouin zone to arrive at conclusions about wave diffraction, dispersion graphs of lattice waves, and electron energy bands.
- Apply basic principles of quantum mechanics to describe the behavior of electrons in crystalline solids and describe the concepts of density of states, Pauli's exclusion principle, the Dirac distribution function, and band structure.
- Use the ideas of band structure to arrive at conclusions about the electrical properties of materials. Use the ideas of doping to arrive at conclusions about the electrical properties of semiconductors.

or
PHSCS 581 : Solid-State Physics. (3:3:0)

WHEN Winter

TAUGHT:

PREREQUISITE: Phscs 222 or equivalent.

DESCRIPTION: Introduction to the physics of solids. Crystal structure and symmetry, X-ray diffraction, lattice vibrations, metals and semiconductors, superconductivity, thermal properties, magnetic properties, and dielectric and optical properties.

**Course Outcomes**

- Explain the following basic concepts underlying the topics in solid state physics: (1) crystal symmetry, (2) reciprocal lattice and the first Brillouin zone in k-space, and (3) the quantum behavior of electrons, Pauli's exclusion principle, and the Fermi-Dirac distribution function.
- Use these basic concepts to explain crystal structure, x-ray diffraction, lattice vibrations, behavior of electrons in metals and semiconductors, and thermal, magnetic, dielectric and optical properties of materials.
- Show their understanding of these topics and their underlying concepts by solving problems using a variety of mathematical tools.

EC EN 450 : Introduction to Semiconductor Devices. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: EC EN 340

DESCRIPTION: Physics of electronic and optical solid state devices; includes semiconductor materials, bipolar and FET device physics and modeling, optical properties of semiconductors, and lasers.

**Course Outcomes**

- Application of basic physical processes to model p-n junctions.
- Application of differential equations to charge transport in semiconducting material.
- Application of the physical properties of device building blocks (pn junctions, metal semiconductor interfaces, MOS structures) to model MOSFET operation.
- Application of basic microfabrication processes to design semiconductor device fabrication process flows.

or

PHSCS 587 : Physics of Semiconductor Devices. (3:3.0:0.0)

WHEN TAUGHT: Fall Contact Department

PREREQUISITE: PHSCS 281; or PHSCS 581; or EC EN 450

DESCRIPTION: Device physics, with an in-depth study of the MOS transistor and other nanoscale computing devices.

**Course Outcomes**

- Identify the fundamental mechanisms and models of these mechanisms controlling the operation of semiconductor devices.
- Apply the fundamental mechanisms and models to the analysis of devices such as silicon mosfets, silicon on insulator transistors, carbon nanotube transistors, and graphene transistors.
- Find, read, and utilize contemporary semiconductor device physics literature to write reviews of this literature.

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

*Nuclear Physics (power generation for industry or navy):*

PHSCS 360 : Statistical and Thermal Physics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 222 & MATH 303; or PHSCS 222 & MATH 334

DESCRIPTION: Principles of statistical mechanics and thermodynamics, with applications.

**Course Outcomes**

- Use statistical arguments to explain thermodynamics from first principles, including heat flow and the increase of entropy. Apply these to solve quantitative problems in thermodynamics.
- Use thermodynamic potentials, e.g. the Helmholtz and Gibbs free energies, to predict equilibrium states in physical systems and predict phase transformations.
- Use simple models to explain physical phenomena in a variety of systems, including: classical and quantum ideal gases, magnetic systems, solids.

PHSCS 451 : Quantum Mechanics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PHSCS 222 & PHSCS 318

DESCRIPTION: Analytical foundations of quantum mechanics.

**Course Outcomes**

- Understand the mechanics of operators, eigenstates and eigenvalues. Learn how to build wave functions, estimate expectation values and standard deviations, and apply the Heisenberg uncertainty principle.
- Manipulate the Schrödinger equation to solve for wave functions.
- Develop free-particle and bound-state solutions to the Schrödinger equation. (In particular, harmonic oscillator, infinite and finite square-well, finite barrier potentials…).
- Construct simple solutions for Hydrogen atom, angular momentum and spin systems, atoms and solids.

PHSCS 452 : Applications of Quantum Mechanics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 451

DESCRIPTION: Applications of quantum mechanics to atomic, molecular, statistical, condensed-matter, and nuclear physics; elementary particles.

**Course Outcomes**

- Apply techniques such as time-independent perturbation theory, variational methods, time-dependent perturbation theory, and scattering theory to quantum systems.
- Describe and quantify fine, hyperfine, and Zeeman level splittings in atoms.
- Characterize emission and absorption of radiation by atoms, and derive the associated selection rules.
- Solve quantum scattering and tunneling problems.

ME EN 422 : Applied Thermodynamics. (3:3:1)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ME EN 321

DESCRIPTION: Applied engineering thermodynamics including air and steam power cycles, thermodynamic relations, and introduction to combustion and equilibrium chemical reactions.

**Course Outcomes**

- Evaluation of work potential using exergy concepts.
- Creation of gas and vapor power cycles.
- Creation of refrigeration cycles.
- Application of thermodynamic property relations.
- Evaluation of problems involving gas mixtures.
- Analysis of thermodynamic problems involving chemical reactions.

*Optical Communication Engineering:*

PHSCS 471 : Principles of Optics. (3:3:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: PHSCS 121 & PHSCS 220 & MATH 302; or PHSCS 121 & PHSCS 220 & MATH 314; Math 303 or 334 or concurrent enrollment.

RECOMMENDED: Phscs 318.

DESCRIPTION: Electromagnetic wave phenomena, including polarization effects, interference, coherence, dispersion, ray theory, diffraction; introduction to quantum nature of light. Laboratory component emphasizes applications.

**Course Outcomes**

- Use mathematical and conceptual descriptions of propagation of light in matter, reflection/transmission at boundaries, polarization effects, interference, dispersion, coherence, image formation, diffraction, and quantum aspects of light to analyze and predict optical phenomena.
- Manipulate and measure properties of light in a laboratory setting.
- Apply mathematical tools such as vector calculus, complex numbers, matrices, and Fourier transforms (1D and 2D) to optical problems.

PHSCS 571 : Lasers and Atoms. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Phscs 451, 471; or equivalents.

DESCRIPTION: Laser amplification, cavity design, and control and characterization of temporal and spatial modes. Interactions between lasers and atoms.

**Course Outcomes**

- Design stable laser resonators, frequency-locking feedback systems, and pulsed-output mode-locking systems.
- Measure durations of femtosecond pulses and the line width and center frequency of frequency-stabilized sources.
- Compute cavity threshold gain, optimal output coupling, and gain saturation.
- Describe interactions of light and matter within a semi-classical two-level-atom framework.
- Compute cross sections and selection rules for transitions in hydrogen.

EC EN 380 : Signals and Systems. (4:3:3)

WHEN TAUGHT: Fall

PREREQUISITE: EC EN 240 & MATH 334

DESCRIPTION: Time and frequency domain analysis of discrete or continuous systems subjected to periodic or nonperiodic input signals.

**Course Outcomes**

- Application of integral calculus, differential equations, complex variables, to transform analysis of a continuous-time LTI system.
- Application of integral calculus, differential equations, complex variables, to transform analysis of a discrete-time LTI system.
- Application of integral calculus to solve continuous-time convolution problems.
- Application of discrete math to solve discrete-time convolution problems.
- Ability to use Matlab or similar tools to analyze, model, simulate, and experiment with linear systems.
- Ability to interpret and synthesize signals and systems in both the time and frequency domains.
- Ability to recognize the mathematical properties of signals and systems including linearity, time invariance, causality, stability, etc.
- An understanding of the consequences and principles associated with digitally sampling and reconstructing analog signals.

EC EN 466 : Introduction to Optical Engineering. (2:3:1)

PREREQUISITE: EC EN 462

DESCRIPTION: Introduces principles and practices of optical engineering including optical communications system and components.

**Course Outcomes**

- Application of differential equations to solve metallic and dielectric waveguide problems.
- Application of integral calculus to solve diffraction problems.
- Application of linear algebra to find propagation characteristics in anisotropic media.
- Ability to apply modern optical test equipment to measure optical communication system parameters.

EC EN 555 : Optoelectronic Devices. (3:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: ECEn 450 or equivalent or instructor's consent.

DESCRIPTION: Design, operation, and fabrication of modern optoelectronic devices, including photodiodes, photovoltaics, LEDs, and lasers.

**Course Outcomes**

- Use principles of physics to analyze and design the following optoelectronic components – LEDs, lasers, photodiodes, and photovoltaics.
- Be familiar with the tools and processes used in fabricating the following optoelectronic components - LEDs, lasers, photodiodes, and photovoltaics.
- Understand metrics of optoelectronics devices and be able to incorporate them into systems for optimal performance.

EC EN 562 : Optical Communication Components and Systems. (3:3:0)

PREREQUISITE: EC En 462, 466; or equivalents.

DESCRIPTION: Fiber-optic communication system components and their operating and performance characteristics.

**Course Outcomes**

- Learn the fundamental properties of optical fiber channels, sources and detectors.
- Design an optical fiber system while considering the bandwidth, distance required, and expense.
- Examine a topic of current interest in optical systems and make an oral presentation to the class.
- Become familiar with the modern test and evaluation tools for fiber optic systems, including the OTDR Time Domain Reflectometer (OTDR), Optical Spectrum Analyzer (OSA), and Optical Oscilloscopes for eye diagram analysis.

*Optical/Laser Engineering:*

PHSCS 442 : Electrodynamics. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: PHSCS 441

DESCRIPTION: Maxwell's equations, radiation, interaction of electromagnetic fields with matter, and special relativity.

**Course Outcomes**

- Demonstrate the ability to calculate time-dependent electric fields using Faraday's law and the ability to calculate time-dependent magnetic fields using Maxwell's displacement current.
- Demonstrate the ability to solve problems involving electric and magnetic energy densities and the Maxwell stress tensor.
- Demonstrate the ability to use Maxwell's equations to solve problems involving electromagnetic waves in vacuum and in matter.
- Demonstrate the ability to use the concept of retarded time to compute radiation potentials.
- Demonstrate the ability to solve problems involving the special theory of relativity, including 4-vectors, form invariance, and the electromagnetic field tensor.

PHSCS 471 : Principles of Optics. (3:3:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: PHSCS 121 & PHSCS 220 & MATH 302; or PHSCS 121 & PHSCS 220 & MATH 314; Math 303 or 334 or concurrent enrollment.

RECOMMENDED: Phscs 318.

DESCRIPTION: Electromagnetic wave phenomena, including polarization effects, interference, coherence, dispersion, ray theory, diffraction; introduction to quantum nature of light. Laboratory component emphasizes applications.

**Course Outcomes**

- Use mathematical and conceptual descriptions of propagation of light in matter, reflection/transmission at boundaries, polarization effects, interference, dispersion, coherence, image formation, diffraction, and quantum aspects of light to analyze and predict optical phenomena.
- Manipulate and measure properties of light in a laboratory setting.
- Apply mathematical tools such as vector calculus, complex numbers, matrices, and Fourier transforms (1D and 2D) to optical problems.

and/or

PHSCS 571 : Lasers and Atoms. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Phscs 451, 471; or equivalents.

DESCRIPTION: Laser amplification, cavity design, and control and characterization of temporal and spatial modes. Interactions between lasers and atoms.

**Course Outcomes**

- Design stable laser resonators, frequency-locking feedback systems, and pulsed-output mode-locking systems.
- Measure durations of femtosecond pulses and the line width and center frequency of frequency-stabilized sources.
- Compute cavity threshold gain, optimal output coupling, and gain saturation.
- Describe interactions of light and matter within a semi-classical two-level-atom framework.
- Compute cross sections and selection rules for transitions in hydrogen.

EC EN 466 : Introduction to Optical Engineering. (2:3:1)

PREREQUISITE: EC EN 462

DESCRIPTION: Introduces principles and practices of optical engineering including optical communications system and components.

**Course Outcomes**

- Application of differential equations to solve metallic and dielectric waveguide problems.
- Application of integral calculus to solve diffraction problems.
- Application of linear algebra to find propagation characteristics in anisotropic media.
- Ability to apply modern optical test equipment to measure optical communication system parameters.

EC EN 555 : Optoelectronic Devices. (3:2:1)

WHEN TAUGHT: Fall

PREREQUISITE: ECEn 450 or equivalent or instructor's consent.

DESCRIPTION: Design, operation, and fabrication of modern optoelectronic devices, including photodiodes, photovoltaics, LEDs, and lasers.

**Course Outcomes**

- Use principles of physics to analyze and design the following optoelectronic components – LEDs, lasers, photodiodes, and photovoltaics.
- Be familiar with the tools and processes used in fabricating the following optoelectronic components - LEDs, lasers, photodiodes, and photovoltaics.
- Understand metrics of optoelectronics devices and be able to incorporate them into systems for optimal performance.

and/or

EC EN 562 : Optical Communication Components and Systems. (3:3:0)

PREREQUISITE: EC En 462, 466; or equivalents.

DESCRIPTION: Fiber-optic communication system components and their operating and performance characteristics.

**Course Outcomes**

- Learn the fundamental properties of optical fiber channels, sources and detectors.
- Design an optical fiber system while considering the bandwidth, distance required, and expense.
- Examine a topic of current interest in optical systems and make an oral presentation to the class.

- Become familiar with the modern test and evaluation tools for fiber optic systems, including the OTDR Time Domain Reflectometer (OTDR), Optical Spectrum Analyzer (OSA), and Optical Oscilloscopes for eye diagram analysis.

*Premedicine, Prelaw (including patent law), Prebusiness:*

Courses in specialty.

*Hours include courses that may fulfill university core requirements.

## Show all Physics and Astronomy (Phscs) Courses

**College of Physical and Mathematical Sciences Home**

**Physics and Astronomy Department Home**

**Majors**

- BS in Applied Physics
- BS in Physics
- BS in Physics-Astronomy
- BS in Physics Teaching

**Minors**

- Astronomy
- Physics
- Physics Teaching

**Course Information**

- Physics and Astronomy (Phscs) Courses

**Faculty**

# BS in Physics (62–65 hours*)

Show All Course Descriptions
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## Program Requirements | View MAP | View Program Outcomes

1. No more than 3 hours of D credit is allowed in major courses.
2. Complete the following:

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 121 or equivalent. Calculus.

DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special

relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHSCS 140 : Electronics Lab. (1:1:2)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Introduction to analog and digital circuits.

**Course Outcomes**

- Build and debug basic analog circuits that are of practical use in experimental physics such as voltage dividers, diode rectifiers, inverting and non-inverting op amp circuits, and transistor switches.
- Demonstrate understanding of electrical concepts of voltage, current, resistance, power, and input and output resistance through the analysis of simple circuits.
- Demonstrate proper use and limitations of electrical sources and test equipment including DC power supplies, multimeters, oscilloscopes, and function generators.
- Build and debug basic digital circuits that use components such as digital gates, flipflops, counters, and digital to analog converters.

PHSCS 145 : Experimental Methods in Physics. (1:0:3)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: PHSCS 140; Phscs 121 or equivalent.

DESCRIPTION: Introduction to physical measurement and analysis, optics, sensors, actuators, and computer-based data acquisition.

**Course Outcomes**

- Demonstrate good practices in experimental physics documentation and communication such as data collection, record keeping, and presentation.
- Demonstrate the ability to analyze experimental data this includes techniques such as error estimation, error propagation, model selection, and curve fitting.
- Use simple optical devices (e.g. lenses, mirrors, slits and gratings, polarizers) to explore the geometric and wave properties of light.
- Apply AC concepts such as frequency response, frequency filtering, fourier transform analysis, and impedance to sinusoidally-driven electrical, mechanical, optical, and acoustical systems.

PHSCS 191 : Introduction to Physics Careers and Research 1. (.5:1:0)

DESCRIPTION: Survey of BYU undergraduate physics and astronomy programs, careers in physics and astronomy, and current physics and astronomy research.

NOTE: Take first semester after registered as physics major.

**Course Outcomes**

- Describe the major subfields of physics and the breadth of interdisciplinary research to which physicists contribute.
- Describe examples of current research in physics or astronomy, explaining what questions are being asked by the investigators and why these questions are interesting.
- Describe career opportunities available in physics and astronomy and the specific preparation necessary for these careers.
- Develop a draft of an educational plan for both undergraduate and graduate training.

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

PHSCS 222 : Modern Physics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHSCS 123 & PHSCS 220; Phscs 121 or equivalent.

DESCRIPTION: Quantum physics, atoms, molecules, condensed matter, nuclei, elementary particles, and selected topics in contemporary physics.

**Course Outcomes**

- Demonstrate their understanding of the fundamental postulates and principles of special relativity and quantum mechanics.
- Apply the principles of quantum mechanics to predict the results of measurements in simple systems such as a free particle, simple potential wells, and central potentials.
- Solve problems and answer conceptual questions applying the principles of quantum mechanics and special relativity to topics in modern physics such as atomic physics, molecular physics, the physics of solids, statistical physics, nuclear physics, radioactivity, and particle physics.

PHSCS 230 : Computational Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 113

DESCRIPTION: Introduction to numerical and symbolic computation and graphical analysis using a symbolic mathematics program. Applications to mechanics, optics, and special relativity.

**Course Outcomes**

- Demonstrate the ability to apply calculus, linear algebra, and complex analysis to solve undergraduate-level physics problems.
- Demonstrate the ability to use programming constructs such as looping, conditional execution, and iteration to solve physics problems.
- Solve equations, including systems of equation, related to physical phenomena both symbolically and numerically.
- Demonstrate the ability to visualize, analyze, and interpret equations, data, and physical models.

PHSCS 240 : Design, Fabrication, and Use of Scientific Apparatus. (2:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHSCS 123 & PHSCS 145

DESCRIPTION: Machining, computer interfacing, controls, and vacuum systems.

**Course Outcomes**

- Design, build, and interface experimental apparatus.
- Make involved physical measurements and analyze experimental results.
- Document in a personal lab notebook the procedures, methods, results, and analysis of laboratory exercises.
- Present work in writing and through oral presentations.
- Demonstrate understanding of professional ethics guidelines for research activities and presentation of results.

PHSCS 245 : Experiments in Contemporary Physics. (2:0:6)

WHEN TAUGHT: Fall; Winter; Spring Odd Yrs.

PREREQUISITE: PHSCS 220 & PHSCS 240

DESCRIPTION: In-depth, multi-period experiments in contemporary physics, using advanced instrumentation.

**Course Outcomes**

- Demonstrate the use and assembly of experimental systems using contemporary instrumentation components to perform experiments in areas such as coherent optical systems, microfabrication, and vacuum systems.
- Independently design and carry out multi-period in-depth projects.
- Present research results through oral presentations.

PHSCS 291 : Introduction to Physics Careers and Research 2. (.5:1:0)

PREREQUISITE: PHSCS 123; Phscs 191 or concurrent enrollment.

DESCRIPTION: Career opportunities for physicists in industry, interdisciplinary research, national labs and observatories, and professions such as medicine, law, and business. Personal planning for research or internship involvement.

NOTE: Take first semester as a sophomore.

**Course Outcomes**

- Describe career opportunities for physicists in industry, interdisciplinary research, national labs and observatories, and professions such as medicine, law and business.
- Learn how to prepare for and succeed in such careers from physicists working in them.
- Develop a plan for research or internship involvement.
- Develop a plan for graduate school (if the student's career path requires it).

PHSCS 318 : Introduction to Mathematical Physics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 303 & PHSCS 230; or MATH 334 & PHSCS 230

DESCRIPTION: Partial differential equations, classical field equations, algebra of complex variables, Fourier analysis, integral transforms, and orthogonal functions.

**Course Outcomes**

- Solve partial differential equations in Cartesian, cylindrical, and spherical coordinates using separation of variables and expansions in orthogonal functions. Apply boundary conditions appropriate for physical systems.
- Perform algebraic computations involving complex numbers and functions.
- Use the properties (such as recursion relations, derivative relationships, and orthogonality conditions) of various special functions, including trigonometric functions, Bessel functions, and Legendre polynomials to solve problems involving those functions.
- Use Fourier series and transforms to expand functions and solve partial differential equations on appropriate domains.

PHSCS 321 : Mechanics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: PHSCS 121 & PHSCS 230 & MATH 302; or PHSCS 121 & PHSCS 230 & MATH 314; Math 303 or 334 or concurrent enrollment.

RECOMMENDED: Concurrent enrollment in Phscs 330.

DESCRIPTION: Newton's laws applied to particles and systems of particles, including rigid bodies. Conservation principles and Lagrange's and Hamilton's equations.

**Course Outcomes**

- Use Newtonian mechanics with forces and torques to solve problems in Cartesian and curvilinear coordinates.
- Solve mechanics problems using work-energy, and conservation of energy, momentum and angular momentum.
- Solve and analyze rigid-body problems and problems in non-inertial frames.
- Use Lagrangian and Hamiltonian mechanics to obtain the equations of motion for a variety of problems, including the use of generalized coordinates and cyclic coordinates.
- Use perturbation and similar techniques to linearize equations of motion to analyze stability and study coupled systems using normal modes.

PHSCS 330 : Computational Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: PHSCS 121 & PHSCS 230; Math 303 or 334 or equivalent; CS 142 or equivalent.

DESCRIPTION: Numerical solution of ordinary differential equations, linear algebra and eigenvalues, chaos theory. Applications to dynamics. Introduction to programming in Matlab.

**Course Outcomes**

- Demonstrate proficiency in using MATLAB and show that the student can write working programs.
- Be able to qualitatively explain how differential equations generate their solution curves.
- Use a symbolic mathematics programs and MATLAB to solve ordinary differential equations to simulate dynamical systems.

PHSCS 360 : Statistical and Thermal Physics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 222 & MATH 303; or PHSCS 222 & MATH 334

DESCRIPTION: Principles of statistical mechanics and thermodynamics, with applications.

**Course Outcomes**

- Use statistical arguments to explain thermodynamics from first principles, including heat flow and the increase of entropy. Apply these to solve quantitative problems in thermodynamics.
- Use thermodynamic potentials, e.g. the Helmholtz and Gibbs free energies, to predict equilibrium states in physical systems and predict phase transformations.
- Use simple models to explain physical phenomena in a variety of systems, including: classical and quantum ideal gases, magnetic systems, solids.

PHSCS 430 : Computational Physics Lab 3. (1:0:3)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: PHSCS 222 & PHSCS 318 & PHSCS 330

DESCRIPTION: Static and dynamic boundary value problems, partial differential equations. Applications in electrostatics, thermodynamics, waves, and quantum mechanics. Programming with Matlab.

**Course Outcomes**

- Numerically solve physics problems involving partial differential equations using Mathematica and MATLAB.
- Apply the basic programming concepts of looping and conditional branching to numerical problems.

PHSCS 441 : Electrostatics and Magnetism. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: PHSCS 220 & PHSCS 318

DESCRIPTION: Classical theory of static electric and magnetic fields.

**Course Outcomes**

- Demonstrate the ability to apply the concepts of vector calculus as used in Maxwell's equations.
- Demonstrate the ability to integrate over a source distribution to calculate time-independent fields and potentials for both electricity and magnetism. Also demonstrate the ability to use Gauss's law and Amperes law to find electric and magnetic fields in symmetric situations.
- Demonstrate the ability to use vacuum harmonics, image charges, and image currents to solve for time-independent electric and magnetic potentials and fields.
- Demonstrate the ability to calculate electric and magnetic fields in the presence of matter which can be electrically and magnetically polarized, including the ability to solve problems involving torques and potential energies of electric and magnetic dipoles.

PHSCS 442 : Electrodynamics. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: PHSCS 441

DESCRIPTION: Maxwell's equations, radiation, interaction of electromagnetic fields with matter, and special relativity.

**Course Outcomes**

- Demonstrate the ability to calculate time-dependent electric fields using Faraday's law and the ability to calculate time-dependent magnetic fields using Maxwell's displacement current.
- Demonstrate the ability to solve problems involving electric and magnetic energy densities and the Maxwell stress tensor.
- Demonstrate the ability to use Maxwell's equations to solve problems involving electromagnetic waves in vacuum and in matter.
- Demonstrate the ability to use the concept of retarded time to compute radiation potentials.

- Demonstrate the ability to solve problems involving the special theory of relativity, including 4-vectors, form invariance, and the electromagnetic field tensor.

PHSCS 451 : Quantum Mechanics. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: PHSCS 222 & PHSCS 318
DESCRIPTION: Analytical foundations of quantum mechanics.

**Course Outcomes**

- Understand the mechanics of operators, eigenstates and eigenvalues. Learn how to build wave functions, estimate expectation values and standard deviations, and apply the Heisenberg uncertainty principle.
- Manipulate the Schrödinger equation to solve for wave functions.
- Develop free-particle and bound-state solutions to the Schrödinger equation. (In particular, harmonic oscillator, infinite and finite square-well, finite barrier potentials…).
- Construct simple solutions for Hydrogen atom, angular momentum and spin systems, atoms and solids.

PHSCS 452 : Applications of Quantum Mechanics. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: PHSCS 451
DESCRIPTION: Applications of quantum mechanics to atomic, molecular, statistical, condensed-matter, and nuclear physics; elementary particles.

**Course Outcomes**

- Apply techniques such as time-independent perturbation theory, variational methods, time-dependent perturbation theory, and scattering theory to quantum systems.
- Describe and quantify fine, hyperfine, and Zeeman level splittings in atoms.
- Characterize emission and absorption of radiation by atoms, and derive the associated selection rules.
- Solve quantum scattering and tunneling problems.

PHSCS 471 : Principles of Optics. (3:3:1)
WHEN TAUGHT: Winter; Summer
PREREQUISITE: PHSCS 121 & PHSCS 220 & MATH 302; or PHSCS 121 & PHSCS 220 & MATH 314; Math 303 or 334 or concurrent enrollment.
RECOMMENDED: Phscs 318.
DESCRIPTION: Electromagnetic wave phenomena, including polarization effects, interference, coherence, dispersion, ray theory, diffraction; introduction to quantum nature of light. Laboratory component emphasizes applications.

**Course Outcomes**

- Use mathematical and conceptual descriptions of propagation of light in matter, reflection/transmission at boundaries, polarization effects, interference, dispersion, coherence, image formation, diffraction, and quantum aspects of light to analyze and predict optical phenomena.
- Manipulate and measure properties of light in a laboratory setting.
- Apply mathematical tools such as vector calculus, complex numbers, matrices, and Fourier transforms (1D and 2D) to optical problems.

**Note:** Phscs 191 should be taken the first semester as a freshman. Phscs 291 should be taken the first semester as a sophomore.

3. Complete one of the following options:

**Either**

MATH 113 : Calculus 2. (4:5:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 302 : Mathematics for Engineering 1. (4:4:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Math 113.
DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the

mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

**Or**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
RECOMMENDED: Math 290.
DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 313.
DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

4. Complete one course from the following:

MATH 303 : Mathematics for Engineering 2. (4:4:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MATH 302
DESCRIPTION: ODEs, Laplace transforms, Fourier series, PDEs.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For a more detailed course description, visit Math 303 Wiki.

MATH 334 : Ordinary Differential Equations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 113 and Math 313.
DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

5. Complete a senior thesis, including the following:
   a. Choose a research mentor and group as early as possible, starting with information in Phscs 191 and 291, and discussions with faculty, your advisor, and senior thesis coordinator. It is best to start as a freshman or sophomore.

Interdisciplinary work in other departments or in internships is possible.

b. Complete two hours of the following

PHSCS 498R : Senior Thesis. (.5-3:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Conducting and reporting research under a department faculty mentor or other professionals.

NOTE: Thesis topic must be cleared by faculty member before registration.

**Course Outcomes**

- Perform significant research in physics or astronomy under the direction of a faculty or internship mentor.
- Present their research in a written document that follows professional standards in the field.
- Do the above within professional ethical standards.

- **Note 1:** Students planning careers in experimental, applied, or industrial physics should complete STAT 201.
- **Note 2:** All students will benefit, through courses or individual study, by learning programming skills and numerical methods beyond what you are taught in C S 142 and our computational physics courses. Consider the following: C S courses, MATH 410, ME EN 373.
- **Note 3:** Students planning graduate school in physics should learn complex analysis. Consider the following: MATH 332, PHSCS 601, 602.

*Hours include courses that may fulfill university core requirements.

## Show all Physics and Astronomy (Phscs) Courses

College of Physical and Mathematical Sciences Home

Physics and Astronomy Department Home

Majors

- BS in Applied Physics
- BS in Physics
- BS in Physics-Astronomy
- BS in Physics Teaching

Minors

- Astronomy
- Physics
- Physics Teaching

Course Information

- Physics and Astronomy (Phscs) Courses

Faculty

# BS in Physics-Astronomy (67–70 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. No more than 3 hours of D credit is allowed in major courses.
2. Complete the following:

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 121 or equivalent. Calculus.

DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special

relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHSCS 127 : Descriptive Astronomy. (3:3:1)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Nonmathematical presentation of knowledge of the content and history of the cosmos, frequently using observatory and planetarium.

**Course Outcomes**

There are no course outcomes available

PHSCS 191 : Introduction to Physics Careers and Research 1. (.5:1:0)

DESCRIPTION: Survey of BYU undergraduate physics and astronomy programs, careers in physics and astronomy, and current physics and astronomy research.
NOTE: Take first semester after registered as physics major.

**Course Outcomes**

- Describe the major subfields of physics and the breadth of interdisciplinary research to which physicists contribute.
- Describe examples of current research in physics or astronomy, explaining what questions are being asked by the investigators and why these questions are interesting.
- Describe career opportunities available in physics and astronomy and the specific preparation necessary for these careers.
- Develop a draft of an educational plan for both undergraduate and graduate training.

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: MATH 113; Phscs 121 or equivalent.
DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

PHSCS 222 : Modern Physics. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PHSCS 123 & PHSCS 220; Phscs 121 or equivalent.
DESCRIPTION: Quantum physics, atoms, molecules, condensed matter, nuclei, elementary particles, and selected topics in contemporary physics.

**Course Outcomes**

- Demonstrate their understanding of the fundamental postulates and principles of special relativity and quantum mechanics.
- Apply the principles of quantum mechanics to predict the results of measurements in simple systems such as a free particle, simple potential wells, and central potentials.
- Solve problems and answer conceptual questions applying the principles of quantum mechanics and special relativity to topics in modern physics such as atomic physics, molecular physics, the physics of solids, statistical physics, nuclear physics, radioactivity, and particle physics.

PHSCS 227 : Solar System Astronomy. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: PHSCS 121; Math 112 or equivalent; Phscs 127 or concurrent.
DESCRIPTION: Solar-system dynamics, planetary surfaces and atmospheres. Analysis of stellar data from telescopes, spectrometers and photometers. Interaction of light with atoms and molecules. Extrasolar planets.

**Course Outcomes**

- Solve elementary problems in classical celestial mechanics and in the interaction of light with atoms and molecules.
- Describe the differences between the planets and moons and how these differences provide clues as to their formation history.
- Use observational data of binary stars to determine fundamental stellar parameters, and apply understanding to characterize other stars.
- Describe various telescopes and how they are used with detectors for photometry and spectroscopy.

PHSCS 228 : Stellar and Extragalactic Astronomy. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: PHSCS 227
DESCRIPTION: Stellar atmospheres, stellar interiors, stellar evolution, interstellar matter, galactic structure, external galaxies, and cosmology.

**Course Outcomes**

- Display a qualitative and simple quantitative understanding of the role of the interstellar medium in star formation, stellar structure and evolution;
- Demonstrate an understanding of stellar populations and galactic structure;
- Display a knowledge of the basic properties of galaxies;
- Display a qualitative grasp of up-to-date observational cosmology and solve elementary problems in theoretical cosmology.

PHSCS 230 : Computational Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 113

DESCRIPTION: Introduction to numerical and symbolic computation and graphical analysis using a symbolic mathematics program. Applications to mechanics, optics, and special relativity.

**Course Outcomes**

- Demonstrate the ability to apply calculus, linear algebra, and complex analysis to solve undergraduate-level physics problems.
- Demonstrate the ability to use programming constructs such as looping, conditional execution, and iteration to solve physics problems.
- Solve equations, including systems of equation, related to physical phenomena both symbolically and numerically.
- Demonstrate the ability to visualize, analyze, and interpret equations, data, and physical models.

PHSCS 291 : Introduction to Physics Careers and Research 2. (.5:1:0)

PREREQUISITE: PHSCS 123; Phscs 191 or concurrent enrollment.

DESCRIPTION: Career opportunities for physicists in industry, interdisciplinary research, national labs and observatories, and professions such as medicine, law, and business. Personal planning for research or internship involvement.

NOTE: Take first semester as a sophomore.

**Course Outcomes**

- Describe career opportunities for physicists in industry, interdisciplinary research, national labs and observatories, and professions such as medicine, law and business.
- Learn how to prepare for and succeed in such careers from physicists working in them.
- Develop a plan for research or internship involvement.
- Develop a plan for graduate school (if the student's career path requires it).

PHSCS 318 : Introduction to Mathematical Physics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 303 & PHSCS 230; or MATH 334 & PHSCS 230

DESCRIPTION: Partial differential equations, classical field equations, algebra of complex variables, Fourier analysis, integral transforms, and orthogonal functions.

**Course Outcomes**

- Solve partial differential equations in Cartesian, cylindrical, and spherical coordinates using separation of variables and expansions in orthogonal functions. Apply boundary conditions appropriate for physical systems.
- Perform algebraic computations involving complex numbers and functions.
- Use the properties (such as recursion relations, derivative relationships, and orthogonality conditions) of various special functions, including trigonometric functions, Bessel functions, and Legendre polynomials to solve problems involving those functions.
- Use Fourier series and transforms to expand functions and solve partial differential equations on appropriate domains.

PHSCS 321 : Mechanics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: PHSCS 121 & PHSCS 230 & MATH 302; or PHSCS 121 & PHSCS 230 & MATH 314; Math 303 or 334 or concurrent enrollment.

RECOMMENDED: Concurrent enrollment in Phscs 330.

DESCRIPTION: Newton's laws applied to particles and systems of particles, including rigid bodies. Conservation principles and Lagrange's and Hamilton's equations.

**Course Outcomes**

- Use Newtonian mechanics with forces and torques to solve problems in Cartesian and curvilinear coordinates.
- Solve mechanics problems using work-energy, and conservation of energy, momentum and angular momentum.
- Solve and analyze rigid-body problems and problems in non-inertial frames.
- Use Lagrangian and Hamiltonian mechanics to obtain the equations of motion for a variety of problems, including the use of generalized coordinates and cyclic coordinates.
- Use perturbation and similar techniques to linearize equations of motion to analyze stability and study coupled systems using normal modes.

PHSCS 329 : Observational Astronomy. (3:2:4)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 127

DESCRIPTION: Basic techniques of observational astronomy, emphasizing practical experience in optical data

acquisition and analysis.

NOTE: See instructor about proficiency exam if you have taken Phscs 127 equivalent.

**Course Outcomes**

- Obtain publication quality astronomical data (photometric data) using a telescope and CCD camera.
- Process raw data and extract astrophysically significant information from data about astronomical objects.
- Interpret data obtained and present results in astronomical publication format written in AASTeX.
- Prepare a request for external telescope time.
- Follow professional ethics guidelines in research activities and presentation of results.

PHSCS 330 : Computational Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: PHSCS 121 & PHSCS 230; Math 303 or 334 or equivalent; CS 142 or equivalent.

DESCRIPTION: Numerical solution of ordinary differential equations, linear algebra and eigenvalues, chaos theory. Applications to dynamics. Introduction to programming in Matlab.

**Course Outcomes**

- Demonstrate proficiency in using MATLAB and show that the student can write working programs.
- Be able to qualitatively explain how differential equations generate their solution curves.
- Use a symbolic mathematics programs and MATLAB to solve ordinary differential equations to simulate dynamical systems.

PHSCS 427 : Introduction to Astrophysics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PHSCS 227 & PHSCS 228

DESCRIPTION: Principles and observational techniques of astrophysics.

**Course Outcomes**

- Represent sky positions and kinematics using basic astronomical spatial and time coordinates. Transform coordinates, motions and times between coordinate systems. Explain at least ten reasons why sky positions change, and make corrections for those which are purely apparent.
- Manipulate basic stellar spectral data, represent such data in and interpret the HR-diagram and kindred color-magnitude and color-color diagrams, explaining their relation to theoretical temperature-luminosity diagrams. Explain how these serve as tools in studies of stars and the interstellar medium.
- Explain the stellar luminosity function, describe its determination, explain the difficulties encountered in its determination, and explain why the actual stellar content of the galaxy is so different from the counting samples we obtain, either with the naked eye or telescopically.
- Describe the most commonly used types of telescopes (visual and non-visual) and auxiliary instruments (including detectors) and be able to calculate their performance characteristics. Explain the advantages and disadvantages of different types and configurations of instruments. Describe and explain the considerations of observatory site selection.
- Interpret and use in solving simple problems the Planck function, the Maxwellian kinematic distributions, and the Boltzmann, Saha, and molecular-disassociation equations.

PHSCS 428 : Introduction to Astrophysics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 227 & PHSCS 228

DESCRIPTION: Principles and observational techniques of astrophysics.

**Course Outcomes**

- Explain and apply the basic laws and conventions of atomic spectroscopy.
- Explain and apply fundamental radiation laws for both continuum and discrete line processes. Relate line emission and absorption coefficients to the Einstein coefficients. Be familiar with the equation of transfer and solve it for the interstellar medium and an Eddington model atmosphere. Explain stellar limb darkening.
- Describe the physical mechanisms that broaden and shape line absorption coefficients and show how to convolve various combinations of coefficient profiles. Then explain the changes that occur in a line profile as causative conditions change. Explain why an actual line profile is proportional in shape to its absorption coefficient profile in weak but not in strong lines.
- Use curve-of-growth analysis to determine stellar composition.
- Explain and quantify the degradation of stellar spectra by terrestrial atmospheric absorption, scattering and refraction.

PHSCS 441 : Electrostatics and Magnetism. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: PHSCS 220 & PHSCS 318

DESCRIPTION: Classical theory of static electric and magnetic fields.

**Course Outcomes**

- Demonstrate the ability to apply the concepts of vector calculus as used in Maxwell's equations.
- Demonstrate the ability to integrate over a source distribution to calculate time-independent fields and potentials for both electricity and magnetism. Also demonstrate the ability to use Gauss's law and Amperes law to find electric and magnetic fields in symmetric situations.
- Demonstrate the ability to use vacuum harmonics, image charges, and image currents to solve for time-independent electric and magnetic potentials and fields.
- Demonstrate the ability to calculate electric and magnetic fields in the presence of matter which can be electrically and magnetically polarized, including the ability to solve problems involving torques and potential energies of electric and magnetic dipoles.

PHSCS 451 : Quantum Mechanics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PHSCS 222 & PHSCS 318

DESCRIPTION: Analytical foundations of quantum mechanics.

**Course Outcomes**

- Understand the mechanics of operators, eigenstates and eigenvalues. Learn how to build wave functions, estimate expectation values and standard deviations, and apply the Heisenberg uncertainty principle.
- Manipulate the Schrödinger equation to solve for wave functions.
- Develop free-particle and bound-state solutions to the Schrödinger equation. (In particular, harmonic oscillator, infinite and finite square-well, finite barrier potentials…).
- Construct simple solutions for Hydrogen atom, angular momentum and spin systems, atoms and solids.

**Note:** Phscs 191 should be taken the first semester as a freshman. Phscs 291 should be taken the first semester as a sophomore.

3. Complete two courses from the following:

PHSCS 360 : Statistical and Thermal Physics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 222 & MATH 303; or PHSCS 222 & MATH 334

DESCRIPTION: Principles of statistical mechanics and thermodynamics, with applications.

**Course Outcomes**

- Use statistical arguments to explain thermodynamics from first principles, including heat flow and the increase of entropy. Apply these to solve quantitative problems in thermodynamics.
- Use thermodynamic potentials, e.g. the Helmholtz and Gibbs free energies, to predict equilibrium states in physical systems and predict phase transformations.
- Use simple models to explain physical phenomena in a variety of systems, including: classical and quantum ideal gases, magnetic systems, solids.

PHSCS 442 : Electrodynamics. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: PHSCS 441

DESCRIPTION: Maxwell's equations, radiation, interaction of electromagnetic fields with matter, and special relativity.

**Course Outcomes**

- Demonstrate the ability to calculate time-dependent electric fields using Faraday's law and the ability to calculate time-dependent magnetic fields using Maxwell's displacement current.
- Demonstrate the ability to solve problems involving electric and magnetic energy densities and the Maxwell stress tensor.
- Demonstrate the ability to use Maxwell's equations to solve problems involving electromagnetic waves in vacuum and in matter.
- Demonstrate the ability to use the concept of retarded time to compute radiation potentials.
- Demonstrate the ability to solve problems involving the special theory of relativity, including 4-vectors, form invariance, and the electromagnetic field tensor.

PHSCS 452 : Applications of Quantum Mechanics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 451

DESCRIPTION: Applications of quantum mechanics to atomic, molecular, statistical, condensed-matter, and nuclear physics; elementary particles.

**Course Outcomes**

- Apply techniques such as time-independent perturbation theory, variational methods, time-dependent perturbation theory, and scattering theory to quantum systems.
- Describe and quantify fine, hyperfine, and Zeeman level splittings in atoms.
- Characterize emission and absorption of radiation by atoms, and derive the associated selection rules.
- Solve quantum scattering and tunneling problems.

PHSCS 471 : Principles of Optics. (3:3:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: PHSCS 121 & PHSCS 220 & MATH 302; or PHSCS 121 & PHSCS 220 & MATH 314; Math 303 or 334 or concurrent enrollment.

RECOMMENDED: Phscs 318.

DESCRIPTION: Electromagnetic wave phenomena, including polarization effects, interference, coherence, dispersion, ray theory, diffraction; introduction to quantum nature of light. Laboratory component emphasizes applications.

**Course Outcomes**

- Use mathematical and conceptual descriptions of propagation of light in matter, reflection/transmission at boundaries, polarization effects, interference, dispersion, coherence, image formation, diffraction, and quantum aspects of light to analyze and predict optical phenomena.
- Manipulate and measure properties of light in a laboratory setting.
- Apply mathematical tools such as vector calculus, complex numbers, matrices, and Fourier transforms (1D and 2D) to optical problems.

4. Complete one of the following options:

**Either**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 302 : Mathematics for Engineering 1. (4:4:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Math 113.
DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

**Or**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
RECOMMENDED: Math 290.
DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 313.
DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore

fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

5. Complete one course from the following:

MATH 303 : Mathematics for Engineering 2. (4:4:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 302

DESCRIPTION: ODEs, Laplace transforms, Fourier series, PDEs.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For a more detailed course description, visit Math 303 Wiki.

MATH 334 : Ordinary Differential Equations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 113 and Math 313.

DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

6. Complete a senior thesis, including the following:
   a. Choose a research mentor and group as early as possible, starting with information in Phscs 191 and 291, and discussions with faculty, your advisor, and the senior thesis coordinator. It is best to start as a freshman or sophomore. Some internships may qualify for your project.
   b. Complete two hours of the following

PHSCS 498R : Senior Thesis. (.5-3:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Conducting and reporting research under a department faculty mentor or other professionals.

NOTE: Thesis topic must be cleared by faculty member before registration.

**Course Outcomes**

- Perform significant research in physics or astronomy under the direction of a faculty or internship mentor.
- Present their research in a written document that follows professional standards in the field.
- Do the above within professional ethical standards.

- **Note:** Students planning on graduate school in astronomy should consider taking all four of PHSCS 360, 442, 452, 471, instead of only two. Gain statistics and computer programming skills beyond what you get in this major by taking courses such as STAT 201 (Statistics for Engineers and Scientists) and courses such as PHSCS 430 (Computational Physics 3), and ME EN 373 (Introduction to Scientific Computing).

*Hours include courses that may fulfill university core requirements.

## Show all Physics and Astronomy (Phscs) Courses

**College of Physical and Mathematical Sciences Home**

**Physics and Astronomy Department Home**

**Majors**

- BS in Applied Physics
- BS in Physics
- BS in Physics-Astronomy
- BS in Physics Teaching

**Minors**

- Astronomy
- Physics
- Physics Teaching

**Course Information**

- Physics and Astronomy (Phscs) Courses

**Faculty**

# BS in Physics Teaching (74.5–77.5 hours, including licensure requirements*)

Show All Course Descriptions
Hide All Course Descriptions

*This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 120 MCKB, (801) 422-3426.*

## Program Requirements | View MAP | View Program Outcomes

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.
2. Contact Education Student Services for entrance requirements into the licensure program.
3. A teaching minor is not required for licensure. However, it is strongly recommended.
4. Complete the following:

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 121 or equivalent. Calculus.

DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHSCS 127 : Descriptive Astronomy. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Nonmathematical presentation of knowledge of the content and history of the cosmos, frequently using observatory and planetarium.

**Course Outcomes**

There are no course outcomes available

PHSCS 140 : Electronics Lab. (1:1:2)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Introduction to analog and digital circuits.

**Course Outcomes**

- Build and debug basic analog circuits that are of practical use in experimental physics such as voltage dividers, diode rectifiers, inverting and non-inverting op amp circuits, and transistor switches.
- Demonstrate understanding of electrical concepts of voltage, current, resistance, power, and input and output resistance through the analysis of simple circuits.
- Demonstrate proper use and limitations of electrical sources and test equipment including DC power supplies, multimeters, oscilloscopes, and function generators.
- Build and debug basic digital circuits that use components such as digital gates, flipflops, counters, and digital to analog converters.

PHSCS 145 : Experimental Methods in Physics. (1:0:3)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: PHSCS 140; Phscs 121 or equivalent.

DESCRIPTION: Introduction to physical measurement and analysis, optics, sensors, actuators, and computer-based data acquisition.

**Course Outcomes**

- Demonstrate good practices in experimental physics documentation and communication such as data collection, record keeping, and presentation.
- Demonstrate the ability to analyze experimental data this includes techniques such as error estimation, error propagation, model selection, and curve fitting.
- Use simple optical devices (e.g. lenses, mirrors, slits and gratings, polarizers) to explore the geometric and wave properties of light.
- Apply AC concepts such as frequency response, frequency filtering, fourier transform analysis, and impedance to sinusoidally-driven electrical, mechanical, optical, and acoustical systems.

PHSCS 191 : Introduction to Physics Careers and Research 1. (.5:1:0)

DESCRIPTION: Survey of BYU undergraduate physics and astronomy programs, careers in physics and astronomy, and current physics and astronomy research.

NOTE: Take first semester after registered as physics major.

**Course Outcomes**

- Describe the major subfields of physics and the breadth of interdisciplinary research to which physicists contribute.
- Describe examples of current research in physics or astronomy, explaining what questions are being asked by the investigators and why these questions are interesting.
- Describe career opportunities available in physics and astronomy and the specific preparation necessary for these careers.
- Develop a draft of an educational plan for both undergraduate and graduate training.

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

PHSCS 222 : Modern Physics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHSCS 123 & PHSCS 220; Phscs 121 or equivalent.

DESCRIPTION: Quantum physics, atoms, molecules, condensed matter, nuclei, elementary particles, and selected topics in contemporary physics.

**Course Outcomes**

- Demonstrate their understanding of the fundamental postulates and principles of special relativity and quantum mechanics.
- Apply the principles of quantum mechanics to predict the results of measurements in simple systems such as a free particle, simple potential wells, and central potentials.
- Solve problems and answer conceptual questions applying the principles of quantum mechanics and special relativity to topics in modern physics such as atomic physics, molecular physics, the physics of solids, statistical physics, nuclear physics, radioactivity, and particle physics.

PHSCS 240 : Design, Fabrication, and Use of Scientific Apparatus. (2:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHSCS 123 & PHSCS 145

DESCRIPTION: Machining, computer interfacing, controls, and vacuum systems.

**Course Outcomes**

- Design, build, and interface experimental apparatus.
- Make involved physical measurements and analyze experimental results.
- Document in a personal lab notebook the procedures, methods, results, and analysis of laboratory exercises.
- Present work in writing and through oral presentations.
- Demonstrate understanding of professional ethics guidelines for research activities and presentation of results.

**Note:** Phscs 191 should be taken the first semester.

5. Complete the following:

**Either**

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 302 : Mathematics for Engineering 1. (4:4:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Math 113.
DESCRIPTION: Multivariable calculus, linear algebra, and numerical methods.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For more detailed information, please visit the department wiki for this course at Math 302 Wiki.

**Or**

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
RECOMMENDED: Math 290.
DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 313.
DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

6. Complete one course from the following:

MATH 303 : Mathematics for Engineering 2. (4:4:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: MATH 302
DESCRIPTION: ODEs, Laplace transforms, Fourier series, PDEs.

**Course Outcomes**

- This course is designed to give students from the College of Engineering and Technology the mathematics background necessary to succeed in their chosen field. For a more detailed course description, visit Math 303 Wiki.

MATH 334 : Ordinary Differential Equations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 113 and Math 313.
DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

7. Complete an additional twelve hours from the following:

- Complete *up to* 6 hours from the following:

HIST 291 : History of Science. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Graeco-Islamic scientific tradition. Ideas, practice, and social impact from Greek, Islamic, and Medieval European civilizations and science to eve of Scientific Revolution. Examines cross-cultural exchange, transformation of ideas.

**Course Outcomes**

- Understand how science developed out of ancient thought disciplines
- Understand the continuity of Greek-style scientific thinking through Arabic/Islamic and Latin/Christian civilizations
- Grasp the overall development of science as an intellectual and social practice, from pre-Greek times, down through the Scientific “Revolution” and to the modern period.
- To question the reality of a Scientific “Revolution”
- To gain a hand-on understanding of the ancient practices of astronomy/astrology, and understand how they drove much other scientific research
- To master one topic or technology from the pre- Scientific “Revolution” period

PHIL 423 : History and Philosophy of Science. (3:3:0)

PREREQUISITE: Phy S 100 or instructor's consent; Phil 300.

DESCRIPTION: Scientific explanation, concepts, and models. Philosophical assumptions and criteria for theory selection, as exemplified by historical development of basic ideas in science.

**Course Outcomes**

- Know major concepts, theories, figures, texts, and issues in the history and philosophy of Western science from antiquity to the contemporary era.
- Read and critically discuss figures and texts in the philosophy of science.
- Practice philosophical analysis and argumentation orally and in writing; write a complex, nuanced, and well-referenced research paper on the philosophy of science.
- Be able to explain the practice and value of philosophy of science.

PHSCS 137 : Severe and Hazardous Weather. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Phy S 100 or high school/college physics.

DESCRIPTION: Nonmathematical introduction to meteorology. Atmospheric structure and dynamic behavior, focusing on short-term violent weather and longer-term hazards: drought, floods, heat waves, cold waves, and climate change, including human environmental impact.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

PHSCS 167 : Descriptive Acoustics of Music and Speech. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introductory acoustics course, emphasizing physical principles underlying production and perception of music and speech.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Define the basic terminologies of acoustics, identify physical principles involved in common situations and answer conceptual questions related to hearing, speech, audio, listening environments, and musical instruments.
- Apply scientific models to analysis of hearing, speech and musical instruments, etc.
- Solve basic problems related to hearing, speech, audio, listening environments, and musical instruments.
- Write effectively using the terminology of acoustics and logically outline how acoustics is important in a discipline of their choice.

PHSCS 281 : Principles of Solid State Physics. (3:3:1)

WHEN TAUGHT: Fall

PREREQUISITE: PHSCS 220; Phscs 121 or equivalent.

DESCRIPTION: Introduction to physics of solids, including laboratory experience.

NOTE: For students in science, computer science, technology, and engineering.

**Course Outcomes**

- Use the concepts of lattices, unit cells, and the atomic basis to describe the structure of crystals.
- Apply the concept of reciprocal lattices and the first Brillouin zone to arrive at conclusions about wave diffraction, dispersion graphs of lattice waves, and electron energy bands.
- Apply basic principles of quantum mechanics to describe the behavior of electrons in crystalline solids and describe the concepts of density of states, Pauli's exclusion principle, the Dirac distribution function, and band structure.
- Use the ideas of band structure to arrive at conclusions about the electrical properties of materials. Use the ideas of doping to arrive at conclusions about the electrical properties of semiconductors.

PHSCS 310 : Physics By Inquiry: Mechanics. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 105; or PHSCS 121

DESCRIPTION: Exploring principles of mechanics through scripted inquiry resulting in personal discovery of key principles and learning to teach through inquiry methods.

**Course Outcomes**

- Teach and learn physics using constructivist inquiry based modes of instruction.
- Be able to deliver laboratory instruction to students using only meter sticks and stopwatches (low tech data collection) and also using electronic probes (high tech data collection).Use of Video and Computer Data collection techniques.
- Leave class with a suite of about 15 labs that they have completed and written up from the constructivist teacher model that they can use immediately in the 7-12 secondary physics classroom.
- Develop teaching skills in using projects, practicums and lab experimentation that can be transferred to secondary schools when they are teachers.

PHSCS 311 : Physics By Inquiry: Electricity. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 106; or PHSCS 220

DESCRIPTION: Exploring principles of electricity through scripted inquiry resulting in personal discovery of key principles and learning to teach through inquiry methods.

**Course Outcomes**

- Teach physics using constructivist inquiry based modes of instruction, scripted inquiry.
- Be able to deliver laboratory instruction to students from the CASTLE Electricity units.
- Develop teaching skills in using projects, practicums and lab experimentation that can be transferred to secondary schools when they are teachers.
- Develop a teaching suite of labs for teaching electricity.Develop the ability to use alternative modes of assessment that take students beyond the multiple choice format of assessment to open ended, "apply the physics you understand" to this problem.

PHSCS 313R : Special Topics in Physics. (.5-3:ARR:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Special topics in physics for undergraduate physics majors.

**Course Outcomes**

- Achieve the learning outcomes of the trial courses assigned this number from time to time.

- Complete *at least* 6 hours from 300-, 400-, or 550-level physics courses, not including 310 or 311 (Phscs 321, 461, and 471 are highly recommended).

8. Complete the Professional Education Component:
   - Complete the following:

CPSE 402 : Educating Students with Disabilities in Secondary Classrooms. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or comparable major course; FBI fingerprint background clearance.

DESCRIPTION: Issues, policies, and methods in teaching secondary students with disabilities in general education classrooms. Lab.

**Course Outcomes**

- Demonstrate sensitivity to individuals with disabilities.
- Describe the effects of cultural, ethnic, and language diversity on the education of individuals with disabilities
- Describe the steps in the Individual Education Program (IEP) process, including Individualized Transition Plans for students aged 14-22.
- Use research-supported methods for academic instruction of individuals with disabilities including explicit instruction, learning strategies, task analysis, and active participation.
- Describe models and strategies of consultation and collaboration including co-planning and co-teaching.
- Define special education and describe the legal structure of services for individuals with disabilities, including the Individuals with Disabilities Education Act (IDEA).
- Develop a personal philosophy of special education which includes an understanding of the implications of Least Restrictive Environment as defined in IDEA.
- Demonstrate knowledge of basic classroom management theories and an understanding of teacher attitudes and behaviors that influence behavior of individuals with exceptional learning needs.
- Describe the characteristics and educational implications of students with high and low incidence disabilities
- Demonstrate ability to identify and prioritize areas of the general curriculum and provide accommodations for individuals with exceptional learning needs

IP&T 286 : Instructional Technology in Teaching. (1:1:ARR)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Using instructional design, visual design, and differentiated staffing principles along with multimedia authoring systems, telecommunication, and other computer-based tools in the

development of educational applications for secondary education settings.

**Course Outcomes**

There are no course outcomes available

PHY S 276 : Exploration of Teaching. (4:4:0)

PREREQUISITE: FBI fingerprint and background clearance.

DESCRIPTION: Field-based initial teaching experience directed at helping prospective teachers experience demands and opportunities associated with teaching secondary students.

**Course Outcomes**

- Students will become familiar with the four moral dimensions of education as outlined by the McKay School of Education
- Engage in the exploration of teachers and students in the public school to come to a conclusion if teaching physical science is a career path you want to pursue.
- Complete PIBS, CDS, Field Experience Demographic forms in Mackay School date collection program.

PHY S 377 : Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHY S 276

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Using Science Standards as a quide develop Assessments, Lesson Plans, Outlines, and all parts of a unit of science instruction.
- Inquiry, Constructivism, Lab, Activities, Projects and other methods to engage students in learning. These teaching methods will be modeled and practiced by the students.
- Students will complete Transition 2 level toward teaching license.

PHY S 378 : Practicum in Secondary Education. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Concurrent enrollment in Phy S 377.

DESCRIPTION: Implementing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- 30 practicum hours where you teach a unit of instruction with guidance public school mentor.

SC ED 353 : Multicultural Education. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Sc Ed 350 or concurrent enrollment; Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B.

DESCRIPTION: Designing and adapting instruction for diverse learners; collaborating with families, cultures, and communities in promoting and sustaining learning.

**Course Outcomes**

- Students will examine and understand the various dimensions of cultural identity, including one's own, and apply this knowledge to their thinking and behavio through a process of reflection.
- Acknowledge the dynamics of culture and diversity in school success and teachers' teaching. This includes recognizing and overcoming deficit thinking.
- Identify culturally and linguistically relevant pedagogy and use theoretically grounded principles to analyze why it is effective for many different types of learners.
- Interpret the historical context of diversity, discrimination, and language policies and evaluate how they impact current school practices.
- Recognize and acknowledge racism, discrimination and other forms of inquity and privilege in themselves, in others, and within institutions.
- Recognize and use a personal moral spiritual framework along with principles and concepts of social science to guide educational accomplishments for diverse learners.

SC ED 375 : Adolescent Development and Classroom Management. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Sc Ed 276R or Phy S 276 or Engl 276R or Bio 276 or SFL 276R or Hlth 276R or MthEd 276 or PETE 276R or TEE 276A or TEE 276B; or concurrent enrollment.

DESCRIPTION: Analysis of education practice and the relationship between theories and research on development, classroom management, education and the practice of teaching. Focus on adolescent development and an introduction to classroom management.

**Course Outcomes**

There are no course outcomes available

**Note:** FBI fingerprint and background clearance must be completed prior to enrollment in Phy S 276.

- Complete 12 hours of one of the following:

SC ED 476R : Secondary Student-Teaching. (1-12:ARR:ARR)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, semester-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will put into practice the theories they have learned in content and pedagogy courses including planning lessons, assessing students of all abilities and cultural backgrounds, using a variety of instructional strategies, and collaborating with other teachers and with the community.

: Secondary Student Teaching - Art.

**Course Outcomes**

: Secondary Student Teaching - Foreign Language. (12:ARR:ARR)

**Course Outcomes**

: Secondary Student Teaching - French.

**Course Outcomes**

: Secondary Student Teaching - Mathematics.

**Course Outcomes**

: Secondary Student Teaching - Physical Science.

**Course Outcomes**

: Secondary Student Teaching - Social Science.

**Course Outcomes**

: Secondary Student Teaching - Spanish.

**Course Outcomes**

SC ED 496R : Academic Internship: Secondary Education. (12:ARR:ARR)

WHEN TAUGHT: Fall

PREREQUISITE: Completion of all course work or departmental approval; requires a major GPA of 2.85; at least a C- in Sc Ed 377; FBI fingerprint and background clearance.

DESCRIPTION: Capstone, field-based, year-long experience in teaching secondary students; demonstrating proficiency in all program standards. Seminar required.

**Course Outcomes**

- Students will demonstrate that they can teach, manage, and assess content area knowledge and skills in the 7-12 classroom.
- Foster relationships with school colleagues, parents, and the larger community.

: Academic Internship: Social Sciences.

**Course Outcomes**

: Academic Internship: English.

**Course Outcomes**

: Academic Internship: Mathematics.

**Course Outcomes**

: Academic Internship: Biological Sciences.

**Course Outcomes**

: Academic Internship: Physical Sciences.

**Course Outcomes**

*Hours include courses that may fulfill university core requirements.

**Show all Physics and Astronomy (Phscs) Courses**

**College of Physical and Mathematical Sciences Home**

**Physics and Astronomy Department Home**

**Majors**

- BS in Applied Physics
- BS in Physics
- BS in Physics-Astronomy
- BS in Physics Teaching

**Minors**

- Astronomy
- Physics
- Physics Teaching

**Course Information**

- Physics and Astronomy (Phscs) Courses

**Faculty**

# Minor in Astronomy (23 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. No D credit may count toward this minor.
2. Complete the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Calculus or concurrent enrollment.
DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 127 : Descriptive Astronomy. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Nonmathematical presentation of knowledge of the content and history of the cosmos, frequently using observatory and planetarium.

**Course Outcomes**

There are no course outcomes available

PHSCS 227 : Solar System Astronomy. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PHSCS 121; Math 112 or equivalent; Phscs 127 or concurrent.

DESCRIPTION: Solar-system dynamics, planetary surfaces and atmospheres. Analysis of stellar data from telescopes, spectrometers and photometers. Interaction of light with atoms and molecules. Extrasolar planets.

**Course Outcomes**

- Solve elementary problems in classical celestial mechanics and in the interaction of light with atoms and molecules.
- Describe the differences between the planets and moons and how these differences provide clues as to their formation history.
- Use observational data of binary stars to determine fundamental stellar parameters, and apply understanding to characterize other stars.
- Describe various telescopes and how they are used with detectors for photometry and spectroscopy.

PHSCS 228 : Stellar and Extragalactic Astronomy. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 227

DESCRIPTION: Stellar atmospheres, stellar interiors, stellar evolution, interstellar matter, galactic structure, external galaxies, and cosmology.

**Course Outcomes**

- Display a qualitative and simple quantitative understanding of the role of the interstellar medium in star formation, stellar structure and evolution;
- Demonstrate an understanding of stellar populations and galactic structure;
- Display a knowledge of the basic properties of galaxies;
- Display a qualitative grasp of up-to-date observational cosmology and solve elementary problems in theoretical cosmology.

PHSCS 329 : Observational Astronomy. (3:2:4)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 127

DESCRIPTION: Basic techniques of observational astronomy, emphasizing practical experience in optical data acquisition and analysis.

NOTE: See instructor about proficiency exam if you have taken Phscs 127 equivalent.

**Course Outcomes**

- Obtain publication quality astronomical data (photometric data) using a telescope and CCD camera.
- Process raw data and extract astrophysically significant information from data about astronomical objects.
- Interpret data obtained and present results in astronomical publication format written in AASTeX.
- Prepare a request for external telescope time.
- Follow professional ethics guidelines in research activities and presentation of results.

*Hours include courses that may fulfill university core requirements.

## Show all Physics and Astronomy (Phscs) Courses

**College of Physical and Mathematical Sciences Home**

**Physics and Astronomy Department Home**

**Majors**

- BS in Applied Physics
- BS in Physics
- BS in Physics-Astronomy
- BS in Physics Teaching

**Minors**

- Astronomy
- Physics
- Physics Teaching

**Course Information**

- Physics and Astronomy (Phscs) Courses

**Faculty**

# Minor in Physics (24 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. No D credit may count toward this minor.
2. Complete the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Calculus or concurrent enrollment.
DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 121 or equivalent. Calculus.

DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHSCS 140 : Electronics Lab. (1:1:2)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Introduction to analog and digital circuits.

**Course Outcomes**

- Build and debug basic analog circuits that are of practical use in experimental physics such as voltage dividers, diode rectifiers, inverting and non-inverting op amp circuits, and transistor switches.
- Demonstrate understanding of electrical concepts of voltage, current, resistance, power, and input and output resistance through the analysis of simple circuits.
- Demonstrate proper use and limitations of electrical sources and test equipment including DC power supplies, multimeters, oscilloscopes, and function generators.
- Build and debug basic digital circuits that use components such as digital gates, flipflops, counters, and digital to analog converters.

PHSCS 145 : Experimental Methods in Physics. (1:0:3)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: PHSCS 140; Phscs 121 or equivalent.

DESCRIPTION: Introduction to physical measurement and analysis, optics, sensors, actuators, and computer-based data acquisition.

**Course Outcomes**

- Demonstrate good practices in experimental physics documentation and communication such as data collection, record keeping, and presentation.
- Demonstrate the ability to analyze experimental data this includes techniques such as error estimation, error propagation, model selection, and curve fitting.
- Use simple optical devices (e.g. lenses, mirrors, slits and gratings, polarizers) to explore the geometric and wave properties of light.
- Apply AC concepts such as frequency response, frequency filtering, fourier transform analysis, and impedance to sinusoidally-driven electrical, mechanical, optical, and acoustical systems.

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

PHSCS 222 : Modern Physics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHSCS 123 & PHSCS 220; Phscs 121 or equivalent.

DESCRIPTION: Quantum physics, atoms, molecules, condensed matter, nuclei, elementary particles, and selected topics in contemporary physics.

**Course Outcomes**

- Demonstrate their understanding of the fundamental postulates and principles of special relativity and quantum mechanics.
- Apply the principles of quantum mechanics to predict the results of measurements in simple systems such as a free particle, simple potential wells, and central potentials.
- Solve problems and answer conceptual questions applying the principles of quantum mechanics and special relativity to topics in modern physics such as atomic physics, molecular physics, the physics of solids, statistical physics, nuclear physics, radioactivity, and particle physics.

PHSCS 240 : Design, Fabrication, and Use of Scientific Apparatus. (2:0:6)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PHSCS 123 & PHSCS 145
DESCRIPTION: Machining, computer interfacing, controls, and vacuum systems.

**Course Outcomes**

- Design, build, and interface experimental apparatus.
- Make involved physical measurements and analyze experimental results.
- Document in a personal lab notebook the procedures, methods, results, and analysis of laboratory exercises.
- Present work in writing and through oral presentations.
- Demonstrate understanding of professional ethics guidelines for research activities and presentation of results.

*Hours include courses that may fulfill university core requirements.

## Show all Physics and Astronomy (Phscs) Courses

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**Physics and Astronomy Department Home**

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- BS in Applied Physics
- BS in Physics
- BS in Physics-Astronomy
- BS in Physics Teaching

**Minors**

- Astronomy
- Physics
- Physics Teaching

**Course Information**

- Physics and Astronomy (Phscs) Courses

**Faculty**

# Minor in Physics Teaching (27 hours*)

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*This minor is designed to prepare students to teach in public schools. A teaching minor may only be received by students graduating with a teaching major. In order to graduate with this minor, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to http://education.byu.edu/ess/licensing.html or contact Education Student Services, 350 MCKB, (801) 422-3426.*

## Program Requirements

1. Grades below C- in professional education courses or content courses will not be accepted in the teaching major or teaching minor. Teacher candidates must have a cumulative 2.85 GPA in teaching major and teaching minor courses to qualify for student teaching.

2. Complete the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Calculus or concurrent enrollment.
DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.

- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 121 or equivalent. Calculus.

DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHSCS 140 : Electronics Lab. (1:1:2)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Introduction to analog and digital circuits.

**Course Outcomes**

- Build and debug basic analog circuits that are of practical use in experimental physics such as voltage dividers, diode rectifiers, inverting and non-inverting op amp circuits, and transistor switches.
- Demonstrate understanding of electrical concepts of voltage, current, resistance, power, and input and output resistance through the analysis of simple circuits.
- Demonstrate proper use and limitations of electrical sources and test equipment including DC power supplies, multimeters, oscilloscopes, and function generators.
- Build and debug basic digital circuits that use components such as digital gates, flipflops, counters, and digital to analog converters.

PHSCS 145 : Experimental Methods in Physics. (1:0:3)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: PHSCS 140; Phscs 121 or equivalent.

DESCRIPTION: Introduction to physical measurement and analysis, optics, sensors, actuators, and computer-based data acquisition.

**Course Outcomes**

- Demonstrate good practices in experimental physics documentation and communication such as data collection, record keeping, and presentation.
- Demonstrate the ability to analyze experimental data this includes techniques such as error estimation, error propagation, model selection, and curve fitting.
- Use simple optical devices (e.g. lenses, mirrors, slits and gratings, polarizers) to explore the geometric and wave properties of light.
- Apply AC concepts such as frequency response, frequency filtering, fourier transform analysis, and impedance to sinusoidally-driven electrical, mechanical, optical, and acoustical systems.

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

PHSCS 222 : Modern Physics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHSCS 123 & PHSCS 220; Phscs 121 or equivalent.

DESCRIPTION: Quantum physics, atoms, molecules, condensed matter, nuclei, elementary particles, and selected topics in contemporary physics.

**Course Outcomes**

- Demonstrate their understanding of the fundamental postulates and principles of special relativity and quantum mechanics.

- Apply the principles of quantum mechanics to predict the results of measurements in simple systems such as a free particle, simple potential wells, and central potentials.
- Solve problems and answer conceptual questions applying the principles of quantum mechanics and special relativity to topics in modern physics such as atomic physics, molecular physics, the physics of solids, statistical physics, nuclear physics, radioactivity, and particle physics.

PHSCS 240 : Design, Fabrication, and Use of Scientific Apparatus. (2:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHSCS 123 & PHSCS 145

DESCRIPTION: Machining, computer interfacing, controls, and vacuum systems.

**Course Outcomes**

- Design, build, and interface experimental apparatus.
- Make involved physical measurements and analyze experimental results.
- Document in a personal lab notebook the procedures, methods, results, and analysis of laboratory exercises.
- Present work in writing and through oral presentations.
- Demonstrate understanding of professional ethics guidelines for research activities and presentation of results.

3. Complete one course from the following:

PHSCS 310 : Physics By Inquiry: Mechanics. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 105; or PHSCS 121

DESCRIPTION: Exploring principles of mechanics through scripted inquiry resulting in personal discovery of key principles and learning to teach through inquiry methods.

**Course Outcomes**

- Teach and learn physics using constructivist inquiry based modes of instruction.
- Be able to deliver laboratory instruction to students using only meter sticks and stopwatches (low tech data collection) and also using electronic probes (high tech data collection).Use of Video and Computer Data collection techniques.
- Leave class with a suite of about 15 labs that they have completed and written up from the constructivist teacher model that they can use immediately in the 7-12 secondary physics classroom.
- Develop teaching skills in using projects, practicums and lab experimentation that can be transferred to secondary schools when they are teachers.

PHY S 377 : Teaching Methods and Instruction. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHY S 276

DESCRIPTION: Developing meaningful and engaging instruction for secondary students; developing critical thinking, problem solving, literacy, and democratic character; assessing learner performance.

**Course Outcomes**

- Using Science Standards as a quide develop Assessments, Lesson Plans, Outlines, and all parts of a unit of science instruction.
- Inquiry, Constructivism, Lab, Activities, Projects and other methods to engage students in learning. These teaching methods will be modeled and practiced by the students.
- Students will complete Transition 2 level toward teaching license.

*Hours include courses that may fulfill university core requirements.

## Show all Physics and Astronomy (Phscs) Courses

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Course Information

- Physics and Astronomy (Phscs) Courses

Faculty

# Physics and Astronomy (Phscs)

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## Undergraduate Courses

### 100-Level Courses

PHSCS 101 : Basic Physics. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Principles of classical and modern physics. Concepts and simple calculations applied to the world around us.

**Course Outcomes**

- Use basic physical laws and concepts to analyze everyday phenomena and do simple calculations involving those laws. These laws and concepts include Newton's laws of motion, conservation laws, simple thermodynamics, fluids, and electricity and magnetism.
- Qualitatively discuss and do simple calculations involving modern physics concepts that are not everyday but which have important practical and philosophical implications in today's world, such as quantum mechanics, nuclear physics and relativity.

PHSCS 105 : General Physics 1. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: High school algebra and trigonometry.
RECOMMENDED: Concurrent enrollment in Phscs 107.
DESCRIPTION: Applied physics course not requiring calculus. Mechanics, heat, wave motion, and sound.

**Course Outcomes**

There are no course outcomes available

PHSCS 106 : General Physics 2. (3:3:0)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 105 or equivalent.
RECOMMENDED: Concurrent enrollment in Phscs 108.
DESCRIPTION: Continuation of Phscs 105. Electricity and magnetism, modern physics, and optics

**Course Outcomes**

There are no course outcomes available

PHSCS 107 : General Physics Lab 1. (1:0:3)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Phscs 105 or concurrent enrollment.
DESCRIPTION: Lab experiments in mechanics and thermodynamics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of mechanics and thermodynamics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 108 : General Physics Lab 2. (1:0:3)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Phscs 106 or concurrent enrollment
DESCRIPTION: Lab experiments in electricity, magnetism, optics, and modern physics. Measuring and analyzing data.

**Course Outcomes**

- Develop a greater conceptual understanding of electricity and magnetism, optics, and modern physics through hands-on experience with physical systems that illustrate lecture course material.
- Develop skills in measuring and analyzing physical data.

PHSCS 121 : Introduction to Newtonian Mechanics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Calculus or concurrent enrollment.

DESCRIPTION: Linear, circular, and projectile motion; their prediction from forces and torques. Conservation of energy and momentum. Weekly lab.

**Course Outcomes**

- Convert quantities from one set of units to another and use a reasonable number of significant digits when expressing answers.
- Compute a particle's classical translational motion in one or two dimensions, including circular motion, both in Cartesian coordinates and in polar coordinates.
- Use the ideas of energy, work, power, linear momentum, and angular momentum to arrive at conclusions about the motion of a system, including the motion of satellites and the planets.
- Use Newton's Second Law to calculate the motion of objects, including those in simple harmonic motion, as well as the forces and torques acting on systems in equilibrium.
- Demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strenghts and weaknesses of this process

PHSCS 123 : Introduction to Waves, Optics, and Thermodynamics. (3:3:1)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Phscs 121 or equivalent. Calculus.

DESCRIPTION: Waves, thermal physics, optics, special relativity, and introduction to modern physics. Weekly lab.

**Course Outcomes**

- Solve problems and answer conceptual questions using the basics of fluid statics and dynamics, including Bernoulli's principle and Pascal's law.
- Answer conceptual questions and calculate changes in temperature, pressure, entropy and volume for quasistatic ideal gas processes and be able to determine work done and efficiency for gas engines, heat pumps, and refrigerators. Determine heat flow and temperatures in systems in steady state.
- Solve problems and answer conceptual questions involving waves, using concepts such as wave speed, wavelength, frequency, superposition, beats, and resonance. Solve wave interference problems.
- Find the location and magnification of images in single- and multiple-lens/mirror systems by calculation and by ray tracing, and be able to work general problems in optics using Snell's law and specular reflection.
- (Section 1) Solve problems and answer conceptual questions in basic modern physics including special relativity, and quantum mechanics and nuclear physics.
- (Section 2) Solve more advanced problems and answer conceptual questions in wave analysis, including calculating group and phases velocities, solving for Fourier coefficients of periodic functions, and frequencies of notes in the equal temperament musical scale. Solve problems in special relativity.

PHSCS 127 : Descriptive Astronomy. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Nonmathematical presentation of knowledge of the content and history of the cosmos, frequently using observatory and planetarium.

**Course Outcomes**

There are no course outcomes available

PHSCS 137 : Severe and Hazardous Weather. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Phy S 100 or high school/college physics.

DESCRIPTION: Nonmathematical introduction to meteorology. Atmospheric structure and dynamic behavior, focusing on short-term violent weather and longer-term hazards: drought, floods, heat waves, cold waves, and climate change, including human environmental impact.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

PHSCS 140 : Electronics Lab. (1:1:2)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Introduction to analog and digital circuits.

**Course Outcomes**

- Build and debug basic analog circuits that are of practical use in experimental physics such as voltage dividers, diode rectifiers, inverting and non-inverting op amp circuits, and transistor switches.
- Demonstrate understanding of electrical concepts of voltage, current, resistance, power, and input and output resistance through the analysis of simple circuits.
- Demonstrate proper use and limitations of electrical sources and test equipment including DC power supplies, multimeters, oscilloscopes, and function generators.
- Build and debug basic digital circuits that use components such as digital gates, flipflops, counters, and digital to analog converters.

PHSCS 145 : Experimental Methods in Physics. (1:0:3)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: PHSCS 140; Phscs 121 or equivalent.

DESCRIPTION: Introduction to physical measurement and analysis, optics, sensors, actuators, and computer-based data acquisition.

**Course Outcomes**

- Demonstrate good practices in experimental physics documentation and communication such as data collection, record keeping, and presentation.
- Demonstrate the ability to analyze experimental data this includes techniques such as error estimation, error propagation, model selection, and curve fitting.
- Use simple optical devices (e.g. lenses, mirrors, slits and gratings, polarizers) to explore the geometric and wave properties of light.
- Apply AC concepts such as frequency response, frequency filtering, fourier transform analysis, and impedance to sinusoidally-driven electrical, mechanical, optical, and acoustical systems.

PHSCS 167 : Descriptive Acoustics of Music and Speech. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introductory acoustics course, emphasizing physical principles underlying production and perception of music and speech.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Define the basic terminologies of acoustics, identify physical principles involved in common situations and answer conceptual questions related to hearing, speech, audio, listening environments, and musical instruments.
- Apply scientific models to analysis of hearing, speech and musical instruments, etc.
- Solve basic problems related to hearing, speech, audio, listening environments, and musical instruments.
- Write effectively using the terminology of acoustics and logically outline how acoustics is important in a discipline of their choice.

PHSCS 191 : Introduction to Physics Careers and Research 1. (.5:1:0)

DESCRIPTION: Survey of BYU undergraduate physics and astronomy programs, careers in physics and astronomy, and current physics and astronomy research.

NOTE: Take first semester after registered as physics major.

**Course Outcomes**

- Describe the major subfields of physics and the breadth of interdisciplinary research to which physicists contribute.
- Describe examples of current research in physics or astronomy, explaining what questions are being asked by the investigators and why these questions are interesting.
- Describe career opportunities available in physics and astronomy and the specific preparation necessary for these careers.
- Develop a draft of an educational plan for both undergraduate and graduate training.

PHSCS 198 : Physics and Mathematics Review. (1:2:0)

PREREQUISITE: Phscs 121 or equivalent. Math 113 or concurrent enrollment.

DESCRIPTION: Review of mathematics and introductory physics for returning missionaries and others returning after a significant break.

**Course Outcomes**

- Recall and apply the fundamental mathematical concepts and techniques up to the level of differential and beginning integral calculus that are necessary for Physics 121.
- Recall and apply fundamental physics concepts at the level of Physics 121.

### 200-Level Courses

PHSCS 220 : Introduction to Electricity and Magnetism. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 113; Phscs 121 or equivalent.

DESCRIPTION: Electricity and magnetism. Weekly lab.

**Course Outcomes**

There are no course outcomes available

PHSCS 222 : Modern Physics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHSCS 123 & PHSCS 220; Phscs 121 or equivalent.

DESCRIPTION: Quantum physics, atoms, molecules, condensed matter, nuclei, elementary particles, and selected topics in contemporary physics.

**Course Outcomes**

- Demonstrate their understanding of the fundamental postulates and principles of special relativity and quantum mechanics.
- Apply the principles of quantum mechanics to predict the results of measurements in simple systems such as a free particle, simple potential wells, and central potentials.
- Solve problems and answer conceptual questions applying the principles of quantum mechanics and special relativity to topics in modern physics such as atomic physics, molecular physics, the physics of solids, statistical physics, nuclear physics, radioactivity, and particle physics.

PHSCS 227 : Solar System Astronomy. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PHSCS 121; Math 112 or equivalent; Phscs 127 or concurrent.

DESCRIPTION: Solar-system dynamics, planetary surfaces and atmospheres. Analysis of stellar data from telescopes, spectrometers and photometers. Interaction of light with atoms and molecules. Extrasolar planets.

**Course Outcomes**

- Solve elementary problems in classical celestial mechanics and in the interaction of light with atoms and molecules.
- Describe the differences between the planets and moons and how these differences provide clues as to their formation history.
- Use observational data of binary stars to determine fundamental stellar parameters, and apply understanding to characterize other stars.
- Describe various telescopes and how they are used with detectors for photometry and spectroscopy.

PHSCS 228 : Stellar and Extragalactic Astronomy. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 227

DESCRIPTION: Stellar atmospheres, stellar interiors, stellar evolution, interstellar matter, galactic structure, external galaxies, and cosmology.

**Course Outcomes**

- Display a qualitative and simple quantitative understanding of the role of the interstellar medium in star formation, stellar structure and evolution;
- Demonstrate an understanding of stellar populations and galactic structure;
- Display a knowledge of the basic properties of galaxies;
- Display a qualitative grasp of up-to-date observational cosmology and solve elementary problems in theoretical cosmology.

PHSCS 230 : Computational Physics Lab 1. (1:0:3)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 113

DESCRIPTION: Introduction to numerical and symbolic computation and graphical analysis using a symbolic mathematics program. Applications to mechanics, optics, and special relativity.

**Course Outcomes**

- Demonstrate the ability to apply calculus, linear algebra, and complex analysis to solve undergraduate-level physics problems.
- Demonstrate the ability to use programming constructs such as looping, conditional execution, and iteration to solve physics problems.
- Solve equations, including systems of equation, related to physical phenomena both symbolically and numerically.
- Demonstrate the ability to visualize, analyze, and interpret equations, data, and physical models.

PHSCS 240 : Design, Fabrication, and Use of Scientific Apparatus. (2:0:6)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PHSCS 123 & PHSCS 145

DESCRIPTION: Machining, computer interfacing, controls, and vacuum systems.

**Course Outcomes**

- Design, build, and interface experimental apparatus.
- Make involved physical measurements and analyze experimental results.
- Document in a personal lab notebook the procedures, methods, results, and analysis of laboratory exercises.
- Present work in writing and through oral presentations.
- Demonstrate understanding of professional ethics guidelines for research activities and presentation of results.

PHSCS 245 : Experiments in Contemporary Physics. (2:0:6)

WHEN TAUGHT: Fall; Winter; Spring Odd Yrs.

PREREQUISITE: PHSCS 220 & PHSCS 240

DESCRIPTION: In-depth, multi-period experiments in contemporary physics, using advanced instrumentation.

**Course Outcomes**

- Demonstrate the use and assembly of experimental systems using contemporary instrumentation components to perform experiments in areas such as coherent optical systems, microfabrication, and vacuum systems.
- Independently design and carry out multi-period in-depth projects.
- Present research results through oral presentations.

PHSCS 281 : Principles of Solid State Physics. (3:3:1)

WHEN TAUGHT: Fall

PREREQUISITE: PHSCS 220; Phscs 121 or equivalent.

DESCRIPTION: Introduction to physics of solids, including laboratory experience.

NOTE: For students in science, computer science, technology, and engineering.

**Course Outcomes**

- Use the concepts of lattices, unit cells, and the atomic basis to describe the structure of crystals.

- Apply the concept of reciprocal lattices and the first Brillouin zone to arrive at conclusions about wave diffraction, dispersion graphs of lattice waves, and electron energy bands.
- Apply basic principles of quantum mechanics to describe the behavior of electrons in crystalline solids and describe the concepts of density of states, Pauli's exclusion principle, the Dirac distribution function, and band structure.
- Use the ideas of band structure to arrive at conclusions about the electrical properties of materials. Use the ideas of doping to arrive at conclusions about the electrical properties of semiconductors.

PHSCS 291 : Introduction to Physics Careers and Research 2. (.5:1:0)

PREREQUISITE: PHSCS 123; Phscs 191 or concurrent enrollment.

DESCRIPTION: Career opportunities for physicists in industry, interdisciplinary research, national labs and observatories, and professions such as medicine, law, and business. Personal planning for research or internship involvement.

NOTE: Take first semester as a sophomore.

**Course Outcomes**

- Describe career opportunities for physicists in industry, interdisciplinary research, national labs and observatories, and professions such as medicine, law and business.
- Learn how to prepare for and succeed in such careers from physicists working in them.
- Develop a plan for research or internship involvement.
- Develop a plan for graduate school (if the student's career path requires it).

PHSCS 297R : Introduction to Research. (1-3:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring, Contact Department; Summer

DESCRIPTION: Faculty-supervised research experience.

**Course Outcomes**

- Produce an informal written report in acceptable scientific style describing the results of this mentored research experience.

**300-Level Courses**

PHSCS 310 : Physics By Inquiry: Mechanics. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 105; or PHSCS 121

DESCRIPTION: Exploring principles of mechanics through scripted inquiry resulting in personal discovery of key principles and learning to teach through inquiry methods.

**Course Outcomes**

- Teach and learn physics using constructivist inquiry based modes of instruction.
- Be able to deliver laboratory instruction to students using only meter sticks and stopwatches (low tech data collection) and also using electronic probes (high tech data collection).Use of Video and Computer Data collection techniques.
- Leave class with a suite of about 15 labs that they have completed and written up from the constructivist teacher model that they can use immediately in the 7-12 secondary physics classroom.
- Develop teaching skills in using projects, practicums and lab experimentation that can be transferred to secondary schools when they are teachers.

PHSCS 311 : Physics By Inquiry: Electricity. (3:2:2)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 106; or PHSCS 220

DESCRIPTION: Exploring principles of electricity through scripted inquiry resulting in personal discovery of key principles and learning to teach through inquiry methods.

**Course Outcomes**

- Teach physics using constructivist inquiry based modes of instruction, scripted inquiry.
- Be able to deliver laboratory instruction to students from the CASTLE Electricity units.
- Develop teaching skills in using projects, practicums and lab experimentation that can be transferred to secondary schools when they are teachers.
- Develop a teaching suite of labs for teaching electricity.Develop the ability to use alternative modes of assessment that take students beyond the multiple choice format of assessment to open ended, "apply the physics you understand" to this problem.

PHSCS 313R : Special Topics in Physics. (.5-3:ARR:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Special topics in physics for undergraduate physics majors.

**Course Outcomes**

- Achieve the learning outcomes of the trial courses assigned this number from time to time.

PHSCS 318 : Introduction to Mathematical Physics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 303 & PHSCS 230; or MATH 334 & PHSCS 230

DESCRIPTION: Partial differential equations, classical field equations, algebra of complex variables, Fourier analysis, integral transforms, and orthogonal functions.

**Course Outcomes**

- Solve partial differential equations in Cartesian, cylindrical, and spherical coordinates using separation of variables and expansions in orthogonal functions. Apply boundary conditions appropriate for physical systems.
- Perform algebraic computations involving complex numbers and functions.
- Use the properties (such as recursion relations, derivative relationships, and orthogonality conditions) of various special functions, including trigonometric functions, Bessel functions, and Legendre polynomials to solve problems involving those functions.
- Use Fourier series and transforms to expand functions and solve partial differential equations on appropriate domains.

PHSCS 321 : Mechanics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: PHSCS 121 & PHSCS 230 & MATH 302; or PHSCS 121 & PHSCS 230 & MATH 314; Math 303 or 334 or concurrent enrollment.

RECOMMENDED: Concurrent enrollment in Phscs 330.

DESCRIPTION: Newton's laws applied to particles and systems of particles, including rigid bodies. Conservation principles and Lagrange's and Hamilton's equations.

**Course Outcomes**

- Use Newtonian mechanics with forces and torques to solve problems in Cartesian and curvilinear coordinates.
- Solve mechanics problems using work-energy, and conservation of energy, momentum and angular momentum.
- Solve and analyze rigid-body problems and problems in non-inertial frames.
- Use Lagrangian and Hamiltonian mechanics to obtain the equations of motion for a variety of problems, including the use of generalized coordinates and cyclic coordinates.
- Use perturbation and similar techniques to linearize equations of motion to analyze stability and study coupled systems using normal modes.

PHSCS 329 : Observational Astronomy. (3:2:4)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 127

DESCRIPTION: Basic techniques of observational astronomy, emphasizing practical experience in optical data acquisition and analysis.

NOTE: See instructor about proficiency exam if you have taken Phscs 127 equivalent.

**Course Outcomes**

- Obtain publication quality astronomical data (photometric data) using a telescope and CCD camera.
- Process raw data and extract astrophysically significant information from data about astronomical objects.
- Interpret data obtained and present results in astronomical publication format written in AASTeX.
- Prepare a request for external telescope time.
- Follow professional ethics guidelines in research activities and presentation of results.

PHSCS 330 : Computational Physics Lab 2. (1:0:3)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: PHSCS 121 & PHSCS 230; Math 303 or 334 or equivalent; CS 142 or equivalent.

DESCRIPTION: Numerical solution of ordinary differential equations, linear algebra and eigenvalues, chaos theory. Applications to dynamics. Introduction to programming in Matlab.

**Course Outcomes**

- Demonstrate proficiency in using MATLAB and show that the student can write working programs.
- Be able to qualitatively explain how differential equations generate their solution curves.
- Use a symbolic mathematics programs and MATLAB to solve ordinary differential equations to simulate dynamical systems.

PHSCS 360 : Statistical and Thermal Physics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 222 & MATH 303; or PHSCS 222 & MATH 334

DESCRIPTION: Principles of statistical mechanics and thermodynamics, with applications.

**Course Outcomes**

- Use statistical arguments to explain thermodynamics from first principles, including heat flow and the increase of entropy. Apply these to solve quantitative problems in thermodynamics.
- Use thermodynamic potentials, e.g. the Helmholtz and Gibbs free energies, to predict equilibrium states in physical systems and predict phase transformations.
- Use simple models to explain physical phenomena in a variety of systems, including: classical and quantum ideal gases, magnetic systems, solids.

PHSCS 391R : Seminar in Current Physics. (1:1:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

There are no course outcomes available

PHSCS 399R : Academic Internship. (.5-9:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Both department chair's and internship coordinator's consent.
NOTE: For students engaged in the internship program.

**Course Outcomes**

- Student will report, both verbally and in writing, what he or she learned from the internship experience.

### 400-Level Courses

PHSCS 416 : Writing in Physics. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: Completed research for thesis or capstone project.
DESCRIPTION: Writing scientific and technical articles and proposals. Writing and presentation skills applied to senior thesis or capstone project. Resources and guidelines for publishing in physics.

**Course Outcomes**

There are no course outcomes available

PHSCS 427 : Introduction to Astrophysics. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: PHSCS 227 & PHSCS 228
DESCRIPTION: Principles and observational techniques of astrophysics.

**Course Outcomes**

- Represent sky positions and kinematics using basic astronomical spatial and time coordinates. Transform coordinates, motions and times between coordinate systems. Explain at least ten reasons why sky positions change, and make corrections for those which are purely apparent.
- Manipulate basic stellar spectral data, represent such data in and interpret the HR-diagram and kindred color-magnitude and color-color diagrams, explaining their relation to theoretical temperature-luminosity diagrams. Explain how these serve as tools in studies of stars and the interstellar medium.
- Explain the stellar luminosity function, describe its determination, explain the difficulties encountered in its determination, and explain why the actual stellar content of the galaxy is so different from the counting samples we obtain, either with the naked eye or telescopically.
- Describe the most commonly used types of telescopes (visual and non-visual) and auxiliary instruments (including detectors) and be able to calculate their performance characteristics. Explain the advantages and disadvantages of different types and configurations of instruments. Describe and explain the considerations of observatory site selection.
- Interpret and use in solving simple problems the Planck function, the Maxwellian kinematic distributions, and the Boltzmann, Saha, and molecular-disassociation equations.

PHSCS 428 : Introduction to Astrophysics. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: PHSCS 227 & PHSCS 228
DESCRIPTION: Principles and observational techniques of astrophysics.

**Course Outcomes**

- Explain and apply the basic laws and conventions of atomic spectroscopy.
- Explain and apply fundamental radiation laws for both continuum and discrete line processes. Relate line emission and absorption coefficients to the Einstein coefficients. Be familiar with the equation of transfer and solve it for the interstellar medium and an Eddington model atmosphere. Explain stellar limb darkening.
- Describe the physical mechanisms that broaden and shape line absorption coefficients and show how to convolve various combinations of coefficient profiles. Then explain the changes that occur in a line profile as causative conditions change. Explain why an actual line profile is proportional in shape to its absorption coefficient profile in weak but not in strong lines.
- Use curve-of-growth analysis to determine stellar composition.
- Explain and quantify the degradation of stellar spectra by terrestrial atmospheric absorption, scattering and refraction.

PHSCS 430 : Computational Physics Lab 3. (1:0:3)

WHEN TAUGHT: Winter; Summer
PREREQUISITE: PHSCS 222 & PHSCS 318 & PHSCS 330
DESCRIPTION: Static and dynamic boundary value problems, partial differential equations. Applications in electrostatics, thermodynamics, waves, and quantum mechanics. Programming with Matlab.

**Course Outcomes**

- Numerically solve physics problems involving partial differential equations using Mathematica and MATLAB.
- Apply the basic programming concepts of looping and conditional branching to numerical problems.

PHSCS 441 : Electrostatics and Magnetism. (3:3:0)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: PHSCS 220 & PHSCS 318
DESCRIPTION: Classical theory of static electric and magnetic fields.

**Course Outcomes**

- Demonstrate the ability to apply the concepts of vector calculus as used in Maxwell's equations.

- Demonstrate the ability to integrate over a source distribution to calculate time-independent fields and potentials for both electricity and magnetism. Also demonstrate the ability to use Gauss's law and Amperes law to find electric and magnetic fields in symmetric situations.
- Demonstrate the ability to use vacuum harmonics, image charges, and image currents to solve for time-independent electric and magnetic potentials and fields.
- Demonstrate the ability to calculate electric and magnetic fields in the presence of matter which can be electrically and magnetically polarized, including the ability to solve problems involving torques and potential energies of electric and magnetic dipoles.

PHSCS 442 : Electrodynamics. (3:3:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: PHSCS 441

DESCRIPTION: Maxwell's equations, radiation, interaction of electromagnetic fields with matter, and special relativity.

**Course Outcomes**

- Demonstrate the ability to calculate time-dependent electric fields using Faraday's law and the ability to calculate time-dependent magnetic fields using Maxwell's displacement current.
- Demonstrate the ability to solve problems involving electric and magnetic energy densities and the Maxwell stress tensor.
- Demonstrate the ability to use Maxwell's equations to solve problems involving electromagnetic waves in vacuum and in matter.
- Demonstrate the ability to use the concept of retarded time to compute radiation potentials.
- Demonstrate the ability to solve problems involving the special theory of relativity, including 4-vectors, form invariance, and the electromagnetic field tensor.

PHSCS 451 : Quantum Mechanics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PHSCS 222 & PHSCS 318

DESCRIPTION: Analytical foundations of quantum mechanics.

**Course Outcomes**

- Understand the mechanics of operators, eigenstates and eigenvalues. Learn how to build wave functions, estimate expectation values and standard deviations, and apply the Heisenberg uncertainty principle.
- Manipulate the Schrödinger equation to solve for wave functions.
- Develop free-particle and bound-state solutions to the Schrödinger equation. (In particular, harmonic oscillator, infinite and finite square-well, finite barrier potentials…).
- Construct simple solutions for Hydrogen atom, angular momentum and spin systems, atoms and solids.

PHSCS 452 : Applications of Quantum Mechanics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 451

DESCRIPTION: Applications of quantum mechanics to atomic, molecular, statistical, condensed-matter, and nuclear physics; elementary particles.

**Course Outcomes**

- Apply techniques such as time-independent perturbation theory, variational methods, time-dependent perturbation theory, and scattering theory to quantum systems.
- Describe and quantify fine, hyperfine, and Zeeman level splittings in atoms.
- Characterize emission and absorption of radiation by atoms, and derive the associated selection rules.
- Solve quantum scattering and tunneling problems.

PHSCS 461 : Introduction to Acoustics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: PHSCS 121 & PHSCS 123 & MATH 303; or PHSCS 121 & PHSCS 123 & MATH 334

RECOMMENDED: Concurrent enrollment in Phscs 318 or equivalent.

DESCRIPTION: Mathematical descriptions of physical phenomena in generation, propagation, and reception of acoustic waves. Fundamental acoustical instrumentation and analysis techniques. Application of physical principles and mathematical models to realistic problems.

**Course Outcomes**

- Demonstrate a conceptual and mathematical understanding of acoustical phenomena, including source radiation, transmission, absorption, and reflection.
- Perform acoustical measurements, interpret the data, and document the results in the form of technical laboratory reports.
- Appropriately calculate various measures of sound, including sound pressure level, transmission loss, sound power, weighted levels, and noise criteria.

PHSCS 471 : Principles of Optics. (3:3:1)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: PHSCS 121 & PHSCS 220 & MATH 302; or PHSCS 121 & PHSCS 220 & MATH 314; Math 303 or 334 or concurrent enrollment.

RECOMMENDED: Phscs 318.

DESCRIPTION: Electromagnetic wave phenomena, including polarization effects, interference, coherence, dispersion, ray theory, diffraction; introduction to quantum nature of light. Laboratory component emphasizes applications.

**Course Outcomes**

- Use mathematical and conceptual descriptions of propagation of light in matter, reflection/transmission at boundaries, polarization effects, interference, dispersion, coherence, image formation, diffraction, and quantum

aspects of light to analyze and predict optical phenomena.
- Manipulate and measure properties of light in a laboratory setting.
- Apply mathematical tools such as vector calculus, complex numbers, matrices, and Fourier transforms (1D and 2D) to optical problems.

PHSCS 492R : Capstone Project in Applied Physics. (2:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Conducting and reporting original research or appropriate creative work. Mentored career experience combining physics and the chosen area of interest. Project must be approved by the department capstone project coordinator or the associate chair before registration or starting project.

**Course Outcomes**

- Students will produce, in both verbal and written form, a report of what was accomplished in his or her capstone project.

PHSCS 497R : Research in Physics. (1-3:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Produce a written report in acceptable scientific style describing the results of this mentored research experience.

PHSCS 498R : Senior Thesis. (.5-3:0:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Conducting and reporting research under a department faculty mentor or other professionals.

NOTE: Thesis topic must be cleared by faculty member before registration.

**Course Outcomes**

- Perform significant research in physics or astronomy under the direction of a faculty or internship mentor.
- Present their research in a written document that follows professional standards in the field.
- Do the above within professional ethical standards.

## 500-Level Graduate Courses (available to advanced undergraduates)

PHSCS 500 : (Phscs-Chem-C S-Geol-Math-MthEd-Stat) Business Career Essentials in Science and Math. (1.5:1.5:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction for science, math, and statistics majors to careers in industry. Project planning, oral and written business presentations, business accounting, and technology readiness.

**Course Outcomes**

- Demonstrate knowledge of business skills necessary to function as a scientist working in industry.Be able to explain how corporate politics can affect your career.
- Learn how to present concepts and ideas in a clear and effective manner in both oral and written form.
- Learn to read and understand corporate accounting statements and data and understand the basic ideas of project and portfolio management.Learn the steps to moving an idea from concept to completion in a business setting.

PHSCS 513R : Special Topics in Contemporary Physics. (.5-3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent.

DESCRIPTION: Topics generally related to recent developments in physics.

**Course Outcomes**

- Demonstrate the ability to achieve the learning outcomes of this trial course whose subject is variable.

PHSCS 529 : Advanced Observational Astronomy. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PHSCS 427 & PHSCS 428

DESCRIPTION: Advanced techniques of observational astronomy, emphasizing knowledge and skills necessary to carry out observational scientific investigation in astronomy.

**Course Outcomes**

- Program an observing schedule into a remote/robotic telescope system to acquire high quality data.
- Reduce all-sky photometric astronomical data in multiple filters.
- Process and analyze infrared astronomical data sets.
- Obtain, process, and analyze radio data on astronomical objects.
- Reduce raw astronomical spectroscopic data to 1D wavelength calibrated stectra and calculate astrophysically important data from those spectra.
- Describe observing programs that require multi-wavelength observing programs.

PHSCS 540 : Electrical Engineering Principles and Practices for Physicists. (2:0:6)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Phscs 140, 145, 220; Math 303 or 334; ability to program in Matlab.

DESCRIPTION: Electronic instrumentation theory and methods. Computer aided circuit design and analysis with transforms, logic and computer simulation. Analog, digital, and discrete signal systems. Printed circuit design and system-on-a-chip creation.

**Course Outcomes**

There are no course outcomes available

PHSCS 545 : Introduction to Plasma Physics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: PHSCS 321 & PHSCS 441

DESCRIPTION: Introduction to plasma physics, including single-particle motion and both fluid and kinetic models of plasma behavior.

**Course Outcomes**

- Solve problems and answer conceptual questions involving both the single-particle and the fluid descriptions of a plasma.
- Describe and characterize the various waves found in a plasma.
- Determine the equilibrium and evaluate the stability of simple plasma configurations.
- Solve problems and answer conceptual questions involving the kinetic theory of plasmas and nonlinear effects.

PHSCS 561 : (Phscs-Me En) Fundamentals of Acoustics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Phscs 318 or equivalent; Phscs 461 or concurrent enrollment.

RECOMMENDED: Phscs 318, 321; or equivalents.

DESCRIPTION: Vibrating systems, elastic media, mechanical energy, and radiation. Sound generation, transmission, reflection, and reception.

**Course Outcomes**

- Conceptualize and solve problems in fundamental areas of vibroacoustics, including: strings, rods, membranes, beams, plates, plane and spherical waves, reflection and transmission phenomena, and radiation of sources.
- Acquire and analyze acoustical data for physical understanding, and document the results in the form of technical laboratory reports.

PHSCS 571 : Lasers and Atoms. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Phscs 451, 471; or equivalents.

DESCRIPTION: Laser amplification, cavity design, and control and characterization of temporal and spatial modes. Interactions between lasers and atoms.

**Course Outcomes**

- Design stable laser resonators, frequency-locking feedback systems, and pulsed-output mode-locking systems.
- Measure durations of femtosecond pulses and the line width and center frequency of frequency-stabilized sources.
- Compute cavity threshold gain, optimal output coupling, and gain saturation.
- Describe interactions of light and matter within a semi-classical two-level-atom framework.
- Compute cross sections and selection rules for transitions in hydrogen.

PHSCS 581 : Solid-State Physics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Phscs 222 or equivalent.

DESCRIPTION: Introduction to the physics of solids. Crystal structure and symmetry, X-ray diffraction, lattice vibrations, metals and semiconductors, superconductivity, thermal properties, magnetic properties, and dielectric and optical properties.

**Course Outcomes**

- Explain the following basic concepts underlying the topics in solid state physics: (1) crystal symmetry, (2) reciprocal lattice and the first Brillouin zone in k-space, and (3) the quantum behavior of electrons, Pauli's exclusion principle, and the Fermi-Dirac distribution function.
- Use these basic concepts to explain crystal structure, x-ray diffraction, lattice vibrations, behavior of electrons in metals and semiconductors, and thermal, magnetic, dielectric and optical properties of materials.
- Show their understanding of these topics and their underlying concepts by solving problems using a variety of mathematical tools.

PHSCS 583 : Physics of Nanostructures, Surfaces, and Interfaces. (3:3.0:0.0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Phscs 222 or equivalent.

RECOMMENDED: Phscs 281 or 581 or equivalent; Phscs 451 or Chem 462 or equivalent.

DESCRIPTION: Properties of nanostructures, surfaces, and interfaces; experimental methods. Applications to emerging problems and opportunities in science and technology. Emphasis on concepts.

**Course Outcomes**

No outcomes are available at this time.

PHSCS 585 : Thin-Film Physics. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: Phscs 222 or equivalent.

DESCRIPTION: Preparation, characterization, use, and special properties of modern thin films; interdisciplinary treatment. Of interest to students in applied physics and engineering.

**Course Outcomes**

- Solve problems and answer conceptual questions, utilizing the graphs, figures and photographs of thin film material science, about structural and chemical aspects of thin films in relation to their environment.
- Solve problems and answer conceptual questions involving deposition and characterization of films, and explain which ones that best match resources and requirements.

PHSCS 586 : Transmission Electron Microscopy for Physical Science and Engineering. (3:3:2)

WHEN TAUGHT: Fall

DESCRIPTION: Practical and theoretical aspects of sample preparation, basic and advanced imaging, electron diffraction, and other analytical materials characterization techniques on the transmission electron microscope.

**Course Outcomes**

- Use the TEM to acquire different types of images and diffraction patterns of various materials.
- Perform basic, necessary alignments of the transmission electron microscope (TEM).
- Demonstrate a working knowledge of the physical components of the TEM and peripheral equipment.
- Show understanding of the theory and practice of electron imaging, electron diffraction and X-ray energy dispersive spectrometry, as how they apply to the characterization of materials.

PHSCS 587 : Physics of Semiconductor Devices. (3:3.0:0.0)

WHEN TAUGHT: Fall Contact Department

PREREQUISITE: PHSCS 281; or PHSCS 581; or EC EN 450

DESCRIPTION: Device physics, with an in-depth study of the MOS transistor and other nanoscale computing devices.

**Course Outcomes**

- Identify the fundamental mechanisms and models of these mechanisms controlling the operation of semiconductor devices.
- Apply the fundamental mechanisms and models to the analysis of devices such as silicon mosfets, silicon on insulator transistors, carbon nanotube transistors, and graphene transistors.
- Find, read, and utilize contemporary semiconductor device physics literature to write reviews of this literature.

PHSCS 599R : Academic Internship. (.5-9:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Department internship coordinator's consent.

DESCRIPTION: Cooperative education internships off campus.

**Course Outcomes**

- Student will report, both verbally and in writing, what he or she learned from the internship experience.

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

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- BS in Physics
- BS in Physics-Astronomy
- BS in Physics Teaching

**Minors**

- Astronomy
- Physics
- Physics Teaching

**Course Information**

- Physics and Astronomy (Phscs) Courses

**Faculty**

# Physics and Astronomy Faculty

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## Professors

Allred, David D.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
MS, Princeton University, 1973
PhD, Princeton University, 1977

Bergeson, Scott D.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1990
PhD, University of Wisconsin, Madison, 1995

Berrondo, Manuel
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, University of Mexico, 1966
PhD, University of Uppsala, Sweden, 1969

Davis, Robert Clinton
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1989
PhD, University of Utah, 1996

Hart, Gus L. W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, University of California, Davis, 1997
PhD, University of California, Davis, 1999

Migenes, Victor
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** PhD, University of Pennsylvania, Philadelphia, 1989

Moody, Joseph Ward
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1980
MS, University of Michigan, Ann Arbor, 1984
PhD, University of Michigan, Ann Arbor, 1986

Peatross, Justin Bruce
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy

**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1988
MS, University of Rochester, 1990
PhD, University of Rochester, 1993

Rees, Lawrence B.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1976
MS, University of Maryland, College Park, 1979
PhD, University of Maryland, College Park, 1983

Sommerfeldt, Scott D.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BM, Brigham Young University, 1983
MS, Brigham Young University, 1986
PhD, Pennsylvania State University, 1989

Spencer, Ross Loren
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1974
MS, University of Wisconsin, Madison, 1976
PhD, University of Wisconsin, Madison, 1979

Stokes, Harold T.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1971
PhD, University of Utah, 1977

Turley, R. Steven
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
PhD, Massachusetts Institute of Technology, 1984

Vanfleet, Richard R.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, University of Illinois, 1994
PhD, University of Illinois, 1997

## Associate Professors

Campbell, Branton J.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1993
MA, University of California, Santa Barbara, 1995
PhD, University of California, Santa Barbara, 1999

Christensen, Clark G.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1966
PhD, California Institute of Technology, 1972

Colton, John S.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy

**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, University of California, Berkeley, 1997
PhD, University of California, Berkeley, 2000

Durfee, Dallin S.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
PhD, Massachusetts Institute of Technology, 1999

Gee, Kent L.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 2001
MS, Brigham Young University, 2002
PhD, Pennsylvania State University, 2005

Hart, Grant W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1977
PhD, University of Maryland, College Park, 1983

Hess, Bret C.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young Iniversity, 1982
PhD, Iowa State University, 1988

Hintz, Eric G.B.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Case Western Reserve University, 1988
BS, Case Western Reserve University, 1988
PhD, Brigham Young University, 1995

Hirschmann, Eric W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1991
PhD, University of California, Santa Barbara, 1996

Leishman, Timothy W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
PhD, Pennsylvania State University, 2000

Neilsen, David W.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1992
MS, Brigham Young University, 1995
PhD, University of Texas, Austin, 1999

Van Huele, Jean-François S.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor
**DEGREES:** BS, Brussels Free University, Belgium, 1979
PhD, Brussels Free University, Belgium, 1987

Ware, Michael J.
**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Professor

**DEGREES:** BS, Brigham Young University, 1999
PhD, Brigham Young University, 2001

## Assistant Professors

Chesnel, Karine

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Assistant Professor
**DEGREES:** MS, Ecole Normale Superieure, 1999
PhD, Joseph Fourier University, France, 2002

Stephens, Denise

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, New Mexico State University, 1999
PhD, New Mexico State University, 2002

Transtrum, Mark K.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2006
MS, Cornell University, 2010
PhD, Cornell University, 2011

## Associate Teaching Professor

Merrell, Duane B.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Teaching Professor
**DEGREES:** AS, College of Eastern Utah, 1980
BS, Utah State University, 1985
MA, Utah State University, 1988

## Research Professor

Joner, Michael Deloss

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Research Professor
**DEGREES:** AA, Clark College, 1975
BS, Brigham Young University, 1979
MS, Brigham Young University, 1981

## Associate Research Professor

Peterson, Bryan G.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Physics and Astronomy
**RANK:** Associate Research Professor
**DEGREES:** BS, Brigham Young University, 1978
PhD, Brigham Young University, 1983

**College of Physical and Mathematical Sciences Home**

**Statistics Department Home**

**Majors**

- BS in Actuarial Science
- BS in Statistics
  - Emphases
    - Applied Statistics and Analytics
    - Biostatistics
    - Statistical Science

**Minors**

- Actuarial Science
- Statistics

**Course Information**

- Statistics (Stat) Courses

**Faculty**

# Statistics

H. Dennis Tolley, Chair
223 TMCB, (801) 422-4505

College of Physical and Mathematical Sciences Advisement Center
N-181 ESC, (801) 422-2674

## Admission to Degree Program

All degree programs in the Department of Statistics are open enrollment.

## The Discipline

Statisticians help determine the sampling and data collection methods, monitor the execution of the study and the processing of data, and advise on the strengths and limitations of the results. They must understand the nature of uncertainties and be able to draw conclusions in the context of particular statistical applications.

An actuary is a business professional who analyzes the financial consequences of risk. Actuaries use statistics, mathematics, and financial theory to study uncertain future events, especially those of concern to insurance and pension programs. They evaluate the likelihood of those events and design creative ways to reduce the likelihood and decrease the impact of adverse events that actually do occur. Their work requires a combination of strong analytical skills, business knowledge, and understanding of human behavior to design and manage programs that control risk.

## Career Opportunities

The curriculum and degrees offered through the Department of Statistics are designed to equip students with decision-making skills for careers as professional statisticians in industrial organizations, government agencies, insurance companies, pharmaceutical companies, universities, and research institutes. The technical tools statisticians acquire are useful in many areas, and for this reason a statistics degree is also excellent preparation for professional programs in business administration, medicine, law, and public administration.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

**BS in Actuarial Science** (Program Outcomes)
**BS in Statistics**
**Applied Statistics and Analytics Emphasis** (Program Outcomes)
**Biostatistics Emphasis** (Program Outcomes)
**Statistical Science Emphasis** (Program Outcomes)
**BS-MS in an Integrated Master's Program**

**Minor in Actuarial Science**
**Minor in Statistics**

Students should see their college advisement center for help or information concerning the undergraduate programs.

## Graduate Programs and Degrees

MS in Statistics

For more information see the BYU 2014–2015 Graduate Catalog.

## General Information

1. It is recommended that a student complete the following courses in high school:
   - 3 units of English.
   - 1 unit of physical science, either chemistry or physics.
   - 4 units of mathematics, consisting of 2.5 units of algebra, 1 unit of geometry, and 0.5 unit of trigonometry. This should qualify students to begin college mathematics with Math 112, analytic geometry and calculus.

Because mathematics provides the foundation for all work in the physical and mathematical sciences, particular attention is paid to high school preparation in this subject.

To decide which mathematics course should be taken first, please visit the Mathematics Department website to take a placement exam.

2. Students are encouraged to complete 15 credit hours each semester. Taking fewer credits substantially increases the cost and the number of semesters to graduate.

3. An integrated BS/MS program is available. This program allows Statistics students in the Statistical Science and Biostatistics emphases to receive their bachelor's and master's degree in five years of schooling. It is available to students who have only 6 courses left until completion of the bachelor's degree. Interested students must complete a department application by February 1 for admission Fall semester.

College of Physical and Mathematical Sciences Home

Statistics Department Home

Majors

- BS in Actuarial Science

BS in Statistics

Emphases

- Applied Statistics and Analytics
- Biostatistics
- Statistical Science

Minors

- Actuarial Science
- Statistics

Course Information

- Statistics (Stat) Courses

Faculty

# BS in Actuarial Science (54 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. No more than three hours of credit below C- is allowed in major courses.
2. Students must pass Exam P of the Society of Actuaries (SOA) jointly administered as Exam 1 by the Casualty Actuarial Society (CAS) before declaring an actuarial science major.
3. Complete the following preparation core courses:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

4. Complete one course from the following:

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data

- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MATH 112

RECOMMENDED: Concurrent enrollment in MATH 113.

DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

STAT 301 : Statistics and Probability for Secondary Educators. (3:3:2)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: MATH 113

DESCRIPTION: Statistics and probability, emphasizing secondary-specific curriculum. Principles of counting, probability distributions, density functions, graphical methods, descriptive and inferential statistics, computer package.

**Course Outcomes**

- Identify and provide examples of basic statistical terminology, such as population, sample, and random variable
- Construct, read, and interpret data displays and decide the most appropriate procedure for data analysis
- Summarize data graphically and numerically
- Identify elements and distinguish between observational studies and experiments
- Compute probabilities for simple events
- Create and interpret by application of a random variable discrete and normal probability distributions
- Model situations by using experimental or theoretical probabilities
- Become aware of misconceptions and errors about statistics and probability
- Make inferences, draw conclusions, and evaluate arguments from a data analysis

- Explain the need for statistics in understanding real-world processes (i.e., by accounting)
- Develop simple activities to reinforce basic statistical topics to middle school and high school students

**Note:** Students who have passed the AP statistics exam or an introductory statistics course should not take Stat 121.

5. Complete the following statistics core courses:

STAT 123 : Introduction to R Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: STAT 121; or STAT 151; or STAT 201
DESCRIPTION: Base R programming skills, introductory statistical analysis and graphics, simulation of introductory statistical concepts.

**Course Outcomes**

There are no course outcomes available

STAT 124 : SAS Base Programming Skills. (1.5:1.5:1.5)

WHEN TAUGHT: Spring
PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.
DESCRIPTION: Base SAS programming skills, introductory statistical analysis and graphics, simulation of introductory statistical concepts.

**Course Outcomes**

There are no course outcomes available

STAT 223 : Applied R Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: STAT 123
RECOMMENDED: Concurrent enrollment in Stat 124.
DESCRIPTION: Advanced R programming skills; communicate with other packages and programs.

**Course Outcomes**

There are no course outcomes available

STAT 224 : Applied SAS Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: STAT 124
RECOMMENDED: Concurrent enrollment in Stat 123.
DESCRIPTION: Advanced SAS programming skills, advanced DATA step programming, ODS, simple MACRO programs, Proc SQL, Proc REPORT, communicate with other packages and programs.

**Course Outcomes**

There are no course outcomes available

STAT 230 : Analysis of Variance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.
RECOMMENDED: Concurrent enrollment in MATH 112.
DESCRIPTION: Scientific method, statistical thinking, sources of variation, completely randomized design, ANOVA, power and sample size considerations, multiple testing, randomized complete blocks, factorial designs, interactions. Introduction to statistical software.

**Course Outcomes**

- Define the experimental unit, response variable, factor(s), and level(s) of a basic experiment
- Understand the role of randomization and replication in inferring causation
- Perform a completely randomized design and construct the ANOVA table in SAS and R
- Compute the minimum number of replicates in a completely randomized design to achieve a given level of power
- Compute pairwise tests of differences in means in SAS and R to understand a significant overall F-test
- Perform a randomized complete block design and construct the ANOVA table in SAS and R
- Perform a factorial design and construct the ANOVA table in SAS and R
- Explain a statistically significant interaction
- Describe the differences between a split plot and a two-way ANOVA

STAT 240 : Discrete Probability. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.
DESCRIPTION: Set theory; discrete probability; conditional probability; finite sample spaces; discrete random variables (pdf, cdf, moments).

**Course Outcomes**

- Apply fundamentals of set theory and basic set operations
- Enumerate the elements of a discrete sample space

Demonstrate familiarity with counting techniques---sampling with order, without order, binomial coefficients
- Solve probability problems in finite sample spaces
- Solve problems using axioms of probability, conditional probability, independence, and Bayes theorem
- Calculate expected values and variances of discrete random variables
- Understand the assumptions and properties of the named discrete distributions (Bernoulli, binomial, Poisson, geometric)
- Solve problems with the pdf, cdf, moments of discrete univariate random variables

STAT 290 : Communication of Statistical Results. (1:1:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 230 & WRTG 150; or STAT 230 & PHIL 150; or STAT 230 & ENGL 115

DESCRIPTION: Introduction to writing within the discipline including the effective use of graphics, tables, and equations. Resources and guidelines for writing and presenting statistical results.

**Course Outcomes**

- Write a technical report on a statistical analysis
- Create effective statistical graphics
- Use LaTeX to create documents and presentations
- Understand ethical considerations in misleading presentation of data

STAT 330 : Introduction to Regression. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 230 & MATH 112

RECOMMENDED: Stat 123 and Stat 124; MATH 113 or concurrent enrollment.

DESCRIPTION: Regression, transformations, residuals, indicator variables, variable selection, logistic regression, time series, observational studies, statistical software.

**Course Outcomes**

- Explain the difference between ANOVA and regression, and their computational methods
- Explain the difference in inference between a designed experiment and observational study
- Fit a regression model in SAS and R
- Apply appropriate transformations to the response variable to improve agreement with regression assumptions
- Use residuals and influence diagnostics to assess model fit, agreement with regression assumptions, and identify outliers and influential observations
- Create sets of indicator variables for categorical explanatory variables
- Apply step-wise selection to identify a subset regression model that selects the most significant explanatory variables from a large data set
- Fit a logistic regression model in SAS and R
- Fit an ARIMA(p,d,q) model and generate forecasts with prediction intervals in SAS and R

STAT 340 : Inference. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 240 & MATH 113

RECOMMENDED: Stat 123 and Stat 124.

DESCRIPTION: Continuous random variables (pdf, cdf, moments); sampling distributions; Central Limit Theorem; frequentist inference (estimation, intervals); Bayesian inference (estimation, intervals); simulation.

**Course Outcomes**

- Understand assumptions and properties of named continuous univariate distributions: normal, beta, gamma, exponential
- Solve problems using pdf's and cdf's of continuous distributions
- Calculate expectation, variance, covariance, and correlation
- Understand the Central Limit Theorem via simulation and use it to calculate probabilities
- Make inferences on a population proportion using a random sample from a binomial distribution and on a population mean using a random sample from a normal distribution with known variance, including:deriving the sampling distributions of the sample mean and proportionderiving the posterior distributions of the mean and proportion using conjugate priorsderiving the maximum likelihood and Bayes estimators of the mean and proportionusing a pivot to construct an approximate 100(1 - α)% confidence intervals for the mean and proportionconstructing Bayesian confidence intervals for the mean and proportion

6. Complete the following:

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

STAT 274 : Theory of Interest. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: MATH 112
RECOMMENDED: Pass SOA Exam P.
DESCRIPTION: Theory of interest, annuities, amortization, financial derivatives. Prepares for SOA Exam FM.

**Course Outcomes**

There are no course outcomes available

7. Complete 18 credit hours from the following two lists, with a minimum of 12 hours from list A:
   a. Complete 12 hours from the following:

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: MATH 112
RECOMMENDED: Concurrent enrollment in MATH 113.
DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 234 : Methods of Survey Sampling. (3:3:2)

WHEN TAUGHT: Fall
PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.
DESCRIPTION: Sampling frames; questionnaire design; simple random, systematic, stratified, and cluster sampling methods; comparing domain means; contingency table analysis.

**Course Outcomes**

- Identify and sample using simple random sampling and various forms of stratified sampling, cluster sampling, and systematic sampling
- Accurately identify and perform variance calculations for basic designs
- Participate in a real project involving sampling methodologies and appropriate point estimate and variance calculations
- Create graphical representations of results
- Demonstrate effective written and oral communication skills as they present their findings

STAT 370 : Statistical Theory for Actuaries. (3:3:0)

WHEN TAUGHT: Spring
PREREQUISITE: STAT 340; Concurrent enrollment in MATH 314
DESCRIPTION: Probability theory; discrete, continuous, mixture random variables; loss distributions; moment-generating functions; conditional probability, expectation; total probability; stochastic independence; transformations. Prepares for SOA Exam P.

**Course Outcomes**

- The assumptions and properties of the following named distributions: Bernoulli, Binomial, Hypergeometric, Negative Binomial, Poisson, Uniform, Gamma, Exponential, Normal, and Pareto
- Probability density functions, cumulative distribution functions, moment generating functions, and moments of univariate random variables
- The properties of joint, conditional, and marginal distributions
- The transformation of random variables using the CDF technique, change of variables, sums of random variables, convolution, and the MGF technique

STAT 424 : Statistical Computing. (3:3:2)

WHEN TAUGHT: Winter
PREREQUISITE: STAT 223 & STAT 224 & STAT 330
DESCRIPTION: Create and interact with relational databases comprised of large real world data; integrate previous course work into a single research project from formulation to final report; solve statistical problems using a combination of SAS, R, and SQL skills.

**Course Outcomes**

There are no course outcomes available

STAT 431 : Experimental Design. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: STAT 330

DESCRIPTION: Basic designs, power and sample size, Latin squares, incomplete blocks, change-over designs, factorials, fractional factorials, confounding, split-plots, response surface designs.

**Course Outcomes**

- Choose an experimental design plan that is appropriate for the research problem at hand
- Construct the design, including determining the proper number of replicates and the creation of a randomized data collection form
- Execute the plan to collect the data, or advise a colleague to do it
- Determine the model appropriate for the data
- Fit the model to the data, and verify that the assumptions have been satisfied
- Interpret the results and present the data in a meaningful way to answer the research problem at hand

STAT 435 : Nonparametric Statistical Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 511

DESCRIPTION: Permutation tests, rank-based methods, analysis of contingency tables, bootstrap methods, curve fitting.

**Course Outcomes**

- Explain and provide examples of the trade-off between parametric assumptions and efficiency of statistical inference
- Compute the following rank-based methods: Wilcoxon Rank-Sum test, Mann-Whitney test, Signed-Rank test, Kruskal-Wallis test, Spearman Rank Correlation
- Formulate and compute permutation tests for 2-sample, K-sample, and contingency tables
- Compute the following tests for contingency tables: Fisher's exact test, Mantel-Haenszel test, McNemar's test
- Formulate and compute bootstrap (resampling) confidence intervals
- Compute generalized additive models (GAM) with splines or smoothers for possible nonlinear effects in R

STAT 451 : Applied Bayesian Statistics. (3:3.0:)

PREREQUISITE: STAT 151 & STAT 330; Concurrent enrollment in STAT 340.

DESCRIPTION: Bayesian analogs of t-tests, regression, ANOVA, ANCOVA, logistic regression, and Poisson regression implemented using both JAGS and Proc MCMC

**Course Outcomes**

- Students will be able to apply, implement and interpret a fully Bayesian approach to relevant statistical problems, including design, model selection, model fit steps.
- Students will be able to generate their own analysis of Bayesian models in R.
- Students will be able to understand, explain and demonstrate basic Bayesian theory and its usefulness in real-world applications.

STAT 462 : Quality Control and Industrial Statistics. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Six sigma; tools with which to define, measure, analyze, improve, control. Advanced concepts in control charts, applying experimental design for process and product improvement.

**Course Outcomes**

- Explain the role of quality improvement as a business strategy
- Explain the relationship between variability in processes and process outputs and the quality and cost of the results produced
- Use the six sigma DMAIC process for quality improvement projects
- Design and use Shewhard, Cusum, and EWMA control chars to recognize common and special causes of variability
- Construct attribute and variables acceptance sampling plans
- Use other useful quality tools for measurement analysis, discovering root causes, and eliminating quality problems

STAT 466 : Introduction to Reliability. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 340

DESCRIPTION: Mathematics, distributions, management, and maintenance of basic reliability concepts; collection and analysis of test data; fault tree analysis; applying reliability in various areas.

**Course Outcomes**

- Discuss reliability concepts
- Fit standard parametric distributions to censored reliability test data
- Analyze data from accelerated life tests
- Model reliability for simple systems
- Predict field failures
- Analyze repairable systems
- Make reliability plots of data
- Complete basic Bayesian analysis of reliability

STAT 469 : Applied Time Series and Forecasting. (3:3:0)

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Data mining, univariate ARIMA time series theory and application, seasonal models, spatial correlation models, conditional heteroscedastic models in financial time series, case studies.

**Course Outcomes**

- Define the autocovariance and autocorrelation functions
- Define weak stationarity
- Define white noise process
- Derive the mean, autocovariance, and autocorrelation of an AR and MA model
- Define an ARMA (p, q) process
- Select the order of an ARIMA model from the sample ACF and sample PACF
- Fit an ARIMA (p, d, q) model and generate forecasts with prediction intervals in R

STAT 475 : Life Contingencies. (3:3:0)

PREREQUISITE: STAT 474; or STAT 274

DESCRIPTION: Life tables, survival functions, contingent annuities, insurance, premiums, reserves, joint annuities and insurance. Prepares for SOA Exam MLC.

**Course Outcomes**

- The primary learning outcome of this course is to prepare students for Exam MLC offered by the Society of Actuaries
- Recognize, understand, and compute problems relating to survival models, including defining and computing expected values, variances, probabilities, and percentiles for continuous and discrete survival-time random variables
- Recognize, understand, and compute problems relating to life insurances and annuities, including expected values, variances and probabilities for present-value-of-benefit random variables defined on survival-time random variables, considerations for life insurances and annuities, and liabilities analyzing the present value-of-future-loss random variables

STAT 477 : Statistical Distributions for Actuarial Modeling and Data Analytics. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 340

RECOMMENDED: Pass SOA Exam P.

DESCRIPTION: Analyze data from a risk-based application; select a suitable model and estimate parameters using MLE, method of moments, and Bayes methods; determine goodness of fit and measures of confidence for decision making.

**Course Outcomes**

There are no course outcomes available

STAT 496R : Academic Internship: Statistics. (.5-9:ARR:ARR)

PREREQUISITE: Department coordinator's consent.

DESCRIPTION: On-the-job experience or internships for undergraduates. Report is required.

**Course Outcomes**

- Practice appropriate dress and etiquette in varied business settings
- Demonstrate good work ethics
- Demonstrate effective written and oral communication skills as they report on their internship experience

STAT 497R : Introduction to Statistical Research. (.5-3:0:6)

PREREQUISITE: Department chair's consent.

DESCRIPTION: Review of current literature and survey of present status of significant statistical research; collaborative work between student and faculty.

**Course Outcomes**

- Contribute to the research project in terms of literature review, data analysis, and reporting of preliminary results
- Demonstrate good work ethics (punctuality to meetings, follow-up of action items, and so forth)
- Show initiative in the conduct of research

b. Complete 6 hours from the following:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.

- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

ACC 310 : Principles of Accounting 2. (3:3:0)

OFFERED: Available on BYU campus only.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ACC 200

DESCRIPTION: Additional issues in financial and managerial accounting. Review of issues related to balance sheet accounts, performance evaluation and capital budgeting.

**Course Outcomes**

- Construct and interpret both a balance sheet and income statement that include elements more advanced than the basic items introduced in Acc 200.
- Construct and interpret a statement of cash flows.
- Apply the financial accounting rules that exist in the following areas:a. Revenue recognition (including SAB 101)b. Inventoryc. Long-term assets (including impairment)d. Bondse. Leases (including the financial ratio impact of operating leases)f. Stockholders' equity (including accumulated other comprehensive income)g. Investment securities (including use of the market adjustment account)
- Employ the time value of money in a financial accounting context.
- Apply managerial accounting concepts in the following areas:a. Use the concepts of financial leverage and operating leverage to assess a company's riskiness.b. Perform cost-volume-profit analysis using regresssion to identify the fixed and variable components of a mixed cost and in multiple-product settings.c. Track product costs through a manufacturing process (including use of process costing).d. identify problems through the use of cost variance analysis.
- Construct and use simple Excel spreadsheets in a variety of business settings.
- Independently manage time and workload for a variety of tasks.

ECON 380 : Intermediate Price Theory 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 110 & MATH 112

DESCRIPTION: Producer, consumer, and equilibrium theories; mathematical techniques of unconstrained and constrained optimization introduced and applied extensively.

**Course Outcomes**

- Recognize the common building blocks of economic models (actors, choices, objectives, constraints)Solve economic models (constrained optimization, equilibrium conditions) Interpret the results (comparative statics)Explain concepts using graphs, prose, and mathematical analysis
- ConsumerThe axioms upon which standard microeconomic consumer theory is based.The implications of consumer demand including price and income responses in absolute and elasticity forms in both utility maximization and expenditure minimization problems.FirmsThe meaning and representation of technologyThe implications of cost and profit maximization for firmsMarketsIntegrate consumers and producers into a market in order to perform market analysis on equilibrium traded quantities and pricesUse market analysis to understand the effects of public policy
- Compare the impact on equilibrium behavior of altering the assumptions of canonical modelsContrast the results of different market imperfections

ECON 381 : Intermediate Macroeconomics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 110 & MATH 112; Math 112 can be concurrent enrollment.

DESCRIPTION: Intermediate macroeconomic theory, emphasizing income, unemployment, and price-level analysis.

**Course Outcomes**

- Demonstrate an understanding of the nature and construction of key macroeconomic data;Demonstrate an understanding of the connection between microeconomics and macroeconomics;Demonstrate an understanding of standard models ofeconomic growthlong-run macroeconomic behaviorshort-run macroeconomic behaviorUse these models to analyze the macroeconomic effects of monetary and fiscal policy changes as well as other economic shocks;Use these models to interpret historical and current events; andDemonstrate an understanding of issues regarding the value and limitations of monetary and fiscal policy.

ECON 382 : Intermediate Price Theory 2. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Welfare theory, imperfect information, imperfect competition, uncertainty, externalities, and public goods.

**Course Outcomes**

- Formally express and analyze economic modelsRecognize the common building blocks of economic models (actors, choices, objectives, constraints)Solve economic models (constrained optimization, equilibrium conditions)Interpret the results (comparative statics)Demonstrate an understanding of the core microeconomic models ofPerfect competition in general equilibrium (exchange and production)Monopoly and oligopolyExternalities and public goodsDecision-making under uncertainty (expected utility)Information problems (moral hazard, adverse selection)Adapt models to new scenariosCompare the impact on equilibrium behavior of altering the assumptions of canonical modelsContrast the results of different market imperfectionsEstablish a knowledge base that will be useful in economic field classesApply models in various real-world examples and identify the positive and normative conclusions in that environment

ECON 388 : Introduction to Econometrics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Mathematical and statistical techniques used in estimating, predicting, and testing hypotheses associated with quantifiable economic relationships.

**Course Outcomes**

- Demonstrate an understanding of the theoretical foundations of estimating and testing the basic regression model, employing tools from matrix algebra, calculus, and statistics.Perform basic regression and testing procedures using Stata. Complete an empirical research project that includes the following elements:.Formulate an econometric model.Collect and prepare relevant data for use in estimating the model.Use appropriate methods of estimation.Test relevant behavioral hypotheses.Understand and test the Gauss-Markov assumptions.Analyze and interpret the estimated model.Prepare a written report summarizing the research results.

ECON 450 : Financial Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 382 & ECON 388

DESCRIPTION: Theory of financial economics, emphasizing capital markets, investment decisions, choice, capital asset pricing model, futures and options markets, efficient markets, and capital structures.

**Course Outcomes**

- Understand and derive the fundamental relationship between risk and return that is implied by the Capital Asset Pricing Model (CAPM). Students should also know the assumptions necessary for this model to hold and be capable of identifying when potential investment projects satisfy these assumptions.Use linear regression to calculate an asset's historical sensitivity to broad market indices, its implied historical mispricing and an estimate of the asset's idiosyncratic risk. Students should also be capable of performing hypothesis testing on these values.Replicate traditional tests of the CAPM using currently available data.Be capable of collecting and analyzing asset market data to estimate the efficient frontier of risky assets using either Excel or another software package. Students should also be able to understand the efficient frontier mathematically and the reasons that it is useful.Calculate the present value of a stream of payments given an appropriate discount factor. Students should know how to use the CAPM to derive potential discount factors for payment streams.Calculate the yield to maturity of a stream of payments given an observed price. Students should also understand the relationship between the coupon rate of traditional bonds, their price and their yield to maturity.Calculate forward rates for all future periods given the observed yield curve.Understand the liquidity preference theory of bond markets as well as the expectations hypothesis. They should also be able to price complicated payment streams using observations of the yield curve and the expectations hypothesis.Calculate the duration and modified duration of a stream of payments and use these to calculate optimal hedges given an arbitrary position in the fixed income market.Calculate and understand bond convexity and its role (along with duration) in hedging.Price forward contracts by arbitrage given a risk-free rate.Price futures contracts whose payoffs are not correlated with the market reinvestment rate. Understand currently used hypotheses regarding futures contract pricing.Understand the structure of call and put options.Price put options given a call option (and vice versa) using the put-call parity relationship.Apply the Black-Scholes option pricing formula to price call and put options given beliefs about the volatility of the underlying asset.Apply the Black-Scholes option pricing formula to calculate the implied volatility of an asset given its price.

ECON 588 : Advanced Econometrics. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: ECON 388

DESCRIPTION: Theory and practice of formulating, estimating, and analyzing economic models.

**Course Outcomes**

- Demonstrate a familiarity with the properties and applications of several families of statistical distributions to econometric problems.Demonstrate an understanding of variations and generalizations of the basic regression model includingGeneralized least squaresGeneralized autoregressive conditional heteroskedasticity modelsInstrumental variablesSeemingly unrelated regression modelsPanel dataHausman specification tests.Demonstrate an understanding of estimation frameworks in econometric models includingParametric, semiparametric, and non parametric specificationsMaximum likelihood, M-, generalized method of moments, kernel, empirical likelihood, and extremum estimation.Formulate and estimate various nonlinear models.Identify and estimate autoregressive integrated moving average (ARIMA) models and obtain forecasts of economic variables.Demonstrate an understanding of dynamic (and static) structural econometric models including being able to discussReduced form, structural, and transfer function representationsThe identification problemIssues of estimation and statistical inferenceVector autoregression models.Complete a research project in which they formulate a research question, apply appropriate methods to answer the question, and prepare a paper summarizing their results.

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Acc 200.

DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MATH 112

RECOMMENDED: Concurrent enrollment in MATH 113.

DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 234 : Methods of Survey Sampling. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Sampling frames; questionnaire design; simple random, systematic, stratified, and cluster sampling methods; comparing domain means; contingency table analysis.

**Course Outcomes**

- Identify and sample using simple random sampling and various forms of stratified sampling, cluster sampling, and systematic sampling
- Accurately identify and perform variance calculations for basic designs
- Participate in a real project involving sampling methodologies and appropriate point estimate and variance calculations
- Create graphical representations of results
- Demonstrate effective written and oral communication skills as they present their findings

STAT 370 : Statistical Theory for Actuaries. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: STAT 340; Concurrent enrollment in MATH 314

DESCRIPTION: Probability theory; discrete, continuous, mixture random variables; loss distributions; moment-generating functions; conditional probability, expectation; total probability; stochastic independence; transformations. Prepares for SOA Exam P.

**Course Outcomes**

- The assumptions and properties of the following named distributions: Bernoulli, Binomial, Hypergeometric, Negative Binomial, Poisson, Uniform, Gamma, Exponential, Normal, and Pareto
- Probability density functions, cumulative distribution functions, moment generating functions, and moments of univariate random variables
- The properties of joint, conditional, and marginal distributions
- The transformation of random variables using the CDF technique, change of variables, sums of random variables, convolution, and the MGF technique

STAT 424 : Statistical Computing. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 223 & STAT 224 & STAT 330

DESCRIPTION: Create and interact with relational databases comprised of large real world data; integrate previous course work into a single research project from formulation to final report; solve statistical problems using a combination of SAS, R, and SQL skills.

**Course Outcomes**

There are no course outcomes available

STAT 431 : Experimental Design. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 330

DESCRIPTION: Basic designs, power and sample size, Latin squares, incomplete blocks, change-over designs, factorials, fractional factorials, confounding, split-plots, response surface designs.

**Course Outcomes**

- Choose an experimental design plan that is appropriate for the research problem at hand
- Construct the design, including determining the proper number of replicates and the creation of a randomized data collection form
- Execute the plan to collect the data, or advise a colleague to do it
- Determine the model appropriate for the data
- Fit the model to the data, and verify that the assumptions have been satisfied
- Interpret the results and present the data in a meaningful way to answer the research problem at hand

STAT 435 : Nonparametric Statistical Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 511

DESCRIPTION: Permutation tests, rank-based methods, analysis of contingency tables, bootstrap methods, curve fitting.

**Course Outcomes**

- Explain and provide examples of the trade-off between parametric assumptions and efficiency of statistical inference
- Compute the following rank-based methods: Wilcoxon Rank-Sum test, Mann-Whitney test, Signed-Rank test, Kruskal-Wallis test, Spearman Rank Correlation
- Formulate and compute permutation tests for 2-sample, K-sample, and contingency tables
- Compute the following tests for contingency tables: Fisher's exact test, Mantel-Haenszel test, McNemar's test
- Formulate and compute bootstrap (resampling) confidence intervals
- Compute generalized additive models (GAM) with splines or smoothers for possible nonlinear effects in R

STAT 451 : Applied Bayesian Statistics. (3:3.0:)

PREREQUISITE: STAT 151 & STAT 330; Concurrent enrollment in STAT 340.

DESCRIPTION: Bayesian analogs of t-tests, regression, ANOVA, ANCOVA, logistic regression, and Poisson regression implemented using both JAGS and Proc MCMC

**Course Outcomes**

- Students will be able to apply, implement and interpret a fully Bayesian approach to relevant statistical problems, including design, model selection, model fit steps.
- Students will be able to generate their own analysis of Bayesian models in R.
- Students will be able to understand, explain and demonstrate basic Bayesian theory and its usefulness in real-world applications.

STAT 462 : Quality Control and Industrial Statistics. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Six sigma; tools with which to define, measure, analyze, improve, control. Advanced concepts in control charts, applying experimental design for process and product improvement.

**Course Outcomes**

- Explain the role of quality improvement as a business strategy
- Explain the relationship between variability in processes and process outputs and the quality and cost of the results produced
- Use the six sigma DMAIC process for quality improvement projects
- Design and use Shewhard, Cusum, and EWMA control chars to recognize common and special causes of variability
- Construct attribute and variables acceptance sampling plans
- Use other useful quality tools for measurement analysis, discovering root causes, and eliminating quality problems

STAT 466 : Introduction to Reliability. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 340

DESCRIPTION: Mathematics, distributions, management, and maintenance of basic reliability concepts; collection and analysis of test data; fault tree analysis; applying reliability in various areas.

**Course Outcomes**

- Discuss reliability concepts
- Fit standard parametric distributions to censored reliability test data
- Analyze data from accelerated life tests
- Model reliability for simple systems
- Predict field failures
- Analyze repairable systems
- Make reliability plots of data
- Complete basic Bayesian analysis of reliability

STAT 469 : Applied Time Series and Forecasting. (3:3:0)

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Data mining, univariate ARIMA time series theory and application, seasonal models, spatial correlation models, conditional heteroscedastic models in financial time series, case studies.

**Course Outcomes**

- Define the autocovariance and autocorrelation functions
- Define weak stationarity
- Define white noise process
- Derive the mean, autocovariance, and autocorrelation of an AR and MA model
- Define an ARMA (p, q) process
- Select the order of an ARIMA model from the sample ACF and sample PACF
- Fit an ARIMA (p, d, q) model and generate forecasts with prediction intervals in R

STAT 475 : Life Contingencies. (3:3:0)

PREREQUISITE: STAT 474; or STAT 274

DESCRIPTION: Life tables, survival functions, contingent annuities, insurance, premiums, reserves, joint annuities and insurance. Prepares for SOA Exam MLC.

**Course Outcomes**

- The primary learning outcome of this course is to prepare students for Exam MLC offered by the Society of Actuaries
- Recognize, understand, and compute problems relating to survival models, including defining and computing expected values, variances, probabilities, and percentiles for continuous and discrete survival-time random variables
- Recognize, understand, and compute problems relating to life insurances and annuities, including expected values, variances and probabilities for present-value-of-benefit random variables defined on survival-time random variables, considerations for life insurances and annuities, and liabilities analyzing the present□value-of-future-loss random variables

STAT 477 : Statistical Distributions for Actuarial Modeling and Data Analytics. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 340

RECOMMENDED: Pass SOA Exam P.

DESCRIPTION: Analyze data from a risk-based application; select a suitable model and estimate parameters using MLE, method of moments, and Bayes methods; determine goodness of fit and measures of confidence for decision making.

**Course Outcomes**

There are no course outcomes available

STAT 496R : Academic Internship: Statistics. (.5-9:ARR:ARR)

PREREQUISITE: Department coordinator's consent.

DESCRIPTION: On-the-job experience or internships for undergraduates. Report is required.

**Course Outcomes**

- Practice appropriate dress and etiquette in varied business settings
- Demonstrate good work ethics
- Demonstrate effective written and oral communication skills as they report on their internship experience

STAT 497R : Introduction to Statistical Research. (.5-3:0:6)

PREREQUISITE: Department chair's consent.

DESCRIPTION: Review of current literature and survey of present status of significant statistical research; collaborative work between student and faculty.

**Course Outcomes**

- Contribute to the research project in terms of literature review, data analysis, and reporting of preliminary results
- Demonstrate good work ethics (punctuality to meetings, follow-up of action items, and so forth)
- Show initiative in the conduct of research

**Note**: Courses used in List A will not double count in List B.

## Recommended Courses

It is recommended that students take Acc 200, Econ 110, and Fin 201 to complete the Society of Actuaries Economics and Corporate Finance VEEs.

*Hours include courses that may fulfill university core requirements.

**Show all Statistics (Stat) Courses**

College of Physical and Mathematical Sciences Home

Statistics Department Home

Majors

- BS in Actuarial Science

BS in Statistics

Emphases

- Applied Statistics and Analytics
- Biostatistics
- Statistical Science

Minors

- Actuarial Science
- Statistics

Course Information

- Statistics (Stat) Courses

Faculty

# BS in Statistics: Applied Statistics and Analytics Emphasis (54 hours*)

Show All Course Descriptions
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## Program Requirements | View MAP | View Program Outcomes

1. No more than three hours of credit below C- is allowed in major courses.
2. Complete the following preparation core courses:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

3. Complete one course from the following:

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation

- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MATH 112

RECOMMENDED: Concurrent enrollment in MATH 113.

DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

STAT 301 : Statistics and Probability for Secondary Educators. (3:3:2)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: MATH 113

DESCRIPTION: Statistics and probability, emphasizing secondary-specific curriculum. Principles of counting, probability distributions, density functions, graphical methods, descriptive and inferential statistics, computer package.

**Course Outcomes**

- Identify and provide examples of basic statistical terminology, such as population, sample, and random variable
- Construct, read, and interpret data displays and decide the most appropriate procedure for data analysis
- Summarize data graphically and numerically
- Identify elements and distinguish between observational studies and experiments
- Compute probabilities for simple events
- Create and interpret by application of a random variable discrete and normal probability distributions
- Model situations by using experimental or theoretical probabilities
- Become aware of misconceptions and errors about statistics and probability
- Make inferences, draw conclusions, and evaluate arguments from a data analysis
- Explain the need for statistics in understanding real-world processes (i.e., by accounting)
- Develop simple activities to reinforce basic statistical topics to middle school and high school students

**Note:** Students who have passed the AP statistics exam or an introductory statistics course should not take Stat 121.

4. Complete the following statistics core courses:

STAT 123 : Introduction to R Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 121; or STAT 151; or STAT 201

DESCRIPTION: Base R programming skills, introductory statistical analysis and graphics, simulation of introductory statistical concepts.

**Course Outcomes**

There are no course outcomes available

STAT 124 : SAS Base Programming Skills. (1.5:1.5:1.5)

WHEN TAUGHT: Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Base SAS programming skills, introductory statistical analysis and graphics, simulation of introductory statistical concepts.

**Course Outcomes**

There are no course outcomes available

STAT 223 : Applied R Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 123

RECOMMENDED: Concurrent enrollment in Stat 124.

DESCRIPTION: Advanced R programming skills; communicate with other packages and programs.

**Course Outcomes**

There are no course outcomes available

STAT 224 : Applied SAS Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: STAT 124

RECOMMENDED: Concurrent enrollment in Stat 123.

DESCRIPTION: Advanced SAS programming skills, advanced DATA step programming, ODS, simple MACRO programs, Proc SQL, Proc REPORT, communicate with other packages and programs.

**Course Outcomes**

There are no course outcomes available

STAT 230 : Analysis of Variance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

RECOMMENDED: Concurrent enrollment in MATH 112.

DESCRIPTION: Scientific method, statistical thinking, sources of variation, completely randomized design, ANOVA, power and sample size considerations, multiple testing, randomized complete blocks, factorial designs, interactions. Introduction to statistical software.

**Course Outcomes**

- Define the experimental unit, response variable, factor(s), and level(s) of a basic experiment
- Understand the role of randomization and replication in inferring causation
- Perform a completely randomized design and construct the ANOVA table in SAS and R
- Compute the minimum number of replicates in a completely randomized design to achieve a given level of power
- Compute pairwise tests of differences in means in SAS and R to understand a significant overall F-test
- Perform a randomized complete block design and construct the ANOVA table in SAS and R
- Perform a factorial design and construct the ANOVA table in SAS and R
- Explain a statistically significant interaction
- Describe the differences between a split plot and a two-way ANOVA

STAT 240 : Discrete Probability. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Set theory; discrete probability; conditional probability; finite sample spaces; discrete random variables (pdf, cdf, moments).

**Course Outcomes**

- Apply fundamentals of set theory and basic set operations
- Enumerate the elements of a discrete sample space
- Demonstrate familiarity with counting techniques---sampling with order, without order, binomial coefficients
- Solve probability problems in finite sample spaces

Solve problems using axioms of probability, conditional probability, independence, and Bayes theorem
- Calculate expected values and variances of discrete random variables
- Understand the assumptions and properties of the named discrete distributions (Bernoulli, binomial, Poisson, geometric)
- Solve problems with the pdf, cdf, moments of discrete univariate random variables

STAT 290 : Communication of Statistical Results. (1:1:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 230 & WRTG 150; or STAT 230 & PHIL 150; or STAT 230 & ENGL 115

DESCRIPTION: Introduction to writing within the discipline including the effective use of graphics, tables, and equations. Resources and guidelines for writing and presenting statistical results.

**Course Outcomes**

- Write a technical report on a statistical analysis
- Create effective statistical graphics
- Use LaTeX to create documents and presentations
- Understand ethical considerations in misleading presentation of data

STAT 330 : Introduction to Regression. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 230 & MATH 112

RECOMMENDED: Stat 123 and Stat 124; MATH 113 or concurrent enrollment.

DESCRIPTION: Regression, transformations, residuals, indicator variables, variable selection, logistic regression, time series, observational studies, statistical software.

**Course Outcomes**

- Explain the difference between ANOVA and regression, and their computational methods
- Explain the difference in inference between a designed experiment and observational study
- Fit a regression model in SAS and R
- Apply appropriate transformations to the response variable to improve agreement with regression assumptions
- Use residuals and influence diagnostics to assess model fit, agreement with regression assumptions, and identify outliers and influential observations
- Create sets of indicator variables for categorical explanatory variables
- Apply step-wise selection to identify a subset regression model that selects the most significant explanatory variables from a large data set
- Fit a logistic regression model in SAS and R
- Fit an ARIMA(p,d,q) model and generate forecasts with prediction intervals in SAS and R

STAT 340 : Inference. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 240 & MATH 113

RECOMMENDED: Stat 123 and Stat 124.

DESCRIPTION: Continuous random variables (pdf, cdf, moments); sampling distributions; Central Limit Theorem; frequentist inference (estimation, intervals); Bayesian inference (estimation, intervals); simulation.

**Course Outcomes**

- Understand assumptions and properties of named continuous univariate distributions: normal, beta, gamma, exponential
- Solve problems using pdf's and cdf's of continuous distributions
- Calculate expectation, variance, covariance, and correlation
- Understand the Central Limit Theorem via simulation and use it to calculate probabilities
- Make inferences on a population proportion using a random sample from a binomial distribution and on a population mean using a random sample from a normal distribution with known variance, including:deriving the sampling distributions of the sample mean and proportionderiving the posterior distributions of the mean and proportion using conjugate priorsderiving the maximum likelihood and Bayes estimators of the mean and proportionusing a pivot to construct an approximate 100(1 - α)% confidence intervals for the mean and proportionconstructing Bayesian confidence intervals for the mean and proportion

5. Complete the following:

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

STAT 424 : Statistical Computing. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 223 & STAT 224 & STAT 330

DESCRIPTION: Create and interact with relational databases comprised of large real world data; integrate previous course work into a single research project from formulation to final report; solve statistical problems using a combination of SAS, R, and SQL skills.

**Course Outcomes**

There are no course outcomes available

6. Complete 18 credit hours from the following two lists, with a minimum of 12 hours from list A:
   a. Complete 12 hours from the following:

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MATH 112

RECOMMENDED: Concurrent enrollment in MATH 113.

DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 234 : Methods of Survey Sampling. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Sampling frames; questionnaire design; simple random, systematic, stratified, and cluster sampling methods; comparing domain means; contingency table analysis.

**Course Outcomes**

- Identify and sample using simple random sampling and various forms of stratified sampling, cluster sampling, and systematic sampling
- Accurately identify and perform variance calculations for basic designs
- Participate in a real project involving sampling methodologies and appropriate point estimate and variance calculations
- Create graphical representations of results
- Demonstrate effective written and oral communication skills as they present their findings

STAT 274 : Theory of Interest. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 112

RECOMMENDED: Pass SOA Exam P.

DESCRIPTION: Theory of interest, annuities, amortization, financial derivatives. Prepares for SOA Exam FM.

**Course Outcomes**

There are no course outcomes available

STAT 370 : Statistical Theory for Actuaries. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: STAT 340; Concurrent enrollment in MATH 314

DESCRIPTION: Probability theory; discrete, continuous, mixture random variables; loss distributions; moment-generating functions; conditional probability, expectation; total probability; stochastic independence; transformations. Prepares for SOA Exam P.

**Course Outcomes**

- The assumptions and properties of the following named distributions: Bernoulli, Binomial, Hypergeometric, Negative Binomial, Poisson, Uniform, Gamma, Exponential, Normal, and Pareto
- Probability density functions, cumulative distribution functions, moment generating functions, and moments of univariate random variables
- The properties of joint, conditional, and marginal distributions
- The transformation of random variables using the CDF technique, change of variables, sums of random variables, convolution, and the MGF technique

STAT 431 : Experimental Design. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 330

DESCRIPTION: Basic designs, power and sample size, Latin squares, incomplete blocks, change-over

designs, factorials, fractional factorials, confounding, split-plots, response surface designs.

**Course Outcomes**

- Choose an experimental design plan that is appropriate for the research problem at hand
- Construct the design, including determining the proper number of replicates and the creation of a randomized data collection form
- Execute the plan to collect the data, or advise a colleague to do it
- Determine the model appropriate for the data
- Fit the model to the data, and verify that the assumptions have been satisfied
- Interpret the results and present the data in a meaningful way to answer the research problem at hand

STAT 435 : Nonparametric Statistical Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 511

DESCRIPTION: Permutation tests, rank-based methods, analysis of contingency tables, bootstrap methods, curve fitting.

**Course Outcomes**

- Explain and provide examples of the trade-off between parametric assumptions and efficiency of statistical inference
- Compute the following rank-based methods: Wilcoxon Rank-Sum test, Mann-Whitney test, Signed-Rank test, Kruskal-Wallis test, Spearman Rank Correlation
- Formulate and compute permutation tests for 2-sample, K-sample, and contingency tables
- Compute the following tests for contingency tables: Fisher's exact test, Mantel-Haenszel test, McNemar's test
- Formulate and compute bootstrap (resampling) confidence intervals
- Compute generalized additive models (GAM) with splines or smoothers for possible nonlinear effects in R

STAT 451 : Applied Bayesian Statistics. (3:3.0:)

PREREQUISITE: STAT 151 & STAT 330; Concurrent enrollment in STAT 340.

DESCRIPTION: Bayesian analogs of t-tests, regression, ANOVA, ANCOVA, logistic regression, and Poisson regression implemented using both JAGS and Proc MCMC

**Course Outcomes**

- Students will be able to apply, implement and interpret a fully Bayesian approach to relevant statistical problems, including design, model selection, model fit steps.
- Students will be able to generate their own analysis of Bayesian models in R.
- Students will be able to understand, explain and demonstrate basic Bayesian theory and its usefulness in real-world applications.

STAT 462 : Quality Control and Industrial Statistics. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Six sigma; tools with which to define, measure, analyze, improve, control. Advanced concepts in control charts, applying experimental design for process and product improvement.

**Course Outcomes**

- Explain the role of quality improvement as a business strategy
- Explain the relationship between variability in processes and process outputs and the quality and cost of the results produced
- Use the six sigma DMAIC process for quality improvement projects
- Design and use Shewhard, Cusum, and EWMA control chars to recognize common and special causes of variability
- Construct attribute and variables acceptance sampling plans
- Use other useful quality tools for measurement analysis, discovering root causes, and eliminating quality problems

STAT 466 : Introduction to Reliability. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 340

DESCRIPTION: Mathematics, distributions, management, and maintenance of basic reliability concepts; collection and analysis of test data; fault tree analysis; applying reliability in various areas.

**Course Outcomes**

- Discuss reliability concepts
- Fit standard parametric distributions to censored reliability test data
- Analyze data from accelerated life tests
- Model reliability for simple systems
- Predict field failures
- Analyze repairable systems
- Make reliability plots of data
- Complete basic Bayesian analysis of reliability

STAT 469 : Applied Time Series and Forecasting. (3:3:0)

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Data mining, univariate ARIMA time series theory and application, seasonal models, spatial correlation models, conditional heteroscedastic models in financial time series, case studies.

**Course Outcomes**

- Define the autocovariance and autocorrelation functions
- Define weak stationarity
- Define white noise process
- Derive the mean, autocovariance, and autocorrelation of an AR and MA model
- Define an ARMA (p, q) process
- Select the order of an ARIMA model from the sample ACF and sample PACF
- Fit an ARIMA (p, d, q) model and generate forecasts with prediction intervals in R

STAT 475 : Life Contingencies. (3:3:0)

PREREQUISITE: STAT 474; or STAT 274

DESCRIPTION: Life tables, survival functions, contingent annuities, insurance, premiums, reserves, joint annuities and insurance. Prepares for SOA Exam MLC.

**Course Outcomes**

- The primary learning outcome of this course is to prepare students for Exam MLC offered by the Society of Actuaries
- Recognize, understand, and compute problems relating to survival models, including defining and computing expected values, variances, probabilities, and percentiles for continuous and discrete survival-time random variables
- Recognize, understand, and compute problems relating to life insurances and annuities, including expected values, variances and probabilities for present-value-of-benefit random variables defined on survival-time random variables, considerations for life insurances and annuities, and liabilities analyzing the present☑alue-of-future-loss random variables

STAT 477 : Statistical Distributions for Actuarial Modeling and Data Analytics. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 340

RECOMMENDED: Pass SOA Exam P.

DESCRIPTION: Analyze data from a risk-based application; select a suitable model and estimate parameters using MLE, method of moments, and Bayes methods; determine goodness of fit and measures of confidence for decision making.

**Course Outcomes**

There are no course outcomes available

STAT 496R : Academic Internship: Statistics. (.5-9:ARR:ARR)

PREREQUISITE: Department coordinator's consent.

DESCRIPTION: On-the-job experience or internships for undergraduates. Report is required.

**Course Outcomes**

- Practice appropriate dress and etiquette in varied business settings
- Demonstrate good work ethics
- Demonstrate effective written and oral communication skills as they report on their internship experience

STAT 497R : Introduction to Statistical Research. (.5-3:0:6)

PREREQUISITE: Department chair's consent.

DESCRIPTION: Review of current literature and survey of present status of significant statistical research; collaborative work between student and faculty.

**Course Outcomes**

- Contribute to the research project in terms of literature review, data analysis, and reporting of preliminary results
- Demonstrate good work ethics (punctuality to meetings, follow-up of action items, and so forth)
- Show initiative in the conduct of research

STAT 500 : (Stat-Chem-C S-Geol-Math-MthEd-Phscs) Business Career Essentials in Science and Math. (1.5:1.5:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction for science, math, and statistics majors to careers in industry. Project planning, oral and written business presentations, business accounting, and technology readiness.

**Course Outcomes**

- Demonstrate knowledge of business skills necessary to function as a scientist working in industry.Be able to explain how corporate politics can affect your career.
- Learn how to present concepts and ideas in a clear and effective manner in both oral and written form.
- Learn to read and understand corporate accounting statements and data and understand the basic ideas of project and portfolio management.Learn the steps to moving an idea from concept to completion in a business setting.

STAT 538 : Survival Analysis. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 340

DESCRIPTION: Basic concepts of survival analysis; hazard functions; types of censoring; Kaplan-Meier estimates; Logrank tests; proportional hazard models; examples drawn from clinical and epidemiological literature.

**Course Outcomes**

- Understand the basic underlying theory of survival analysis methods
- Conduct estimation of the survival function for a single sample
- Conduct formal comparison of survival functions for two samples
- Conduct formal analysis through incorporation of covariates
- Conduct formal analysis in high-dimensional, low-sample size settings
- Be able to assess the appropriateness of the use of methods for a given data set (given the scientific questions of interest and given the data characteristics)
- Be able to effectively communicate the results of data analyses

b. Complete 6 hours from the following:

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

RECOMMENDED: Math 290.

DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

: Honors Elementary Linear Algebra. (3:3:1)

**Course Outcomes**

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 313.

DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MATH 112
RECOMMENDED: Concurrent enrollment in MATH 113.
DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 234 : Methods of Survey Sampling. (3:3:2)

WHEN TAUGHT: Fall
PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.
DESCRIPTION: Sampling frames; questionnaire design; simple random, systematic, stratified, and cluster sampling methods; comparing domain means; contingency table analysis.

**Course Outcomes**

- Identify and sample using simple random sampling and various forms of stratified sampling, cluster sampling, and systematic sampling
- Accurately identify and perform variance calculations for basic designs
- Participate in a real project involving sampling methodologies and appropriate point estimate and variance calculations
- Create graphical representations of results
- Demonstrate effective written and oral communication skills as they present their findings

STAT 274 : Theory of Interest. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: MATH 112
RECOMMENDED: Pass SOA Exam P.
DESCRIPTION: Theory of interest, annuities, amortization, financial derivatives. Prepares for SOA Exam FM.

**Course Outcomes**

There are no course outcomes available

STAT 370 : Statistical Theory for Actuaries. (3:3:0)

WHEN TAUGHT: Spring
PREREQUISITE: STAT 340; Concurrent enrollment in MATH 314
DESCRIPTION: Probability theory; discrete, continuous, mixture random variables; loss distributions; moment-generating functions; conditional probability, expectation; total probability; stochastic independence; transformations. Prepares for SOA Exam P.

**Course Outcomes**

- The assumptions and properties of the following named distributions: Bernoulli, Binomial, Hypergeometric, Negative Binomial, Poisson, Uniform, Gamma, Exponential, Normal, and Pareto
- Probability density functions, cumulative distribution functions, moment generating functions, and moments of univariate random variables
- The properties of joint, conditional, and marginal distributions
- The transformation of random variables using the CDF technique, change of variables, sums of random variables, convolution, and the MGF technique

STAT 431 : Experimental Design. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: STAT 330
DESCRIPTION: Basic designs, power and sample size, Latin squares, incomplete blocks, change-over designs, factorials, fractional factorials, confounding, split-plots, response surface designs.

**Course Outcomes**

- Choose an experimental design plan that is appropriate for the research problem at hand
- Construct the design, including determining the proper number of replicates and the creation of a randomized data collection form
- Execute the plan to collect the data, or advise a colleague to do it
- Determine the model appropriate for the data
- Fit the model to the data, and verify that the assumptions have been satisfied
- Interpret the results and present the data in a meaningful way to answer the research problem at hand

STAT 435 : Nonparametric Statistical Methods. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: STAT 330; or STAT 511

DESCRIPTION: Permutation tests, rank-based methods, analysis of contingency tables, bootstrap methods, curve fitting.

**Course Outcomes**

- Explain and provide examples of the trade-off between parametric assumptions and efficiency of statistical inference
- Compute the following rank-based methods: Wilcoxon Rank-Sum test, Mann-Whitney test, Signed-Rank test, Kruskal-Wallis test, Spearman Rank Correlation
- Formulate and compute permutation tests for 2-sample, K-sample, and contingency tables
- Compute the following tests for contingency tables: Fisher's exact test, Mantel-Haenszel test, McNemar's test
- Formulate and compute bootstrap (resampling) confidence intervals
- Compute generalized additive models (GAM) with splines or smoothers for possible nonlinear effects in R

STAT 451 : Applied Bayesian Statistics. (3:3.0:)

PREREQUISITE: STAT 151 & STAT 330; Concurrent enrollment in STAT 340.

DESCRIPTION: Bayesian analogs of t-tests, regression, ANOVA, ANCOVA, logistic regression, and Poisson regression implemented using both JAGS and Proc MCMC

**Course Outcomes**

- Students will be able to apply, implement and interpret a fully Bayesian approach to relevant statistical problems, including design, model selection, model fit steps.
- Students will be able to generate their own analysis of Bayesian models in R.
- Students will be able to understand, explain and demonstrate basic Bayesian theory and its usefulness in real-world applications.

STAT 462 : Quality Control and Industrial Statistics. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Six sigma; tools with which to define, measure, analyze, improve, control. Advanced concepts in control charts, applying experimental design for process and product improvement.

**Course Outcomes**

- Explain the role of quality improvement as a business strategy
- Explain the relationship between variability in processes and process outputs and the quality and cost of the results produced
- Use the six sigma DMAIC process for quality improvement projects
- Design and use Shewhard, Cusum, and EWMA control chars to recognize common and special causes of variability
- Construct attribute and variables acceptance sampling plans
- Use other useful quality tools for measurement analysis, discovering root causes, and eliminating quality problems

STAT 466 : Introduction to Reliability. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 340

DESCRIPTION: Mathematics, distributions, management, and maintenance of basic reliability concepts; collection and analysis of test data; fault tree analysis; applying reliability in various areas.

**Course Outcomes**

- Discuss reliability concepts
- Fit standard parametric distributions to censored reliability test data
- Analyze data from accelerated life tests
- Model reliability for simple systems
- Predict field failures
- Analyze repairable systems
- Make reliability plots of data
- Complete basic Bayesian analysis of reliability

STAT 469 : Applied Time Series and Forecasting. (3:3:0)

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Data mining, univariate ARIMA time series theory and application, seasonal models, spatial correlation models, conditional heteroscedastic models in financial time series, case studies.

**Course Outcomes**

- Define the autocovariance and autocorrelation functions
- Define weak stationarity
- Define white noise process
- Derive the mean, autocovariance, and autocorrelation of an AR and MA model
- Define an ARMA (p, q) process
- Select the order of an ARIMA model from the sample ACF and sample PACF
- Fit an ARIMA (p, d, q) model and generate forecasts with prediction intervals in R

STAT 475 : Life Contingencies. (3:3:0)

PREREQUISITE: STAT 474; or STAT 274
DESCRIPTION: Life tables, survival functions, contingent annuities, insurance, premiums, reserves, joint annuities and insurance. Prepares for SOA Exam MLC.

**Course Outcomes**

- The primary learning outcome of this course is to prepare students for Exam MLC offered by the Society of Actuaries
- Recognize, understand, and compute problems relating to survival models, including defining and computing expected values, variances, probabilities, and percentiles for continuous and discrete survival-time random variables
- Recognize, understand, and compute problems relating to life insurances and annuities, including expected values, variances and probabilities for present-value-of-benefit random variables defined on survival-time random variables, considerations for life insurances and annuities, and liabilities analyzing the present□value-of-future-loss random variables

STAT 477 : Statistical Distributions for Actuarial Modeling and Data Analytics. (3:3:1)
WHEN TAUGHT: Winter
PREREQUISITE: STAT 340
RECOMMENDED: Pass SOA Exam P.
DESCRIPTION: Analyze data from a risk-based application; select a suitable model and estimate parameters using MLE, method of moments, and Bayes methods; determine goodness of fit and measures of confidence for decision making.

**Course Outcomes**

There are no course outcomes available

STAT 496R : Academic Internship: Statistics. (.5-9:ARR:ARR)
PREREQUISITE: Department coordinator's consent.
DESCRIPTION: On-the-job experience or internships for undergraduates. Report is required.

**Course Outcomes**

- Practice appropriate dress and etiquette in varied business settings
- Demonstrate good work ethics
- Demonstrate effective written and oral communication skills as they report on their internship experience

STAT 497R : Introduction to Statistical Research. (.5-3:0:6)
PREREQUISITE: Department chair's consent.
DESCRIPTION: Review of current literature and survey of present status of significant statistical research; collaborative work between student and faculty.

**Course Outcomes**

- Contribute to the research project in terms of literature review, data analysis, and reporting of preliminary results
- Demonstrate good work ethics (punctuality to meetings, follow-up of action items, and so forth)
- Show initiative in the conduct of research

STAT 500 : (Stat-Chem-C S-Geol-Math-MthEd-Phscs) Business Career Essentials in Science and Math. (1.5:1.5:0)
WHEN TAUGHT: Winter
DESCRIPTION: Introduction for science, math, and statistics majors to careers in industry. Project planning, oral and written business presentations, business accounting, and technology readiness.

**Course Outcomes**

- Demonstrate knowledge of business skills necessary to function as a scientist working in industry.Be able to explain how corporate politics can affect your career.
- Learn how to present concepts and ideas in a clear and effective manner in both oral and written form.
- Learn to read and understand corporate accounting statements and data and understand the basic ideas of project and portfolio management.Learn the steps to moving an idea from concept to completion in a business setting.

STAT 538 : Survival Analysis. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: STAT 340
DESCRIPTION: Basic concepts of survival analysis; hazard functions; types of censoring; Kaplan-Meier estimates; Logrank tests; proportional hazard models; examples drawn from clinical and epidemiological literature.

**Course Outcomes**

- Understand the basic underlying theory of survival analysis methods
- Conduct estimation of the survival function for a single sample
- Conduct formal comparison of survival functions for two samples
- Conduct formal analysis through incorporation of covariates
- Conduct formal analysis in high-dimensional, low-sample size settings
- Be able to assess the appropriateness of the use of methods for a given data set (given the

scientific questions of interest and given the data characteristics)
- Be able to effectively communicate the results of data analyses

**Note**: Courses used in List A will not double count in List B.

*Hours include courses that may fulfill university core requirements.

## Show all Statistics (Stat) Courses

College of Physical and Mathematical Sciences Home

Statistics Department Home

Majors

- BS in Actuarial Science

BS in Statistics

Emphases

- Applied Statistics and Analytics
- Biostatistics
- Statistical Science

Minors

- Actuarial Science
- Statistics

Course Information

- Statistics (Stat) Courses

Faculty

# BS in Statistics: Biostatistics Emphasis (60–61 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP | View Program Outcomes

1. No more than three hours of credit below C- is allowed in major courses.
2. Complete the following preparation core courses:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

3. Complete one course from the following:

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation

- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MATH 112

RECOMMENDED: Concurrent enrollment in MATH 113.

DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

STAT 301 : Statistics and Probability for Secondary Educators. (3:3:2)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: MATH 113

DESCRIPTION: Statistics and probability, emphasizing secondary-specific curriculum. Principles of counting, probability distributions, density functions, graphical methods, descriptive and inferential statistics, computer package.

**Course Outcomes**

- Identify and provide examples of basic statistical terminology, such as population, sample, and random variable
- Construct, read, and interpret data displays and decide the most appropriate procedure for data analysis
- Summarize data graphically and numerically
- Identify elements and distinguish between observational studies and experiments
- Compute probabilities for simple events
- Create and interpret by application of a random variable discrete and normal probability distributions
- Model situations by using experimental or theoretical probabilities
- Become aware of misconceptions and errors about statistics and probability
- Make inferences, draw conclusions, and evaluate arguments from a data analysis
- Explain the need for statistics in understanding real-world processes (i.e., by accounting)
- Develop simple activities to reinforce basic statistical topics to middle school and high school students

**Note:** Students who have passed the AP statistics exam or an introductory statistics course should not take Stat 121.

4. Complete the following statistics core courses:

STAT 123 : Introduction to R Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 121; or STAT 151; or STAT 201

DESCRIPTION: Base R programming skills, introductory statistical analysis and graphics, simulation of introductory statistical concepts.

**Course Outcomes**

There are no course outcomes available

STAT 124 : SAS Base Programming Skills. (1.5:1.5:1.5)

WHEN TAUGHT: Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Base SAS programming skills, introductory statistical analysis and graphics, simulation of introductory statistical concepts.

**Course Outcomes**

There are no course outcomes available

STAT 223 : Applied R Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 123

RECOMMENDED: Concurrent enrollment in Stat 124.

DESCRIPTION: Advanced R programming skills; communicate with other packages and programs.

**Course Outcomes**

There are no course outcomes available

STAT 224 : Applied SAS Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: STAT 124

RECOMMENDED: Concurrent enrollment in Stat 123.

DESCRIPTION: Advanced SAS programming skills, advanced DATA step programming, ODS, simple MACRO programs, Proc SQL, Proc REPORT, communicate with other packages and programs.

**Course Outcomes**

There are no course outcomes available

STAT 230 : Analysis of Variance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

RECOMMENDED: Concurrent enrollment in MATH 112.

DESCRIPTION: Scientific method, statistical thinking, sources of variation, completely randomized design, ANOVA, power and sample size considerations, multiple testing, randomized complete blocks, factorial designs, interactions. Introduction to statistical software.

**Course Outcomes**

- Define the experimental unit, response variable, factor(s), and level(s) of a basic experiment
- Understand the role of randomization and replication in inferring causation
- Perform a completely randomized design and construct the ANOVA table in SAS and R
- Compute the minimum number of replicates in a completely randomized design to achieve a given level of power
- Compute pairwise tests of differences in means in SAS and R to understand a significant overall F-test
- Perform a randomized complete block design and construct the ANOVA table in SAS and R
- Perform a factorial design and construct the ANOVA table in SAS and R
- Explain a statistically significant interaction
- Describe the differences between a split plot and a two-way ANOVA

STAT 240 : Discrete Probability. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Set theory; discrete probability; conditional probability; finite sample spaces; discrete random variables (pdf, cdf, moments).

**Course Outcomes**

- Apply fundamentals of set theory and basic set operations
- Enumerate the elements of a discrete sample space
- Demonstrate familiarity with counting techniques---sampling with order, without order, binomial coefficients
- Solve probability problems in finite sample spaces

Solve problems using axioms of probability, conditional probability, independence, and Bayes theorem
- Calculate expected values and variances of discrete random variables
- Understand the assumptions and properties of the named discrete distributions (Bernoulli, binomial, Poisson, geometric)
- Solve problems with the pdf, cdf, moments of discrete univariate random variables

STAT 290 : Communication of Statistical Results. (1:1:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 230 & WRTG 150; or STAT 230 & PHIL 150; or STAT 230 & ENGL 115

DESCRIPTION: Introduction to writing within the discipline including the effective use of graphics, tables, and equations. Resources and guidelines for writing and presenting statistical results.

**Course Outcomes**

- Write a technical report on a statistical analysis
- Create effective statistical graphics
- Use LaTeX to create documents and presentations
- Understand ethical considerations in misleading presentation of data

STAT 330 : Introduction to Regression. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 230 & MATH 112

RECOMMENDED: Stat 123 and Stat 124; MATH 113 or concurrent enrollment.

DESCRIPTION: Regression, transformations, residuals, indicator variables, variable selection, logistic regression, time series, observational studies, statistical software.

**Course Outcomes**

- Explain the difference between ANOVA and regression, and their computational methods
- Explain the difference in inference between a designed experiment and observational study
- Fit a regression model in SAS and R
- Apply appropriate transformations to the response variable to improve agreement with regression assumptions
- Use residuals and influence diagnostics to assess model fit, agreement with regression assumptions, and identify outliers and influential observations
- Create sets of indicator variables for categorical explanatory variables
- Apply step-wise selection to identify a subset regression model that selects the most significant explanatory variables from a large data set
- Fit a logistic regression model in SAS and R
- Fit an ARIMA(p,d,q) model and generate forecasts with prediction intervals in SAS and R

STAT 340 : Inference. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 240 & MATH 113

RECOMMENDED: Stat 123 and Stat 124.

DESCRIPTION: Continuous random variables (pdf, cdf, moments); sampling distributions; Central Limit Theorem; frequentist inference (estimation, intervals); Bayesian inference (estimation, intervals); simulation.

**Course Outcomes**

- Understand assumptions and properties of named continuous univariate distributions: normal, beta, gamma, exponential
- Solve problems using pdf's and cdf's of continuous distributions
- Calculate expectation, variance, covariance, and correlation
- Understand the Central Limit Theorem via simulation and use it to calculate probabilities
- Make inferences on a population proportion using a random sample from a binomial distribution and on a population mean using a random sample from a normal distribution with known variance, including:deriving the sampling distributions of the sample mean and proportionderiving the posterior distributions of the mean and proportion using conjugate priorsderiving the maximum likelihood and Bayes estimators of the mean and proportionusing a pivot to construct an approximate 100(1 - α)% confidence intervals for the mean and proportionconstructing Bayesian confidence intervals for the mean and proportion

5. Complete the following:

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

RECOMMENDED: Math 290.

DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 313.
DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

6. Complete one course from the following:

CHEM 105 : General College Chemistry. (4:5:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 110 (or equivalent) or concurrent enrollment.
DESCRIPTION: Atomic and molecular structure including bonding and periodic properties of the elements; reaction energetics, electrochemistry, acids and bases, inorganic and organic chemistry.
NOTE: Primarily for students in engineering and biological sciences. Three lectures and two recitation sections per week.

**Course Outcomes**

- Students will demonstrate a familiarity with the basic vocabulary and concepts of chemistry.
- Students will demonstrate a qualitative and basic quantitative understanding of the fundamental chemical laws which govern the material substances in our universe and which express how one variable in nature depends on another.
- Students will demonstrate the ability to manipulate quantitative descriptors of natural phenomena expressed both in the form of equations and of proportionalities, and solve chemistry problems using these skills.
- A successful Chemistry 105 students describes chemical phenomenon by first focusing on properties of the elements at the atomic level. Chemistry 105 students will gain a knowledge base of reactivity patterns of elements and compounds.
- Chemistry 105 students will be able to use their chemistry experience, knowledge, and skills to better understand and work in their own field of study.

CHEM 111 : Principles of Chemistry. (4:3:3)

OFFERED: Honors also.
WHEN TAUGHT: Fall
PREREQUISITE: Math 110 or equivalent.
RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.
DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.
NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

: Honors Principles of Chemistry.

**Course Outcomes**

7. Complete the following:

MMBIO 240 : Molecular Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: BIO 130 & CHEM 105; or PDBIO 120 & CHEM 105; or MMBIO 151 & CHEM 105
DESCRIPTION: Fundamentals of protein and nucleic acid structure and their function in the context of the classical experiments that have informed our current models of biology at the molecular level.
NOTE: Chem 105 and Chem 111 can also fulfill the prerequisite requirement; contact advisor.

**Course Outcomes**

- Describe and compare the functions and molecular structures of DNA, RNA, and protein, and explain the processes and regulatory mechanisms governing the synthesis of each.
- Explain a variety of molecular biology techniques, and interpret experimental results obtained using the various methods.
- Solve unfamiliar problems by applying the information and principles mastered through Learning Outcomes 1 and 2
- Collaborate with other students to solve challenging problems, to clarify ideas and concepts, and to learn from one another in a spirit of cooperation and integrity

PDBIO 120 : Science of Biology. (2:2:1)

OFFERED: Honors also

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

8. Complete one course from the following:

BIO 350 : Ecology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: PDBIO 120; or BIO 130

DESCRIPTION: Distribution and abundance of organisms and their interactions with the physical and biotic components of the earth.

**Course Outcomes**

- Understand the major physical processes that form and characterize the biosphere, including global scale energy flow, the carbon cycle, climate, and soil formation.
- Understand the processes that drive major levels of organization of the biotic world, including energetics in the ecosystem, population dynamics, and species interactions.
- Understand the importance of writing as a way of synthesizing and solidifying critical thought.
- Foster and promote environmental stewardship within your realm of influence and your community.
- Understand the importance of ecology to issues regarding human well-being
- See the connectivity and relevance of ecology to other fields of study

PDBIO 305 : Human Physiology (with lab). (4:4:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Chem 101 or equivalent; PDBio 210 or 220.

RECOMMENDED: A general biology course.

DESCRIPTION: Function of body organ systems.

NOTE: Not acceptable for physiology and developmental biology, biophysics, or neuroscience majors. Designed for students with basic chemistry / no molecular biology. Students with chemistry/molecular biology should take PDBio 362.

**Course Outcomes**

- Students will demonstrate the proper use of physiology terminology.
- Student will demonstrate a well-integrated and comprehensive understanding of the human body in health and disease.
- Students will use knowledge of cells and organ systems to solve problems related to the function of the human body.
- Students will demonstrate the necessary knowledge and skills in physiology that are required for their majors and future aspirations for graduate and professional school.
- Students will develop and demonstrate in their daily lives a deeper appreciation and respect for the human body.
- Students will demonstrate the knowledge to make informed personal (medical,ethical,and political)decisions regarding physiological concepts.

PWS 340 : Genetics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MMBIO 240; or CHEM 481M; or CHEM 481

DESCRIPTION: Genetic mechanisms, their fundamental nature, interactions, and applications to human affairs. Genetics in quantitative terms. Extensive practice in problem solving.

**Course Outcomes**

- Students can construct two- and three-point linkage maps.
- Students can display fluency in interpreting gene annotation and nomenclature in GenBank records.
- Students can demonstrate ability to analyze and apply Chi-square goodness-of-fit tests to complex geneticdata sets involving segregation and Hardy-Weinberg equilibrium models.
- Students can identify differences between extranuclear, autosomal and sex-linked inheritance patterns.
- Students can use genetic data (DNA or amino acid sequence) to reconstruct basic evolutionary phylogenies.
- Students can dissect quantitative traits into environmental and genetic variance components.

9. Complete 12 credit hours from the following two lists, with a minimum of 6 hours from list A:

a. Complete 6 hours from the following:

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MATH 112

RECOMMENDED: Concurrent enrollment in MATH 113.

DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 234 : Methods of Survey Sampling. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Sampling frames; questionnaire design; simple random, systematic, stratified, and cluster sampling methods; comparing domain means; contingency table analysis.

**Course Outcomes**

- Identify and sample using simple random sampling and various forms of stratified sampling, cluster sampling, and systematic sampling
- Accurately identify and perform variance calculations for basic designs
- Participate in a real project involving sampling methodologies and appropriate point estimate and variance calculations
- Create graphical representations of results
- Demonstrate effective written and oral communication skills as they present their findings

STAT 274 : Theory of Interest. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 112

RECOMMENDED: Pass SOA Exam P.

DESCRIPTION: Theory of interest, annuities, amortization, financial derivatives. Prepares for SOA Exam FM.

**Course Outcomes**

There are no course outcomes available

STAT 424 : Statistical Computing. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 223 & STAT 224 & STAT 330

DESCRIPTION: Create and interact with relational databases comprised of large real world data; integrate previous course work into a single research project from formulation to final report; solve statistical problems using a combination of SAS, R, and SQL skills.

**Course Outcomes**

There are no course outcomes available

STAT 431 : Experimental Design. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 330

DESCRIPTION: Basic designs, power and sample size, Latin squares, incomplete blocks, change-over designs, factorials, fractional factorials, confounding, split-plots, response surface designs.

**Course Outcomes**

- Choose an experimental design plan that is appropriate for the research problem at hand
- Construct the design, including determining the proper number of replicates and the creation of a randomized data collection form
- Execute the plan to collect the data, or advise a colleague to do it
- Determine the model appropriate for the data
- Fit the model to the data, and verify that the assumptions have been satisfied
- Interpret the results and present the data in a meaningful way to answer the research problem at hand

STAT 435 : Nonparametric Statistical Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 511

DESCRIPTION: Permutation tests, rank-based methods, analysis of contingency tables, bootstrap methods, curve fitting.

**Course Outcomes**

- Explain and provide examples of the trade-off between parametric assumptions and efficiency of statistical inference
- Compute the following rank-based methods: Wilcoxon Rank-Sum test, Mann-Whitney test, Signed-Rank test, Kruskal-Wallis test, Spearman Rank Correlation
- Formulate and compute permutation tests for 2-sample, K-sample, and contingency tables
- Compute the following tests for contingency tables: Fisher's exact test, Mantel-Haenszel test, McNemar's test

- Formulate and compute bootstrap (resampling) confidence intervals
- Compute generalized additive models (GAM) with splines or smoothers for possible nonlinear effects in R

STAT 451 : Applied Bayesian Statistics. (3:3.0:)

PREREQUISITE: STAT 151 & STAT 330; Concurrent enrollment in STAT 340.

DESCRIPTION: Bayesian analogs of t-tests, regression, ANOVA, ANCOVA, logistic regression, and Poisson regression implemented using both JAGS and Proc MCMC

**Course Outcomes**

- Students will be able to apply, implement and interpret a fully Bayesian approach to relevant statistical problems, including design, model selection, model fit steps.
- Students will be able to generate their own analysis of Bayesian models in R.
- Students will be able to understand, explain and demonstrate basic Bayesian theory and its usefulness in real-world applications.

STAT 466 : Introduction to Reliability. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 340

DESCRIPTION: Mathematics, distributions, management, and maintenance of basic reliability concepts; collection and analysis of test data; fault tree analysis; applying reliability in various areas.

**Course Outcomes**

- Discuss reliability concepts
- Fit standard parametric distributions to censored reliability test data
- Analyze data from accelerated life tests
- Model reliability for simple systems
- Predict field failures
- Analyze repairable systems
- Make reliability plots of data
- Complete basic Bayesian analysis of reliability

STAT 469 : Applied Time Series and Forecasting. (3:3:0)

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Data mining, univariate ARIMA time series theory and application, seasonal models, spatial correlation models, conditional heteroscedastic models in financial time series, case studies.

**Course Outcomes**

- Define the autocovariance and autocorrelation functions
- Define weak stationarity
- Define white noise process
- Derive the mean, autocovariance, and autocorrelation of an AR and MA model
- Define an ARMA (p, q) process
- Select the order of an ARIMA model from the sample ACF and sample PACF
- Fit an ARIMA (p, d, q) model and generate forecasts with prediction intervals in R

STAT 496R : Academic Internship: Statistics. (.5-9:ARR:ARR)

PREREQUISITE: Department coordinator's consent.

DESCRIPTION: On-the-job experience or internships for undergraduates. Report is required.

**Course Outcomes**

- Practice appropriate dress and etiquette in varied business settings
- Demonstrate good work ethics
- Demonstrate effective written and oral communication skills as they report on their internship experience

STAT 497R : Introduction to Statistical Research. (.5-3:0:6)

PREREQUISITE: Department chair's consent.

DESCRIPTION: Review of current literature and survey of present status of significant statistical research; collaborative work between student and faculty.

**Course Outcomes**

- Contribute to the research project in terms of literature review, data analysis, and reporting of preliminary results
- Demonstrate good work ethics (punctuality to meetings, follow-up of action items, and so forth)
- Show initiative in the conduct of research

STAT 538 : Survival Analysis. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 340

DESCRIPTION: Basic concepts of survival analysis; hazard functions; types of censoring; Kaplan-Meier estimates; Logrank tests; proportional hazard models; examples drawn from clinical and epidemiological literature.

**Course Outcomes**

- Understand the basic underlying theory of survival analysis methods
- Conduct estimation of the survival function for a single sample
- Conduct formal comparison of survival functions for two samples
- Conduct formal analysis through incorporation of covariates
- Conduct formal analysis in high-dimensional, low-sample size settings
- Be able to assess the appropriateness of the use of methods for a given data set (given the scientific questions of interest and given the data characteristics)
- Be able to effectively communicate the results of data analyses

b. Complete 6 hours from the following:

C S 142 : Introduction to Computer Programming. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Knowledge of algebra.

DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

HLTH 345 : Principles of Epidemiology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: Stat 121.

DESCRIPTION: Applying analytical tools to study acute and chronic disease to facilitate investigation and control of epidemics.

**Course Outcomes**

- Investigate disease outbreaks.
- Describe basic concepts, definitions, and history of Epidemiology.
- Describe patterns of disease occurrence.
- Interpret Epidemiologic studies.
- Evaluate treatment effectiveness.
- Measure disease frequency and association.
- Distinguish between statistical association and cause-effect relationships.
- Know basic design strategies in Epidemiology.

MATH 341 : Theory of Analysis 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Math 113 and Math 290.

DESCRIPTION: Rigorous treatment of calculus of a single real variable: topology, order, completeness of real numbers; continuity, differentiability, integrability, and convergence of functions.

**Course Outcomes**

- The main purpose of this course is to provide students with an understanding of the real number system and of real-valued functions of a single real variable, with the focus being on the theoretical and logical foundations of single-variable calculus. A secondary purpose of this course is to reinforce students' prior training in discovering and writing valid mathematical proofs.For more detailed information visit the Math 341 Wiki.

MATH 342 : Theory of Analysis 2. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MATH 313 & MATH 341

DESCRIPTION: Rigorous treatment of calculus of several real variables; metric spaces, geometry and topology of Euclidean space, differentiation implicity function theorem, integration on sets and manifolds.

**Course Outcomes**

- Math 342 is the multivariable sequel to Math 341. Itprovides a rigorous treatment of multivariable calculus. Unlike the case with Math 341, Math 342 students are not required to have had an introductory course in the subject matter, so Math 342 needs to treat both computation and theory in some depth.For more detailed information visit the Math 342 Wiki entry.

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MATH 112

RECOMMENDED: Concurrent enrollment in MATH 113.
DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 234 : Methods of Survey Sampling. (3:3:2)
WHEN TAUGHT: Fall
PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.
DESCRIPTION: Sampling frames; questionnaire design; simple random, systematic, stratified, and cluster sampling methods; comparing domain means; contingency table analysis.

**Course Outcomes**

- Identify and sample using simple random sampling and various forms of stratified sampling, cluster sampling, and systematic sampling
- Accurately identify and perform variance calculations for basic designs
- Participate in a real project involving sampling methodologies and appropriate point estimate and variance calculations
- Create graphical representations of results
- Demonstrate effective written and oral communication skills as they present their findings

STAT 274 : Theory of Interest. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: MATH 112
RECOMMENDED: Pass SOA Exam P.
DESCRIPTION: Theory of interest, annuities, amortization, financial derivatives. Prepares for SOA Exam FM.

**Course Outcomes**

There are no course outcomes available

STAT 424 : Statistical Computing. (3:3:2)
WHEN TAUGHT: Winter
PREREQUISITE: STAT 223 & STAT 224 & STAT 330
DESCRIPTION: Create and interact with relational databases comprised of large real world data; integrate previous course work into a single research project from formulation to final report; solve statistical problems using a combination of SAS, R, and SQL skills.

**Course Outcomes**

There are no course outcomes available

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WHEN TAUGHT: Fall
PREREQUISITE: STAT 330
DESCRIPTION: Basic designs, power and sample size, Latin squares, incomplete blocks, change-over designs, factorials, fractional factorials, confounding, split-plots, response surface designs.

**Course Outcomes**

- Choose an experimental design plan that is appropriate for the research problem at hand
- Construct the design, including determining the proper number of replicates and the creation of a randomized data collection form
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WHEN TAUGHT: Winter
PREREQUISITE: STAT 330; or STAT 511
DESCRIPTION: Permutation tests, rank-based methods, analysis of contingency tables, bootstrap methods, curve fitting.

**Course Outcomes**

- Explain and provide examples of the trade-off between parametric assumptions and efficiency of statistical inference

- Compute the following rank-based methods: Wilcoxon Rank-Sum test, Mann-Whitney test, Signed-Rank test, Kruskal-Wallis test, Spearman Rank Correlation
- Formulate and compute permutation tests for 2-sample, K-sample, and contingency tables
- Compute the following tests for contingency tables: Fisher's exact test, Mantel-Haenszel test, McNemar's test
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PREREQUISITE: STAT 151 & STAT 330; Concurrent enrollment in STAT 340.

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**Course Outcomes**

- Students will be able to apply, implement and interpret a fully Bayesian approach to relevant statistical problems, including design, model selection, model fit steps.
- Students will be able to generate their own analysis of Bayesian models in R.
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WHEN TAUGHT: Winter

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DESCRIPTION: Mathematics, distributions, management, and maintenance of basic reliability concepts; collection and analysis of test data; fault tree analysis; applying reliability in various areas.

**Course Outcomes**

- Discuss reliability concepts
- Fit standard parametric distributions to censored reliability test data
- Analyze data from accelerated life tests
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- Make reliability plots of data
- Complete basic Bayesian analysis of reliability

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PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Data mining, univariate ARIMA time series theory and application, seasonal models, spatial correlation models, conditional heteroscedastic models in financial time series, case studies.

**Course Outcomes**

- Define the autocovariance and autocorrelation functions
- Define weak stationarity
- Define white noise process
- Derive the mean, autocovariance, and autocorrelation of an AR and MA model
- Define an ARMA (p, q) process
- Select the order of an ARIMA model from the sample ACF and sample PACF
- Fit an ARIMA (p, d, q) model and generate forecasts with prediction intervals in R

STAT 496R : Academic Internship: Statistics. (.5-9:ARR:ARR)

PREREQUISITE: Department coordinator's consent.

DESCRIPTION: On-the-job experience or internships for undergraduates. Report is required.

**Course Outcomes**

- Practice appropriate dress and etiquette in varied business settings
- Demonstrate good work ethics
- Demonstrate effective written and oral communication skills as they report on their internship experience

STAT 497R : Introduction to Statistical Research. (.5-3:0:6)

PREREQUISITE: Department chair's consent.

DESCRIPTION: Review of current literature and survey of present status of significant statistical research; collaborative work between student and faculty.

**Course Outcomes**

- Contribute to the research project in terms of literature review, data analysis, and reporting of preliminary results
- Demonstrate good work ethics (punctuality to meetings, follow-up of action items, and so forth)
- Show initiative in the conduct of research

STAT 538 : Survival Analysis. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 340
DESCRIPTION: Basic concepts of survival analysis; hazard functions; types of censoring; Kaplan-Meier estimates; Logrank tests; proportional hazard models; examples drawn from clinical and epidemiological literature.

**Course Outcomes**

- Understand the basic underlying theory of survival analysis methods
- Conduct estimation of the survival function for a single sample
- Conduct formal comparison of survival functions for two samples
- Conduct formal analysis through incorporation of covariates
- Conduct formal analysis in high-dimensional, low-sample size settings
- Be able to assess the appropriateness of the use of methods for a given data set (given the scientific questions of interest and given the data characteristics)
- Be able to effectively communicate the results of data analyses

**Note**: Courses used in List A will not double count in List B.

## Recommended Courses

It is **strongly recommend** that students interested in graduate study in biostatistics include Math 341 and 342 in their elective lists.

*Hours include courses that may fulfill university core requirements.

## Show all Statistics (Stat) Courses

College of Physical and Mathematical Sciences Home

Statistics Department Home

Majors

- BS in Actuarial Science

BS in Statistics

Emphases

- Applied Statistics and Analytics
- Biostatistics
- Statistical Science

Minors

- Actuarial Science
- Statistics

Course Information

- Statistics (Stat) Courses

Faculty

# BS in Statistics: Statistical Science Emphasis (54 hours*)

Show All Course Descriptions
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## Program Requirements | View MAP | View Program Outcomes

1. No more than three hours of credit below C- is allowed in major courses.
2. Complete the following preparation core courses:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

3. Complete one course from the following:

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation

- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MATH 112

RECOMMENDED: Concurrent enrollment in MATH 113.

DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

STAT 301 : Statistics and Probability for Secondary Educators. (3:3:2)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: MATH 113

DESCRIPTION: Statistics and probability, emphasizing secondary-specific curriculum. Principles of counting, probability distributions, density functions, graphical methods, descriptive and inferential statistics, computer package.

**Course Outcomes**

- Identify and provide examples of basic statistical terminology, such as population, sample, and random variable
- Construct, read, and interpret data displays and decide the most appropriate procedure for data analysis
- Summarize data graphically and numerically
- Identify elements and distinguish between observational studies and experiments
- Compute probabilities for simple events
- Create and interpret by application of a random variable discrete and normal probability distributions
- Model situations by using experimental or theoretical probabilities
- Become aware of misconceptions and errors about statistics and probability
- Make inferences, draw conclusions, and evaluate arguments from a data analysis
- Explain the need for statistics in understanding real-world processes (i.e., by accounting)
- Develop simple activities to reinforce basic statistical topics to middle school and high school students

**Note:** Students who have passed the AP statistics exam or an introductory statistics course should not take Stat 121.

4. Complete the following statistics core courses:

STAT 123 : Introduction to R Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 121; or STAT 151; or STAT 201

DESCRIPTION: Base R programming skills, introductory statistical analysis and graphics, simulation of introductory statistical concepts.

**Course Outcomes**

There are no course outcomes available

STAT 124 : SAS Base Programming Skills. (1.5:1.5:1.5)

WHEN TAUGHT: Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Base SAS programming skills, introductory statistical analysis and graphics, simulation of introductory statistical concepts.

**Course Outcomes**

There are no course outcomes available

STAT 223 : Applied R Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 123

RECOMMENDED: Concurrent enrollment in Stat 124.

DESCRIPTION: Advanced R programming skills; communicate with other packages and programs.

**Course Outcomes**

There are no course outcomes available

STAT 224 : Applied SAS Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: STAT 124

RECOMMENDED: Concurrent enrollment in Stat 123.

DESCRIPTION: Advanced SAS programming skills, advanced DATA step programming, ODS, simple MACRO programs, Proc SQL, Proc REPORT, communicate with other packages and programs.

**Course Outcomes**

There are no course outcomes available

STAT 230 : Analysis of Variance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

RECOMMENDED: Concurrent enrollment in MATH 112.

DESCRIPTION: Scientific method, statistical thinking, sources of variation, completely randomized design, ANOVA, power and sample size considerations, multiple testing, randomized complete blocks, factorial designs, interactions. Introduction to statistical software.

**Course Outcomes**

- Define the experimental unit, response variable, factor(s), and level(s) of a basic experiment
- Understand the role of randomization and replication in inferring causation
- Perform a completely randomized design and construct the ANOVA table in SAS and R
- Compute the minimum number of replicates in a completely randomized design to achieve a given level of power
- Compute pairwise tests of differences in means in SAS and R to understand a significant overall F-test
- Perform a randomized complete block design and construct the ANOVA table in SAS and R
- Perform a factorial design and construct the ANOVA table in SAS and R
- Explain a statistically significant interaction
- Describe the differences between a split plot and a two-way ANOVA

STAT 240 : Discrete Probability. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Set theory; discrete probability; conditional probability; finite sample spaces; discrete random variables (pdf, cdf, moments).

**Course Outcomes**

- Apply fundamentals of set theory and basic set operations
- Enumerate the elements of a discrete sample space
- Demonstrate familiarity with counting techniques---sampling with order, without order, binomial coefficients
- Solve probability problems in finite sample spaces

Solve problems using axioms of probability, conditional probability, independence, and Bayes theorem
- Calculate expected values and variances of discrete random variables
- Understand the assumptions and properties of the named discrete distributions (Bernoulli, binomial, Poisson, geometric)
- Solve problems with the pdf, cdf, moments of discrete univariate random variables

STAT 290 : Communication of Statistical Results. (1:1:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 230 & WRTG 150; or STAT 230 & PHIL 150; or STAT 230 & ENGL 115

DESCRIPTION: Introduction to writing within the discipline including the effective use of graphics, tables, and equations. Resources and guidelines for writing and presenting statistical results.

**Course Outcomes**

- Write a technical report on a statistical analysis
- Create effective statistical graphics
- Use LaTeX to create documents and presentations
- Understand ethical considerations in misleading presentation of data

STAT 330 : Introduction to Regression. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 230 & MATH 112

RECOMMENDED: Stat 123 and Stat 124; MATH 113 or concurrent enrollment.

DESCRIPTION: Regression, transformations, residuals, indicator variables, variable selection, logistic regression, time series, observational studies, statistical software.

**Course Outcomes**

- Explain the difference between ANOVA and regression, and their computational methods
- Explain the difference in inference between a designed experiment and observational study
- Fit a regression model in SAS and R
- Apply appropriate transformations to the response variable to improve agreement with regression assumptions
- Use residuals and influence diagnostics to assess model fit, agreement with regression assumptions, and identify outliers and influential observations
- Create sets of indicator variables for categorical explanatory variables
- Apply step-wise selection to identify a subset regression model that selects the most significant explanatory variables from a large data set
- Fit a logistic regression model in SAS and R
- Fit an ARIMA(p,d,q) model and generate forecasts with prediction intervals in SAS and R

STAT 340 : Inference. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 240 & MATH 113

RECOMMENDED: Stat 123 and Stat 124.

DESCRIPTION: Continuous random variables (pdf, cdf, moments); sampling distributions; Central Limit Theorem; frequentist inference (estimation, intervals); Bayesian inference (estimation, intervals); simulation.

**Course Outcomes**

- Understand assumptions and properties of named continuous univariate distributions: normal, beta, gamma, exponential
- Solve problems using pdf's and cdf's of continuous distributions
- Calculate expectation, variance, covariance, and correlation
- Understand the Central Limit Theorem via simulation and use it to calculate probabilities
- Make inferences on a population proportion using a random sample from a binomial distribution and on a population mean using a random sample from a normal distribution with known variance, including:deriving the sampling distributions of the sample mean and proportionderiving the posterior distributions of the mean and proportion using conjugate priorsderiving the maximum likelihood and Bayes estimators of the mean and proportionusing a pivot to construct an approximate 100(1 - α)% confidence intervals for the mean and proportionconstructing Bayesian confidence intervals for the mean and proportion

5. Complete the following:

MATH 313 : Elementary Linear Algebra. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

RECOMMENDED: Math 290.

DESCRIPTION: Linear systems, matrices, vectors and vector spaces, linear transformations, determinants, inner product spaces, eigenvalues, and eigenvectors.

**Course Outcomes**

- This course is aimed at majors in mathematics, the physical sciences, engineering, and other students interested in applications of mathematics to their disciplines. Linear algebra is used more than any other form of advanced mathematics in industry and science. A key idea is the mathematical modeling of a problem via systems of linear equations. For more detailed information visit the Math 313 Wiki page.

MATH 314 : Calculus of Several Variables. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 313.
DESCRIPTION: Partial differentiation, the Jacobian matrix, and integral theorems of vector calculus.

**Course Outcomes**

- This course is aimed at students majoring in mathematical and physical sciences, and engineering, and students minoring in mathematics or mathematical education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed manipulative skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus of several variables extends the concepts of limit, integral, and derivative from one dimension to higher dimensional settings and is therefore fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS degree. For more detailed information visit the Math 314 Wiki page.

6. Complete 18 credit hours from the following two lists, with a minimum of 12 hours from list A:
   a. Complete 12 hours from the following:

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: MATH 112
RECOMMENDED: Concurrent enrollment in MATH 113.
DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 234 : Methods of Survey Sampling. (3:3:2)

WHEN TAUGHT: Fall
PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.
DESCRIPTION: Sampling frames; questionnaire design; simple random, systematic, stratified, and cluster sampling methods; comparing domain means; contingency table analysis.

**Course Outcomes**

- Identify and sample using simple random sampling and various forms of stratified sampling, cluster sampling, and systematic sampling
- Accurately identify and perform variance calculations for basic designs
- Participate in a real project involving sampling methodologies and appropriate point estimate and variance calculations
- Create graphical representations of results
- Demonstrate effective written and oral communication skills as they present their findings

STAT 274 : Theory of Interest. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: MATH 112
RECOMMENDED: Pass SOA Exam P.
DESCRIPTION: Theory of interest, annuities, amortization, financial derivatives. Prepares for SOA Exam FM.

**Course Outcomes**

There are no course outcomes available

STAT 370 : Statistical Theory for Actuaries. (3:3:0)

WHEN TAUGHT: Spring
PREREQUISITE: STAT 340; Concurrent enrollment in MATH 314
DESCRIPTION: Probability theory; discrete, continuous, mixture random variables; loss distributions; moment-generating functions; conditional probability, expectation; total probability; stochastic independence; transformations. Prepares for SOA Exam P.

**Course Outcomes**

- The assumptions and properties of the following named distributions: Bernoulli, Binomial, Hypergeometric, Negative Binomial, Poisson, Uniform, Gamma, Exponential, Normal, and Pareto
- Probability density functions, cumulative distribution functions, moment generating functions, and moments of univariate random variables
- The properties of joint, conditional, and marginal distributions
- The transformation of random variables using the CDF technique, change of variables, sums of random variables, convolution, and the MGF technique

STAT 424 : Statistical Computing. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 223 & STAT 224 & STAT 330

DESCRIPTION: Create and interact with relational databases comprised of large real world data; integrate previous course work into a single research project from formulation to final report; solve statistical problems using a combination of SAS, R, and SQL skills.

**Course Outcomes**

There are no course outcomes available

STAT 431 : Experimental Design. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 330

DESCRIPTION: Basic designs, power and sample size, Latin squares, incomplete blocks, change-over designs, factorials, fractional factorials, confounding, split-plots, response surface designs.

**Course Outcomes**

- Choose an experimental design plan that is appropriate for the research problem at hand
- Construct the design, including determining the proper number of replicates and the creation of a randomized data collection form
- Execute the plan to collect the data, or advise a colleague to do it
- Determine the model appropriate for the data
- Fit the model to the data, and verify that the assumptions have been satisfied
- Interpret the results and present the data in a meaningful way to answer the research problem at hand

STAT 435 : Nonparametric Statistical Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 511

DESCRIPTION: Permutation tests, rank-based methods, analysis of contingency tables, bootstrap methods, curve fitting.

**Course Outcomes**

- Explain and provide examples of the trade-off between parametric assumptions and efficiency of statistical inference
- Compute the following rank-based methods: Wilcoxon Rank-Sum test, Mann-Whitney test, Signed-Rank test, Kruskal-Wallis test, Spearman Rank Correlation
- Formulate and compute permutation tests for 2-sample, K-sample, and contingency tables
- Compute the following tests for contingency tables: Fisher's exact test, Mantel-Haenszel test, McNemar's test
- Formulate and compute bootstrap (resampling) confidence intervals
- Compute generalized additive models (GAM) with splines or smoothers for possible nonlinear effects in R

STAT 451 : Applied Bayesian Statistics. (3:3.0:)

PREREQUISITE: STAT 151 & STAT 330; Concurrent enrollment in STAT 340.

DESCRIPTION: Bayesian analogs of t-tests, regression, ANOVA, ANCOVA, logistic regression, and Poisson regression implemented using both JAGS and Proc MCMC

**Course Outcomes**

- Students will be able to apply, implement and interpret a fully Bayesian approach to relevant statistical problems, including design, model selection, model fit steps.
- Students will be able to generate their own analysis of Bayesian models in R.
- Students will be able to understand, explain and demonstrate basic Bayesian theory and its usefulness in real-world applications.

STAT 462 : Quality Control and Industrial Statistics. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Six sigma; tools with which to define, measure, analyze, improve, control. Advanced concepts in control charts, applying experimental design for process and product improvement.

**Course Outcomes**

- Explain the role of quality improvement as a business strategy
- Explain the relationship between variability in processes and process outputs and the quality and cost of the results produced
- Use the six sigma DMAIC process for quality improvement projects
- Design and use Shewhard, Cusum, and EWMA control chars to recognize common and special causes of variability
- Construct attribute and variables acceptance sampling plans
- Use other useful quality tools for measurement analysis, discovering root causes, and eliminating quality problems

STAT 466 : Introduction to Reliability. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 340

DESCRIPTION: Mathematics, distributions, management, and maintenance of basic reliability concepts; collection and analysis of test data; fault tree analysis; applying reliability in various areas.

**Course Outcomes**

- Discuss reliability concepts
- Fit standard parametric distributions to censored reliability test data
- Analyze data from accelerated life tests
- Model reliability for simple systems
- Predict field failures
- Analyze repairable systems
- Make reliability plots of data
- Complete basic Bayesian analysis of reliability

STAT 469 : Applied Time Series and Forecasting. (3:3:0)

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Data mining, univariate ARIMA time series theory and application, seasonal models, spatial correlation models, conditional heteroscedastic models in financial time series, case studies.

**Course Outcomes**

- Define the autocovariance and autocorrelation functions
- Define weak stationarity
- Define white noise process
- Derive the mean, autocovariance, and autocorrelation of an AR and MA model
- Define an ARMA (p, q) process
- Select the order of an ARIMA model from the sample ACF and sample PACF
- Fit an ARIMA (p, d, q) model and generate forecasts with prediction intervals in R

STAT 475 : Life Contingencies. (3:3:0)

PREREQUISITE: STAT 474; or STAT 274

DESCRIPTION: Life tables, survival functions, contingent annuities, insurance, premiums, reserves, joint annuities and insurance. Prepares for SOA Exam MLC.

**Course Outcomes**

- The primary learning outcome of this course is to prepare students for Exam MLC offered by the Society of Actuaries
- Recognize, understand, and compute problems relating to survival models, including defining and computing expected values, variances, probabilities, and percentiles for continuous and discrete survival-time random variables
- Recognize, understand, and compute problems relating to life insurances and annuities, including expected values, variances and probabilities for present-value-of-benefit random variables defined on survival-time random variables, considerations for life insurances and annuities, and liabilities analyzing the present☑value-of-future-loss random variables

STAT 477 : Statistical Distributions for Actuarial Modeling and Data Analytics. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 340

RECOMMENDED: Pass SOA Exam P.

DESCRIPTION: Analyze data from a risk-based application; select a suitable model and estimate parameters using MLE, method of moments, and Bayes methods; determine goodness of fit and measures of confidence for decision making.

**Course Outcomes**

There are no course outcomes available

STAT 496R : Academic Internship: Statistics. (.5-9:ARR:ARR)

PREREQUISITE: Department coordinator's consent.

DESCRIPTION: On-the-job experience or internships for undergraduates. Report is required.

**Course Outcomes**

- Practice appropriate dress and etiquette in varied business settings
- Demonstrate good work ethics
- Demonstrate effective written and oral communication skills as they report on their internship experience

STAT 497R : Introduction to Statistical Research. (.5-3:0:6)

PREREQUISITE: Department chair's consent.

DESCRIPTION: Review of current literature and survey of present status of significant statistical research; collaborative work between student and faculty.

**Course Outcomes**

- Contribute to the research project in terms of literature review, data analysis, and reporting of preliminary results
- Demonstrate good work ethics (punctuality to meetings, follow-up of action items, and so forth)
- Show initiative in the conduct of research

STAT 538 : Survival Analysis. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: STAT 340
DESCRIPTION: Basic concepts of survival analysis; hazard functions; types of censoring; Kaplan-Meier estimates; Logrank tests; proportional hazard models; examples drawn from clinical and epidemiological literature.

**Course Outcomes**

- Understand the basic underlying theory of survival analysis methods
- Conduct estimation of the survival function for a single sample
- Conduct formal comparison of survival functions for two samples
- Conduct formal analysis through incorporation of covariates
- Conduct formal analysis in high-dimensional, low-sample size settings
- Be able to assess the appropriateness of the use of methods for a given data set (given the scientific questions of interest and given the data characteristics)
- Be able to effectively communicate the results of data analyses

b. Complete 6 hours from the following:

C S 142 : Introduction to Computer Programming. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Knowledge of algebra.
DESCRIPTION: Introduction to object-oriented program design and development. Principles of algorithm formulation and implementation.

**Course Outcomes**

- Use the rudiments of the environment and the resources available to help them program (editors, basic computer architecture, compilers, libraries, reference manuals, on-line help).Develop programs from an English description.Write programs on their own, independent of "hand holding" by a TA or an instructor (typically a dozen or so).Understand and use the basic programming constructs: types (built in types, basic provided types including arrays and strings, type construction), values (constants,variables, assignment statements, and expressions), control structures (sequential flow, conditional statements, and loops), and I/O (basic output to the screen and input from the keyboard, and file I/O).Understand and use objects (value representation, applicable operations, hidden implementations).Implement basic recursive algorithms.Describe and use the basic ideas of some of the more advanced programming constructs,including exceptions, inheritance, and polymorphism.
- AbstractionDebugging and Assurance of CorrectnessProgram Development (analysis, specification, design, implementation, testing)

MATH 334 : Ordinary Differential Equations. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 113 and Math 313.
DESCRIPTION: Methods and theory of ordinary differential equations.

**Course Outcomes**

There are no course outcomes available

MATH 341 : Theory of Analysis 1. (3:3:0)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Math 113 and Math 290.
DESCRIPTION: Rigorous treatment of calculus of a single real variable: topology, order, completeness of real numbers; continuity, differentiability, integrability, and convergence of functions.

**Course Outcomes**

- The main purpose of this course is to provide students with an understanding of the real number system and of real-valued functions of a single real variable, with the focus being on the theoretical and logical foundations of single-variable calculus. A secondary purpose of this course is to reinforce students' prior training in discovering and writing valid mathematical proofs.For more detailed information visit the Math 341 Wiki.

MATH 342 : Theory of Analysis 2. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: MATH 313 & MATH 341
DESCRIPTION: Rigorous treatment of calculus of several real variables; metric spaces, geometry and topology of Euclidean space, differentiation implicity function theorem, integration on sets and manifolds.

**Course Outcomes**

- Math 342 is the multivariable sequel to Math 341. Itprovides a rigorous treatment of multivariable calculus. Unlike the case with Math 341, Math 342 students are not required to have had an introductory course in the subject matter, so Math 342 needs to treat both computation and theory in some depth.For more detailed information visit the Math 342 Wiki entry.

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)
WHEN TAUGHT: Fall; Spring
PREREQUISITE: MATH 112

RECOMMENDED: Concurrent enrollment in MATH 113.
DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 234 : Methods of Survey Sampling. (3:3:2)
WHEN TAUGHT: Fall
PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.
DESCRIPTION: Sampling frames; questionnaire design; simple random, systematic, stratified, and cluster sampling methods; comparing domain means; contingency table analysis.

**Course Outcomes**

- Identify and sample using simple random sampling and various forms of stratified sampling, cluster sampling, and systematic sampling
- Accurately identify and perform variance calculations for basic designs
- Participate in a real project involving sampling methodologies and appropriate point estimate and variance calculations
- Create graphical representations of results
- Demonstrate effective written and oral communication skills as they present their findings

STAT 274 : Theory of Interest. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: MATH 112
RECOMMENDED: Pass SOA Exam P.
DESCRIPTION: Theory of interest, annuities, amortization, financial derivatives. Prepares for SOA Exam FM.

**Course Outcomes**

There are no course outcomes available

STAT 370 : Statistical Theory for Actuaries. (3:3:0)
WHEN TAUGHT: Spring
PREREQUISITE: STAT 340; Concurrent enrollment in MATH 314
DESCRIPTION: Probability theory; discrete, continuous, mixture random variables; loss distributions; moment-generating functions; conditional probability, expectation; total probability; stochastic independence; transformations. Prepares for SOA Exam P.

**Course Outcomes**

- The assumptions and properties of the following named distributions: Bernoulli, Binomial, Hypergeometric, Negative Binomial, Poisson, Uniform, Gamma, Exponential, Normal, and Pareto
- Probability density functions, cumulative distribution functions, moment generating functions, and moments of univariate random variables
- The properties of joint, conditional, and marginal distributions
- The transformation of random variables using the CDF technique, change of variables, sums of random variables, convolution, and the MGF technique

STAT 424 : Statistical Computing. (3:3:2)
WHEN TAUGHT: Winter
PREREQUISITE: STAT 223 & STAT 224 & STAT 330
DESCRIPTION: Create and interact with relational databases comprised of large real world data; integrate previous course work into a single research project from formulation to final report; solve statistical problems using a combination of SAS, R, and SQL skills.

**Course Outcomes**

There are no course outcomes available

STAT 431 : Experimental Design. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: STAT 330
DESCRIPTION: Basic designs, power and sample size, Latin squares, incomplete blocks, change-over designs, factorials, fractional factorials, confounding, split-plots, response surface designs.

**Course Outcomes**

- Choose an experimental design plan that is appropriate for the research problem at hand
- Construct the design, including determining the proper number of replicates and the creation of a

randomized data collection form
- Execute the plan to collect the data, or advise a colleague to do it
- Determine the model appropriate for the data
- Fit the model to the data, and verify that the assumptions have been satisfied
- Interpret the results and present the data in a meaningful way to answer the research problem at hand

STAT 435 : Nonparametric Statistical Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 511

DESCRIPTION: Permutation tests, rank-based methods, analysis of contingency tables, bootstrap methods, curve fitting.

**Course Outcomes**

- Explain and provide examples of the trade-off between parametric assumptions and efficiency of statistical inference
- Compute the following rank-based methods: Wilcoxon Rank-Sum test, Mann-Whitney test, Signed-Rank test, Kruskal-Wallis test, Spearman Rank Correlation
- Formulate and compute permutation tests for 2-sample, K-sample, and contingency tables
- Compute the following tests for contingency tables: Fisher's exact test, Mantel-Haenszel test, McNemar's test
- Formulate and compute bootstrap (resampling) confidence intervals
- Compute generalized additive models (GAM) with splines or smoothers for possible nonlinear effects in R

STAT 451 : Applied Bayesian Statistics. (3:3.0:)

PREREQUISITE: STAT 151 & STAT 330; Concurrent enrollment in STAT 340.

DESCRIPTION: Bayesian analogs of t-tests, regression, ANOVA, ANCOVA, logistic regression, and Poisson regression implemented using both JAGS and Proc MCMC

**Course Outcomes**

- Students will be able to apply, implement and interpret a fully Bayesian approach to relevant statistical problems, including design, model selection, model fit steps.
- Students will be able to generate their own analysis of Bayesian models in R.
- Students will be able to understand, explain and demonstrate basic Bayesian theory and its usefulness in real-world applications.

STAT 462 : Quality Control and Industrial Statistics. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Six sigma; tools with which to define, measure, analyze, improve, control. Advanced concepts in control charts, applying experimental design for process and product improvement.

**Course Outcomes**

- Explain the role of quality improvement as a business strategy
- Explain the relationship between variability in processes and process outputs and the quality and cost of the results produced
- Use the six sigma DMAIC process for quality improvement projects
- Design and use Shewhard, Cusum, and EWMA control chars to recognize common and special causes of variability
- Construct attribute and variables acceptance sampling plans
- Use other useful quality tools for measurement analysis, discovering root causes, and eliminating quality problems

STAT 466 : Introduction to Reliability. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 340

DESCRIPTION: Mathematics, distributions, management, and maintenance of basic reliability concepts; collection and analysis of test data; fault tree analysis; applying reliability in various areas.

**Course Outcomes**

- Discuss reliability concepts
- Fit standard parametric distributions to censored reliability test data
- Analyze data from accelerated life tests
- Model reliability for simple systems
- Predict field failures
- Analyze repairable systems
- Make reliability plots of data
- Complete basic Bayesian analysis of reliability

STAT 469 : Applied Time Series and Forecasting. (3:3:0)

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Data mining, univariate ARIMA time series theory and application, seasonal models, spatial correlation models, conditional heteroscedastic models in financial time series, case studies.

**Course Outcomes**

- Define the autocovariance and autocorrelation functions
- Define weak stationarity
- Define white noise process
- Derive the mean, autocovariance, and autocorrelation of an AR and MA model
- Define an ARMA (p, q) process
- Select the order of an ARIMA model from the sample ACF and sample PACF
- Fit an ARIMA (p, d, q) model and generate forecasts with prediction intervals in R

STAT 475 : Life Contingencies. (3:3:0)

PREREQUISITE: STAT 474; or STAT 274

DESCRIPTION: Life tables, survival functions, contingent annuities, insurance, premiums, reserves, joint annuities and insurance. Prepares for SOA Exam MLC.

**Course Outcomes**

- The primary learning outcome of this course is to prepare students for Exam MLC offered by the Society of Actuaries
- Recognize, understand, and compute problems relating to survival models, including defining and computing expected values, variances, probabilities, and percentiles for continuous and discrete survival-time random variables
- Recognize, understand, and compute problems relating to life insurances and annuities, including expected values, variances and probabilities for present-value-of-benefit random variables defined on survival-time random variables, considerations for life insurances and annuities, and liabilities analyzing the present□value-of-future-loss random variables

STAT 477 : Statistical Distributions for Actuarial Modeling and Data Analytics. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 340

RECOMMENDED: Pass SOA Exam P.

DESCRIPTION: Analyze data from a risk-based application; select a suitable model and estimate parameters using MLE, method of moments, and Bayes methods; determine goodness of fit and measures of confidence for decision making.

**Course Outcomes**

There are no course outcomes available

STAT 496R : Academic Internship: Statistics. (.5-9:ARR:ARR)

PREREQUISITE: Department coordinator's consent.

DESCRIPTION: On-the-job experience or internships for undergraduates. Report is required.

**Course Outcomes**

- Practice appropriate dress and etiquette in varied business settings
- Demonstrate good work ethics
- Demonstrate effective written and oral communication skills as they report on their internship experience

STAT 497R : Introduction to Statistical Research. (.5-3:0:6)

PREREQUISITE: Department chair's consent.

DESCRIPTION: Review of current literature and survey of present status of significant statistical research; collaborative work between student and faculty.

**Course Outcomes**

- Contribute to the research project in terms of literature review, data analysis, and reporting of preliminary results
- Demonstrate good work ethics (punctuality to meetings, follow-up of action items, and so forth)
- Show initiative in the conduct of research

STAT 538 : Survival Analysis. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 340

DESCRIPTION: Basic concepts of survival analysis; hazard functions; types of censoring; Kaplan-Meier estimates; Logrank tests; proportional hazard models; examples drawn from clinical and epidemiological literature.

**Course Outcomes**

- Understand the basic underlying theory of survival analysis methods
- Conduct estimation of the survival function for a single sample
- Conduct formal comparison of survival functions for two samples
- Conduct formal analysis through incorporation of covariates
- Conduct formal analysis in high-dimensional, low-sample size settings
- Be able to assess the appropriateness of the use of methods for a given data set (given the scientific questions of interest and given the data characteristics)
- Be able to effectively communicate the results of data analyses

**Note**: Courses used in List A will not double count in List B.

## Recommended Courses

It is **strongly recommended** that students interested in graduate study in statistics choose electives to prepare for the BYU BS/MS statistics integrated program by meeting with the statistics graduate coordinator.

*Hours include courses that may fulfill university core requirements.

## Show all Statistics (Stat) Courses

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Statistics Department Home

Majors

- BS in Actuarial Science

BS in Statistics

Emphases

- Applied Statistics and Analytics
- Biostatistics
- Statistical Science

Minors

- Actuarial Science
- Statistics

Course Information

- Statistics (Stat) Courses

Faculty

# Minor in Actuarial Science (12-15 hours*)

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## Program Requirements

1. Students must pass Exam P of the Society of Actuaries (SOA) jointly administered as Exam 1 by the Casualty Actuarial Society (CAS) before declaring an actuarial science minor.

2. Complete the following courses:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

MATH 113 : Calculus 2. (4:5:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Math 112.
DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

3. Complete the following courses preparing for SOA Exams:

STAT 274 : Theory of Interest. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: MATH 112
RECOMMENDED: Pass SOA Exam P.
DESCRIPTION: Theory of interest, annuities, amortization, financial derivatives. Prepares for SOA Exam FM.

**Course Outcomes**

There are no course outcomes available

STAT 340 : Inference. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: STAT 240 & MATH 113
RECOMMENDED: Stat 123 and Stat 124.

DESCRIPTION: Continuous random variables (pdf, cdf, moments); sampling distributions; Central Limit Theorem; frequentist inference (estimation, intervals); Bayesian inference (estimation, intervals); simulation.

**Course Outcomes**

- Understand assumptions and properties of named continuous univariate distributions: normal, beta, gamma, exponential
- Solve problems using pdf's and cdf's of continuous distributions
- Calculate expectation, variance, covariance, and correlation
- Understand the Central Limit Theorem via simulation and use it to calculate probabilities
- Make inferences on a population proportion using a random sample from a binomial distribution and on a population mean using a random sample from a normal distribution with known variance, including:deriving the sampling distributions of the sample mean and proportionderiving the posterior distributions of the mean and proportion using conjugate priorsderiving the maximum likelihood and Bayes estimators of the mean and proportionusing a pivot to construct an approximate 100(1 - α)% confidence intervals for the mean and proportionconstructing Bayesian confidence intervals for the mean and proportion

4. Complete the courses in one of the following categories:

To complete Applied Statistics VEE:

STAT 230 : Analysis of Variance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

RECOMMENDED: Concurrent enrollment in MATH 112.

DESCRIPTION: Scientific method, statistical thinking, sources of variation, completely randomized design, ANOVA, power and sample size considerations, multiple testing, randomized complete blocks, factorial designs, interactions. Introduction to statistical software.

**Course Outcomes**

- Define the experimental unit, response variable, factor(s), and level(s) of a basic experiment
- Understand the role of randomization and replication in inferring causation
- Perform a completely randomized design and construct the ANOVA table in SAS and R
- Compute the minimum number of replicates in a completely randomized design to achieve a given level of power
- Compute pairwise tests of differences in means in SAS and R to understand a significant overall F-test
- Perform a randomized complete block design and construct the ANOVA table in SAS and R
- Perform a factorial design and construct the ANOVA table in SAS and R
- Explain a statistically significant interaction
- Describe the differences between a split plot and a two-way ANOVA

STAT 330 : Introduction to Regression. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 230 & MATH 112

RECOMMENDED: Stat 123 and Stat 124; MATH 113 or concurrent enrollment.

DESCRIPTION: Regression, transformations, residuals, indicator variables, variable selection, logistic regression, time series, observational studies, statistical software.

**Course Outcomes**

- Explain the difference between ANOVA and regression, and their computational methods
- Explain the difference in inference between a designed experiment and observational study
- Fit a regression model in SAS and R
- Apply appropriate transformations to the response variable to improve agreement with regression assumptions
- Use residuals and influence diagnostics to assess model fit, agreement with regression assumptions, and identify outliers and influential observations
- Create sets of indicator variables for categorical explanatory variables
- Apply step-wise selection to identify a subset regression model that selects the most significant explanatory variables from a large data set
- Fit a logistic regression model in SAS and R
- Fit an ARIMA(p,d,q) model and generate forecasts with prediction intervals in SAS and R

To complete Business VEE:

ACC 200 : Principles of Accounting. (3:3:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Financial and managerial accounting principles. Basic accounting statements, processes, and management applications. Open to all students.

**Course Outcomes**

- Construct and use internal accounting tools such as cost-volume-profit analysis, budgets, product cost reports, and nonroutine decision analyses to understand how to make better business management decisions.
- Construct and interpret a balance sheet and income statement understanding its usefulness in business and investment decision making.
- Comfortably use accounting terms and concepts in business-related discussions.
- Intelligently converse about the following areas:a. The role of accounting in international businessb. The role of information systems in financial reportingc. Fraud and how to prevent

fraudd. The theory and practice of income taxese. Investing in stocksf. Career planning and spiritual decision makingg. Managerial accounting as a competitive toolh. Personal budgeting and financial planning
- Write a brief, focused memo demonstrating basic understanding of background business reading material.
- Use computer-aided learning tools and online learning resources.
- Manage workload in a self-paced learning environment.

FIN 201 : Principles of Finance. (3:3:1.5)

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Acc 200.

DESCRIPTION: Financial management from the viewpoint of the business manager emphasizing profitability, liquidity, and long-range financial planning.

**Course Outcomes**

There are no course outcomes available

To complete Economics VEE:

ECON 380 : Intermediate Price Theory 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 110 & MATH 112

DESCRIPTION: Producer, consumer, and equilibrium theories; mathematical techniques of unconstrained and constrained optimization introduced and applied extensively.

**Course Outcomes**

- Recognize the common building blocks of economic models (actors, choices, objectives, constraints)Solve economic models (constrained optimization, equilibrium conditions) Interpret the results (comparative statics)Explain concepts using graphs, prose, and mathematical analysis
- ConsumerThe axioms upon which standard microeconomic consumer theory is based.The implications of consumer demand including price and income responses in absolute and elasticity forms in both utility maximization and expenditure minimization problems.FirmsThe meaning and representation of technologyThe implications of cost and profit maximization for firmsMarketsIntegrate consumers and producers into a market in order to perform market analysis on equilibrium traded quantities and pricesUse market analysis to understand the effects of public policy
- Compare the impact on equilibrium behavior of altering the assumptions of canonical modelsContrast the results of different market imperfections

ECON 381 : Intermediate Macroeconomics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 110 & MATH 112; Math 112 can be concurrent enrollment.

DESCRIPTION: Intermediate macroeconomic theory, emphasizing income, unemployment, and price-level analysis.

**Course Outcomes**

- Demonstrate an understanding of the nature and construction of key macroeconomic data;Demonstrate an understanding of the connection between microeconomics and macroeconomics;Demonstrate an understanding of standard models ofeconomic growthlong-run macroeconomic behaviorshort-run macroeconomic behaviorUse these models to analyze the macroeconomic effects of monetary and fiscal policy changes as well as other economic shocks;Use these models to interpret historical and current events; andDemonstrate an understanding of issues regarding the value and limitations of monetary and fiscal policy.

SAS Certification:

STAT 123 : Introduction to R Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 121; or STAT 151; or STAT 201

DESCRIPTION: Base R programming skills, introductory statistical analysis and graphics, simulation of introductory statistical concepts.

**Course Outcomes**

There are no course outcomes available

STAT 124 : SAS Base Programming Skills. (1.5:1.5:1.5)

WHEN TAUGHT: Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Base SAS programming skills, introductory statistical analysis and graphics, simulation of introductory statistical concepts.

**Course Outcomes**

There are no course outcomes available

STAT 223 : Applied R Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: STAT 123
RECOMMENDED: Concurrent enrollment in Stat 124.
DESCRIPTION: Advanced R programming skills; communicate with other packages and programs.

**Course Outcomes**

There are no course outcomes available

STAT 224 : Applied SAS Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: STAT 124
RECOMMENDED: Concurrent enrollment in Stat 123.
DESCRIPTION: Advanced SAS programming skills, advanced DATA step programming, ODS, simple MACRO programs, Proc SQL, Proc REPORT, communicate with other packages and programs.

**Course Outcomes**

There are no course outcomes available

STAT 424 : Statistical Computing. (3:3:2)

WHEN TAUGHT: Winter
PREREQUISITE: STAT 223 & STAT 224 & STAT 330
DESCRIPTION: Create and interact with relational databases comprised of large real world data; integrate previous course work into a single research project from formulation to final report; solve statistical problems using a combination of SAS, R, and SQL skills.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

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- BS in Actuarial Science

BS in Statistics

Emphases

- Applied Statistics and Analytics
- Biostatistics
- Statistical Science

Minors

- Actuarial Science
- Statistics

Course Information

- Statistics (Stat) Courses

Faculty

# Minor in Statistics (18 hours*)

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## Program Requirements

1. Complete one course from the following:

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
RECOMMENDED: MATH 110 or equivalent.
DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring
PREREQUISITE: MATH 112
RECOMMENDED: Concurrent enrollment in MATH 113.
DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: MATH 112; or MATH 119
DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous

univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

STAT 301 : Statistics and Probability for Secondary Educators. (3:3:2)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: MATH 113

DESCRIPTION: Statistics and probability, emphasizing secondary-specific curriculum. Principles of counting, probability distributions, density functions, graphical methods, descriptive and inferential statistics, computer package.

**Course Outcomes**

- Identify and provide examples of basic statistical terminology, such as population, sample, and random variable
- Construct, read, and interpret data displays and decide the most appropriate procedure for data analysis
- Summarize data graphically and numerically
- Identify elements and distinguish between observational studies and experiments
- Compute probabilities for simple events
- Create and interpret by application of a random variable discrete and normal probability distributions
- Model situations by using experimental or theoretical probabilities
- Become aware of misconceptions and errors about statistics and probability
- Make inferences, draw conclusions, and evaluate arguments from a data analysis
- Explain the need for statistics in understanding real-world processes (i.e., by accounting)
- Develop simple activities to reinforce basic statistical topics to middle school and high school students

**Note:** Students who have passed the AP statistics exam or an introductory statistics course should not take Stat 121.

2. Complete 15 additional credit hours from Stat 123, 124 and courses numbered 223 or higher (excluding Stat 301, 370, 372, 474, 475, 496R, 510, 532, 599R).

*Hours include courses that may fulfill university core requirements.

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BS in Statistics

Emphases

- Applied Statistics and Analytics
- Biostatistics
- Statistical Science

Minors

- Actuarial Science
- Statistics

Course Information

- Statistics (Stat) Courses

Faculty

# Statistics (Stat)

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## Undergraduate Courses

### 100-Level Courses

STAT 105 : Introduction to Statistics. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 97 or equivalent.

DESCRIPTION: Fundamental ideas and applications of statistics.

**Course Outcomes**

- Understand and appreciate the value of statistics as a discipline and its relevance for general education
- Evaluate the validity of research findings from observational studies and simple experiments by asking appropriate questions regarding data collection and analysis
- Analyze data using appropriate graphical methods and numerical summaries
- Distinguish between observational studies and experiments in terms of how data is collected and what appropriate conclusions to make
- Determine potential associations between two categorical and between two quantitative variables
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem

STAT 121 : Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

: Honors Principles of Statistics.

**Course Outcomes**

STAT 123 : Introduction to R Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 121; or STAT 151; or STAT 201

DESCRIPTION: Base R programming skills, introductory statistical analysis and graphics, simulation of introductory statistical concepts.

**Course Outcomes**

There are no course outcomes available

STAT 124 : SAS Base Programming Skills. (1.5:1.5:1.5)

WHEN TAUGHT: Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Base SAS programming skills, introductory statistical analysis and graphics, simulation of introductory statistical concepts.

**Course Outcomes**

There are no course outcomes available

STAT 151 : Introduction to Bayesian Statistics. (3:3:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: MATH 112

RECOMMENDED: Concurrent enrollment in MATH 113.

DESCRIPTION: The scientific method; conditional probability; Bayes' Theorem; conjugate distributions: Beta-binomial, Poisson-gamma, normal-normal; Gibbs sampling.

**Course Outcomes**

- Explain how conditional probability and Bayes' Theorem relate to the analysis of data via the Bayesian paradigm
- Identify the conjugate priors of the normal (mean and variance), binomial, and Poisson distributions and derive the respective posterior distributions
- Explain why Gibbs and Metropolis samplers work and when they are appropriate to use
- Code in R a Gibbs sampler and/or Metropolis sampler for a simple non-conjugate posterior distributions
- Interpret and explain the results of Bayesian analysis

STAT 199R : Academic Internship. (.5-3:ARR:ARR)

PREREQUISITE: Department chair's and internship coordinator's consent

DESCRIPTION: Work experience evaluated by supervisor and posted on student's transcript.

**Course Outcomes**

- Practice appropriate dress and etiquette in varied business settings
- Demonstrate good work ethics
- Demonstrate effective written and oral communication skills as they report on their internship

### 200-Level Courses

STAT 201 : Statistics for Engineers and Scientists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: MATH 112; or MATH 119

DESCRIPTION: The scientific method; probability, random variables, common discrete and continuous random variables, central limit theorem; confidence intervals and hypothesis testing; completely randomized experiments; factorial experiments.

**Course Outcomes**

- Compute numerial and graphics summary statistics and explain the difference between populations given the summaries (numerical or graphical)
- Apply fundamentals of set theory and basic set operations to simple problems
- Distinguish between counting techniques (permutations, combinations) and compute the number of possible combinations for simple problems
- Solve simple problems using axioms of probability, conditional probability, independence, and Bayes' theorem
- Compute probabilities, expected values, and variances using the PDF of a discrete and a continuous univariate random variable
- Understand the definition of a sampling distribution, identify the mean, variance, and shape of the sampling distribution given the population information, and explain the application and importance of the Central Limit Theorem
- Understand the basics of experimental design, including the definition of the experimental unit, response, variable, factor(s), and level(s) of a basic experiment, and the role of randomization and replication to permit causal inference
- Compute the confidence interval for μ from a random sample and make the correct decision about an experiment when given a confidence interval
- Compute the test statistic and p-value for H0 : μ = μ0 from a random sample
- Make the correct decision when given the p-value for a hypothesis test and compute the ANOVA table for the data from a completely randomized design
- Compute pairwise confidence intervals on the difference in means (Fisher, Bonferroni) to understand a significant overall F-test from a completely randomized design
- Compute the ANOVA table for data from a two factor experiment
- Explain a statistically significant interaction
- Perform a two factor (or 2^3) experiment (in a group), compute the ANOVA table from the observed data, and write a technical report of the results of the experiment with appropriate graphics of significant effects or interactions

STAT 223 : Applied R Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 123

RECOMMENDED: Concurrent enrollment in Stat 124.

DESCRIPTION: Advanced R programming skills; communicate with other packages and programs.

**Course Outcomes**

There are no course outcomes available

STAT 224 : Applied SAS Programming. (1.5:1.5:1.5)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: STAT 124

RECOMMENDED: Concurrent enrollment in Stat 123.

DESCRIPTION: Advanced SAS programming skills, advanced DATA step programming, ODS, simple MACRO programs, Proc SQL,

Proc REPORT, communicate with other packages and programs.

**Course Outcomes**

There are no course outcomes available

STAT 230 : Analysis of Variance. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

RECOMMENDED: Concurrent enrollment in MATH 112.

DESCRIPTION: Scientific method, statistical thinking, sources of variation, completely randomized design, ANOVA, power and sample size considerations, multiple testing, randomized complete blocks, factorial designs, interactions. Introduction to statistical software.

**Course Outcomes**

- Define the experimental unit, response variable, factor(s), and level(s) of a basic experiment
- Understand the role of randomization and replication in inferring causation
- Perform a completely randomized design and construct the ANOVA table in SAS and R
- Compute the minimum number of replicates in a completely randomized design to achieve a given level of power
- Compute pairwise tests of differences in means in SAS and R to understand a significant overall F-test
- Perform a randomized complete block design and construct the ANOVA table in SAS and R
- Perform a factorial design and construct the ANOVA table in SAS and R
- Explain a statistically significant interaction
- Describe the differences between a split plot and a two-way ANOVA

STAT 234 : Methods of Survey Sampling. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Sampling frames; questionnaire design; simple random, systematic, stratified, and cluster sampling methods; comparing domain means; contingency table analysis.

**Course Outcomes**

- Identify and sample using simple random sampling and various forms of stratified sampling, cluster sampling, and systematic sampling
- Accurately identify and perform variance calculations for basic designs
- Participate in a real project involving sampling methodologies and appropriate point estimate and variance calculations
- Create graphical representations of results
- Demonstrate effective written and oral communication skills as they present their findings

STAT 240 : Discrete Probability. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: STAT 121; or STAT 151; or STAT 201; or Stat 301.

DESCRIPTION: Set theory; discrete probability; conditional probability; finite sample spaces; discrete random variables (pdf, cdf, moments).

**Course Outcomes**

- Apply fundamentals of set theory and basic set operations
- Enumerate the elements of a discrete sample space
- Demonstrate familiarity with counting techniques---sampling with order, without order, binomial coefficients
- Solve probability problems in finite sample spaces
- Solve problems using axioms of probability, conditional probability, independence, and Bayes theorem
- Calculate expected values and variances of discrete random variables
- Understand the assumptions and properties of the named discrete distributions (Bernoulli, binomial, Poisson, geometric)
- Solve problems with the pdf, cdf, moments of discrete univariate random variables

STAT 274 : Theory of Interest. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: MATH 112

RECOMMENDED: Pass SOA Exam P.

DESCRIPTION: Theory of interest, annuities, amortization, financial derivatives. Prepares for SOA Exam FM.

**Course Outcomes**

There are no course outcomes available

STAT 290 : Communication of Statistical Results. (1:1:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 230 & WRTG 150; or STAT 230 & PHIL 150; or STAT 230 & ENGL 115

DESCRIPTION: Introduction to writing within the discipline including the effective use of graphics, tables, and equations. Resources and guidelines for writing and presenting statistical results.

**Course Outcomes**

- Write a technical report on a statistical analysis
- Create effective statistical graphics

- Use LaTeX to create documents and presentations
- Understand ethical considerations in misleading presentation of data

**300-Level Courses**

STAT 301 : Statistics and Probability for Secondary Educators. (3:3:2)

WHEN TAUGHT: Fall; Summer

PREREQUISITE: MATH 113

DESCRIPTION: Statistics and probability, emphasizing secondary-specific curriculum. Principles of counting, probability distributions, density functions, graphical methods, descriptive and inferential statistics, computer package.

**Course Outcomes**

- Identify and provide examples of basic statistical terminology, such as population, sample, and random variable
- Construct, read, and interpret data displays and decide the most appropriate procedure for data analysis
- Summarize data graphically and numerically
- Identify elements and distinguish between observational studies and experiments
- Compute probabilities for simple events
- Create and interpret by application of a random variable discrete and normal probability distributions
- Model situations by using experimental or theoretical probabilities
- Become aware of misconceptions and errors about statistics and probability
- Make inferences, draw conclusions, and evaluate arguments from a data analysis
- Explain the need for statistics in understanding real-world processes (i.e., by accounting)
- Develop simple activities to reinforce basic statistical topics to middle school and high school students

STAT 330 : Introduction to Regression. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 230 & MATH 112

RECOMMENDED: Stat 123 and Stat 124; MATH 113 or concurrent enrollment.

DESCRIPTION: Regression, transformations, residuals, indicator variables, variable selection, logistic regression, time series, observational studies, statistical software.

**Course Outcomes**

- Explain the difference between ANOVA and regression, and their computational methods
- Explain the difference in inference between a designed experiment and observational study
- Fit a regression model in SAS and R
- Apply appropriate transformations to the response variable to improve agreement with regression assumptions
- Use residuals and influence diagnostics to assess model fit, agreement with regression assumptions, and identify outliers and influential observations
- Create sets of indicator variables for categorical explanatory variables
- Apply step-wise selection to identify a subset regression model that selects the most significant explanatory variables from a large data set
- Fit a logistic regression model in SAS and R
- Fit an ARIMA(p,d,q) model and generate forecasts with prediction intervals in SAS and R

STAT 340 : Inference. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 240 & MATH 113

RECOMMENDED: Stat 123 and Stat 124.

DESCRIPTION: Continuous random variables (pdf, cdf, moments); sampling distributions; Central Limit Theorem; frequentist inference (estimation, intervals); Bayesian inference (estimation, intervals); simulation.

**Course Outcomes**

- Understand assumptions and properties of named continuous univariate distributions: normal, beta, gamma, exponential
- Solve problems using pdf's and cdf's of continuous distributions
- Calculate expectation, variance, covariance, and correlation
- Understand the Central Limit Theorem via simulation and use it to calculate probabilities
- Make inferences on a population proportion using a random sample from a binomial distribution and on a population mean using a random sample from a normal distribution with known variance, including:deriving the sampling distributions of the sample mean and proportionderiving the posterior distributions of the mean and proportion using conjugate priorsderiving the maximum likelihood and Bayes estimators of the mean and proportionusing a pivot to construct an approximate 100(1 - α)% confidence intervals for the mean and proportionconstructing Bayesian confidence intervals for the mean and proportion

STAT 370 : Statistical Theory for Actuaries. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: STAT 340; Concurrent enrollment in MATH 314

DESCRIPTION: Probability theory; discrete, continuous, mixture random variables; loss distributions; moment-generating functions; conditional probability, expectation; total probability; stochastic independence; transformations. Prepares for SOA Exam P.

**Course Outcomes**

- The assumptions and properties of the following named distributions: Bernoulli, Binomial, Hypergeometric, Negative Binomial, Poisson, Uniform, Gamma, Exponential, Normal, and Pareto
- Probability density functions, cumulative distribution functions, moment generating functions, and moments of univariate random variables
- The properties of joint, conditional, and marginal distributions
- The transformation of random variables using the CDF technique, change of variables, sums of random variables, convolution, and the MGF technique

STAT 372 : Actuarial Problems. (1:2:0)

PREREQUISITE: STAT 370.

DESCRIPTION: Applying mathematical statistics in actuarial science. Prepares for SOA Exam P.

**Course Outcomes**

- The primary learning outcome of this course is to provide additional Exam P preparation for students who have completed Statistics 370
- Students will, upon course completion, be more adept at solving problems related to material covered in Statistics 370

**400-Level Courses**

STAT 424 : Statistical Computing. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 223 & STAT 224 & STAT 330

DESCRIPTION: Create and interact with relational databases comprised of large real world data; integrate previous course work into a single research project from formulation to final report; solve statistical problems using a combination of SAS, R, and SQL skills.

**Course Outcomes**

There are no course outcomes available

STAT 431 : Experimental Design. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 330

DESCRIPTION: Basic designs, power and sample size, Latin squares, incomplete blocks, change-over designs, factorials, fractional factorials, confounding, split-plots, response surface designs.

**Course Outcomes**

- Choose an experimental design plan that is appropriate for the research problem at hand
- Construct the design, including determining the proper number of replicates and the creation of a randomized data collection form
- Execute the plan to collect the data, or advise a colleague to do it
- Determine the model appropriate for the data
- Fit the model to the data, and verify that the assumptions have been satisfied
- Interpret the results and present the data in a meaningful way to answer the research problem at hand

STAT 435 : Nonparametric Statistical Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 511

DESCRIPTION: Permutation tests, rank-based methods, analysis of contingency tables, bootstrap methods, curve fitting.

**Course Outcomes**

- Explain and provide examples of the trade-off between parametric assumptions and efficiency of statistical inference
- Compute the following rank-based methods: Wilcoxon Rank-Sum test, Mann-Whitney test, Signed-Rank test, Kruskal-Wallis test, Spearman Rank Correlation
- Formulate and compute permutation tests for 2-sample, K-sample, and contingency tables
- Compute the following tests for contingency tables: Fisher's exact test, Mantel-Haenszel test, McNemar's test
- Formulate and compute bootstrap (resampling) confidence intervals
- Compute generalized additive models (GAM) with splines or smoothers for possible nonlinear effects in R

STAT 451 : Applied Bayesian Statistics. (3:3.0:)

PREREQUISITE: STAT 151 & STAT 330; Concurrent enrollment in STAT 340.

DESCRIPTION: Bayesian analogs of t-tests, regression, ANOVA, ANCOVA, logistic regression, and Poisson regression implemented using both JAGS and Proc MCMC

**Course Outcomes**

- Students will be able to apply, implement and interpret a fully Bayesian approach to relevant statistical problems, including design, model selection, model fit steps.
- Students will be able to generate their own analysis of Bayesian models in R.
- Students will be able to understand, explain and demonstrate basic Bayesian theory and its usefulness in real-world applications.

STAT 462 : Quality Control and Industrial Statistics. (3:3:2)

WHEN TAUGHT: Fall

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Six sigma; tools with which to define, measure, analyze, improve, control. Advanced concepts in control charts, applying experimental design for process and product improvement.

**Course Outcomes**

- Explain the role of quality improvement as a business strategy

- Explain the relationship between variability in processes and process outputs and the quality and cost of the results produced
- Use the six sigma DMAIC process for quality improvement projects
- Design and use Shewhard, Cusum, and EWMA control chars to recognize common and special causes of variability
- Construct attribute and variables acceptance sampling plans
- Use other useful quality tools for measurement analysis, discovering root causes, and eliminating quality problems

STAT 466 : Introduction to Reliability. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 330; or STAT 340

DESCRIPTION: Mathematics, distributions, management, and maintenance of basic reliability concepts; collection and analysis of test data; fault tree analysis; applying reliability in various areas.

**Course Outcomes**

- Discuss reliability concepts
- Fit standard parametric distributions to censored reliability test data
- Analyze data from accelerated life tests
- Model reliability for simple systems
- Predict field failures
- Analyze repairable systems
- Make reliability plots of data
- Complete basic Bayesian analysis of reliability

STAT 469 : Applied Time Series and Forecasting. (3:3:0)

PREREQUISITE: STAT 330 & STAT 340

DESCRIPTION: Data mining, univariate ARIMA time series theory and application, seasonal models, spatial correlation models, conditional heteroscedastic models in financial time series, case studies.

**Course Outcomes**

- Define the autocovariance and autocorrelation functions
- Define weak stationarity
- Define white noise process
- Derive the mean, autocovariance, and autocorrelation of an AR and MA model
- Define an ARMA (p, q) process
- Select the order of an ARIMA model from the sample ACF and sample PACF
- Fit an ARIMA (p, d, q) model and generate forecasts with prediction intervals in R

STAT 475 : Life Contingencies. (3:3:0)

PREREQUISITE: STAT 474; or STAT 274

DESCRIPTION: Life tables, survival functions, contingent annuities, insurance, premiums, reserves, joint annuities and insurance. Prepares for SOA Exam MLC.

**Course Outcomes**

- The primary learning outcome of this course is to prepare students for Exam MLC offered by the Society of Actuaries
- Recognize, understand, and compute problems relating to survival models, including defining and computing expected values, variances, probabilities, and percentiles for continuous and discrete survival-time random variables
- Recognize, understand, and compute problems relating to life insurances and annuities, including expected values, variances and probabilities for present-value-of-benefit random variables defined on survival-time random variables, considerations for life insurances and annuities, and liabilities analyzing the present value-of-future-loss random variables

STAT 477 : Statistical Distributions for Actuarial Modeling and Data Analytics. (3:3:1)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 340

RECOMMENDED: Pass SOA Exam P.

DESCRIPTION: Analyze data from a risk-based application; select a suitable model and estimate parameters using MLE, method of moments, and Bayes methods; determine goodness of fit and measures of confidence for decision making.

**Course Outcomes**

There are no course outcomes available

STAT 496R : Academic Internship: Statistics. (.5-9:ARR:ARR)

PREREQUISITE: Department coordinator's consent.

DESCRIPTION: On-the-job experience or internships for undergraduates. Report is required.

**Course Outcomes**

- Practice appropriate dress and etiquette in varied business settings
- Demonstrate good work ethics
- Demonstrate effective written and oral communication skills as they report on their internship experience

STAT 497R : Introduction to Statistical Research. (.5-3:0:6)

PREREQUISITE: Department chair's consent.

DESCRIPTION: Review of current literature and survey of present status of significant statistical research; collaborative work

between student and faculty.

**Course Outcomes**

- Contribute to the research project in terms of literature review, data analysis, and reporting of preliminary results
- Demonstrate good work ethics (punctuality to meetings, follow-up of action items, and so forth)
- Show initiative in the conduct of research

STAT 499R : Honors Thesis. (.5-3:ARR:ARR)

PREREQUISITE: Departmental consent.

**Course Outcomes**

- Perform a literature review
- Understand the principles of the research process
- Apply sound statistical methodology to research situations
- Follow ethical procedures for storing, analyzing, and presenting data
- Document reproducible code
- Display evidence of intellectual/professional growth and development
- Communicate statistical ideas, arguments, and conclusions effectively

## 500-Level Graduate Courses (available to advanced undergraduates)

STAT 500 : (Stat-Chem-C S-Geol-Math-MthEd-Phscs) Business Career Essentials in Science and Math. (1.5:1.5:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction for science, math, and statistics majors to careers in industry. Project planning, oral and written business presentations, business accounting, and technology readiness.

**Course Outcomes**

- Demonstrate knowledge of business skills necessary to function as a scientist working in industry.Be able to explain how corporate politics can affect your career.
- Learn how to present concepts and ideas in a clear and effective manner in both oral and written form.
- Learn to read and understand corporate accounting statements and data and understand the basic ideas of project and portfolio management.Learn the steps to moving an idea from concept to completion in a business setting.

STAT 511 : Statistical Methods for Research 1. (3:3:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: STAT 121; or equivalent.

DESCRIPTION: Basic statistical methodologies and experimental design. Topics include simple analysis of variance, multiple regression, analysis of covariance, model selection.

**Course Outcomes**

- Describe the role of randomization and replication in inferring causation
- Use JMP (or other software) to read in data and compute numerical and graphical summaries of the data
- Use a t-test (one-sample, paired, and two-sample) to perform inference on means and know what the assumptions for use are
- Fit a one-way ANOVA and construct an interpret the ANOVA table in JMP (or other software)
- Fit both simple and multiple linear regression and interpret the results
- Use residuals and influence diagnostics to assess model fit, agreement with regression assumptions, and identify outliers and influential observations
- Critically read scientific literature of their field involving parametric linear models with a continuous response

STAT 512 : Statistical Methods for Research 2. (3:3:2)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 511

DESCRIPTION: Advanced statistical methodologies and experimental design. Topics include multi-way analysis of variance, mixed models analysis of variance, logistic regression, log-linear models, time series models, principal components, canonical correlation, common experimental designs.

**Course Outcomes**

- Fit a two-way ANOVA and interpret the main effects and interaction
- Explain the differences between fixed and random effects and interpret computer output from mixed model analyses
- Identify evidence of autocorrelation and fit an ar(1) model to analyze continuous time series data
- Recognize multivariate data, and appropriately carry out principal components analysis and canoncial correlation analysis using statistical software
- Interpret and calculate odds, odds ratios, risk differences, and relative risks from 2x2 contingency tables and describe which measures are justified in prospective and retrospective studies
- Use X^2 tests and Fisher's Exact tests to assess associations in 2x2 contingency tables
- Fit and interpret simple generalized linear regression models (binary response data and count response data) and draw appropriate conclusions justified by the study design
- Construct a factorial design and a screening design

STAT 535 : Linear Models. (3:3:0)

WHEN Fall

TAUGHT:

PREREQUISITE: Departmental consent.

DESCRIPTION: Theory of estimation and testing in linear models. Analysis of full-rank model, over-parameterized model, cell-means model, unequal subclass frequencies, and missing and fused cells. Estimability issues, diagnostics.

**Course Outcomes**

There are no course outcomes available

STAT 536 : Modern Regression Methods. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 535 & STAT 624; or departmental consent.

DESCRIPTION: Weighted least squares, Bayesian linear models, robust regression, nonlinear regression, local regression, generalized additive models, tree-structured regression.

**Course Outcomes**

- This course trains students in using statistical methods for modeling a response variable as a function of explanatory variables. Stat 535 (a prerequisite) covered linear models, and this course attempts to cover the complement set. At a minimum you will learn the derivation, computation, and application of the different methods on data. As part of the first-year MS core, this course material will be part of the Comprehensive Written Exam.
- Review Linear Regression Models
- Review Weighted Least Squares, Mixed Models
- Bayesian Linear Regression
- Measurement Error Models
- Generalized Linear Models (logistic)
- Model Assessment and Selection
- Shrinkage Methods, Bias-Variance Tradeoff, Subset Selection
- Local Regression (splines, smoothers)
- Generalized Additive Models (GAM)
- Tree-based Models, Random Forests
- Boosting, Bayesian Adaptive Regression Trees
- p >> n

STAT 538 : Survival Analysis. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: STAT 340

DESCRIPTION: Basic concepts of survival analysis; hazard functions; types of censoring; Kaplan-Meier estimates; Logrank tests; proportional hazard models; examples drawn from clinical and epidemiological literature.

**Course Outcomes**

- Understand the basic underlying theory of survival analysis methods
- Conduct estimation of the survival function for a single sample
- Conduct formal comparison of survival functions for two samples
- Conduct formal analysis through incorporation of covariates
- Conduct formal analysis in high-dimensional, low-sample size settings
- Be able to assess the appropriateness of the use of methods for a given data set (given the scientific questions of interest and given the data characteristics)
- Be able to effectively communicate the results of data analyses

STAT 590R : Statistical Consulting. (1-3:Arr:0)

PREREQUISITE: Departmental consent.

DESCRIPTION: Introduction to statistical consulting, oral presentations, presentation packages, written reports. Extensive applied experience in the Center for Collaborative Research and Statistical Consulting.

**Course Outcomes**

- Work in a team with members from other disciplines
- Elicit the relevant information from a non-statistician in order to complete the correct statistical analysis
- Communicate statistical concepts to a non-statistician
- Make oral and written presentations of statistical results to a non-statistician

STAT 591R : Graduate Seminar in Statistics. (0:1:0)

WHEN TAUGHT: Fall; Winter

**Course Outcomes**

- Identify areas of emergent statistical research
- Describe elements of the effective presentation of statistical results to a specialized audience

STAT 595R : Special Topics in Statistics. (1-3:ARR:0)

PREREQUISITE: Instructor's consent.

**Course Outcomes**

- This is a course with no set curriculum. The learning objectives will be determined by the directing instructor. The outcomes will be specific to the special topic as directed by the professor. In general, after completion of a special topics course in statistics, the student will:
- Demonstrate understanding of and competence in subject matter, varying by course topic
- Explain the historical context or modern relevance of the selected special topics curriculum
- Develop proficiency in specialized quantitative methods and their use in a modern statistical software package.

: Statistical Computations.

**Course Outcomes**

: Theory of Risk.

**Course Outcomes**

: Expert Systems in Statistics.

**Course Outcomes**

: Biostatistical Methods.

**Course Outcomes**

: Quality Methods.

**Course Outcomes**

: Sampling Practicum.

**Course Outcomes**

STAT 599R : Academic Internship: Statistics. (1-9:0:0)

PREREQUISITE: Departmental consent.

DESCRIPTION: On-the-job experience. Report required.

**Course Outcomes**

- Apply classroom knowledge and skills to day-to-day statistical tasks
- Explore personal career goals and expectations
- Develop problem solving skills
- Practice appropriate dress and etiquette in varied business settings
- Effectively communicate results of statistical analyses to clients, supervisors, and colleagues
- Demonstrate effective written and oral communication skills as they report on their internship experience

## Graduate Courses

For 600- and 700-level courses, see the BYU 2014–2015 Graduate Catalog.

**Back to Statistics Department Home**

College of Physical and Mathematical Sciences Home

Statistics Department Home

Majors

- BS in Actuarial Science

BS in Statistics

Emphases

- Applied Statistics and Analytics
- Biostatistics
- Statistical Science

Minors

- Actuarial Science
- Statistics

Course Information

- Statistics (Stat) Courses

Faculty

# Statistics Faculty

Show All
Hide All

## Professors

Christensen, William F.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1995
PhD, Iowa State University, 1999

Fellingham, Gilbert W.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** BA, Occidental College, 1971
MS, Brigham Young University, 1977
MS, Brigham Young University, 1978
MS, University of Washington, 1988
PhD, University of Washington, 1990

Grimshaw, Scott D.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** BS, Southern Utah State College, 1983
MS, Texas A&M University, 1985
PhD, Texas A&M University, 1989

Lawson, John S.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** AA, Los Angeles Valley College, 1967
BS, Brigham Young University, 1969
MS, Brigham Young University, 1971
MS, Rutgers College, 1976
PhD, Polytechnic Institute of New York, 1984

Reese, C. Shane

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1995
PhD, Texas A&M University, 1999

Schaalje, G. Bruce

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** AA, Ricks College, 1975
BS, Brigham Young University, 1977
MS, Brigham Young University, 1979
MS, University of Washington, 1981
PhD, North Carolina State University, 1988

Scott, Del T.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1970
MS, Brigham Young University, 1973
PhD, Pennsylvania State University, 1977

Tolley, Harold Dennis

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1970
PhD, University of North Carolina, Chapel Hill, 1974

## Associate Professors

Dahl, David B.

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1997
MS, Brigham Young University, 1998
PhD, University of Wisconsin-Madison, 2004

Engler, David

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1997
MS, Brigham Young University, 2002
AM, Harvard University, 2006
PhD, Harvard University, 2007

## Assistant Professors

Berrett, Candace

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2005
MS, The Ohio State University, 2007
PhD, The Ohio State University, 2010

Blades, Natalie Jean

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Assistant Professor
**DEGREES:** AB, Wellesley College, 1997
MSE, Johns Hopkins University, 2002
PhD, Johns Hopkins University, 2003

Heaton, Matthew Joseph

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2006
MS, Brigham Young University, 2007
PhD, Duke University, 2011

Tass, Shannon Neeley

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2001
MS, Brigham Young University, 2003
MA, Rice University, 2008

PhD, Rice University, 2008

## Associate Teaching Professor

Nielsen, Perpetua Lynne

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Associate Teaching Professor
**DEGREES:** BS, University of Philippines, 1973
MS, Brigham Young University, 1984

## Research Associate Professor

Eggett, Dennis Lee

**COLLEGE:** Physical and Mathematical Sciences
**DEPARTMENT:** Statistics
**RANK:** Research Associate Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, Brigham Young University, 1983
PhD, North Carolina State University, 1987

- Education
- Engineering and Technology
- Family, Home, and Social Sciences
- Fine Arts and Communications
- Humanities
- Law School
- Life Sciences
- Management
- Nursing
- Physical and Mathematical Sciences
- Religious Education
- Undergraduate Education

**Departments**

- Ancient Scripture
- Church History and Doctrine

# Religious Education

370 JSB
(801) 422-2735

**Dean:** Brent L. Top, Professor, Ancient Scripture
**Associate Dean:** Dana M. Pike, Professor, Church History and Doctrine
**Associate Dean:** Robert C. Freeman, Professor, Church History and Doctrine

Academic Departments and Curriculum Areas

Ancient Scripture
Church History and Doctrine

Research and Academic Support Areas

Religious Studies Center

## Purposes

The mission of Religious Education at Brigham Young University is to assist individuals in their efforts to come unto Christ by teaching the scriptures, doctrine, and history of the restored gospel of Jesus Christ through classroom instruction, gospel scholarship, and outreach to the larger community.

Religious Education oversees the teaching of and research into scripture, doctrine, LDS and Christian church history, and world religions. We strive to create a learning environment and provide resources that are "spiritually strengthening, intellectually enlarging, and character building" and an educational experience that results in "lifelong learning and service" (The Aims of a BYU Education).

Religious Education seeks to spread the light of restored truth to Latter-day Saints and to those not of the LDS faith in three ways:

1. Instruction. We seek in Religious Education to find new ways and more effective ways to communicate timeless truths and to provide "a stimulating setting where a commitment to excellence is expected and the full realization of human potential is pursued" (BYU Mission Statement). In general, we search for ways to enhance the educational experience and to build a faith in and a commitment to the restored gospel that is as stimulating and satisfying to the mind as it is soothing and settling to the heart.
2. Scholarship. The search for new truths and the quest to better understand well-known truths are central to the work of Religious Education. While the ultimate interpretation of doctrinal matters rests with apostles and prophets, we seek to discover historical backgrounds, provide cultural and linguistic details, and explore new avenues of understanding into our faith, history, and way of life.
3. Outreach. An important dimension of the work of Religious Education is outreach, the effort to teach, share, and discuss Mormonism in the larger non-LDS community of scholars and to foster understanding between men and women of all faiths.

## Degrees Offered

Religious Education offers two programs leading to a master's degree: **Religious Education Master of Arts** designed for individuals recommended by Seminaries and Institutes and **Religious Studies Master of Arts** for military chaplaincy candidates.

For further information on these programs, please contact Religious Education, 370 JSB, (801) 422-2735. No other degree programs are offered in this area.

## Scholarships and Awards

Graduate-level scholarships and awards are available to qualified students. Applications may be obtained from the Office of the Dean of Religious Education, 370 JSB.

## Religious Studies Center

THomas A. Wayment, Director
167 HGB
(801) 422-6975
http://rsc.byu.edu/

The Religious Studies Center (RSC) is the research and publication arm of Religious Education. It continues to pursue its original charter to encourage and sponsor serious, faithful, gospel-related scholarship and the ensuing publication of that scholarship. It fulfills the charge to help meet the university's commitment to religious studies and Religious Education's aim to teach and preserve the doctrine of the gospel of Jesus Christ. It also serves the greater Church through the publication of the works of Religious Education faculty and other scholars who have written important, timely, scholarly work of a faith-promoting nature.

To encourage and promote religiously oriented scholarship, the RSC awards grants and provides other financial assistance. It proactively reaches out to faculty to encourage research in specific areas and supports them in the publication of their findings. To

accomplish this the RSC sponsors two faculty mentors, known as area directors, who oversee and fund research in Church history and ancient scripture.

**Religious Education Home**

**Ancent Scripture Department Home**

**Course Information**

- Ancient Scripture (Rel A) Courses

**Faculty**

# Ancient Scripture

Camille Fronk Olson, Chair
375A JSB, (801) 422-2067

Kerry M. Muhlestein, Associate Chair
316Q JSB, (801) 422-3911

# Ancient Scripture (Rel A)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

Asterisk (*) denotes core courses.

### 100-Level Courses

*REL A 121 : The Book of Mormon. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Narrative, doctrines, and precepts of the Book of Mormon. Covers 1 Nephi through Alma 29.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the Book of Mormon narrative or story.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the Book of Mormon's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the Book of Mormon bears witness of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected Book of Mormon passages can be applied to daily living.

*REL A 122 : The Book of Mormon. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Narrative, doctrines, and precepts of the Book of Mormon. Covers Alma 30 through Moroni 10.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of --the Book of Mormon narrative or story.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Book of Mormon's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how the Book of Mormon bears witness of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how selected Book of Mormon passages can be applied to daily living.

### 200-Level Courses

*REL A 211 : The New Testament. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Historical background, narrative, and doctrines of the New Testament. Covers the life and teachings of Jesus Christ set forth in the four Gospels.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the New Testament bears witness of the mission and message of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected New Testament passages can be applied to daily living.

*REL A 212 : The New Testament. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer

TAUGHT:
DESCRIPTION: Historical background, narrative, and doctrines of the New Testament. Covers the Acts of the Apostles through the Revelation of John.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the New Testament bears witness of the mission and message of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected New Testament passages can be applied to daily living.

## 300-Level Courses

REL A 301 : The Old Testament. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Historical background, narrative, and doctrines of the Old Testament. Covers Genesis through 2 Samuel.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how selected Old Testament passages can be applied to daily living.

REL A 302 : The Old Testament. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Historical background, narrative, and doctrines of the Old Testament. Covers 1 Kings through Malachi.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how selected Old Testament passages can be applied to daily living.

REL A 304 : Writings of Isaiah. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Teachings and prophecies of Isaiah in light of their historical context and relevance to latter-day people.

**Course Outcomes**

There are no course outcomes available

REL A 320 : The Joseph Smith Translation of the Bible. (2:2:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
DESCRIPTION: Historical significance of Joseph Smith's translation of the Bible, its relationship to the other standard works, and its doctrinal contributions.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the historical background of the JST.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the doctrinal contribution of the JST.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the relationship between product and process in development of the JST.

REL A 327 : The Pearl of Great Price. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Historical background and doctrines of the Pearl of Great Price.

**Course Outcomes**

There are no course outcomes available

REL A 392R : Special Studies in Religion: Ancient Scripture. (.5-3:ARR:0)

OFFERED: Honors also

WHEN TAUGHT: Contact Department.

DESCRIPTION: Topical studies in religion based on student interest and teacher expertise.

**Course Outcomes**

- Students will demonstrably learn relevant doctrine, principles and/or history of a specific aspect

: Writings of John.

**Course Outcomes**

: Honors: Special Studies in Religion: Ancient Scripture.

**Course Outcomes**

: Honors: Writings of John.

**Course Outcomes**

: Special Topics in the Book of Mormon. (2:2:0)

**Course Outcomes**

## Jerusalem Center Courses (Rel A)

The following courses are offered only at the BYU Jerusalem Center for Near Eastern Studies. Jerusalem Center courses may not be repeated.

### 100-Level Courses

REL A 101 : Old Testament Survey. (2:2:3)

OFFERED: Offered only at the BYU Jerusalem Center for Near Eastern Studies.

WHEN TAUGHT: Spring; Summer

DESCRIPTION: Survey of the Old Testament, integrated with extensive field study in the biblical world; leads to understanding, appreciation, and application of scriptural teachings today.

NOTE: Jerusalem Center courses may not be repeated.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the Old Testament narrative in its context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements of this course will be able to demonstrate that they have acquired and understanding of how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements of this course will be able to demonstrate that they have acquired an understanding of how selected Old Testament passages can be applied to daily living.

*REL A 111 : New Testament Survey of the Gospels. (2:2:3)

OFFERED: Offered only at the BYU Jerusalem Center for Near Eastern Studies.

WHEN TAUGHT: Spring; Summer

DESCRIPTION: Survey of the New Testament Gospels integrated with extensive field experience in the biblical world; leads to understanding, appreciation, and application of scriptural teachings today.

NOTE: Jerusalem Center courses may not be repeated.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the New Testament bears witness of the mission and message of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected New Testament passages can be applied to daily living.

### 300-Level Courses

REL A 303R : Old Testament Studies. (1.5-3:Arr.:Arr.)

OFFERED: Offered only at the BYU Jerusalem Center for Near Eastern Studies.

WHEN: Fall; Winter; Spring; Summer

TAUGHT:

DESCRIPTION: Study of the Old Testament integrated with extensive field experiences in the biblical world; leads to an understanding, appreciation, and application of scriptural teachings today.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the Old Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected Old Testament passages can be applied to daily living.

*REL A 311R : New Testament Studies of the Gospels. (1.5-3:Arr.:Arr.)

OFFERED: Offered only at the BYU Jerusalem Center for Near Eastern Studies.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Study of the New Testament Gospels integrated with extensive field experiences in the biblical world; leads to an understanding, appreciation, and application of scriptural teachings today.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the New Testament bears witness of the mission and message of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected New Testament passages can be applied to daily living.

## Graduate Courses

For graduate courses, see the BYU 2014–2015 Graduate Catalog.

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**Course Information**

- Ancient Scripture (Rel A) Courses

**Faculty**

# Ancient Scripture Faculty

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## Professors

Ball, Terry Briggs
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1979
MA, Brigham Young University, 1990
PhD, Brigham Young University, 1992

Hoskisson, Paul Y.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1969
MA, Brigham Young University, 1972
PhD, Brandeis University, 1985

Hull, Kerry M.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BA, Utah State University
MS, Georgetown University
PhD, The University of Texas at Austin

Huntington, Ray Lynn
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1972
MA, Brigham Young University, 1977
PhD, Brigham Young University, 1994

Jackson, Kent P.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1974
MA, University of Michigan, 1976
PhD, University of Michigan, 1980

Judd, Daniel K.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BS, Southern Utah State University, 1980
MS, Brigham Young University, 1985
PhD, Brigham Young University, 1987

Largey, Dennis L.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BS, Brigham Young University—Hawaii, 1972
MA, Brigham Young University, 1976

EdD, Brigham Young University, 1981

Ogden, D. Kelly

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BA, Weber State College, 1971
MEd, Brigham Young University, 1974
MA, Institute of Holy Land Studies, Jerusalem, 1978
PhD, University of Utah, 1982

Olson, Camille Fronk

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BA, Utah State University, 1976
MA, Brigham Young University, 1986
PhD, Brigham Young University, 1996

Pike, Dana M.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1978
PhD, University of Pennsylvania, 1990

Seely, David R.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1981
MA, Brigham Young University, 1982
AM, University of Michigan, Ann Arbor, 1985
PhD, University of Michigan, Ann Arbor, 1990

Skinner, Andrew C.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BS, University of Colorado, 1975
MAR, Iliff School of Theology, 1978
MTh, Harvard University, 1980
PhD, University of Denver, 1986

Wayment, Thomas Arvel

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Professor
**DEGREES:** BA, University of California, Riverside, 1994
MA, Claremont Graduate School, 1998
PhD, Claremont Graduate School, 2000

## Associate Professors

Belnap, Daniel Lee

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1996
MA, Brigham Young University, 1999
MA, University of Chicago, 2002
PhD, University of Chicago, 2007

Hauglid, Brian Michael

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1984
MA, University of Utah, 1991
PhD, University of Utah, 1998

Huntsman, Eric D.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1990
MA, University of Pennsylvania, 1992
PhD, University of Pennsylvania, 1997

Judd, Frank F.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1993
MA, Brigham Young University, 1995
MA, University of North Carolina, Chapel Hill, 1997
PhD, University of North Carolina, Chapel Hill, 2003

Ludlow, Jared W.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1992
MA, University of California, Berkeley, 1994
PhD, University of California, Berkeley, 2000

Muhlestein, Kerry

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BS, Brigham Young University, 1994
MA, Brigham Young University, 1997
PhD, University of California, Los Angeles, 2003

Strathearn, Gaye

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1991
MA, Brigham Young University, 1992
PhD, Claremont Graduate University, 2004

Swift, Charles

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1983
MA, Brigham Young University, 1987
PhD, Brigham Young University, 2003

Whitchurch, David M.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BS, Utah State University, 1977
MEd, Brigham Young University, 1982
PhD, Brigham Young University, 1991

Wilson, Keith J.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1976
MA, Brigham Young University, 1981
PhD, University of Utah, 1995

## Assistant Professors

Blumell, Lincoln H.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Assistant Professor

**DEGREES:** BA, University of Calgary, 2001
MA, University of Calgary, 2003
MSt, University of Oxford, 2004
PhD, University of Toronto, 2009

Easton-Flake, Amy
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2001
MA, Brigham Young University, 2003
PhD, Brandeis University, 2011

Grey, Matthew J.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2003
MA, Andrews University, 2005
MSt, University of Oxford, 2006
PhD, University of North Carolina at Chapel Hill, 2011

Hilton, III, John L.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2000
MEd, Harvard University, 2004
PhD, Brigham Young University, 2010

Hopkin, Shon D.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1997
MA, Brigham Young University, 2001
PhD, University of Texas, Austin, 2011

Wright, Mark A.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Assistant Professor
**DEGREES:** BA, University of California, Los Angeles, 2003
MA, University of California, Riverside, 2004
PhD, University of California, Riverside, 2008

## Teaching Professors

Johnson, Stanley A.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Teaching Professor
**DEGREES:** BS, Brigham Young University, 1975
MS, Brigham Young University, 1979
EdD, Brigham Young University, 1987

Merrill, Byron R.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Teaching Professor
**DEGREES:** BA, Brigham Young University, 1972
JD, University of California, Davis, 1975

Parker, Todd B.
**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Teaching Professor
**DEGREES:** BS, Weber State College, 1974
MEd, Brigham Young University, 1978
EdD, Brigham Young University, 1985

## Associate Teaching Professor

Marsh, W. Jeffrey

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Associate Teaching Professor
**DEGREES:** BA, University of Utah, 1981
MEd, Brigham Young University, 1984
PhD, Brigham Young University, 1989

## Assistant Teaching Professor

Griffin, Tyler J.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Assistant Teaching Professor
**DEGREES:** BA, Utah State University, 1998
MS, Utah State University, 2001
PhD, Utah State University, 2007

## Instructor

Farnsworth, Brad W.

**COLLEGE:** Religious Education
**DEPARTMENT:** Ancient Scripture
**RANK:** Instructor
**DEGREES:** BS, Brigham Young University, 1979
MAcc, Brigham Young University, 1979

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**Course Information**

- Church History and Doctrine (Rel C) Courses

**Faculty**

# Church History and Doctrine

Richard E. Bennett, Chair
375B JSB, (801) 422-3691

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**Course Information**

- Church History and Doctrine (Rel C) Courses

**Faculty**

# Church History and Doctrine (Rel C)

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## Undergraduate Courses

**Asterisk (*) denotes core courses.**

### 100-Level Courses

REL C 100 : Introduction to the LDS Church. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Introduction to the doctrines, history, and practices of The Church of Jesus Christ of Latter-day Saints for students who are not members of the church.

NOTE: It is strongly recommended that this course be taken the first semester at BYU.

**Course Outcomes**

- Students will demonstrate their gained understanding of basic LDS history, culture, doctrine, and terminology
- Students will be empowered to excel in Religion classes with LDS peers
- Students will gain more from their BYU experience

REL C 130 : Missionary Preparation. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Focuses upon the purpose, skills, and doctrines of missionary work and prepares prospective missionaries for a more meaningful MTC and mission experience.

NOTE: Recommended for all prospective missionaries. This class may not be taken or retaken by returned missionaries or non-LDS students.

**Course Outcomes**

There are no course outcomes available

### 200-Level Courses

REL C 234 : LDS Marriage and Family. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: LDS doctrines and principles of marriage and family.

**Course Outcomes**

- Students will learn and identify specific LDS doctrines and principles of successful marriage and family relationships.
- Students will accurately express LDS doctrines and principles of successful marriage and family relationships.
- Students will find and act on prophetic teachings regarding LDS expectations for marriage and family relationships.
- Students will discover and apply doctrines, instruction, and counsel given to Latter-Day Saints concerning marriage and family relationships.
- Students will remember and discuss LDS doctrines and teachings concerning the family.
- Students will discern between LDS principles of marriage and family and other views.

: Honors: LDS Marriage and Family.

**Course Outcomes**

REL C 261 : Introduction to Family History (Genealogy). (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Introduction to the doctrinal significance, necessary skills, and available resources dealing with family history and genealogy.

**Course Outcomes**

There are no course outcomes available

REL C 293R : Specialized Studies in Family History (Genealogy). (1:1.0:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Using documents from specific regional and organizational sources to identify ancestors and submit their names for temple ordinances.

**Course Outcomes**

No outcomes are available at this time.

: LDS Family History.

**Course Outcomes**

: United States and Canada Family History.

**Course Outcomes**

: British Family History.

**Course Outcomes**

: Scandinavian Family History.

**Course Outcomes**

: Native American Family History.

**Course Outcomes**

: French and Italian Family History.

**Course Outcomes**

: Latin American, Spanish, and Portuguese Family History.

**Course Outcomes**

: Slavic Family History.

**Course Outcomes**

: Germanic Family History.

**Course Outcomes**

## 300-Level Courses

*REL C 324 : The Doctrine and Covenants. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Origin, content, and teachings of the Doctrine and Covenants. Covers Sections 1 through 76.

**Course Outcomes**

- Students will learn the origin, content, and teachings of Doctrine and Covenants sections 1-76
- Students will demonstrably analyze the relevant revelation texts
- Students will demonstrably remember the teachings of the relevant revelation texts
- Students will understand and identify what the relevant revelation texts meant to their original recipients
- Students will apply the relevant revelation texts to personal and present situations

: Honors: The Doctrine and Covenants.

**Course Outcomes**

*REL C 325 : The Doctrine and Covenants. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Origin, content, and teachings of the Doctrine and Covenants. Covers Sections 77 through Official Declaration 2.

**Course Outcomes**

- Students will learn the origin, content, and teachings of Doctrine and Covenants sections 77 through Official Declaration 2
- Students will demonstrably analyze the relevant revelation texts
- Students will demonstrably remember the teachings of the relevant revelation texts
- Students will understand and identify what the relevant revelation texts meant to their original recipients
- Students will apply the relevant revelation texts to personal and present situations

: Honors: The Doctrine and Covenants.

**Course Outcomes**

REL C 333 : The Living Prophets. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Doctrines, administration, backgrounds, and current teachings of the living prophets, seers, and revelators.

**Course Outcomes**

- Students will accurately identify specific LDS doctrines, organization, government, and perspectives related to current members of the First Presidency and Quorum of Twelve Apostles
- Students will accurately articulate LDS doctrines and perspectives related to current members of the First Presidency and Quorum of Twelve Apostles
- Students will demonstrably identify, gather, and analyze biographical information of current members of the First Presidency and Quorum of Twelve Apostles
- Students will find and report on teachings of current members of the First Presidency and Quorum of Twelve Apostles
- Students will demonstrably discern the doctrines, instruction, and counsel of current members of the First Presidency and Quorum of Twelve Apostles

REL C 341 : Joseph Smith and the Restoration, 1805-1845. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Life and ministry of the Prophet Joseph Smith, coming forth of the Book of Mormon, organization of the church, foundational revelations, building the Kirtland Temple, Missouri persecutions, establishment of Nauvoo, and events leading to the Martyrdom.

**Course Outcomes**

There are no course outcomes available

REL C 342 : Pioneers and Persecution, 1846-1899. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Exodus from Nauvoo, the experience of Mormon Pioneers crossing the plains, establishing Zion in the Great Basin, plural marriage and government persecution, the Manifesto, and events leading to Utah statehood.

**Course Outcomes**

There are no course outcomes available

: Honors Pioneers and Persecution, 1846-1899.

**Course Outcomes**

REL C 343 : The Global Church, 1900 to the Present. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: The Church in the twentieth and twenty-first centuries, international expansion, significant developments of Church programs and structure, the Church during wartime, the world-wide spread of temples.

**Course Outcomes**

There are no course outcomes available

: Honors The Global Church, 1900 to the Present.

**Course Outcomes**

REL C 344 : Latter-day Saint History: The International Church. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Church history and doctrine from 1830 to the present in Britain, Europe, the Pacific, Asia, Latin America, Africa, the Near East, and other areas.

**Course Outcomes**

- Students will learn the history of how the Church of Jesus Christ of Latter-day Saints, has expanded globally and been influenced by global developments
- Students will demonstrably remember and analyze events and developments of the global aspects of LDS history
- Students will demonstrably remember participants in global LDS history and analyze their contributions.
- Students will demonstrably remember the geography of global LDS history
- Students will gain experience with the historical record of global LDS history

Students will relate global LDS history to larger historical contexts and patterns
- Students will examine and explain change over time and causes and effects as they relate to global LDS history

REL C 350R : Religious Studies in a World Setting. (1-3:Arr:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Religious studies related to Latter-day Saint foundations and doctrines as relevant to specific geographical regions (International Study Programs).

**Course Outcomes**

- Students will learn the LDS Church history of a particular region.
- Students will visit key LDS Church history sites in a particular region.
- Students will become acquainted with the challenges church members face in a particular region.
- Students interview Church members in a particular region relative to their history.

REL C 351 : Survey of World Religions. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Explores the origins, theological doctrines, scriptural works, and religious practices of several internationally religious traditions, including Christianity, Islam, Judaism, Hinduism, Sikhism, Buddhism, Taoism, Confucianism, and Shinto. Comparisions are offered between these religions, and Latter-day Saints belief and practice.

**Course Outcomes**

There are no course outcomes available

: Honors Survey of World Religions.

**Course Outcomes**

REL C 352 : Survey of Christianity. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: An examination of the history, doctrines, and liturgical practices of the three major branches of Christianity: Roman Catholicism, Eastern Orthodoxy, and Protestantism. Comparisons are offered between these religions, and Latter-day Saint belief and practice.

**Course Outcomes**

There are no course outcomes available

REL C 353 : American Christianity and the Restored Gospel. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: History, doctrine, and practices of the major Christian faiths of America in light of the restored gospel.

**Course Outcomes**

There are no course outcomes available

REL C 357 : Survey of Judaism and Islam. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Explores the origins, doctrines, scriptural works, history and religious practices of Judaism and Islam. Comparisons are offered between the two, and Latter-day Saint Christianity.

**Course Outcomes**

There are no course outcomes available

REL C 358 : Survey of Eastern Religions. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Introduces the history, beliefs, practices, and sacred texts of Hinduism, Janism, Buddhism, Sikhism, Confucianism, Daoism, and Shinto. Comparisons are offered between these religions, and Latter-day Saint belief and practice.

**Course Outcomes**

There are no course outcomes available

REL C 393R : Special Studies in Religion: Church History and Doctrine. (.5-3:ARR:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Topical studies in religion based on student interest and teacher expertise.

**Course Outcomes**

- · Students will demonstrably learn relevant doctrine, principles and/or history of a specific aspect of the restored gospel topics based on student interest and instructor expertise

: Presidents of the Church.

**Course Outcomes**

: Men and Women of Mormonism.

**Course Outcomes**

: LDS Temples.

**Course Outcomes**

: Book of Mormon Witnesses.

**Course Outcomes**

: Lectures on Faith.

**Course Outcomes**

: Doctrine and Teachings of Joseph Smith.

**Course Outcomes**

: Latter-Day Saints in Wartime.

**Course Outcomes**

: Family History in Great Britain. (1-3:ARR:0)

**Course Outcomes**

: Honors: Special Studies in Religion: Church History and Doctrine.

**Course Outcomes**

: Honors: Presidents of the Church.

**Course Outcomes**

: Honors: Men and Women of Mormonism.

**Course Outcomes**

: Honors: LDS Temples.

**Course Outcomes**

: Honors: Book of Mormon Witnesses.

**Course Outcomes**

: Honors: Lectures on Faith.

**Course Outcomes**

: Honors: Doctrine and Teachings of Joseph Smith.

**Course Outcomes**

: Honors: Latter-Day Saints in Wartime.

**Course Outcomes**

: Honors: Family History in Great Britain. (1-3:ARR:0)

**Course Outcomes**

: History of the English Bible. (2:2:0)

**Course Outcomes**

## 400-Level Courses

REL C 431 : Doctrines of the Gospel. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Doctrines of The Church of Jesus Christ of Latter-day Saints as taught in the scriptures and by latter-day prophets. Intended as a capstone experience to integrate doctrines and principles of the plan of salvation.

NOTE: Honors also.

**Course Outcomes**

- · Students will identify, understand, clarify, and explain core doctrines contained in the Standard Works of the Church of Jesus Christ of Latter-day Saints and taught by LDS prophets.

- · Students will discern whether their life choices are in harmony with the doctrines they understand
- · Students will explain how various aspects and principles of the plan of salvation work to bring to pass the immortality and eternal life of God's children

: Honors Doctrines of the Gospel.

**Course Outcomes**

REL C 471 : Teaching Seminary. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: An introduction to effective seminary teaching, includes discussion related to professional seminary expectations, teaching techniques, classroom management and direct experience in teaching seminary.

NOTE: For prospective seminary teachers only.

**Course Outcomes**

There are no course outcomes available

REL C 472 : Teaching the Developmentally Disabled. (2:2:0)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Training prospective Church Educational System teachers to effectively teach religious education to youth who are developmentally disabled.

**Course Outcomes**

- · Students will identify, understand, and respond to developmentally disabled seminary students
- Students will demonstrate in a classroom environment strategies for teaching the developmentally disabled.

REL C 475 : Seminary Teaching Seminar. (.5-2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Topics pertinent to success of newly appointed seminary teachers preparatory to fall teaching.

**Course Outcomes**

- Students will demonstrate teaching competence through a student teaching experience in a seminary classroom
- Students will demonstrate an ability to employ basic seminary teaching strategies in classroom presentations.

## Graduate Courses

For graduate courses, see the BYU 2014–2015 Graduate Catalog.

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**Church History and Doctrine Department Home**

**Course Information**

- Church History and Doctrine (Rel C) Courses

**Faculty**

# Church History and Doctrine Faculty

Show All
Hide All

## Professors

Baugh, Alexander L.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BS, Utah State University, 1981
MA, Brigham Young University, 1986
PhD, Brigham Young University, 1996

Bennett, Richard Edmond
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1972
MA, Brigham Young University, 1975
PhD, Wayne State University, 1984

Cowan, Richard O.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Occidental College, 1958
MA, Stanford University, 1959
PhD, Stanford University, 1961

Freeman, Robert C.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BS, Brigham Young University, 1985
JD, Western State University, 1989

Holzapfel, Richard Neitzel
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1978
MA, University of California, Irvine, 1990
PhD, University of California, Irvine, 1993

Minert, Roger P.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1977
MA, Ohio State University, 1987
PhD, Ohio State University, 1991

Newell, Lloyd
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Professor
**DEGREES:** BA, Brigham Young University, 1980
MA, Brigham Young University, 1985
PhD, Brigham Young University, 1999

Ostler, Craig James
- **COLLEGE:** Religious Education
- **DEPARTMENT:** Church History and Doctrine
- **RANK:** Professor
- **DEGREES:** BA, Brigham Young University, 1977
  MEd, Brigham Young University, 1979
  PhD, Brigham Young University, 1995

Richardson, Matthew O.
- **COLLEGE:** Religious Education
- **DEPARTMENT:** Church History and Doctrine
- **RANK:** Professor
- **DEGREES:** BA, Brigham Young University, 1987
  MEd, Brigham Young University, 1990
  EdD, Brigham Young University, 1996

Sperry, Kip
- **COLLEGE:** Religious Education
- **DEPARTMENT:** Church History and Doctrine
- **RANK:** Professor
- **DEGREES:** BS, Brigham Young University, 1971
  MLS, Brigham Young University, 1974

Top, Brent LaMar
- **COLLEGE:** Religious Education
- **DEPARTMENT:** Church History and Doctrine
- **RANK:** Professor
- **DEGREES:** BA, Brigham Young University, 1976
  MEd, Brigham Young University, 1980
  PhD, Brigham Young University, 1984

Woodger, Mary Jane
- **COLLEGE:** Religious Education
- **DEPARTMENT:** Church History and Doctrine
- **RANK:** Professor
- **DEGREES:** BS, Brigham Young University, 1980
  MEd, Utah State University, 1992
  EdD, Brigham Young University, 1997

Woods, Fred E.
- **COLLEGE:** Religious Education
- **DEPARTMENT:** Church History and Doctrine
- **RANK:** Professor
- **DEGREES:** BS, Brigham Young University, 1981
  MA, Brigham Young University, 1985
  PhD, University of Utah, 1991

## Associate Professors

Alford, Kenneth L.
- **COLLEGE:** Religious Education
- **DEPARTMENT:** Church History and Doctrine
- **RANK:** Associate Professor
- **DEGREES:** BA, Brigham Young University, 1979
  MA, University of Southern California, 1982
  MA, University of Illinois Urbana-Champaign, 1988
  PhD, George Mason University, 2000

Boone, David Flake
- **COLLEGE:** Religious Education
- **DEPARTMENT:** Church History and Doctrine
- **RANK:** Associate Professor
- **DEGREES:** BA, Brigham Young University, 1978
  MA, Brigham Young University, 1981
  EdD, Brigham Young University, 1992

Chadwick, Jeffrey R.
- **COLLEGE:** Religious Education
- **DEPARTMENT:** Church History and Doctrine
- **RANK:** Associate Professor

**DEGREES:** BA, Weber State College, 1978
MA, Brigham Young University, 1984
PhD, University of Utah, 1992

Esplin, Scott Clair
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BS, Southern Utah University, 1997
MEd, Brigham Young University, 2001
PhD, Brigham Young University, 2006

Gaskill, Alonzo L.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BA, Idaho State University, 1991
MA, University of Notre Dame, 1995
PhD, Trinity Theological Seminary, Liverpool, 2000

Goodman, Michael A.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BA, University of Oregon, 1989
MS, Western Oregon State College, 1995
PhD, Brigham Young University, 2004

Hedges, Andrew H.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BA, Weber State University, 1986
MA, Brigham Young University, 1991
PhD, University of Illinois, Urbana-Champaign, 1996

Livingstone, John Peter
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BSc, University of Alberta, Canada, 1974
MEd, University of Regina, Canada, 1981
EdD, Brigham Young University, 1986

Manscill, Craig Kent
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BS, Weber State College, 1978
MS, Brigham Young University, 1980
PhD, Brigham Young University, 1987

Ogletree, Mark D.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Professor
**DEGREES:** BA, Brigham Young University, 1987
MA, Northern Arizona University, 1994
PhD, Utah State University, 2000

## Assistant Professors

Cope, Rachel
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 2001
MA, Brigham Young University, 2003
PhD, Syracuse University, 2009

Haws, J.B.

**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Assistant Professor
**DEGREES:** BS, Weber State University, 1997
MA, Brigham Young University, 2003
PhD, University of Utah, 2010

MacKay, Michael H.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Assistant Professor
**DEGREES:** BA, Weber State University, 2003
MA, University of York, 2005
PhD, University of York, 2009

Morgan, Barbara E.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Assistant Professor
**DEGREES:** BA, Brigham Young University, 1999
MEd, Brigham Young University, 2002
PhD, Utah State University, 2007

Properzi, Mauro
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Assistant Professor
**DEGREES:** BS, Brigham Young University, 2000
MTS, Harvard Divinity School, 2002
M.Phil, Cambridge University, 2004
PhD, Durham University, 2010

## Associate Teaching Professors

Brooks, Kent Richmond
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Teaching Professor
**DEGREES:** BS, Brigham Young University, 1979
MEd, Brigham Young University, 1981
PhD, Brigham Young University, 1988

Dorius, Guy L.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Teaching Professor
**DEGREES:** BS, University of Utah, 1984
MEd, Brigham Young University, 1986
PhD, Brigham Young University, 1994

## Assistant Teaching Professor

Sweat, Anthony R.
**COLLEGE:** Religious Education
**DEPARTMENT:** Church History and Doctrine
**RANK:** Associate Teaching Professor
**DEGREES:** BFA, University of Utah, 1999
MEd, Utah State University, 2005
PhD, Utah State University, 2011

- Education
- Engineering and Technology
- Family, Home, and Social Sciences
- Fine Arts and Communications
- Humanities
- Law School
- Life Sciences
- Management
- Nursing
- Physical and Mathematical Sciences
- Religious Education
- Undergraduate Education

**Departments**

- Honors Program

# Undergraduate Education

2006 JKB
(801) 422-3037
Email: ugrad@byu.edu
Website: http://ue.byu.edu

**Dean:** John D. Bell, Professor, Physiology and Developmental Biology
**Associate Dean:** Deborah Dean, Professor, English
**Associate Dean:** Paul Kerry, Associate Professor, History
**Associate Dean:** Joseph Parry; Professor; Humanities, Classics, and Comparative Literature
**Assistant Dean:** Heather Hammond
**Assistant Dean:** Phil Rash, Associate Clinical Professor, Counseling and Career Center
**Assistant Dean:** Carolyn Tuitupou

The Office of Undergraduate Education supervises and fosters essential university-wide elements of the baccalaureate: General Education, Honors Program, First-Year Experience, and Freshman Mentoring. These interrelated programs together promote and champion teaching and learning within an integrated *university* education. They aim to enrich the educational experience and to benefit the life of each undergraduate student.

## General Education

302 MSRB
(801) 422-6818
Email: gened@byu.edu
Website: http://ge.byu.edu

The General Education (GE) components of the University Core are overseen by the Associate Dean of Undergraduate Education—General Education. The Faculty General Education Council (FGEC), consisting of faculty members from a variety of disciplines and chaired by the associate dean, regularly reviews general education courses and has final authority to decide which courses meet GE requirements.

GE requirements are set forth in the University Core section of this catalog. Beyond this and the more detailed listing in the current class schedule, the recommended source of information and advice about GE requirements is the individual college advisement center. The college advisement centers, together with the University Advisement Center (2500 WSC), provide assistance with registration, graduation requirements, policies and procedures, fields of study, changes of major, appeals, and many other aspects of academic life. The General Education Office (302 MSRB) regularly consults with each advisement center on issues related to GE.

In an ongoing effort to strengthen the GE offerings in the University Core, General Education offers matching grants for GE course development and enhancement. General education courses are taught by faculty from throughout the university, and General Education works closely with the colleges in a collaborative effort to foster a strong and engaging GE offering within the University Core.

## Honors Program

102A MSRB
(801) 422-5497
Email: honors@byu.edu
Website: http://honors.byu.edu

The University Honors Program is open to all capable, motivated undergraduate students who wish to broaden their education through interdisciplinary study and deepen it by producing original research in their home discipline. Especially welcome are students who seek both knowledge and wisdom, who want to use their intellect to build their faith and their faith to strengthen their intellect, and who bring a sense of curiosity, humility, and courage to their education. The breadth and depth of an Honors education develops leaadership qualities and encourages the integration of faith, intellect, and character. The central focus of the program is the study of big or "great" questions (e.g., justice, human agency and responsibility). Coursework teaches and models for students modes of intellectual inquiry that draw on the knowledge and skills of different disciplines, that are open to discovering "unexpected connections" between those disciplines, and that lead to a deeper, more careful and precise understanding of the questions we seek to answer (and have sought to answer for millenia). "University Honors" is a distinction awarded to any graduate of BYU who has met the Honors requirements; see the Honors Program section of this catalog for details. It will be recorded on the student's university diploma, on the official transcript of grades, and in the graduation program.

## First-Year Experience

2006 JKB
(801) 422-4243
Email: fye@byu.edu

Website: http://fye.byu.edu

The Office of First-Year Experience (FYE) facilitates new students' transition to university life. This includes helping new students 1) make connections with peers and university personnel, 2) become acquainted with campus resources, and 3) improve their sense of purpose and motivation by increasing their understanding of BYU's unique mission and history. These efforts span the time between students' admission notification through the end of their first year on campus. Some of the FYE activities that help students transition to university life include Jumpstart (course registration orientation), New Student Orientation, Freshman Seminar (UNIV 101), and the First-Year Arts Card program.

Course (Univ)

UNIV 101 : Freshman Seminar. (.5-2:Arr:Arr)

DESCRIPTION: Aims of a BYU education in a disciplinary context. Topics vary by section and semester.

**Course Outcomes**

There are no course outcomes available

## Freshman Mentoring

2014 JKB
(801) 422-8176 or 1-877-890-5451
Email: freshmanmentoring@byu.edu
Website: freshmanmentoring.byu.edu

The Freshman Mentoring program is a key part of a university-wide initiative to strengthen undergraduate education at BYU. It gives all first-year students easier access to high demand University Core (General Education plus Religious Education) classes and provides every freshman with strong peer mentor support. Beginning Summer Term or Fall Semester 2010, all incoming freshmen will participate in the two-semester Mentoring program, which guarantees

- Reserved seating in one or more high-demand, University Core mentored courses, both fall and winter semesters
- Access to a Freshman Mentoring peer mentor whose principal task is to have individual conversations with students about the successes and challenges of their first year at BYU and to encourage, support, and model habits that contribute to academic success
- Connections with other students who share the same mentored classes
- Progress toward fulfillment of foundational University Core requirements

Freshman students starting at BYU during the summer will have the additional advantage of a mentored summer term experience and selection of a general education class from a slate of options. They will then select one or more Freshman Mentoring envelope courses for the fall and winter semesters.

For more information about the Freshman Mentoring program and expectations for students to engage with their peer mentor, please visit http://freshmanmentoring.byu.edu.

## National Scholarships, Fellowships, and Programs

102B MSRB
(801) 422-6137
Email: prestigious_scholarships@byu.edu
Website: www.byu.edu/scholarships

The National Scholarships, Fellowships, and Programs office assists students in finding and applying for national externally funded scholarships and fellowships for undergraduate and graduate study (e.g., Rhodes, Marshall, Gates, Fulbright, Goldwater, Truman, National Science Foundation Graduate Research Fellowship, etc.) and scholarships for research opportunities, summer programs, and study abroad. Students are encouraged to review the online information describing each scholarship at www.byu.edu/scholarships. For more information contact Carolyn Tuitupou in 102B MSRB or e-mail prestigious_scholarships@byu.edu.

**Undergraduate Education Home**

**Honors Program Home**

**Honrs (Honors) Courses**

- A. Honors Courses that Fulfill General Education Requirements
- B. Other Honors Courses

- Departmental Sections of Honors Courses

# Honors Program

350 MSRB
(801) 422-5497
Email: honors@byu.edu
Website: http://honors.byu.edu

**Honors Program Director:** Joseph D. Parry; Professor; Humanities, Classics, and Comparative Literature
**Honors Program Administrator:** Julie C. Radle
**Honors Program Advisement Manager:** Shauna Barrick

## Participation in Honors

The Honors Program provides a rich and challenging experience for capable and motivated undergraduate students. Its purpose is to broaden and deepen the educational experience of students, to develop the intellectual integrity and moral character that define disciple-scholarship. An Honors education is not merely a more intensive general education or a more strenuous program in a major. Rather, it grounds students in broader interdisciplinary inquiry that strengthens leadership and encourages the integration of faith, intellect, and character.

The Honors Program is comprised of three dimensions: Great Questions, Experiential Learning, and the Honors Thesis. The central focus of the program is the study of big or "great" questions. Through coursework, research, writing, and hands-on experiences, students explore interdisciplinary approaches and consider ways in which "unexpected connections" not only can be found between different disciplines, but also can lead to a deeper understanding of the questions we seek to answer. The Honors Program invites students to satisfy university core requirements through the Honors Interdisciplinary Core where they can begin to consider the questions that drive our inquiry, and indeed, lie behind every bit of knowledge we study and learn.

"University Honors" is a distinction awarded to all graduates of BYU who have met the Honors requirements as described below. This prestigious designation is recorded on the university diploma, on the official transcript of grades, and in the graduation program. It is widely recognized as an indication of exceptional academic achievement. Although it is hoped that students will choose to complete all of the requirements for the University Honors designation, those who do not intend to do so are welcome to participate in the Honors Program to whatever extent they choose. All students are invited to consider Honors as a way to achieve the quality academic experiences they seek. Students may register for Honors courses at any time during their undergraduate years without necessarily intending to complete all the Honors graduation requirements.

There are no special admissions criteria for participation in the Honors Program, and all students are invited to consider Honors as a way to broaden and deepen their educational experience at BYU. However, it takes careful planning to complete all program requirements. Typically, interested first-year students begin by completing an enrollment form that may be obtained from the Honors Advisement Center in 350D MSRB after a brief orientation. Then during their second year, students formally commit to the program and, with the help of the advisement center, begin to construct a more concrete plan for graduation with University Honors. Reasonable accommodations can be made for transfer students who wish to join the program. Any student at the university is welcome to take Honors courses that suit their interests and educational objectives.

## Facilities and Opportunities Available to Honors Students

The Honors Program is housed in the historic Maeser Building on the southwest part of campus. This quiet corner is surrounded by beautiful grounds and wooded areas. The building is named after Karl G. Maeser, the first principal of Brigham Young Academy (the school that later became Brigham Young University). A bronze statue of Karl G. Maeser stands at the building's east entrance. Constructed in 1911, the Maeser Building is the oldest building on the current campus. The building was restored in 1985 with modern electrical and ventilation systems but retains its historic architecture and decoration, its marble halls richly decorated with oak and brass trim.

Facilities for honors students in the Maeser Building include the Honors Reading Room in 150 MSRB, with study tables and a small library of reference works and classics; the Honors Student Lounge in 102 MSRB, where students can meet for informal discussions; an art gallery in the lower-floor hall; the Honors Advisement Center in 350D MSRB, where students receive counseling about their honors education; and the Martha Jane Knowlton Coray Lecture Hall in 321 MSRB, where classes, lectures, and musical concerts are held. Another Honors Reading Room is located in 3770 Harold B. Lee Library.

The Honors Program sponsors lectures, concerts, symposia, socials, and a Late Summer Honors program. It also offers competetive scholarships. Students can participate in intercampus events with Honors students from other universities and colleges, and are invited to participate with the Honors Student Advisory Council, a group of student representatives who assist in policy development, social activities, and academic functions of the Honors Program. Honors students are recognized during University graduation exercises at the Honors Graduation luncheon, and in the graduation program.

## Who Should Participate in Honors?

Any student who wishes to broaden their education through interdisciplinary study and deepen it by producing original research in their home discipline should consider participating in the Honors Program. Especially welcome are students who seek both knowledge and wisdom, who want to use their intellect to build their faith, and their faith to strenthen their intellect, and who bring a sense of curiosity, humility, and courage to their education. The most successful Honors students see learning as a way of being, not as an instrument to a credential or a job. They do not worry if the program requirements will be too hard; rather, they see their BYU experience as a time to continually avail themselves of the rich and diverse offerings on campus of concerts, plays, films,

lectures, art, science exhibitions, and athletic events. And they enjoy and benefit from pursuing all of these things in a community of senior (faculty) and junior (student) scholars.

## Overview of Requirements for Graduation with University Honors

This section provides a brief overview of the requirements to graduate with University Honors. Detailed explanations of each requirement follow this section. The staff in the Honors Advisement Center, 350D MSRB, (801) 422-5497, is available on a walk-in basis to answer questions about the program. To graduate with University Honors, a student must:

1. Complete an honors enrollment form.
2. Complete the honors commitment interview.
3. Complete the honors curriculum.
4. Complete the honors great questions essay.
5. Complete the honors experiential learning requirement.
6. Complete the senior graduation review.
7. Complete the honors thesis requirement.
8. Submit a graduation portfolio.

The requirements for graduation with University Honors complement both major and university core education. The Honors curriculum includes and enhances the university core components; the Honors thesis requirement enhances the major education component.

## Detailed Explanations of Requirements for Graduation with University Honors

1. **Honors Enrollment Meeting**

   Students who wish to explore the Honors Program should attend a brief group enrollment meeting as early as possible in their undergraduate program. Consultation with the Honors Advisement Center allows the Honors Program personnel to be aware of students' plans to better assist with registration, help develop plans toward graduation, and consult on other Honors program requirements. The enrollment process is the door to a community of well-rounded, enthusiastic scholars and to all of the activities and programs the Honors Program offers.

2. **Honors Commitment Interview**

   Students who intend to graduate with University Honors will submit a letter of intent in preparation for an interview usually held during the student's third or fourth semester at BYU. Accommodations can be made for transfer students and students joining late. Newly committed students will be recognized at the Fall Honors Opening Evening.

3. **Honors Curriculum Requirement**

   The central focus of the Honors curriculum is the study of big or "great" questions (e.g., justice, human agency, relationships, ethics). Courses are designed to model different disciplinary approaches to Great Questions, to explore interdisciplinary approaches, and to consider ways in which "unexpected connections" can be found between disciplines, leading to a deeper understanding of the questions we seek to answer.

   To fulfill the Honors curriculum requirements, students must complete 14-17 credit hours as follows:

   a. HONRS 120 (2 credits): Introduction to Great Questions
   b. UNIV 291, 292, and 293 (3 credits each): The Honors Interdisciplinary Core, comprised of three Unexpected Connections courses. Each course will simultaneously fill Honors core curriculum requirements and the GE requirements in two designated disciplines.
   c. HONRS 320 (3 credits): Great Questions Tutorial. See additional information below.
   d. HONRS 390 (3 credits): Experiential Learning. See additional information below.

4. **Honors Great Questions Requirement**

   The capstone to the Honors coursework (HONRS 320) will provide group and individual instruction in researching and writing the Great Question essay, a multi-disciplinary essay on an approved question of the student's choosing. Students are expected to incorporate three different and sufficiently disparate disciplinary areas into the essay, usually including the student's home discipline. This essay is not a second honors thesis; it is fundamentally different in that it broadens where the honors thesis tends to narrow a topic.

   By "Great Questions" we mean the big questions every discipline at the university addresses in some way and no one discipline can fully answer. Some of these are old, frequently posed questions for which the answer has proven maddeningly elusive (e.g., the question of justice, of human agency and freedom, of our relationships with and obligations toward each other, other forms of life, and the physical world in which we live). Others have emerged more recently, often provoked by new discoveries and developments in technology (e.g., questions of medical ethics, use of natural resources including very powerful ones like nuclear energy, etc.). Students will explore various aspects of their question, including implications, stakes and context, as they consider ways of thinking and reasoning from various perspectives to better understand their topic.

5. **Honors Experiential Learning Requirement**

   Typically during their 2nd or 3rd year at the university, Honors students will participate in an approved, substantive, "hands-on" experience that augments their BYU education and expands learning to the world outside the classroom. To fill the Experiential Learning requirement (HONRS 390), students may serve as an Honors Peer Mentor in HONRS 120 or as a teaching assistant in a UNIV course, participate in an approved international study or internship experience, or participate in an education-related service initiative.

6. **Senior Graduation Review**

   Progress on the thesis and other graduation requirements will be reviewed during the senior interview with an Honors advisor.

7. **Honors Thesis Requirement**

   The Honors thesis requirement gives students the opportunity to participate in original research or creative work in the discipline of their major. Honors students typically complete the thesis requirement during their junior and senior years after they have obtained sufficient training in their major to conduct research in a specialized academic field. Generally stated, each student consults with the Department Honors Coordinator to choose a faculty advisor in the department of his or her major and, in consultation with the advisor, chooses a thesis topic. But this process can work differently in different fields. For instance, a student who works in a faculty member's lab can work with that faculty member to identify a portion or an expansion of the research being conducted that could become the student's thesis. Another student may fulfill major requirements with a capstone paper or project that could also serve as or become her Honors thesis. Yet another student produces his thesis from an academic or a creative project he first proposed to a faculty member to win an ORCA grant.

   Students should complete significant course work within the subject area of the thesis (usually at least 30 credit hours, several of which are from 300- or 400-level major courses). The thesis is intended to acquaint students firsthand and in depth with the type of scholarly work that characterizes the field they intend to pursue professionally. For these reasons, only under rare circumstances is an Honors thesis topic outside the major area approved. (In most cases students who complete a thesis outside the major do so in fields cognate to their majors.)

   Before students begin work on an Honors thesis, they attend an Honors Program thesis orientation then approach the Department Honors Coordinator to assemble a thesis committee consisting of the student, faculty advisor, and a faculty second reader. Each member of the committee signs a thesis contract that specifies the student's chosen topic and direction. Second, students submit to the Honors Program Office a formal written thesis proposal that has been approved by all members of the thesis committee and that is now ready for final approval from the Honors Program Office. Guidelines for writing the proposal are available in the Honors Advisement Center (350D MSRB) or electronically at http://honors.byu.edu. Students can request financial support as a part of the thesis proposal. Many Honors students obtain competitive undergraduate research grants from BYU's Office of Research and Creative Activities for Honors thesis work. Also, many professors and departments have research funding that can be devoted to research on an Honors thesis. Personnel in the Honors Program can help students explore the various opportunities available to support their work on an Honors thesis.

   After completing thesis research and writing the thesis, each student must schedule and complete a thesis defense. The defense committee consists of the thesis advisor, a faculty referee, and a representative of the Honors Program administration. After the thesis defense is completed and all final changes are incorporated into the thesis, the Honors Program will have the thesis bound and add it to the collection of Honors theses housed in the Harold B. Lee Library Honors Reading Room (3770 HBLL).

8. **Graduation Portfolio Summarizing the Honors Experiences**

   The Honors portfolio is a record of a student's culminating experiences in each of the three dimensions of the Honors Program. It is submitted for review when the final thesis draft is due and contains:

   a. The Great Question essay
   b. A reflective summary of the student's experiential learning experience
   c. The Honors thesis

**Note:** The general Web site for the BYU Honors Program is http://honors.byu.edu.

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# Honors (Honrs) Courses

Dates and times for Honors Program courses are listed in the current class schedule under Honors Program (HONRS).

The Honors Program Course Guide also contains a complete list of honors courses and detailed course descriptions. It is an essential supplement to the undergraduate catalog and the class schedule. The course guide is posted on the Honors Program website at http://honors.byu.edu. For further information about the Honors Program, contact the Honors Advisement Center: 350D MSRB, telephone (801) 422-5497, or email honors@byu.edu.

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# A. Honors Courses that Fulfill General Education Requirements

Show All Course Descriptions
Hide All Course Descriptions

**Note:** Courses marked with * simultaneously meet two General Education (GE) requirements. For more information on General Education and Religion requirements go to the University Core.

1. **Citizenship**

*Global and Cultural Awareness*

UNIV 292 : Unexpected Connections: Physical Science and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: WRTG 150; or PHIL 150; or ENGL 115; or ELang 150.

DESCRIPTION: The class, team-taught by professors from different disciplines, explores unities between physical science and culture. Through reading, writing, and conversation, students gain understanding and skills to engage real-life questions. Topics are announced in the class schedule.

**Course Outcomes**

There are no course outcomes available

2. **Arts, Letters, and Sciences**

*Arts*

UNIV 293 : Unexpected Connections: Social Science and Art. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: WRTG 150; or PHIL 150; or ENGL 115; or ELang 150.

DESCRIPTION: The class, team-taught by professors from different disciplines, explores the unities between social science and art. Through reading, writing, and conversation, students gain understanding and skills to engage real-life questions. Topics are announced in the class schedule.

**Course Outcomes**

There are no course outcomes available

*Letters*

UNIV 291 : Unexpected Connections: Biology and Letters. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: WRTG 150; or PHIL 150; or ENGL 115; or ELang 150.

DESCRIPTION: The class, team-taught by professors from different disciplines, explores unities between biology and letters. Through reading, writing, and conversation, students gain understanding and skills to engage in real-life questions. Topics are announced in the class schedule.

**Course Outcomes**

There are no course outcomes available

*Scientific Principles and Reasoning*

UNIV 291 : Unexpected Connections: Biology and Letters. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: WRTG 150; or PHIL 150; or ENGL 115; or ELang 150.

DESCRIPTION: The class, team-taught by professors from different disciplines, explores unities between biology and letters. Through reading, writing, and conversation, students gain understanding and skills to engage in real-life questions. Topics are announced in the class schedule.

**Course Outcomes**

There are no course outcomes available

UNIV 292 : Unexpected Connections: Physical Science and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: WRTG 150; or PHIL 150; or ENGL 115; or ELang 150.

DESCRIPTION: The class, team-taught by professors from different disciplines, explores unities between physical science and culture. Through reading, writing, and conversation, students gain understanding and skills to engage real-life questions. Topics are announced in the class schedule.

**Course Outcomes**

There are no course outcomes available

UNIV 293 : Unexpected Connections: Social Science and Art. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: WRTG 150; or PHIL 150; or ENGL 115; or ELang 150.

DESCRIPTION: The class, team-taught by professors from different disciplines, explores the unities between social science and art. Through reading, writing, and conversation, students gain understanding and skills to engage real-life questions. Topics are announced in the class schedule.

**Course Outcomes**

There are no course outcomes available

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# B. Other Honors Courses

Show All Course Descriptions
Hide All Course Descriptions

HONRS 100R : Honors Topics. (.5-2:Arr:Arr)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introductory seminar for incoming honors students.

**Course Outcomes**
There are no course outcomes available

HONRS 101 : Late Summer Honors. (1:1:1)
WHEN TAUGHT: Fall
DESCRIPTION: One week introductory seminar for incoming freshmen.

**Course Outcomes**
There are no course outcomes available

HONRS 120 : Introduction to Honors: Great Questions. (2:2:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Introduction to Honors curriculum, especially the study of big ("Great") questions. The course models different disciplinary approaches to Great Questions (guest lectures), and concludes by briefly exploring interdisciplinary approaches (preparation for UNIV 291, 292, 293).

**Course Outcomes**
There are no course outcomes available

HONRS 292R : Honors Seminar. (1-3:ARR:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Weekly presentation by faculty and invited guests on various research topics. Students will complete one Great Works response.

**Course Outcomes**
There are no course outcomes available

HONRS 301R : Teaching Writing: Writing Fellows. (1-3:ARR:ARR)

**Course Outcomes**
No outcomes are available at this time.

HONRS 320 : Great Questions Tutorial. (3:Arr:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: HONRS 120; or HONRS 292R
RECOMMENDED: Wrtg 150.
DESCRIPTION: This capstone to the Honors Program coursework provides group and individual instruction in researching and writing the Great Question Essay, a multi-disciplinary essay on an approved "big question" of the student's choosing.

**Course Outcomes**
There are no course outcomes available

HONRS 390R : Honors Experiential Learning. (.5-3:Arr:Arr)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: HONRS 120
DESCRIPTION: Facilitates substantive experience that augments Honors education through approved BYU international program or internship, Honors peer mentoring, or education-related service. Increases understanding by applying, teaching, expanding, and reflecting on knowledge and skills acquired at BYU.

**Course Outcomes**

There are no course outcomes available

HONRS 391R : Honors Student Advisory Council. (1-3:Arr:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Course for students elected to the Honors Student Advisory Council. Credit granted for work organizing honors events. Gives leadership and service experiences.

**Course Outcomes**

There are no course outcomes available

HONRS 395R : Special Topics. (1-3:Arr:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: For upper-level students on approved special topics supervised under the Honors Program. Topics vary.

**Course Outcomes**

There are no course outcomes available

HONRS 398 : Honors Thesis Proposal. (1-3:Arr:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Writing the Honors Thesis Proposal in preparation for writing the Honors Thesis. Students find a thesis chair, have initial contact with them, and complete a proposal leading to completing the Honors thesis.

NOTE: This course should be taken preferably during the sophomore or junior year.

**Course Outcomes**

There are no course outcomes available

HONRS 499R : Honors Thesis. (.5-6:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Student will demonstrate application of his/her Honors Thesis project to his/her personal religious beliefs and to solving real-life problems.
- Student will incorporate critical thinking skills in analytically approaching a discipline-specific question.
- Student will apply course credits towards completion of graduating from BYU with Honors recognition.
- Student will utilize advanced research and writing skills on an approved Honors Thesis project.

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# Departmental Sections of Honors Courses

Show All Course Descriptions
Hide All Course Descriptions

Selected departments offer designated honors sections of introductory courses that meet particular university core requirements as well as departmental requirements. Credit for departmental honors sections does not apply to Honors Program requirements. Dates and times are listed in the current class schedule, and courses are designated by the word *honors* in the title. Departmental honors courses include:

A HTG 100 : Honors American Heritage (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Synthesis of American constitutional and economic principles, and patterns of historical development.

**Course Outcomes**

- Understand the religious, historical, political and economic origins of the Constitution
- Learn how the Constitution works;
- Apply their knowledge of the Constitution to analyze major historical, political and economic issues
- Become better informed, more active citizens

ANTHR 110 : Honors Introduction to Archaeology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Studying past human behaviors and cultures by applying scientific principles and reasoning; exploring case studies concerning archaeological discoveries.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- This course should help students to demonstrate an understanding of the basic scientific principles which undergird the scientific process, including the strengths and weaknesses of this process. Students will learn to appreciate the excitement of discovery that has accompanied important scientific developments as well as demonstrate how scientific methodology can be used to analyze real-world science-related problems. Students will become adept at evaluating scientific data and claims in order to make rational decisions on public-policy science issues that affect their community. As students complete the course they will learn to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data, as well as reflect rationally upon the interface between science and religion.

ARTHC 111 : Honors Introduction to Art History. (3:3:0)

OFFERED: Honors also.

DESCRIPTION: Topical approach to art history and appreciation.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

BIO 100 : Honors Principles of Biology. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Introductory course for general education students.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

CHEM 111 : Honors Principles of Chemistry. (4:3:3)

OFFERED: Honors also.

WHEN TAUGHT: Fall

PREREQUISITE: Math 110 or equivalent.

RECOMMENDED: High school chemistry, physics, and introductory calculus or concurrent enrollment in Math 112.

DESCRIPTION: Stoichiometry, kinetic-molecular theory, thermodynamics, states of matter, solutions and equilibria, electrochemistry, structure and bonding, chemical reactions, kinetics.

NOTE: Tutorial included.

**Course Outcomes**

- Students will demonstrate the ability to use valence shell and molecular orbital models of bonding to predict molecular shapes, reactivity, and spectroscopic properties.
- Students will be able to apply the kinetic theory of gases, including properties of ideal gases and interactions that lead to non-ideal behavior, to predict gas behavior with varied temperature, pressure and volume.
- Students will demonstrate the ability to use core concepts of chemical thermodynamics, with emphasis on the first and second laws, to predict physical changes and reaction outcomes based on Gibbs energies.
- Students will be able to apply concepts of the quantum mechanical nature of light and matter to explain observations that originally led to the development of atomic theory.

CL CV 110 : Honors Introduction to Greek and Roman Literature. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Homer's *Iliad*, Sophocles' *Oedipus the King*, Vergil's *Aeneid*, and other important works of the Greeks and Romans.
NOTE: All readings in English. Honors also.

**Course Outcomes**

There are no course outcomes available

CL CV 201 : Honors Classical Tradition 1: Antiquity to Renaissance. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall
DESCRIPTION: Civilization from Greek and Roman antiquity to the Italian Renaissance, emphasizing Greco-Roman culture--its institutions, literature, arts, and ideas.

**Course Outcomes**

There are no course outcomes available

CL CV 202 : Honors Classical Tradition 2: Reformation to Modern. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Winter
DESCRIPTION: Civilization from the Reformation to the twentieth century, emphasizing the heritage of Greco-Roman culture--its institutions, literature, arts, and ideas.

**Course Outcomes**

No outcomes are available at this time.

CL CV 241 : Honors Greek and Roman Mythology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Greek and Roman gods, heroes, and myths, emphasizing literature but also giving attention to representations in the visual arts.

**Course Outcomes**

There are no course outcomes available

CMLIT 201 : Honors Civilization: Literature 1. (3:3:0)

OFFERED: Honors also.
DESCRIPTION: Western civilization from antiquity to early Italian Renaissance, emphasizing socioeconomic, political, intellectual, and aesthetic developments, with primary focus on literary texts.

**Course Outcomes**

There are no course outcomes available

CMLIT 202 : Honors Civilization: Literature 2. (3:3:0)

OFFERED: Honors also.
DESCRIPTION: Western civilization from Europe's high Renaissance to the present, emphasizing socioeconomic, political, intellectual, and aesthetic developments, with primary focus on literary texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

DANCE 260 : Honors Introduction to Dance. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Critical analysis of dance as a cultural and expressive art form, studied through lecture, reading, research, multimedia presentations, and practical movement experiences.
NOTE: No previous dance experience required. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

ECON 110 : Honors Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

ENGL 201 : Honors Masterpieces of World Literature 1. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department

DESCRIPTION: Major world civilizations from antiquity through the early Italian Renaissance, approached through literature and emphasizing socioeconomic, religious, political, intellectual, and aesthetic developments.

**Course Outcomes**

There are no course outcomes available

ENGL 202 : Honors Masterpieces of World Literature 2. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Major world civilizations from Europe's High Renaissance to modern times, approached through literature and emphasizing socioeconomic, religious, political, intellectual, and aesthetic developments.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

ENGL 311 : Honors Writing About the Arts and Humanities. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Writing for both academic and mass audiences about the functions, meanings, values, and qualities of art and the humanities. Library research paper.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Write and speak effectively about the arts to academic and general audiences and for a variety of purposes.
- Critically read and evaluate different artistic mediums as well as scholarship in the humanities.

ENGL 312 : Honors Persuasive Writing. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: First-year writing, junior or senior status.

DESCRIPTION: Expository and persuasive writing focusing on practical reasons for evaluating audiences, generating and structuring an argument, and making stylistic decisions. Library research paper.

NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including creating and/or finding ideas, evidence, and data to write about; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness,

and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Create an appropriate ethos in both writing and speaking.
- Analyze the parts of an argument; evaluate them in terms of the intended audience; and generate a reasonable argument for a specific audience.Anticipate and effectively respond to audience objections and counterarguments.

ENGL 315 : Honors Writing in the Social Sciences. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Writing characteristic of disciplines that inquire into human behavior and institutions; correspondence, proposals, library paper, empirical research, and reviews.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to specific rhetorical situations.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Successfully complete the library tour, tutorial, and tests (if not completed as part of the first-year writing requirement). Successfully complete a library mini-course taught for their major area and demonstrate the ability to use the library effectively.
- Demonstrate the ability to create, number, and label tables and figures.
- Effectively evaluate and comment on the writing of others to facilitate revision.

ENGL 316 : Honors Technical Communication. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: First-year writing, junior or senior status.
DESCRIPTION: Effective processes of written, oral, and visual technical communication, including collaborative processes. Writing for academic and professional audiences.
NOTE: Carries GE Advanced Written and Oral Communication credit.

**Course Outcomes**

- Employ informed and flexible processes for writing and speaking, including: creating and/or finding ideas about which to write; collecting evidence and data; planning and drafting; revising; editing; and designing or presenting a message so that it is successfully understood by a specified audience.
- Write coherent and unified texts, including effective introductions, clear thesis statements, supporting details, transitions, and strong conclusions.
- Use various methods of invention, organization, and style to adapt written and oral forms of communication to a specific rhetorical situation.
- Utilize the library and electronic resources to locate relevant information, assess its reliability and usefulness, and effectively and ethically incorporate it into their own writing by following an appropriate style of documentation.
- Write in a correct, clear, and graceful prose style.
- Effectively evaluate and comment on the writing of others to facilitate revision.
- Analyze rhetorical aspects of audience, purpose, and context to communicate technical information effectively in written, oral, and visual media.
- Recognize structures or genres typically used in science and engineering, understand the processes that produce them, and the organizational and stylistic conventions characteristic of them, and apply this knowledge to their own writing tasks.

EXSC 349 : Honors Body, Mind, Spirit. (3:3:0)

OFFERED: Independent Study only. Honors also.
DESCRIPTION: Sacredness of the body and its meaningfulness to the whole being. Comparative approach utilizing ideas from the restored gospel and Western and Eastern philosophy (nature of being).

**Course Outcomes**

There are no course outcomes available

FREN 202 : Honors Intermediate French, Part 2. (3:3:1)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Fren 201 or equivalent.
DESCRIPTION: Final course for GE Languages of Learning requirement (except for full-time French speaking returned missionaries); extensive reading in French literature and culture.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Read beyond basic plot and learn to apply tools of literary analysis.
- Recognize and analyze key genres in French literature.
- Identify and define key characteristics of the important French literary movements.
- Place literature in a meaningful cultural and historical context.
- Improve your reading and writing skills in French.
- Broaden and deepen your perception and appreciation of French culture.

GEOG 120 : Honors Geography and World Affairs. (3:3:0)

OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Survey of the world, stressing geography of major political regions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOL 101 : Honors Introduction to Geology. (3:2:1)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Summer
DESCRIPTION: Cultural focus on physical and environmental geology for nonscience majors; rocks and minerals. Field trips.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- 1. Understand the difference between minerals and rocks.2. Be able to identify common rocks and minerals.3. Know where and when the basic rock and mineral types form and how they are related to the hydrologic and tectonic systems.
- 1. Understand how the hydrologic system helps to shape the Earth and how the different sub-systems interact.2. Learn the reasons for climate change in both ancient and modern times.
- 1. Learn the basic evidences and ideas that support the Theory of Plate Tectonics.2. Understand how the plate tectonic system works, including the role of the different types of plate boundaries and the forces that help to drive the system.3. Learn how the plate tectonic system has helped to shape the Earth's surface.
- 1. Gain a greater insight into the enormous length of geologic time and the evidences that support this claim.2. Learn the different ways that scientists can determine geologic ages.
- Learn how and why the other planets and moons in our solar system are different from Earth.

GERM 330 : Honors Cultural History of German-Speaking Peoples. (3:3:1.5)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Germ 202 or equivalent experience.
DESCRIPTION: Culture, with listening, speaking, reading, writing, and grammar as secondary emphases. Includes International Cinema.
NOTE: Entry course for returned missionaries or others with equivalent German language experience. Required course for obtaining language credit by examination (Germ 101, 102, 201, 311R). Prerequisite to all 400-level courses. Culminating course for Languages of Learning requirement.

**Course Outcomes**

There are no course outcomes available

GERM 340 : Honors: Writing About Literature. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall
DESCRIPTION: Methods of literary interpretation. Reading, writing, and research skills integral to the literary analysis expected in German major or minor courses.
NOTE: Fills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

There are no course outcomes available

GERM 343 : Honors: Introduction to Literary Analysis. (3:3:.5)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter
RECOMMENDED: Germ 302, 303, 330, 340.
DESCRIPTION: Close reading of texts; examining various critical theories and their application to German prose, drama, poetry, and film. Preparation for 440R - 445R sequence. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

HEB 133 : Honors Hebrew and the Old Testament. (4:4:0)

WHEN TAUGHT: Fall
PREREQUISITE: Must be taken in conjunction with specified Honors section of Rel A 301.
DESCRIPTION: Rapid survey of biblical Hebrew.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Recite the Hebrew alphabet and recognize the vowels;2. Analyze and discuss most of the fundamental elements of Hebrew grammar;3. Read and translate elemental biblical historical narrative texts with limited use of a lexicon;4. Analyze and parse the verbal system: Pa'al (Qal);5. Define approximately 315 vocabulary words.

HEB 134 : Honors Hebrew and the Old Testament. (4:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: Must be taken in conjunction with specified Honors section of Rel A 302.

DESCRIPTION: Rapid survey of biblical Hebrew.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Analyze and discuss the fundamental elements of Hebrew grammar.2. Read and translate elemental biblical historical narrative texts with limited use of a lexicon.3. Analyze and parse the verbal system: pa'al, niphal, piel, pual, hiphil, hophal, hithpael.4. Define approximately 400 vocabulary words.

HIST 201 : Honors World Civilization to 1500. (3:3:0)

OFFERED: Honors also. Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: World civilization from Greek antiquity to Renaissance; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development
- Be able to identify major societies of the pre-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles
- Gain an appreciation of influential cultural works produced in a variety of pre-modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (pre-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

HIST 202 : Honors World Civilization from 1500. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: World civilization from Renaissance to present; explores fundamental questions in the human experience, examines formative events in history, and seeks to teach value of important texts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate a basic geographical knowledge of the world, and more importantly, develop the ability to discuss how geographical and environmental realities, as well as cross-regional interactions, have impacted historical development.
- Be able to identify major societies of the post-1500 C.E. era and make historical comparisons between them, in regard to political systems, trade and economics, social structures, religious beliefs, and gender roles.
- Gain an appreciation of influential cultural works produced in a variety of modern societies and through them come to a clearer understanding of the fundamental values held by past peoples—including, how they understood the natural world, what it meant to be human, and their relationship with the divine.
- Be able to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Be able to read, analyze, and discuss both primary and secondary source documents dealing with world history (post-1500 C.E.).
- Improve the clarity and grace of analytical writing.
- Recognize and be able to apply the tools necessary for a lifelong appreciation of the study of world history.

IHUM 201 : Honors Western Humanities 1: Antiquity to Renaissance. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Western civilization from Greek antiquity to Renaissance from perspective of traditional humanistic values reflected in its arts and ideas. Examines fundamental questions about human experience, formative events in history, and value of important literary and artistic texts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

IHUM 202 : Honors Western Humanities 2: Renaissance to the Present. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Western civilization from Renaissance to present from perspective of traditional humanistic values reflected in its arts

and ideas. Examines fundamental questions about human experience, formative events in history, and value of important literary and artistic texts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

IHUM 261 : Honors American Humanities 1: Colonial Era Through 1876. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Value systems reflected in the arts and ideas of the United States from the colonial era to 1876.

**Course Outcomes**

There are no course outcomes available

IHUM 262 : Honors American Humanities 2: 1877 to the Present. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Value systems reflected in the arts and ideas of the United States from 1877 to the present.

**Course Outcomes**

There are no course outcomes available

LATIN 111 : Honors Beginning Latin Accelerated. (5:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Equivalent of combined Latin 101, 102.

NOTE: Prepares students for Latin 201.

**Course Outcomes**

There are no course outcomes available

MATH 112 : Honors Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

MATH 113 : Honors Calculus 2. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Math 112.

DESCRIPTION: Techniques and applications of integration; sequences, series, convergence tests, power series; parametric equations; polar coordinates.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 2 develops techniques of integration, applications of integration, infinite sequences and series, parametric curves, polar coordinates, and conic sections. This course contributes to all the expected learning outcomes of the Mathematics BS. For a more detailed course description, visit the Math 113 Wiki page.

M COM 320 : Honors Communication in Organizational Settings. (3:3:1)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: GE First-Year Writing requirement. To be taken before senior year. Not for freshmen.

DESCRIPTION: Developing written and oral communications for professional organizations, including composing and designing employment communications. Incorporates oral presentations.

NOTE: Fulfills GE Advanced Written and Oral Communication requirement.

**Course Outcomes**

- Compose various commonly occurring business texts, achieving effectiveness in design, organization, content, and style.
- Demonstrate knowledge of generally accepted grammar standards (from Writing & Speaking for Business).
- Give effective oral presentations with appropriate visual support, achieving effectiveness in message, media, and messenger.
- Create effective business graphics and implement effective visual-design principles.

MMBIO 221 : Honors General Microbiology. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Any biology course.
RECOMMENDED: Any chemistry course.
DESCRIPTION: Microbial world, emphasizing communicable diseases, their causes and control.
NOTE: Recommended for students seeking a liberal education in microbiology who do not have the prerequisites to take the more advanced courses.

**Course Outcomes**

- Explain and discuss the ways by which microbiologists study microorganisms.
- Discuss the principle infectious diseases that affect mankind, including how they are transmitted, treated, controlled and prevented.
- Differentiate between the types of microorganisms by identifying relevant structure and their function in the biosphere.
- Propose microbial solutions to global problems.
- Describe how the human body defends itself against infectious agents.

MUSIC 101 : Honors Introduction to Music. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Nonmusic major status.
DESCRIPTION: Designed to aid nonmusic majors in developing skills needed for listening to music creatively. Emphasis on masterworks of Western music from major style periods.

**Course Outcomes**

- By listening to music, learning about the historical development of music, learning about its composers, participating in in-class discussions, attending concerts, and by acquiring a vocabulary and knowledge of music terms and concepts, students will be capable of identifying practically any piece of classical music by time period and genre. Students will also possess a much greater understanding of musical forms, genres and styles.

MUSIC 201 : Honors Civilization: Music 1. (3:3:0)

OFFERED: Honors also
WHEN TAUGHT: Fall; Spring Contact Department; Summer Contact Department
PREREQUISITE: Ability to read musical notation.
DESCRIPTION: History of civilization from Greek antiquity through the seventeenth century, primarily from perspective of musical literature and the arts; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate foundational knowledge and skills in the methods of investigating, expressing, and evaluating concepts in the Arts, with a focus on music, from Ancient Greece to ca. 1720.
- Communicate effectively through writing with diverse audiences about music, culture and the arts from Ancient Greece to ca. 1720.
- Identify and describe the major cultural ideas and styles from the Western cultural tradition from Ancient Greece to ca. 1720.
- Demonstrate the skills and abilities needed for a life-long critical and evaluative pursuit of art, literature, music, and philosophy

MUSIC 202 : Honors Civilization: Music 2. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Winter Contact Department; Spring Contact Department; Summer Contact Department
PREREQUISITE: Ability to read musical notation.
DESCRIPTION: History of civilization from the eighteenth century through the present day, primarily from perspective of musical literature and the arts; exploring fundamental questions in human experience, examining formative events in history; understanding value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Demonstrate foundational knowledge and skills in the methods of investigating, expressing, and evaluating concepts in the Arts, with a focus on music, from ca. 1720 to the present day.
- Communicate effectively through writing with diverse audiences about music, culture and the arts from ca. 1720 to the present day.
- Identify and describe the major cultural ideas and styles from the Western cultural tradition from ca. 1720 to the present day.
- Demonstrate the skills and abilities needed for a life-long critical and evaluative pursuit of art, literature, music, and philosophy

PDBIO 120 : Honors Science of Biology. (2:2:1)

OFFERED: Honors also

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: General biology course designed for biological science majors, emphasizing the scientific method, cell theory, biochemical unity, the central dogma, bioenergetics, reproduction, and evolutionary theory.

**Course Outcomes**

There are no course outcomes available

PHIL 110 : Honors Introduction to Philosophy. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Articulating, assessing, and defending fundamental positions on topics such as reason, knowledge, science, education, ethics, politics, and religion.

**Course Outcomes**

- Become acquainted with important figures, topics, and issues in the history of philosophy.
- Learn to read and discuss critically philosophical texts.
- Write a clear and cogent philosophical essay.
- Learn to integrate philosophical skills and practices with religious convictions, while cultivating a respect for contrary points of view.

PHIL 150 : Honors Reasoning and Writing. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: Recommended for philosophy majors and minors.

DESCRIPTION: Informal grammar, logic, and rhetoric as tools for reading and writing. Library research.

NOTE: Fulfills GE First-Year Writing requirement. No course challenges accepted.

**Course Outcomes**

There are no course outcomes available

PHIL 201 : Honors History of Philosophy 1. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Western civilization from Greek antiquity to Renaissance, primarily from perspective of philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

**Course Outcomes**

- Know milestones of Western history and culture from antiquity through the Renaissance and Reformation.
- Acquire a basic understanding of the most important philosophical figures, texts, and issues in ancient, medieval, and early modern philosophy.
- Write a clear and cogent philosophical essay.

PHIL 202 : Honors History of Philosophy 2. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Western civilization from Renaissance to present, primarily from perspective of philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

**Course Outcomes**

- Know milestones of Western history and culture from the Renaissance and Reformation through the present.
- Acquire a basic understanding of the most important philosophical figures, texts, and issues in late modern and contemporary philosophy.
- Write a clear and cogent philosophical essay.

PHIL 210 : Honors Science and Civilization 1. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall

DESCRIPTION: History of Civilization from Greek antiquity to scientific revolution; methods in early science and their philosophical significance; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Know about the development of scientific ideas and practices in their cultural context, including the major figures and methods of science from antiquity to 1500.
- Read, analyze, and critically summarize a book-length study of science.
- Learn to integrate philosophical skills and practices with religious convictions, while cultivating a respect for contrary points of view.

PHIL 211 : Honors Science and Civilization 2. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Winter
DESCRIPTION: History of Civilization from scientific revolution to present; concepts and methods in modern science and their philosophical significance; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

PHIL 300 : Honors Philosophical Writing. (3:3:0)

OFFERED: Honors also
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Phil 201 and Phil 202 and Phil 205.
DESCRIPTION: Writing philosophical papers about philosophical texts or problems. Research methods in philosophy. Library research paper.
NOTE: Fulfills GE Advanced Written and Oral Communications requirement. No course challenges accepted.

**Course Outcomes**

- Learn advanced strategies of writing clearly on a well-defined topic using correct grammar, accepted usage, and stylistic conventions appropriate to philosophy; refine the ability to write using a voice, tone, and level of formality suited to one's intended audience.
- Cultivate advanced critical reading and writing skills used in summarizing, paraphrasing, formulating, analyzing and evaluating philosophical arguments, and in prewriting, drafting, revising, critiquing, editing, and proofreading philosophical essays.
- Refine the ability to use scholarly research tools (including library and internet resources) in writing expository, persuasive, and philosophical essays, and to use and cite researched material.

PHY S 100 : Honors Physical Science. (3:3:ARR)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Conceptual lectures and demonstrations of the most significant and universal laws and models describing the physical world by faculty from the Physics and Astronomy, Chemistry and Biochemistry, and Geology departments.
NOTE: Satisfies GE Physical Science requirement.

**Course Outcomes**

- Students will be able to recognize and apply the fundamental principles presented in this course to simple physical situations.
- Students will be able to express their thoughts (in oral, graphical, and written formats) on scientific topics clearly, including appropriate use of basic scientific vocabulary and effective interpretation of quantitative data.
- Students will be able to explain how scientific observations led to the development of these few principles and the models built on them.
- Students will be able to explain how these principles and models in turn lead to further scientific questions.
- Students will be able to reflect rationally upon the interface between science and religion.
- Students will be able to evaluate scientific data and claims in order to make rational decisions on public policy issues that affect their community.

PHSCS 127 : Honors Descriptive Astronomy. (3:3:1)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Nonmathematical presentation of knowledge of the content and history of the cosmos, frequently using observatory and planetarium.

**Course Outcomes**

There are no course outcomes available

POLI 110 : Honors American Government and Politics. (3:3:0)

OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Origin and development of federal Constitution; national, state, and local governments and politics.

**Course Outcomes**

There are no course outcomes available

POLI 150 : Honors Comparative Government and Politics. (3:3:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Patterns of European, Asian, Latin American, and other political systems.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 201 : Honors Western Political Heritage 1. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Western civilization from Greek antiquity to Renaissance, primarily from perspective of political philosophy and scriptures; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 202 : Honors Western Political Heritage 2. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Western civilization from Renaissance to present, primarily from perspective of political philosophy; exploring fundamental questions in human experience; examining formative events in history; understanding value of important texts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

PSYCH 111 : Honors Introduction to Psychological Science. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Basic course in modern scientific psychology.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Objective: Apply psychological principles to personal and social issues and problems.Measurement:Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper.
- Objective: Demonstrate a broad knowledge of the basic theoretical perspectives that guide psychological inquiry.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Pyychology 111 sections.
- Objective: Understand the basic research methods used in psychology, including classical and current experiments.Measurement: Examinations, quizzes, comprehensive final examination that includes questions common to all Psychology 111 sections, response papers to essays written by practicing research psychologists or term paper, participation as a subject in actual psychological research.

SFL 160 : Honors: Introduction to Family Processes. (3:3:0)

OFFERED: Honors also; Independent Study also.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Ways of strengthening family life by understanding such family processes as generations, emotions, communication, and rituals.

**Course Outcomes**

- Critically examine the main theoretical frameworks used in the family sciences.Demonstrate understanding of basic terms, concepts, and ideas used to describe family systems.Apply family systems ideas and concepts to your own family (past and future) in order to learn how they might improve your own family well-being.
- Identify and discuss how researchers uniquely study families and family systems.

SOC 111 : Honors Introductory Sociology. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Social group influence; social interaction, processes, organization, and change; family, religion, government, population, culture, race relations.

**Course Outcomes**

There are no course outcomes available

SOC 112 : Honors Current Social Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Individual deviance (violence, insanity, drugs, sex, crime, etc.) and social disorganization (poverty, race and sex discrimination, divorce, overpopulation, etc.). Conditions, causes, solutions.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

STAT 121 : Honors Principles of Statistics. (3:3:1)

OFFERED: Independent Study also; Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

RECOMMENDED: MATH 110 or equivalent.

DESCRIPTION: Stemplots, boxplots, histograms, scatterplots; central tendency, variability; confidence intervals and hypothesis testing involving one and two means and proportions; contingency tables, simple linear regression.

**Course Outcomes**

- Differentiate between observational studies and experiments
- Identify three sampling designs: simple random sample, stratified, and multi-stage
- Identify three designs of experiments: completely randomized, randomized block and matched-pairs
- Interpret and make appropriate conclusions from plots of data
- Calculate and interpret measures of center and spread
- Determine potential association between two quantitative and two categorical variables
- Communicate using technical language about probability and variation
- Interpret and communicate the outcomes of estimation and hypothesis tests in the context of a problem
- Understand the importance of data collection and how it dictates the appropriate statistical method and acceptable inference
- Determine the appropriate statistical procedure to use for a given research problem or data set

WRTG 150 : Honors Writing and Rhetoric. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Processes of writing, reading, and research with an emphasis on argumentation and rhetorical analysis.

NOTE: Fulfills General Education First-Year Writing requirement.

**Course Outcomes**

- Use rhetoric responsibly to compose arguments in a variety of genres for specific audiences and purposes.
- Critically read texts. This includesanalyzing how a text functions in a specific situation, community, or public;analyzing the nuances of language (diction, figures of speech, tone, etc.);identifying and evaluating the elements of an argument—claims, reasons, assumptions, and ethical, emotional, and logical appeals.
- Write coherent and unified texts (effective introductions, clear theses, supporting details, transitions, and strong conclusions) using a flexible and effective writing process, including prewriting, drafting, revising, and editing.
- Use style—diction, figurative language, tone, grammar, punctuation, spelling, mechanics—genre, conventions, and document design correctly and for rhetorical effect.
- Navigate the library to locate primary and secondary sources, evaluate the appropriateness and credibility of those sources, and effectively incorporate and accurately document outside sources in a research paper.

Religious Education:

REL A 121 : Honors The Book of Mormon. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Narrative, doctrines, and precepts of the Book of Mormon. Covers 1 Nephi through Alma 29.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the Book of Mormon narrative or story.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the Book of Mormon's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the Book of Mormon bears witness of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected Book of Mormon passages can be applied to daily living.

REL A 122 : Honors The Book of Mormon. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Narrative, doctrines, and precepts of the Book of Mormon. Covers Alma 30 through Moroni 10.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of --the Book of Mormon narrative or story.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Book of Mormon's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how the Book of Mormon bears witness of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how selected Book of Mormon passages can be applied to daily living.

REL A 211 : Honors: The New Testament. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Historical background, narrative, and doctrines of the New Testament. Covers the life and teachings of Jesus Christ set forth in the four Gospels.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the New Testament bears witness of the mission and message of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected New Testament passages can be applied to daily living.

REL A 212 : Honors: The New Testament. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Historical background, narrative, and doctrines of the New Testament. Covers the Acts of the Apostles through the Revelation of John.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the New Testament bears witness of the mission and message of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected New Testament passages can be applied to daily living.

REL A 301 : Honors: The Old Testament. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Historical background, narrative, and doctrines of the Old Testament. Covers Genesis through 2 Samuel.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how selected Old Testament passages can be applied to daily living.

REL A 302 : Honors: The Old Testament. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Historical background, narrative, and doctrines of the Old Testament. Covers 1 Kings through Malachi.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how selected Old Testament passages can be applied to daily living.

REL A 304 : Honors: Writings of Isaiah. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Teachings and prophecies of Isaiah in light of their historical context and relevance to latter-day people.

**Course Outcomes**

There are no course outcomes available

REL A 327 : Honors: The Pearl of Great Price. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Historical background and doctrines of the Pearl of Great Price.

**Course Outcomes**

There are no course outcomes available

REL A 392R : Honors: Special Studies in Religion: Ancient Scripture. (.5-3:ARR:0)

OFFERED: Honors also

WHEN TAUGHT: Contact Department.
DESCRIPTION: Topical studies in religion based on student interest and teacher expertise.

**Course Outcomes**

- Students will demonstrably learn relevant doctrine, principles and/or history of a specific aspect

REL C 130 : Honors Missionary Preparation. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Focuses upon the purpose, skills, and doctrines of missionary work and prepares prospective missionaries for a more meaningful MTC and mission experience.
NOTE: Recommended for all prospective missionaries. This class may not be taken or retaken by returned missionaries or non-LDS students.

**Course Outcomes**

There are no course outcomes available

REL C 234 : Honors: LDS Marriage and Family. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: LDS doctrines and principles of marriage and family.

**Course Outcomes**

- Students will learn and identify specific LDS doctrines and principles of successful marriage and family relationships.
- Students will accurately express LDS doctrines and principles of successful marriage and family relationships.
- Students will find and act on prophetic teachings regarding LDS expectations for marriage and family relationships.
- Students will discover and apply doctrines, instruction, and counsel given to Latter-Day Saints concerning marriage and family relationships.
- Students will remember and discuss LDS doctrines and teachings concerning the family.
- Students will discern between LDS principles of marriage and family and other views.

REL C 261 : Honors Introduction to Family History (Genealogy). (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Introduction to the doctrinal significance, necessary skills, and available resources dealing with family history and genealogy.

**Course Outcomes**

There are no course outcomes available

REL C 324 : Honors: The Doctrine and Covenants. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Origin, content, and teachings of the Doctrine and Covenants. Covers Sections 1 through 76.

**Course Outcomes**

- Students will learn the origin, content, and teachings of Doctrine and Covenants sections 1-76
- Students will demonstrably analyze the relevant revelation texts
- Students will demonstrably remember the teachings of the relevant revelation texts
- Students will understand and identify what the relevant revelation texts meant to their original recipients
- Students will apply the relevant revelation texts to personal and present situations

REL C 325 : Honors: The Doctrine and Covenants. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Origin, content, and teachings of the Doctrine and Covenants. Covers Sections 77 through Official Declaration 2.

**Course Outcomes**

- Students will learn the origin, content, and teachings of Doctrine and Covenants sections 77 through Official Declaration 2
- Students will demonstrably analyze the relevant revelation texts
- Students will demonstrably remember the teachings of the relevant revelation texts
- Students will understand and identify what the relevant revelation texts meant to their original recipients
- Students will apply the relevant revelation texts to personal and present situations

REL C 333 : Honors: The Living Prophets. (2:2:0)

OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Doctrines, administration, backgrounds, and current teachings of the living prophets, seers, and revelators.

**Course Outcomes**

- Students will accurately identify specific LDS doctrines, organization, government, and perspectives related to current members of the First Presidency and Quorum of Twelve Apostles
- Students will accurately articulate LDS doctrines and perspectives related to current members of the First Presidency and Quorum of Twelve Apostles
- Students will demonstrably identify, gather, and analyze biographical information of current members of the First Presidency and Quorum of Twelve Apostles
- Students will find and report on teachings of current members of the First Presidency and Quorum of Twelve Apostles
- Students will demonstrably discern the doctrines, instruction, and counsel of current members of the First Presidency and Quorum of Twelve Apostles

REL C 341 : Honors Joseph Smith and the Restoration, 1805-1845. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Life and ministry of the Prophet Joseph Smith, coming forth of the Book of Mormon, organization of the church, foundational revelations, building the Kirtland Temple, Missouri persecutions, establishment of Nauvoo, and events leading to the Martyrdom.

**Course Outcomes**

There are no course outcomes available

REL C 342 : Honors Pioneers and Persecution, 1846-1899. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Exodus from Nauvoo, the experience of Mormon Pioneers crossing the plains, establishing Zion in the Great Basin, plural marriage and government persecution, the Manifesto, and events leading to Utah statehood.

**Course Outcomes**

There are no course outcomes available

REL C 343 : Honors The Global Church, 1900 to the Present. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: The Church in the twentieth and twenty-first centuries, international expansion, significant developments of Church programs and structure, the Church during wartime, the world-wide spread of temples.

**Course Outcomes**

There are no course outcomes available

REL C 344 : Honors Latter-day Saint History: The International Church. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Church history and doctrine from 1830 to the present in Britain, Europe, the Pacific, Asia, Latin America, Africa, the Near East, and other areas.

**Course Outcomes**

- Students will learn the history of how the Church of Jesus Christ of Latter-day Saints, has expanded globally and been influenced by global developments
- Students will demonstrably remember and analyze events and developments of the global aspects of LDS history
- Students will demonstrably remember participants in global LDS history and analyze their contributions.
- Students will demonstrably remember the geography of global LDS history
- Students will gain experience with the historical record of global LDS history
- Students will relate global LDS history to larger historical contexts and patterns
- Students will examine and explain change over time and causes and effects as they relate to global LDS history

REL C 393R : Honors: Special Studies in Religion: Church History and Doctrine. (.5-3:ARR:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Topical studies in religion based on student interest and teacher expertise.

**Course Outcomes**

- · Students will demonstrably learn relevant doctrine, principles and/or history of a specific aspect of the restored gospel topics based on student interest and instructor expertise

REL C 431 : Honors Doctrines of the Gospel. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Doctrines of The Church of Jesus Christ of Latter-day Saints as taught in the scriptures and by latter-day prophets. Intended as a capstone experience to integrate doctrines and principles of the plan of salvation.

NOTE: Honors also.

**Course Outcomes**

- · Students will identify, understand, clarify, and explain core doctrines contained in the Standard Works of the Church of Jesus Christ of Latter-day Saints and taught by LDS prophets.
- · Students will discern whether their life choices are in harmony with the doctrines they understand
- · Students will explain how various aspects and principles of the plan of salvation work to bring to pass the immortality and eternal life of God's children

Students should consult the departmental listings in this catalog and the current class schedule for further details about these courses.

**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

**Course Information**

- European Studies (Europ) Courses

**International Development**

**Minors**

- International Development

**International Relations**

**Majors**

- BA in International Relations

**Course Information**

- International Relations (IR) Courses

**Latin American Studies**

**Majors**

- BA in Latin American Studies

**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# International and Area Studies

International and Area Studies Advisement Center
Anna Ortiz, Supervisor
273 HRCB, (801) 422-3548

## International and Area Studies Program Coordinators

African Studies, Chantal Thompson
Ancient Near Eastern Studies, Eric Huntsman
Asian Studies, Eric A. Hyer
European Studies, Nick Mason
International Development, Tim Heaton
International Relations, Ken Stiles
Latin American Studies, Christopher Lund
Middle East Studies / Arabic, James A. Toronto

## Admission to Degree Programs

All undergraduate international and area studies degree programs are open enrollment.

## Graduation Requirements

To receive a BYU bachelor's degree a student must complete, in addition to all requirements for a specific major, the following university requirements:

- The university core, consisting of requirements in general and religious education. (See University Core for details. For a complete listing of courses that meet university core requirements, see the current class schedule.)
- At least 30 credit hours must be earned in residence on the BYU campus in Provo as an admitted day student
- A minimum of 120 credit hours
- A cumulative GPA of at least 2.0
- Be in good standing with the Honor Code Office

## Undergraduate Programs and Degrees

Majors

BA in Ancient Near Eastern Studies

**History and Culture of Ancient Near East**
Know and be able to interpret the significant events and developments in the history and cultures of the ancient Near East, including the history and culture of ancient Israel in its Near Eastern context.

**Ancient Text Interpretation**
Be able to interpret major ancient Near East texts, including the Bible, and analyze their significance for understanding the cultures in which they were produced.

**Language Proficiency**
Acquire and demonstrate functional capacity in the languages and textual interpretation of the Hebrew Bible and/or Greek New Testament, being able to read, comprehend, analyze, and interpret these significant religious and historical texts with methodological soundness.

**Critical Thinking**
Develop the capacity for informed, independent, critical thinking and be able to perform appropriate library and online research utilized in the professional study of the ancient Near East.

**Analytical Writing**
Be able to write concise as well as more substantial research papers that utilize approaches from the Social Sciences and Humanities and that integrate language and interpretive skills to analyze ancient Near Eastern topics.

**Academic Integrity**
Have considered and received affirmation concerning the significance of integrity in their academic and professional pursuits.

**Academics and Faith**
Have considered and received affirmation concerning the relationship between academics and faith, and will have been encouraged to engage in a spiritually informed, lifelong pursuit of learning, scholarship, and service.

BA in Asian Studies
Emphases:
China Studies

**Factual Knowledge**
Demonstrate general factual knowledge of the literature, humanities, history, politics, economics, geography, and social conditions of East Asia.

**Language Proficiency**
Communicate in an Asian language (e.g. Chinese, Japanese or Korean) at the "intermediate" level

**Middle and Near Eastern Studies**

**Majors**

- BA in Ancient Near Eastern Studies
- BA in Middle East Studies/Arabic

**Minors**

- Ancient Near Eastern Studies
- Middle East Studies

**Course Information**

- Ancient Near Eastern Studies (ANES) Courses
- Middle East Studies/Arabic (MESA) Courses

according to ACTFL proficiency guidelines-i.e. "handle successfully a variety of uncomplicated communicative tasks in straightforward social situations . . . limited to those predictable and concrete exchanges necessary for survival." Comprehend "simple, sentence-length speech . . . in a variety of basic personal and social contexts." Read "short, non-complex texts that convey basic information and deal with basic personal and social topics."

**Language Proficiency**
Communicate in an Asian language (e.g. Chinese, Japanese or Korean) at the "intermediate" level according to ACTFL proficiency guidelines-i.e. "handle successfully a variety of uncomplicated communicative tasks in straightforward social situations . . . limited to those predictable and concrete exchanges necessary for survival." Comprehend "simple, sentence-length speech . . . in a variety of basic personal and social contexts." Read "short, non-complex texts that convey basic information and deal with basic personal and social topics."

**Language Proficiency**
Communicate in an Asian language (e.g. Chinese, Japanese or Korean) at the "intermediate" level according to ACTFL proficiency guidelines-i.e. "handle successfully a variety of uncomplicated communicative tasks in straightforward social situations . . . limited to those predictable and concrete exchanges necessary for survival." Comprehend "simple, sentence-length speech . . . in a variety of basic personal and social contexts." Read "short, non-complex texts that convey basic information and deal with basic personal and social topics."

**Effective Writing**
Demonstrate effective writing skills by completing a research paper on a major East Asian topic.

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Demonstrate effective writing skills by completing a research paper on a major East Asian topic.

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Demonstrate effective writing skills by completing a research paper on a major East Asian topic.

**Effective Writing**
Demonstrate effective writing skills by completing a research paper on a major East Asian topic.

**Effective Writing**
Demonstrate effective writing skills by completing a research paper on a major East Asian topic.

**Research Philosophies and Methodologies**
Understanding basic research philosophies and methodologies associated with research in the social science and humanities.

**Research Philosophies and Methodologies**
Understanding basic research philosophies and methodologies associated with research in the social science and humanities.

**Research Philosophies and Methodologies**
Understanding basic research philosophies and methodologies associated with research in the social science and humanities.

**Research Philosophies and Methodologies**
Understanding basic research philosophies and methodologies associated with research in the social science and humanities.

Japan Studies

**Factual Knowledge**
Demonstrate general factual knowledge of the literature, humanities, history, politics, economics, geography, and social conditions of East Asia.

**Factual Knowledge**
Demonstrate general factual knowledge of the literature, humanities, history, politics, economics, geography, and social conditions of East Asia.

**Language Proficiency**
Communicate in an Asian language (e.g. Chinese, Japanese or Korean) at the "intermediate" level according to ACTFL proficiency guidelines-i.e. "handle successfully a variety of uncomplicated communicative tasks in straightforward social situations . . . limited to those predictable and concrete exchanges necessary for survival." Comprehend "simple, sentence-length speech . . . in a variety of basic personal and social contexts." Read "short, non-complex texts that convey basic information and deal with basic personal and social topics."

**Language Proficiency**
Communicate in an Asian language (e.g. Chinese, Japanese or Korean) at the "intermediate" level according to ACTFL proficiency guidelines-i.e. "handle successfully a variety of uncomplicated communicative tasks in straightforward social situations . . . limited to those predictable and concrete exchanges necessary for survival." Comprehend "simple, sentence-length speech . . . in a variety of basic personal and social contexts." Read "short, non-complex texts that convey basic information and deal with basic personal and social topics."

**Effective Writing**
Demonstrate effective writing skills by completing a research paper on a major East Asian topic.

**Effective Writing**
Demonstrate effective writing skills by completing a research paper on a major East Asian topic.

**Effective Writing**
Demonstrate effective writing skills by completing a research paper on a major East Asian topic.

**Research Philosophies and Methodologies**
Understanding basic research philosophies and methodologies associated with research in the social science and humanities.

**Research Philosophies and Methodologies**
Understanding basic research philosophies and methodologies associated with research in the social science and humanities.

**Research Philosophies and Methodologies**
Understanding basic research philosophies and methodologies associated with research in the social science and humanities.

Korea Studies

**Factual Knowledge**
Demonstrate general factual knowledge of the literature, humanities, history, politics, economics, geography, and social conditions of East Asia.

**Factual Knowledge**
Demonstrate general factual knowledge of the literature, humanities, history, politics, economics, geography, and social conditions of East Asia.

**Language Proficiency**
Communicate in an Asian language (e.g. Chinese, Japanese or Korean) at the "intermediate" level according to ACTFL proficiency guidelines-i.e. "handle successfully a variety of uncomplicated communicative tasks in straightforward social situations . . . limited to those predictable and concrete exchanges necessary for survival." Comprehend "simple, sentence-length speech . . . in a variety of basic personal and social contexts." Read "short, non-complex texts that convey basic information and deal with basic personal and social topics."

**Effective Writing**
Demonstrate effective writing skills by completing a research paper on a major East Asian topic.

**Effective Writing**
Demonstrate effective writing skills by completing a research paper on a major East Asian topic.

**Effective Writing**
Demonstrate effective writing skills by completing a research paper on a major East Asian topic.

**Research Philosophies and Methodologies**
Understanding basic research philosophies and methodologies associated with research in the social science and humanities.

**Research Philosophies and Methodologies**
Understanding basic research philosophies and methodologies associated with research in the social science and humanities.

**Research Philosophies and Methodologies**
Understanding basic research philosophies and methodologies associated with research in the social science and humanities.

BA in European Studies

No learning outcomes were found for this program.

BA in International Relations

**Factual Knowledge**
Demonstrate factual knowledge of important international trends and events related to politics, economics, geography and history.

**Factual Knowledge**
Demonstrate factual knowledge of important international trends and events related to politics, economics, geography and history

**Analyzing International Affairs**
Anaylze international affairs by utilizing theoretical concepts and ideas from more than one IR-related discipline.

**Analyzing International Affairs**
Anaylze international affairs by utilizing theoretical concepts and ideas from more than one IR-related discipline.

**Analyzing International Affairs**
Anaylze international affairs by utilizing theoretical concepts and ideas from more than one IR-related discipline

**Writing Effectively**
Communicate effectively in writing and in speech.

**Writing Effectively**
Communicate effectively in writing and in speech

**Critical and Analytical Thinking**
Think critically and analytically about international problems and events, and synthesize concepts, information and experiences from different disciplines relevant to international affairs.

**Critical and Analytical Thinking**
Think critically and analytically about international problems and events, and synthesize concepts, information and experiences from different disciplines relevant to international affairs

**Analysis and Research**
Employ appropriate methods of analysis and research, both qualitative and quantitative, to provide sophisticated analyses and clear, logical arguments relating to important questions about international relations.

**Analysis and Research**
Employ appropriate methods of analysis and research, both qualitative and quantitative, to provide sophisticated analyses and clear, logical arguments relating to important questions about international relations

**Language Proficiency**
Communicate at an intermediate level in a foreign language (to the equivalent of 321).

**Language Proficiency**
Communicate at an intermediate level in a foreign language (to the equivalent of 321).

**Academic Honesty and Integrity**
Bring honesty and integrity to their daily lives, public affairs, and professional activities.

**Academic Honesty and Integrity**
Bring honesty and integrity to their daily lives, public affairs, and professional activities

**Religious Principles**
Apply religious principles and faith to the analysis of international affairs.

**Religious Principles**
Apply religious principles and faith to the analysis of international affairs

**Life-long Learning**
Gain a strong desire and prepare themselves to pursue a life of continued learning, to participate effectively in international affairs and to serve international communities and organizations.

**Life-long Learning**
Gain a strong desire and prepare themselves to pursue a life of continued learning, to participate effectively in international affairs and to serve international communities and organizations

BA in Latin American Studies

No learning outcomes were found for this program.

BA in Middle East Studies / Arabic

**Succinct Analytical Writing**
Write succinct analytical briefing papers on Middle Eastern events or topics in which they situate the event or topic in its broader context (geographical, political, religious, historical, etc.)

**Succinct Analytical Writing**
Write succinct analytical briefing papers on Middle Eastern events or topics in which studens situate the event or topic in its broader context (geographical, political, religious, historical, etc.)

**Succinct Analytical Writing**
Write succinct analytical briefing papers on Middle Eastern events or topics in which they situate the event or topic in its broader context (geographical, political, religious, historical, etc.)

**Substantive Research Papers**
Write substantive research papers which integrate extensive background knowledge and personal experience in the Middle East

**Oral Presentation**
Explain and analyze Middle Eastern events or topics in a significant oral presentation.

**Oral Presentation**
Explain and analyze Middle Eastern events or topics in a significant oral presentation.

**Library / Internet Research**
Perform skilled library and internet research on Middle Eastern topics

**Speaking Proficiency**
Speak an Arabic dialect at the ACTFL Advanced Level, demonstrating an ability to negotiate both survival and basic professional situations

**Speaking Proficiency**
Speak an Arabic dialect at the ACTFL Advanced Level, demonstrating an ability to negotiate both survival and basic professional situations

**Reading Proficiency**
Read and understand Arabic newspapers fluently, specifically front page, international page and Arab World page news articles, without the use of a dictionary or other aids.

**Arabic Research Sources**
Research using Arabic sources.

**Gospel principles of respect**
Applies gospel principles of appreciation and respect for cultural and religious differences and similarities.

**Gospel principles of respect**
Applies gospel principles of appreciation and respect for cultural and religious differences and similarities.

**Cultural Proficiency**
Exhibit understanding of Middle Eastern culture, humanities, geography, history, politics and religion while working in the Middle East for an extended period of time.

**Cultural Proficiency**
Exhibit understanding of Middle Eastern culture, humanities, geography, history, politics and religion while working in the Middle East for an extended period of time.

Minors

- African Studies
- Ancient Near Eastern Studies
- Asian Studies
- European Studies
- International Development
- Latin American Studies
- Middle East Studies

Students should see the International and Area Studies Advisement Center for help or information concerning the undergraduate programs.

# General Information

## International Study Programs

International Study Programs (ISP) are open to students from all university majors. Students need not be formally admitted to BYU to participate in International Study and BYU credit may be transferred to their home institution.

**Study Abroad:** BYU's traditional off-campus study programs. In these programs students are able to further their general education; pursue specialized courses in languages, the social sciences, humanities, fine arts, and other fields; gain valuable insights into their own country; and further international understanding.

**Direct Enrollment:** Students are integrated into an international university, taught by faculty native to that county, and are not accompanied by BYU faculty.

**International Internships:** Short-term, on-the-job apprentice training abroad under the direction of a firm, government agency, NGO, or other such institution.

**Field Studies:** A research experience abroad for small numbers of students directed by faculty, who generally do not accompany the students.

For further information, see the Office of International Study Programs in the David M. Kennedy Center, 101 HRCB, isp@byu.edu, and (801) 422-3686.

**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

**Course Information**

- European Studies (Europ) Courses

**International Development**

**Minors**

- International Development

**International Relations**

**Majors**

- BA in International Relations

**Course Information**

- International Relations (IR) Courses

**Latin American Studies**

**Majors**

- BA in Latin American Studies

**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# International and Area Studies (IAS)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 100-Level Courses

IAS 100 : Introduction to International Studies. (1:1:0)
DESCRIPTION: Academic expectations in the major and career orientation; review of campus resources; faculty presentations.

**Course Outcomes**
There are no course outcomes available

IAS 199R : Academic Internship: International. (.5-3:ARR:ARR)
DESCRIPTION: Nonsupervised undergraduate foreign internship.

**Course Outcomes**
There are no course outcomes available

### 200-Level Courses

IAS 201R : Cultural Survey. (.5-4:2:2)
PREREQUISITE: Performing group or ISP participant status.
DESCRIPTION: Multidisciplinary survey of various countries and regions in preparation for extended experience abroad.

**Course Outcomes**

- · Demonstrate a basic understanding of the people, worldview, culture (and language, where applicable) of the foreign setting in which the student studies.· Recognize one's cultural presuppositions and biases through exposure to, and study of, foreign perspectives on one's own culture.

: Cultural Survey-Europe.
**Course Outcomes**

: Cultural Survey-Asia.
**Course Outcomes**

: Cultural Survey-China.
**Course Outcomes**

: Cultural Survey-Middle East.
**Course Outcomes**

: Cultural Survey-USSR.
**Course Outcomes**

: Cultural Survey-Eastern Europe.
**Course Outcomes**

: Cultural Survey-Scandinavia.
**Course Outcomes**

: Cultural Survey-England.
**Course Outcomes**

: Cultural Survey-Africa.
**Course Outcomes**

: Cultural Survey-South Pacific.

**Course Outcomes**

: Cultural Survey: Japan.

**Course Outcomes**

IAS 220 : Introduction to Development Studies. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Exploration of international development in non-formal education, micro-enterprises, community organizations; hunger, poverty, and other special problems in developing areas of the world.

**Course Outcomes**

- Upon successfully completing this course, a student will be able to recognize the historical origins of international development and the various agendas that it embodies. Upon successfully completing this course, a student will be able to recognize and articulate the complexity of international development issues and their interdisciplinary nature. Upon successfully completing this course, a student will be able to identify major theories and approaches to international development both in general and across different key disciplines. Upon successfully completing this course, a student will be intellectually ready to embark on an International Development Minor Internship.

### 300-Level Courses

IAS 301 : Kennedy Center Lecture Series. (1:1:0)

DESCRIPTION: Weekly lectures by national and international authorities on world affairs; designed as an introductory class for all David M. Kennedy Center majors.

**Course Outcomes**

There are no course outcomes available

IAS 351R : Model United Nations Preparation. (.5-3:ARR:0)

DESCRIPTION: Preparation for participating in MUN projects, on campus, in public schools, and at the United Nations in New York.

**Course Outcomes**

- • Understand the framework for multilateral diplomacy -Students will demonstrate understanding of the process and politics of international organizations • Explore the rationale for diplomacy - Students will understand how international law informs diplomacy and relates to international organization. • Improve public speaking ability - Students will improve oratory ability by learning and demonstrating elements of effective public speaking. • Improve policy writing ability - Students will demonstrate the ability to write policy papers and resolutions with regular feedback and various opportunities individually, in small groups and in large simulations. • Improve research ability - Students will demonstrate effective research skills while learning about country policies and international topics in greater depth. • Develop parliamentary procedure skills - Students will learn and effectively use beginning and intermediate parliamentary procedure in group settings. • Expand leadership capacity - Students will explore the dynamics of leadership, including motivation, decision making, and group dynamics and will begin to demonstrate leadership abilities, especially in simulations/case study/small group activities.

IAS 353R : Intercultural Outreach Preparation. (1-3:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Developing abilities to prepare and share international understanding in public and private schools.

**Course Outcomes**

- Activelyreflect on your own cultural values, practices, and traditions and develop an articulated sense of respect for themStudy, understand, and negotiate the central role cultural values—your own and others'—play in all human interactionsDevelop a personal framework for effective intercultural participationProbe commonly held views of culture and intercultural competenceDevelop a pedagogical approach for fostering transformative cultural contact situations and for creating "third zones", as negotiated and productive areas of intercultural workCreate written and oral forms of intercultural outreachBecome an active agent for intercultural responsibility and competence

IAS 354R : Model Arab League Preparation. (.5-3:Arr:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Understanding Middle Eastern governments and foreign policies. Preparation and attendance at the Model Arab League Conference.

**Course Outcomes**

There are no course outcomes available

IAS 360R : International Field Study Preparation. (.5-9:ARR:0)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Cross-cultural field research and survival with a regional emphasis and application.

NOTE: For students preparing for International Field Studies and Internships or Study Abroad programs.

**Course Outcomes**

- 1. Improve your ability to ask analytical and insightful questions as relates to your experience and express yourself more clearly in writing.2. Develop cross-cultural skills for entering and navigating a new culture and developing new meaningful relationships with people from often very different backgrounds than you.3. Further develop a working knowledge of field methods and project design, and develop a clearly written and implementable plan for your field study.4. Develop a basic understanding of research ethics and the IRB process.5. Collaborate and learn from others in the BYU Field Studies community.6. Create realistic expectations of yourself and your academic experience abroad.

IAS 361 : Post-Fieldwork Analysis and Writing. (2:2:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: IAS 360R

DESCRIPTION: Writing course designed to help students write a quality research paper

NOTE: Only for those students who have participated in an International Study Programs Field Study Program.

**Course Outcomes**

- Rhetorical Knowledge – Students will demonstrate that they can write clearly, focus on a well-defined purpose in writing, use conventions of format and structure appropriate to their discipline, and adopt a voice, tone, and level of formality suited to multiple purposes and audiences, including audiences both within and outside the discipline in which the course is offered.Writing Processes – Students will develop productive and flexible individual and collaborative writing processes, including prewriting, drafting, revising, editing and proofreading. These processes could include the following: collecting data, finding supporting evidence, and creating good arguments; organizing the material for a paper; writing successive drafts of the same paper; group writing; seeking and using peer responses; editing grammar, usage and punctuation; and using conventional formats. These processes will reflect processes of inquiry within the student's discipline.Processes of Disciplinary Research – Students will demonstrate the ability to use appropriate research tools and processes of research within their particular discipline, including library research. Students will demonstrate their ability to identify and evaluate sources, retrieve and evaluate data, take notes, and follow conventions of quoting, paraphrasing, and summarizing. They will cite sources properly and demonstrate an understanding of ethical issues related to research, including how to avoid plagiarism.

IAS 369R : International Internship Preparation. (1-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Orientation on cross-cultural communication, globalization, interfacing with internship providers, culture shock, international safety/health, and BYU policies abroad.

NOTE: For students preparing to participate in an internship, field practicum, or experiential learning experience abroad.

**Course Outcomes**

There are no course outcomes available

IAS 380R : Cultural Proofs. (1-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Independent research on cultural topics and intercultural communication.

NOTE: For students studying abroad.

**Course Outcomes**

- Gain knowledge from close observation of cultural traditions and practices
- Each student will develop in these areas through careful analysis of cultural traditions and practices and the production of field notes and a reflective written summary
- Through participation in the cultural proofs exercises, each student will become familiar with basic field study research skills and practices

IAS 397R : Topics in International and Area Studies. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Instructor's consent.

DESCRIPTION: Study relating to current world problems.

**Course Outcomes**

- Students will gain knowledge through advanced study in focused area of IAS
- The student will develop these skills by producing a well-reasoned and well-written research paper
- Develop techniques of advanced research appropriate to the study

:

**Course Outcomes**

IAS 399R : Academic Internship: International. (.5-9:ARR:ARR)

PREREQUISITE: Acceptance into program.

DESCRIPTION: Individualized work or volunteer experience in an international setting.

NOTE: Class must be coordinated through International Study Programs.

**Course Outcomes**

- · Apply skills and material learned in traditional courses to a real-world workplace environment.· Demonstrate proficiency in the skills required by the internship supervisor.· Demonstrate an ability to link insights gained from traditional classes and from real-world

workplace experiences.

**400-Level Courses**

IAS 421 : Seminar on Japanese Workplace: Society and Culture. (3:3:0)

WHEN TAUGHT: Fall; Summer
PREREQUISITE: Instructor's consent.
NOTE: Required seminar for interns in the Japan seminar and intern program held only in Japan.

**Course Outcomes**

No outcomes are available at this time.

IAS 491 : Directed Research for African Studies Minor. (3:2.5:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Enrollment in the African Studies minor.
DESCRIPTION: Directed research project (library and/or on-site experience) related to African studies or the African diaspora. Must be supervised by faculty with extensive in-field experience in Africa and African Studies.
NOTE: Students may adapt their research project to their individual major requirements with the approval of their major department.

**Course Outcomes**

No outcomes are available at this time.

**Back to International and Area Studies Home**

**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

**Course Information**

- European Studies (Europ) Courses

**International Development**

**Minors**

- International Development

**International Relations**

**Majors**

- BA in International Relations

**Course Information**

- International Relations (IR) Courses

**Latin American Studies**

**Majors**

- BA in Latin American Studies

**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# African Studies

## The Discipline

The African Studies minor is an interdisciplinary program focused on the study of Africa, primarily through the humanities and social sciences. With its various courses on history, geography, culture, literature and politics, the program deepens your understanding of a continent of increasing importance in global politics and world economy. It is an excellent minor for students interested in medicine, law, business, education, humanities, economics, or working with government agencies, NGOs, or international organizations.

**Middle and Near Eastern Studies**

**Majors**

- BA in Ancient Near Eastern Studies
- BA in Middle East Studies/Arabic

**Minors**

- Ancient Near Eastern Studies
- Middle East Studies

**Course Information**

- Ancient Near Eastern Studies (ANES) Courses
- Middle East Studies/Arabic (MESA) Courses

**International and Area Studies Programs Home**

**Course Information**
- International and Area Studies (IAS) Courses

**African Studies**

**Minor**
- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:
- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**
- Asian Studies

**Course Information**
- Asian Studies (Asian) Courses

**European Studies**

**Majors**
- BA in European Studies

**Minors**
- European Studies

**Course Information**
- European Studies (Europ) Courses

**International Development**

**Minors**
- International Development

**International Relations**

**Majors**
- BA in International Relations

**Course Information**
- International Relations (IR) Courses

**Latin American Studies**

**Majors**
- BA in Latin American Studies

**Minors**
- Latin American Studies

**Course Information**
- Latin American Studies (Lt Am) Courses

# Minor in African Studies (15 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## The Discipline

The African Studies minor is designed to complement several majors in preparing students interested in work related to the continent of Africa or the African Diaspora.

## Program Requirements

1. Complete three courses from the following:

ANTHR 330 : Peoples of Africa. (3:3:0)
WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Political, economic, and social organization, family life, language, worldview, religion, ritual, artistic expression, ecological adaptation, and contemporary development issues among rural and urban sub-Saharan peoples.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

GEOG 285 : Africa South of the Sahara. (3:3:0)
WHEN TAUGHT: Winter Contact Department
DESCRIPTION: Geographical analysis focusing on resource management, political issues, development, environmental problems, economic development, and urban-rural change; case studies from selected countries.

**Course Outcomes**
There are no course outcomes available

HIST 261 : Modern Africa. (3:3:0)
WHEN TAUGHT: Fall Even Yrs.
DESCRIPTION: Survey of the history of the African continent from circa 1800, focusing on experiences and perspectives of Africans. Topics may include culture and identity, colonialism, independence movements, religion, gender relations, the environment, and economic development.

**Course Outcomes**
- Students will gain a greater knowledge of major events, developments, and questions in modern African history
- Students will develop a historical understanding of African societies, cultures, and peoples
- Students will improve their ability to weigh evidence, assess conflicting viewpoints, and evaluate arguments
- Students will improve their ability to write clearly and organize evidence to build an argument
- Students will gain a greater understanding of how Africa has related to the rest of the world

POLI 352 : African Politics. (3:3:0)
PREREQUISITE: Poli 200.
DESCRIPTION: Processes of change and development of nation states; African regionalism and relations with other nations; contemporary political issues.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

2. Complete one course from the following:

ENGL 358R : Ethnic Literatures. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: ENGL 251 & ENGL 295
DESCRIPTION: Study of literary texts representative of a thoughtfully focused dimension of a given ethnic group.

**Course Outcomes**
There are no course outcomes available

: Native American Literature.

**Course Outcomes**

: African American Literature.

**Course Outcomes**

: Asian American Literature.

**Course Outcomes**

: Latino/a American Literature.

**Course Outcomes**

: Jewish American Literature. (0::)

**Course Outcomes**

FREN 456R : Francophone Studies. (3:3:0)
PREREQUISITE: Fren 340.
DESCRIPTION: Readings from major French-speaking writers from countries outside France, such as Canada, Africa, and the Caribbean.

**Course Outcomes**

- Analyze and compare the cultures and practices that create African Francophone identities.
- Analyze and interpret literary texts of the French-speaking world.

3. Complete the following:

IAS 491 : Directed Research for African Studies Minor. (3:2.5:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Enrollment in the African Studies minor.
DESCRIPTION: Directed research project (library and/or on-site experience) related to African studies or the African diaspora. Must be supervised by faculty with extensive in-field experience in Africa and African Studies.
NOTE: Students may adapt their research project to their individual major requirements with the approval of their major department.

**Course Outcomes**
No outcomes are available at this time.

*Hours include courses that may fulfill university core requirements.

**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

**Course Information**

- European Studies (Europ) Courses

**International Development**

**Minors**

- International Development

**International Relations**

**Majors**

- BA in International Relations

**Course Information**

- International Relations (IR) Courses

**Latin American Studies**

**Majors**

- BA in Latin American Studies

**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# Asian Studies

## The Discipline

The Asian Studies major is an interdisciplinary program designed to prepare students for careers and advanced study in the specialized field of Asia not provided by a major in one department. In the program, students acquire working competence in Chinese, Japanese, Korean, or another approved Asian language; a broad knowledge of Asian civilization; and a more specialized knowledge in an academic discipline.

## Career Opportunities

The Asian Studies major is useful to those contemplating careers in academic areas, private industry, or government service. The import-export field and international services are particularly interested in persons who have a strong background in Asian Studies.

**Middle and Near Eastern Studies**

**Majors**

- BA in Ancient Near Eastern Studies
- BA in Middle East Studies/Arabic

**Minors**

- Ancient Near Eastern Studies
- Middle East Studies

**Course Information**

- Ancient Near Eastern Studies (ANES) Courses
- Middle East Studies/Arabic (MESA) Courses

**International and Area Studies Programs Home**

**Course Information**
- International and Area Studies (IAS) Courses

**African Studies**

**Minor**
- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:
- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**
- Asian Studies

**Course Information**
- Asian Studies (Asian) Courses

**European Studies**

**Majors**
- BA in European Studies

**Minors**
- European Studies

**Course Information**
- European Studies (Europ) Courses

**International Development**

**Minors**
- International Development

**International Relations**

**Majors**
- BA in International Relations

**Course Information**
- International Relations (IR) Courses

**Latin American Studies**

**Majors**
- BA in Latin American Studies

**Minors**
- Latin American Studies

**Course Information**
- Latin American Studies (Lt Am) Courses

# BA in Asian Studies: China Studies Emphasis (50–70 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Courses cannot be double counted between the different requirement sections in the major.
2. There is a strong expectation that majors will do work in Asia via Study Abroad, internships, etc.
3. Complete the following core courses:

ASIAN 200 : Introduction to Asian Studies: Methods and Materials. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Sources, materials, and methods of research and writing; critical analysis of research project.
NOTE: Required of all Asian Studies majors early in the program.

**Course Outcomes**
- The student can identify countries and major geographic features of Asia on a map. The student can relate basic facts about the history, economics, politics, society and cultures of the countries of Asia.
- The student will be able to apply effective search strategies to locate and to evaluate information on Asia in all formats (print, electronic, microform, video, DVD) and of all types (books, articles, reference materials, etc.). The student will be able to employ proper research skills to carry out research on a topic related to Asia and present results in oral and written academic reports.

ASIAN 342 : Asian Literary Traditions. (3:3:0)
DESCRIPTION: Comparative analysis of Asian literary works spanning several traditions.

**Course Outcomes**
- Apply basic concepts of comparative literary analysis to course texts.
- Gain familiarity with Asian literary traditions, particularly India, China, and Japan.
- Demonstrate strong critical reading, writing, and analytical skills across linguistic and national traditions.

HIST 231 : Introduction to East Asian History. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Major themes in the history, thought, and culture of Asian societies from antiquity to the present.

**Course Outcomes**
- Students will be able to explain and analyze the major political, economic, and social developments in the history of China, Korea, and Japan from antiquity to the present
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meaning and significance of historical events on contemporary identity and foreign relations.
- Students will be able to analyze historical arguments.

IHUM 240 : Introduction to the Humanities of Asia. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Major arts of Asian cultures in their historical, religious, and philosophical settings.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

4. Complete one course from the following:

POLI 348 : Government and Politics of Asia. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Comparative analysis of political developments of the major countries of Asia not covered in other country-specific classes.

**Course Outcomes**
There are no course outcomes available

POLI 385 : International Relations of Asia. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Foreign policies and international relations of China, Japan, and Northeast and Southeast Asia; historical and contemporary review and analysis.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

5. Complete the following core course:

ASIAN 495 : Senior Seminar. (1:Arr:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Senior status or program coordinator's consent.

DESCRIPTION: Learning research and writing skills necessary to prepare and present major senior research paper.

NOTE: Most all major requirements should be completed before registering for this course.

**Course Outcomes**

- In this course, you will learn how to complete a significant research project using appropriate methods of research, analysis, and a professional standard of writing. In doing so, you will draw heavily from your knowledge from previous courses.
- You will do this by studying a specialized topic in Asian Studies under the guidance of a professor. Thus, you will deepen your familiarity with a sub-field within Asian Studies and Asian Studies more broadly.
- You will also learn how to present your findings in a high-quality oral presentation, and how to give and receive appropriate feedback within a community of scholars.

6. Complete the following history core courses (history core courses cannot be double counted as electives):

HIST 340 : Traditional China. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: From a loose federation of Neolithic societies, Chinese civilization emerges as East Asia's dominant political and cultural force; developments to ca. 1500.

**Course Outcomes**

- Students will be able to explain and analyze the major social, political, economic, intellectual and cultural developments in the history of Early China (ca. 5000 BC–220 AD
- Students will demonstrate a basic geographical knowledge of China, including significant geological features and major historical cities Moreover, they will be able to discuss how geographical and environmental realities have impacted historical development.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve.

HIST 341 : China Since 1200. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Economic and political foundations of modernity during high Imperial China; challenge of new order from the West; rise of Chinese nationalism, revolution, and development to the present.

**Course Outcomes**

There are no course outcomes available

7. Complete the required courses for the Language Certificate in Chinese and take the OPI and WPT assessments. These assessments must be done on the BYU campus, and must be completed before graduation. See http://languagecertificate.byu.edu/program-requirements for complete details. Complete the following:

CHIN 302 : Third-Year Mandarin (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Chin 301.

DESCRIPTION: Advanced-level Mandarin skills, especially media discourse and reading.

**Course Outcomes**

- Understand the main points of spoken Chinese on television and radio news broadcasts at the ACTFL advanced mid level. (See Chinese major learning outcome 1)
- Read journalistic texts at the ACTFL advanced mid level, demonstrating the ability to both skim and scan texts as well as read for details. (See Chinese major learning outcome 2)
- Summarize news stories, express personal insights, and write and translate descriptive reports in formal written Chinese at the ACTFL intermediate mid level and in spoken Chinese at the advanced low level. (See Chinese major learning outcome 2)
- Understand the structure of Chinese media discourse, including grammar and stylistics, within the Chinese cultural context. (See Chinese major learning outcome 3)

CHIN 345R : Chinese Culture. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: Selected topics in traditional, modern, and contemporary Chinese culture.

**Course Outcomes**

- Demonstrate cultural literacy of the foundations of Chinese civilization: geography, history, philosophy, thought, political systems and social structures (see Chinese major expected learning outcome 3).
- Explain how cultural factors and institutions have shaped and continue to shape allied disciplines in Chinese studies including language, literature, linguistics, and the visual arts (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

CHIN 343 : Chinese Literature in Translation--Poetry. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: All readings in English; topics vary.

**Course Outcomes**

- Outline the basic facts of early Chinese poetry: authors, genres, titles (see Chinese major expected learning outcome 3).
- Utilize the basic approaches to analyzing and appreciating literature (see Chinese major expected learning outcome 3).
- Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

**Or**:
CHIN 344 : Chinese Literature in Translation--Prose. (3:3:0)
WHEN TAUGHT: Winter
DESCRIPTION: All readings in English; topics vary.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Acquire and apply knowledge of literary terminology and frameworks for literary analysis (see Chinese major expected learning outcome 3).
- Analyze and discuss classical and modern Chinese narrative literature and its relations to Chinese cultural traditions (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

Note: Chin 344 and 345R cannot be double counted as electives.

8. Complete 18 hours from the following elective courses (no more than 6 hours may be selected from any one department):

ANTHR 335 : Peoples of India. (3:3:0)
WHEN TAUGHT: Winter Odd Yrs.
DESCRIPTION: Society and culture on the Indian subcontinent. Stratification, kinship, marriage, religion, politics, economics.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be provided an overview of the peoples and cultures of South Asia with an emphasis on India; a region consisting of several hundred languages, multiple ethnicities, many religious traditions, and competing political orientations.
- Students will receive increased knowledge of the cultures of India through in-depth readings, lectures, discussions, and films.
- Students will increase their capacity for critical thinking skills and writing within the discipline through discussions, exams, and a written research papers.

ANTHR 336 : Cinema and Culture in India. (3:3:0)
WHEN TAUGHT: Spring
DESCRIPTION: Anthropology of film in India; the world's largest film industry. Indian cultural and linguistic diversity. How different film genres reflect, distort, or utilize Indian cultural diversity. Evidences in the film work of Satyajit Ray.

**Course Outcomes**

There are no course outcomes available

ANTHR 341 : Ethnonationalism and Southeast Asia. (3:3:0)
WHEN TAUGHT: Winter
RECOMMENDED: Anthr 101.
DESCRIPTION: Historical and ethnographic perspectives on social and political dynamics in Southeast Asia, including upland ethnic minority issues, ethnonationalistic movements, geopolitical influences, war, genocide, religious dynamics, and the rise of nationalism in the region.

**Course Outcomes**

There are no course outcomes available

ANTHR 343 : Chinese Culture and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter Odd Yrs.
DESCRIPTION: Cultural and social institutions of traditional and modern China, including mainland China, Taiwan, Hong Kong, or other areas of Chinese impact.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain knowledge of the varieties of cultures encompassed in the vast domains of China as well as the basic social paradigms of Chinese society. Through this study, students will also gain a basic knowledge of the history of China and its importance in both past and present world contexts.

ANTHR 348 : Contemporary Japan. (3:3:0)
DESCRIPTION: Using movies and popular media to examine the social structures and family life dynamics of contemporary Japan.

**Course Outcomes**

There are no course outcomes available

ARTHC 203 : Survey of Oriental Art and Architecture. (3:3:0)
DESCRIPTION: Art and architecture of China, Korea, Japan, Southeast Asia, and India, considering social, religious, and environmental context of various cultures.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 375 : Japanese Art and Architecture. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Japanese art and architecture from its neolithic origins through the dawn of the modern age. Literary, social, and religious contexts considered.

**Course Outcomes**

No outcomes are available at this time.

CHIN 342 : Chinese Film in Translation. (3:2:3)
WHEN TAUGHT: Winter
DESCRIPTION: Survey course covering the silent era to the present, including selections from Republican China, the People's Republic of China, Taiwan, and Hong Kong.

**Course Outcomes**

There are no course outcomes available

CHIN 343 : Chinese Literature in Translation--Poetry. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: All readings in English; topics vary.

**Course Outcomes**

- Outline the basic facts of early Chinese poetry: authors, genres, titles (see Chinese major expected learning outcome 3).
- Utilize the basic approaches to analyzing and appreciating literature (see Chinese major expected learning outcome 3).
- Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

CHIN 344 : Chinese Literature in Translation--Prose. (3:3:0)
WHEN TAUGHT: Winter
DESCRIPTION: All readings in English; topics vary.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Acquire and apply knowledge of literary terminology and frameworks for literary analysis (see Chinese major expected learning outcome 3).
- Analyze and discuss classical and modern Chinese narrative literature and its relations to Chinese cultural traditions (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

CHIN 345R : Chinese Culture. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Selected topics in traditional, modern, and contemporary Chinese culture.

**Course Outcomes**

- Demonstrate cultural literacy of the foundations of Chinese civilization: geography, history, philosophy, thought, political systems and social structures (see Chinese major expected learning outcome 3).

- Explain how cultural factors and institutions have shaped and continue to shape allied disciplines in Chinese studies including language, literature, linguistics, and the visual arts (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

CHIN 346 : Introduction to Chinese Philosophy. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction to native Chinese philosophies of Confucianism and Taoism. Readings in translation of *Lun-yu, Meng-tsu, Lao-tzu,* and *Chuang-tzu.* Themes include self, society, and cosmos.

**Course Outcomes**

- Summarize the important facts, figures, and dates relevant to early Chinese philosophy (see Chinese major expected learning outcome 3).
- Explain the broad outlines of the major schools of Confucianism, Mohism, Daoism, and Legalism, and understand their roles in the development of Chinese society and thought (see Chinese major expected learning outcome 3).
- Formulate philosophical questions.
- Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

CHIN 441 : Classical and Literary Chinese. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Chin 301 or equivalent.

DESCRIPTION: Introduction to syntax and stylistic patterns.

**Course Outcomes**

- Explain the use of the common grammatical particles and patterns essential in mastering the intricacies and subtleties of "classical" Chinese prose (see Chinese major expected learning outcome 3).
- Discuss and apply the meanings and usages of the standard vocabulary of classical Chinese (see Chinese major expected learning outcome 3).
- Summarize the thought of each important early thinker (see Chinese major expected learning outcome 3).

CHIN 442 : Classical and Literary Chinese. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHIN 441

DESCRIPTION: Introduction to syntax and stylistic patterns.

**Course Outcomes**

- Read, analyze, and discuss documentary Chinese prose (see Chinese major expected learning outcome 3).
- Compare and contrast the literary craftsmanship exhibited by the writers of documentary Chinese and discuss traditional Chinese history, literature, and religion (see Chinese major expected learning outcome 3).
- Explain the use of the basic grammatical particles introduced in Chin 441, learn some more advanced ones, and practice using them in new contexts (see Chinese major expected learning outcome 3).

CHIN 443 : Modern Chinese Literature. (3:3:0)

PREREQUISITE: Chin 321 or 322.

DESCRIPTION: Authors, themes, and writing styles of the period 1915--1949. Texts in Chinese.

**Course Outcomes**

- Read, analyze, and discuss Chinese literary texts from the modern (1900-1949) period in Chinese (see Chinese major expected learning outcomes 2 and 3).
- Discuss modern Chinese literary texts in Chinese with fluency and increasing sophistication, demonstrating facility for expressing subjective judgments on literature and other abstract topics in Chinese (see Chinese major expected learning outcomes 1-3).
- Analyze and discuss modern Chinese literary genres, works and authors in their social, historical, and religious contexts (see Chinese major expected learning outcome 3).

CHIN 444 : Contemporary Chinese Literature. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Chin 321 or 322.

DESCRIPTION: Contemporary literature of Taiwan and the PRC. Texts in Chinese.

**Course Outcomes**

- Read, analyze, and write about Chinese literary texts from the contemporary (1949-present) period in Chinese (see Chinese major expected learning outcomes 2 and 3).
- Discuss contemporary Chinese literary texts in Chinese with fluency and increasing sophistication, demonstrating facility for expressing subjective judgments on literature and other abstract topics in Chinese (see Chinese major expected learning outcomes 1 and 3).
- Analyze and discuss contemporary Chinese literary genres, works and authors in their social, historical, and religious contexts (see Chinese major expected learning outcome 3).

CHIN 445R : Chinese Poetry. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: CHIN 343 & CHIN 441
DESCRIPTION: Readings in Chinese poetry. Topics vary from classical and modern poetry. Various themes and genres introduced, emphasizing shi poetry. Texts in Chinese.

**Course Outcomes**

There are no course outcomes available

GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.
DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 273 : Southeast Asia. (3:3.0:0)

WHEN TAUGHT: Fall Contact Department
DESCRIPTION: Fundamental issues of geography relating to Southeast Asia, including the extraction and marketing of natural resources, economic development, neighborly relations, and how diffusion has influenced the unique cultural, religious, and linguistic characteristics of the region.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

HIST 337 : Pre-modern Korea. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Political, economic, and social history of Korea from antiquity to 1850.

**Course Outcomes**

- An understanding of the major features of Korean history and culture both in breadth and in depth.
- An understanding of Korean history contextualized both within the framework of Korean history and in relationship to other histories and other constructions of history.
- The ability to think and write about issues in Korean history in a critical and compelling manner.

HIST 338 : Modern Korea. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.
DESCRIPTION: Political, economic, and social history of Korea from 1850 to the present.

**Course Outcomes**

- Students will be able to describe the most significant aspects of the polity, economy, society and ideology of Korea from 1850 to the present.
- Students will be able to recognize and analyze change over time in East Asia
- Students will be able to evaluate and apply primary source texts to broad historical themes
- Students will be able to conduct individual research and situate it in the broader historical context

HIST 340 : Traditional China. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.
DESCRIPTION: From a loose federation of Neolithic societies, Chinese civilization emerges as East Asia's dominant political and cultural force; developments to ca. 1500.

**Course Outcomes**

- Students will be able to explain and analyze the major social, political, economic, intellectual and cultural developments in the history of Early China (ca. 5000 BC–220 AD
- Students will demonstrate a basic geographical knowledge of China, including significant geological features and major historical cities Moreover, they will be able to discuss how geographical and environmental realities have impacted historical development.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve.

HIST 341 : China Since 1200. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Economic and political foundations of modernity during high Imperial China; challenge of new order from the West; rise of Chinese nationalism, revolution, and development to the present.

**Course Outcomes**

There are no course outcomes available

HIST 343 : Traditional Japan. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, social, religious, and cultural developments to ca. 1700.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history until around 1600.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 344 : Modern Japan. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Main themes in Japanese history from Tokugawa times to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history from approximately 1600 to the present.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 347 : Chinese Cultural History. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Methods and approaches of the cultural historian; in-depth investigation of a selected topic in Chinese cultural history. Topics may include women, Silk Roads, material culture, etc.

**Course Outcomes**

- Students will be able to explain and understand the methods and approaches of the cultural historian through an investigation of select topics in Chinese cultural history.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve

HIST 348 : Modern South East Asia. (3:3:0)

DESCRIPTION: Complex history of the varied nations of this vast area: religion, colonialism, nationalism, independence.

**Course Outcomes**

- Gain a historical consciousness by demonstrating a knowledge of major developments in South East Asia and world history and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions by using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

HIST 349 : History of Asian Religions and Thought. (3:3:0)

DESCRIPTION: Major themes in religion, philosophy, and ideas in Asia.

**Course Outcomes**

- Students will be able to understand and analyze key concepts in Chinese thought and religion as well as the logic behind core beliefs and practices
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions.

JAPAN 321 : Reading Modern Documentary Styles. (3:3:0)

PREREQUISITE: Japan 302 or equivalent.

DESCRIPTION: Readings in modern documentary styles, emphasizing reading comprehension, grammar, and vocabulary building.

**Course Outcomes**

- Students will increase their ability to understand vocabulary commonly used in newspapers
- Students will be able to read a range of types of news articles (politics, business, human interest, sports, etc.)
- Students will be able to compare and contrast print and television news reports. A written sample will be included in the individual student portfolio. The student portfolio will be formally reviewed at the conclusion of this course.

JAPAN 322 : Reading Modern Short Fiction. (3:3:0)

PREREQUISITE: Japan 302 or equivalent.

DESCRIPTION: Readings in modern short fiction, emphasizing grammar, reading comprehension, vocabulary

building, and stylistic analysis.

**Course Outcomes**

- Students will be able to use a variety of dictionary sources that will enable them to read and comprehend modern Japanese prose
- Students will be able to recognize a majority of standard-usage kanji and identify various readings for the characters
- Students will be able to analyze and discuss a variety of modern Japanese literary texts at an intermediate level in the target language. A writing sample will be included in the individual student portfolio.

JAPAN 345 : Traditional Japanese Culture. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department

DESCRIPTION: General survey emphasizing aesthetics, religion, and value systems. All readings in English.

**Course Outcomes**

- Students will be able to speak and write about such features of culture as language, literature, thought, religion, aesthetics, art and music. A writing sample will be included in the individual student portfolio.

JAPAN 350 : Japanese Literature in Translation--Eighth Through Sixteenth Centuries. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 700 through 1600 (Nara, Heian, and medieval periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of premodern literature in verbal and written forms. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their knowledge and understanding of major works and genres in verbal and written forms.

JAPAN 351 : Japanese Literature in Translation--Seventeenth Through Nineteenth Centuries. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 1600 through 1900 (Edo and Meiji periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of early modern Japanese literature orally and in writing. A writing sample will be included in individual student portfolio.
- Students will demonstrate their understanding of key literary works and genres in early modern Japanese literature in verbal and written forms.

JAPAN 352 : Japanese Literature in Translation: The Modern Era. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from Meiji period to the present.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of human aspects in works of modern Japanese literature orally and in writing. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their ability to analyze key works and genres in modern Japanese literature in oral and written form.

JAPAN 441 : Introduction to Classical Japanese. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: JAPAN 321 & JAPAN 322

DESCRIPTION: Reading of premodern texts, emphasizing grammar and syntax, and showing differences from and influences on the modern idiom.

**Course Outcomes**

- Students will be able to analyze and discuss the influence of the pre-modern language on present-day Japanese.
- Students will read and analyze the content and linguistic features of important premodern literary texts. A writing sample will be included in the individual student portfolio.

JAPAN 444 : Reading Modern Japan. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 321, 322; or equivalents.

DESCRIPTION: Fictional texts from major twentieth-century authors. Texts primarily in Japanese.

**Course Outcomes**

- Students will demonstrate their ability to read and interpret modern literary texts with sophistication in both oral and written forms. A writing sample will be included in the individual student portfolio.

KOREA 321 : Selected Readings of Modern Korean. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Korea 301 or equivalent.

DESCRIPTION: Mixed script (with hanja) and other readings from modern documentary and literary texts, emphasizing comprehension, grammar, and vocabulary building.

**Course Outcomes**

- students will develop skills in reading advanced level texts in literature and social sciences.

KOREA 340 : Korean Literature to 1900. (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 302

DESCRIPTION: Korean literature from the earliest times to 1900. Emphasis on basic literary concepts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will learn of the wide range of literary genre available in Korea prior to the 20th century.
- Students will learn at least five styles of poetry common in Korea from the Silla period to the late Joseon period, including hyangga, Chinese (Tang) poetry, sijo, gasa, and the poetry of the Yongbi-eo cheon'ga.
- Fiction, in the form of tales, legends, fables, and uniquely Korean "pansori" novels will become familiar to students in this course.

KOREA 345 : Korean Culture. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Selected topics in traditional, modern, and contemporary Korean culture. All readings in English.

**Course Outcomes**

- -- become familiar with the historical framework of Korea, the major dynasties and historic events.-- become familiar with major religions including shamanism, Buddhism, Confucianism, and Christianity as well as some "new religions".-- learn basic concepts of lineage and family structure, organization and activities, including ancestor veneration ceremonies.-- learn the political structure of South Korea and North Korea

KOREA 441 : Classical Korean (Hanmun). (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 321; or CHIN 441

DESCRIPTION: Reading of premodern, documentary Sino-Korean texts, including genealogy records and the Chosŏn Dynasty Annals.

**Course Outcomes**

- Students will learn to read academic journals articles, reference works, genealogies, and other primary source documents, all of which contain Sino-Korean vocabulary.This course will assist students who work for the government or need to take advanced proficiency test to do well and excel on such tests in their future professions.

KOREA 443 : Korean Literature after 1900. (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: KOREA 302

DESCRIPTION: Literary texts from major post-1900 authors, in Korean, emphasizing reading, translating, and criticism.

**Course Outcomes**

- Students will learn of the poetry, short stories and novels of the 20th and 21st centuries.Major literature from Korea before the division in 1945, and post-division in South Korea (with a little readings of North Korean literature) will be covered.

MUSIC 203 : World Music Cultures. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Non-music major status.

DESCRIPTION: Traditional music of selected cultures of Asia, Oceania, Africa, Europe, and the Americas, including both folk and art music traditions.

NOTE: For non-music majors. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will recognize the diversity of aesthetic values among the world's cultures.
- Students will understand and appreciate cultural traditions outside of their own.
- Students will transcend natural tendencies towards ethnocentricity.

- Students will discover the various ways in which the arts can express values and devotion.

MUSIC 336R : Balinese Gamelan. (1:2:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Playing and performing on the Balinese gamelan (percussion) instruments.

**Course Outcomes**

- Students participating in Gamelan will learn the mental and technical skills required to memorize and perform works from the traditional Balinese gamelan repertoire, including becoming proficient on one or more of the instruments in the ensemble.
- Students will also use music as a window into the relationship between Balinese musical practice and Balinese social and religious culture, and, more broadly, develop a deep appreciation for this musicâ s profound contribution to the life experience.
- In the spirit of BYUâ s global mission and the breadth of educational experience advocated in BYUâ s guiding documents, successful students in gamelan will develop a greater understanding of and respect for music and traditions outside of their native experience. This respect will better prepare them to represent BYU and the Church in an increasingly interconnected global society.

POLI 348 : Government and Politics of Asia. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Comparative analysis of political developments of the major countries of Asia not covered in other country-specific classes.

**Course Outcomes**

There are no course outcomes available

(cannot be double counted with item 5 above)
POLI 353 : China: Government and Politics. (3:3:0)
DESCRIPTION: Structure and behavior of politics; contemporary problems.

**Course Outcomes**

There are no course outcomes available

POLI 354 : Japan: Government and Politics. (3:3:0)
DESCRIPTION: Structure and behavior of politics; contemporary problems.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 385 : International Relations of Asia. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Foreign policies and international relations of China, Japan, and Northeast and Southeast Asia; historical and contemporary review and analysis.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

(cannot be double counted with item 5 above)
POLI 386 : Japanese Foreign Policy. (3:3:0)
DESCRIPTION: Process and outcomes of Japan's foreign policy; analysis of its relations with other nations in a historical and contemporary setting.

**Course Outcomes**

There are no course outcomes available

POLI 388 : Chinese Foreign Policy. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Structure and process of foreign policy of the People's Republic of China.

**Course Outcomes**

There are no course outcomes available

REL C 351 : Survey of World Religions. (2:2:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Explores the origins, theological doctrines, scriptural works, and religious practices of several internationally religious traditions, including Christianity, Islam, Judaism, Hinduism, Sikhism, Buddhism, Taoism, Confucianism, and Shinto. Comparisions are offered between these religions,

and Latter-day Saints belief and practice.

**Course Outcomes**

There are no course outcomes available

: Honors Survey of World Religions.

**Course Outcomes**

Other electives: If approved beforehand, up to 9 hours of 330R or 399R credit may be counted for overseas work done under one of the following: Study Abroad, internships, mentored research, or independent field studies.

*Hours include courses that may fulfill university core requirements.

## Show all Asian Studies (Asian) Courses

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**Course Information**
- International and Area Studies (IAS) Courses

**African Studies**

**Minor**
- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:
- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**
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**Course Information**
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**European Studies**

**Majors**
- BA in European Studies

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**Course Information**
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**International Development**

**Minors**
- International Development

**International Relations**

**Majors**
- BA in International Relations

**Course Information**
- International Relations (IR) Courses

**Latin American Studies**

**Majors**
- BA in Latin American Studies

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**Course Information**
- Latin American Studies (Lt Am) Courses

# BA in Asian Studies: Japan Studies Emphasis (50–70 hours*)

Show All Course Descriptions
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## Program Requirements | View MAP

1. Courses cannot be double counted between the different requirement sections in the major.
2. Complete the GE languages of learning requirement in Japanese.
3. There is a strong expectation that majors will do work in Asia via Study Abroad, internships, etc.
4. Complete the following core courses:

ASIAN 200 : Introduction to Asian Studies: Methods and Materials. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Sources, materials, and methods of research and writing; critical analysis of research project.
NOTE: Required of all Asian Studies majors early in the program.

**Course Outcomes**
- The student can identify countries and major geographic features of Asia on a map. The student can relate basic facts about the history, economics, politics, society and cultures of the countries of Asia.
- The student will be able to apply effective search strategies to locate and to evaluate information on Asia in all formats (print, electronic, microform, video, DVD) and of all types (books, articles, reference materials, etc.). The student will be able to employ proper research skills to carry out research on a topic related to Asia and present results in oral and written academic reports.

ASIAN 342 : Asian Literary Traditions. (3:3:0)
DESCRIPTION: Comparative analysis of Asian literary works spanning several traditions.

**Course Outcomes**
- Apply basic concepts of comparative literary analysis to course texts.
- Gain familiarity with Asian literary traditions, particularly India, China, and Japan.
- Demonstrate strong critical reading, writing, and analytical skills across linguistic and national traditions.

HIST 231 : Introduction to East Asian History. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Major themes in the history, thought, and culture of Asian societies from antiquity to the present.

**Course Outcomes**
- Students will be able to explain and analyze the major political, economic, and social developments in the history of China, Korea, and Japan from antiquity to the present
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meaning and significance of historical events on contemporary identity and foreign relations.
- Students will be able to analyze historical arguments.

IHUM 240 : Introduction to the Humanities of Asia. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Major arts of Asian cultures in their historical, religious, and philosophical settings.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

5. Complete one course from the following:

POLI 348 : Government and Politics of Asia. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Comparative analysis of political developments of the major countries of Asia not covered in other country-specific classes.

**Course Outcomes**

There are no course outcomes available

POLI 385 : International Relations of Asia. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Foreign policies and international relations of China, Japan, and Northeast and Southeast Asia; historical and contemporary review and analysis.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

6. Complete the following core course:

ASIAN 495 : Senior Seminar. (1:Arr:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Senior status or program coordinator's consent.

DESCRIPTION: Learning research and writing skills necessary to prepare and present major senior research paper.

NOTE: Most all major requirements should be completed before registering for this course.

**Course Outcomes**

- In this course, you will learn how to complete a significant research project using appropriate methods of research, analysis, and a professional standard of writing. In doing so, you will draw heavily from your knowledge from previous courses.
- You will do this by studying a specialized topic in Asian Studies under the guidance of a professor. Thus, you will deepen your familiarity with a sub-field within Asian Studies and Asian Studies more broadly.
- You will also learn how to present your findings in a high-quality oral presentation, and how to give and receive appropriate feedback within a community of scholars.

7. Complete the following history core courses (history core courses cannot be double counted as electives):

HIST 343 : Traditional Japan. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, social, religious, and cultural developments to ca. 1700.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history until around 1600.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 344 : Modern Japan. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Main themes in Japanese history from Tokugawa times to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history from approximately 1600 to the present.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

8. Complete the required courses for the Language Certificate in Japanese and take the OPI and WPT assessments. These assessments must be done on the BYU campus, and must be completed before graduation. See http://languagecertificate.byu.edu/program-requirements for complete details. Complete the following:

JAPAN 321 : Reading Modern Documentary Styles. (3:3:0)

PREREQUISITE: Japan 302 or equivalent.

DESCRIPTION: Readings in modern documentary styles, emphasizing reading comprehension, grammar, and vocabulary building.

**Course Outcomes**

- Students will increase their ability to understand vocabulary commonly used in newspapers
- Students will be able to read a range of types of news articles (politics, business, human interest, sports, etc.)
- Students will be able to compare and contrast print and television news reports. A written sample will be included in the individual student portfolio. The student portfolio will be formally reviewed at the conclusion of this course.

JAPAN 345 : Traditional Japanese Culture. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department

DESCRIPTION: General survey emphasizing aesthetics, religion, and value systems. All readings in English.

**Course Outcomes**

- Students will be able to speak and write about such features of culture as language, literature, thought, religion, aesthetics, art and music. A writing sample will be included in the individual student portfolio.

JAPAN 322 : Reading Modern Short Fiction. (3:3:0)

PREREQUISITE: Japan 302 or equivalent.

DESCRIPTION: Readings in modern short fiction, emphasizing grammar, reading comprehension, vocabulary building, and stylistic analysis.

**Course Outcomes**

- Students will be able to use a variety of dictionary sources that will enable them to read and comprehend modern Japanese prose
- Students will be able to recognize a majority of standard-usage kanji and identify various readings for the characters
- Students will be able to analyze and discuss a variety of modern Japanese literary texts at an intermediate level in the target language. A writing sample will be included in the individual student portfolio.

**Or**:

JAPAN 351 : Japanese Literature in Translation--Seventeenth Through Nineteenth Centuries. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 1600 through 1900 (Edo and Meiji periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of early modern Japanese literature orally and in writing. A writing sample will be included in individual student portfolio.
- Students will demonstrate their understanding of key literary works and genres in early modern Japanese literature in verbal and written forms.

**Or**:

JAPAN 352 : Japanese Literature in Translation: The Modern Era. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from Meiji period to the present.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of human aspects in works of modern Japanese literature orally and in writing. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their ability to analyze key works and genres in modern Japanese literature in oral and written form.

Note: These courses cannot be double counted as electives.

9. Complete 18 hours from the following elective courses (no more than 6 hours may be selected from any one department):

ANTHR 335 : Peoples of India. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Society and culture on the Indian subcontinent. Stratification, kinship, marriage, religion, politics, economics.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be provided an overview of the peoples and cultures of South Asia with an emphasis on India; a region consisting of several hundred languages, multiple ethnicities, many religious traditions, and competing political orientations.
- Students will receive increased knowledge of the cultures of India through in-depth readings, lectures, discussions, and films.
- Students will increase their capacity for critical thinking skills and writing within the discipline through discussions, exams, and a written research papers.

ANTHR 336 : Cinema and Culture in India. (3:3:0)

WHEN TAUGHT: Spring

DESCRIPTION: Anthropology of film in India; the world's largest film industry. Indian cultural and linguistic diversity. How different film genres reflect, distort, or utilize Indian cultural diversity. Evidences in the film work of Satyajit Ray.

**Course Outcomes**

There are no course outcomes available

ANTHR 341 : Ethnonationalism and Southeast Asia. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Anthr 101.

DESCRIPTION: Historical and ethnographic perspectives on social and political dynamics in Southeast Asia, including upland ethnic minority issues, ethnonationalistic movements, geopolitical influences, war, genocide, religious dynamics, and the rise of nationalism in the region.

**Course Outcomes**

There are no course outcomes available

ANTHR 343 : Chinese Culture and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter Odd Yrs.

DESCRIPTION: Cultural and social institutions of traditional and modern China, including mainland China, Taiwan, Hong Kong, or other areas of Chinese impact.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain knowledge of the varieties of cultures encompassed in the vast domains of China as well as the basic social paradigms of Chinese society. Through this study, students will also gain a basic knowledge of the history of China and its importance in both past and present world contexts.

ANTHR 348 : Contemporary Japan. (3:3:0)

DESCRIPTION: Using movies and popular media to examine the social structures and family life dynamics of contemporary Japan.

**Course Outcomes**

There are no course outcomes available

ARTHC 203 : Survey of Oriental Art and Architecture. (3:3:0)

DESCRIPTION: Art and architecture of China, Korea, Japan, Southeast Asia, and India, considering social, religious, and environmental context of various cultures.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 375 : Japanese Art and Architecture. (3:3:0)

PREREQUISITE: ARTHC 201 & ARTHC 202

DESCRIPTION: Japanese art and architecture from its neolithic origins through the dawn of the modern age. Literary, social, and religious contexts considered.

**Course Outcomes**

No outcomes are available at this time.

CHIN 342 : Chinese Film in Translation. (3:2:3)

WHEN TAUGHT: Winter

DESCRIPTION: Survey course covering the silent era to the present, including selections from Republican China, the People's Republic of China, Taiwan, and Hong Kong.

**Course Outcomes**

There are no course outcomes available

CHIN 343 : Chinese Literature in Translation--Poetry. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: All readings in English; topics vary.

**Course Outcomes**

- Outline the basic facts of early Chinese poetry: authors, genres, titles (see Chinese major expected learning outcome 3).
- Utilize the basic approaches to analyzing and appreciating literature (see Chinese major expected learning outcome 3).
- Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

CHIN 344 : Chinese Literature in Translation--Prose. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: All readings in English; topics vary.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Acquire and apply knowledge of literary terminology and frameworks for literary analysis (see Chinese major expected learning outcome 3).

- Analyze and discuss classical and modern Chinese narrative literature and its relations to Chinese cultural traditions (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

CHIN 345R : Chinese Culture. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Selected topics in traditional, modern, and contemporary Chinese culture.

**Course Outcomes**

- Demonstrate cultural literacy of the foundations of Chinese civilization: geography, history, philosophy, thought, political systems and social structures (see Chinese major expected learning outcome 3).
- Explain how cultural factors and institutions have shaped and continue to shape allied disciplines in Chinese studies including language, literature, linguistics, and the visual arts (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

CHIN 346 : Introduction to Chinese Philosophy. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction to native Chinese philosophies of Confucianism and Taoism. Readings in translation of *Lun-yu, Meng-tsu, Lao-tzu,* and *Chuang-tzu.* Themes include self, society, and cosmos.

**Course Outcomes**

- Summarize the important facts, figures, and dates relevant to early Chinese philosophy (see Chinese major expected learning outcome 3).
- Explain the broad outlines of the major schools of Confucianism, Mohism, Daoism, and Legalism, and understand their roles in the development of Chinese society and thought (see Chinese major expected learning outcome 3).
- Formulate philosophical questions.
- Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

CHIN 441 : Classical and Literary Chinese. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Chin 301 or equivalent.

DESCRIPTION: Introduction to syntax and stylistic patterns.

**Course Outcomes**

- Explain the use of the common grammatical particles and patterns essential in mastering the intricacies and subtleties of "classical" Chinese prose (see Chinese major expected learning outcome 3).
- Discuss and apply the meanings and usages of the standard vocabulary of classical Chinese (see Chinese major expected learning outcome 3).
- Summarize the thought of each important early thinker (see Chinese major expected learning outcome 3).

CHIN 442 : Classical and Literary Chinese. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHIN 441

DESCRIPTION: Introduction to syntax and stylistic patterns.

**Course Outcomes**

- Read, analyze, and discuss documentary Chinese prose (see Chinese major expected learning outcome 3).
- Compare and contrast the literary craftsmanship exhibited by the writers of documentary Chinese and discuss traditional Chinese history, literature, and religion (see Chinese major expected learning outcome 3).
- Explain the use of the basic grammatical particles introduced in Chin 441, learn some more advanced ones, and practice using them in new contexts (see Chinese major expected learning outcome 3).

CHIN 443 : Modern Chinese Literature. (3:3:0)

PREREQUISITE: Chin 321 or 322.

DESCRIPTION: Authors, themes, and writing styles of the period 1915--1949. Texts in Chinese.

**Course Outcomes**

- Read, analyze, and discuss Chinese literary texts from the modern (1900-1949) period in Chinese (see Chinese major expected learning outcomes 2 and 3).
- Discuss modern Chinese literary texts in Chinese with fluency and increasing sophistication, demonstrating facility for expressing subjective judgments on literature and other abstract topics in Chinese (see Chinese major expected learning outcomes 1-3).
- Analyze and discuss modern Chinese literary genres, works and authors in their social, historical, and religious contexts (see Chinese major expected learning outcome 3).

CHIN 444 : Contemporary Chinese Literature. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Chin 321 or 322.

DESCRIPTION: Contemporary literature of Taiwan and the PRC. Texts in Chinese.

**Course Outcomes**

- Read, analyze, and write about Chinese literary texts from the contemporary (1949-present) period in Chinese (see Chinese major expected learning outcomes 2 and 3).
- Discuss contemporary Chinese literary texts in Chinese with fluency and increasing sophistication, demonstrating facility for expressing subjective judgments on literature and other abstract topics in Chinese (see Chinese major expected learning outcomes 1 and 3).
- Analyze and discuss contemporary Chinese literary genres, works and authors in their social, historical, and religious contexts (see Chinese major expected learning outcome 3).

CHIN 445R : Chinese Poetry. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: CHIN 343 & CHIN 441

DESCRIPTION: Readings in Chinese poetry. Topics vary from classical and modern poetry. Various themes and genres introduced, emphasizing shi poetry. Texts in Chinese.

**Course Outcomes**

There are no course outcomes available

GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 273 : Southeast Asia. (3:3.0:0)

WHEN TAUGHT: Fall Contact Department

DESCRIPTION: Fundamental issues of geography relating to Southeast Asia, including the extraction and marketing of natural resources, economic development, neighborly relations, and how diffusion has influenced the unique cultural, religious, and linguistic characteristics of the region.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

HIST 337 : Pre-modern Korea. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, economic, and social history of Korea from antiquity to 1850.

**Course Outcomes**

- An understanding of the major features of Korean history and culture both in breadth and in depth.
- An understanding of Korean history contextualized both within the framework of Korean history and in relationship to other histories and other constructions of history.
- The ability to think and write about issues in Korean history in a critical and compelling manner.

HIST 338 : Modern Korea. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Political, economic, and social history of Korea from 1850 to the present.

**Course Outcomes**

- Students will be able to describe the most significant aspects of the polity, economy, society and ideology of Korea from 1850 to the present.
- Students will be able to recognize and analyze change over time in East Asia
- Students will be able to evaluate and apply primary source texts to broad historical themes
- Students will be able to conduct individual research and situate it in the broader historical context

HIST 340 : Traditional China. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: From a loose federation of Neolithic societies, Chinese civilization emerges as East Asia's dominant political and cultural force; developments to ca. 1500.

**Course Outcomes**

- Students will be able to explain and analyze the major social, political, economic, intellectual and cultural developments in the history of Early China (ca. 5000 BC–220 AD
- Students will demonstrate a basic geographical knowledge of China, including significant geological features and major historical cities Moreover, they will be able to discuss how geographical and environmental realities have impacted historical development.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in

secondary scholarship should improve.

HIST 341 : China Since 1200. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Economic and political foundations of modernity during high Imperial China; challenge of new order from the West; rise of Chinese nationalism, revolution, and development to the present.

**Course Outcomes**

There are no course outcomes available

HIST 343 : Traditional Japan. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, social, religious, and cultural developments to ca. 1700.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history until around 1600.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 344 : Modern Japan. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Main themes in Japanese history from Tokugawa times to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history from approximately 1600 to the present.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 347 : Chinese Cultural History. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Methods and approaches of the cultural historian; in-depth investigation of a selected topic in Chinese cultural history. Topics may include women, Silk Roads, material culture, etc.

**Course Outcomes**

- Students will be able to explain and understand the methods and approaches of the cultural historian through an investigation of select topics in Chinese cultural history.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve

HIST 348 : Modern South East Asia. (3:3:0)

DESCRIPTION: Complex history of the varied nations of this vast area: religion, colonialism, nationalism, independence.

**Course Outcomes**

- Gain a historical consciousness by demonstrating a knowledge of major developments in South East Asia and world history and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions by using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

HIST 349 : History of Asian Religions and Thought. (3:3:0)

DESCRIPTION: Major themes in religion, philosophy, and ideas in Asia.

**Course Outcomes**

- Students will be able to understand and analyze key concepts in Chinese thought and religion as well as the logic behind core beliefs and practices
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions.

JAPAN 321 : Reading Modern Documentary Styles. (3:3:0)

PREREQUISITE: Japan 302 or equivalent.

DESCRIPTION: Readings in modern documentary styles, emphasizing reading comprehension, grammar, and vocabulary building.

**Course Outcomes**

- Students will increase their ability to understand vocabulary commonly used in newspapers
- Students will be able to read a range of types of news articles (politics, business, human interest, sports, etc.)
- Students will be able to compare and contrast print and television news reports. A written sample will be included in the individual student portfolio. The student portfolio will be formally reviewed at the conclusion of this course.

JAPAN 322 : Reading Modern Short Fiction. (3:3:0)

PREREQUISITE: Japan 302 or equivalent.

DESCRIPTION: Readings in modern short fiction, emphasizing grammar, reading comprehension, vocabulary building, and stylistic analysis.

**Course Outcomes**

- Students will be able to use a variety of dictionary sources that will enable them to read and comprehend modern Japanese prose
- Students will be able to recognize a majority of standard-usage kanji and identify various readings for the characters
- Students will be able to analyze and discuss a variety of modern Japanese literary texts at an intermediate level in the target language. A writing sample will be included in the individual student portfolio.

JAPAN 345 : Traditional Japanese Culture. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department

DESCRIPTION: General survey emphasizing aesthetics, religion, and value systems. All readings in English.

**Course Outcomes**

- Students will be able to speak and write about such features of culture as language, literature, thought, religion, aesthetics, art and music. A writing sample will be included in the individual student portfolio.

JAPAN 350 : Japanese Literature in Translation--Eighth Through Sixteenth Centuries. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 700 through 1600 (Nara, Heian, and medieval periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of premodern literature in verbal and written forms. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their knowledge and understanding of major works and genres in verbal and written forms.

JAPAN 351 : Japanese Literature in Translation--Seventeenth Through Nineteenth Centuries. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 1600 through 1900 (Edo and Meiji periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of early modern Japanese literature orally and in writing. A writing sample will be included in individual student portfolio.
- Students will demonstrate their understanding of key literary works and genres in early modern Japanese literature in verbal and written forms.

JAPAN 352 : Japanese Literature in Translation: The Modern Era. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from Meiji period to the present.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of human aspects in works of modern Japanese literature orally and in writing. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their ability to analyze key works and genres in modern Japanese literature in oral and written form.

JAPAN 441 : Introduction to Classical Japanese. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: JAPAN 321 & JAPAN 322

DESCRIPTION: Reading of premodern texts, emphasizing grammar and syntax, and showing differences from and influences on the modern idiom.

**Course Outcomes**

- Students will be able to analyze and discuss the influence of the pre-modern language on present-day Japanese.
- Students will read and analyze the content and linguistic features of important premodern literary texts. A writing sample will be included in the individual student portfolio.

JAPAN 444 : Reading Modern Japan. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 321, 322; or equivalents.

DESCRIPTION: Fictional texts from major twentieth-century authors. Texts primarily in Japanese.

**Course Outcomes**

- Students will demonstrate their ability to read and interpret modern literary texts with sophistication in both oral and written forms. A writing sample will be included in the individual student portfolio.

KOREA 321 : Selected Readings of Modern Korean. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Korea 301 or equivalent.

DESCRIPTION: Mixed script (with hanja) and other readings from modern documentary and literary texts, emphasizing comprehension, grammar, and vocabulary building.

**Course Outcomes**

- students will develop skills in reading advanced level texts in literature and social sciences.

KOREA 340 : Korean Literature to 1900. (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 302

DESCRIPTION: Korean literature from the earliest times to 1900. Emphasis on basic literary concepts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will learn of the wide range of literary genre available in Korea prior to the 20th century.
- Students will learn at least five styles of poetry common in Korea from the Silla period to the late Joseon period, including hyangga, Chinese (Tang) poetry, sijo, gasa, and the poetry of the Yongbi-eo cheon'ga.
- Fiction, in the form of tales, legends, fables, and uniquely Korean "pansori" novels will become familiar to students in this course.

KOREA 345 : Korean Culture. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Selected topics in traditional, modern, and contemporary Korean culture. All readings in English.

**Course Outcomes**

- -- become familiar with the historical framework of Korea, the major dynasties and historic events.-- become familiar with major religions including shamanism, Buddhism, Confucianism, and Christianity as well as some "new religions".-- learn basic concepts of lineage and family structure, organization and activities, including ancestor veneration ceremonies.-- learn the political structure of South Korea and North Korea

KOREA 441 : Classical Korean (Hanmun). (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 321; or CHIN 441

DESCRIPTION: Reading of premodern, documentary Sino-Korean texts, including genealogy records and the Chosŏn Dynasty Annals.

**Course Outcomes**

- Students will learn to read academic journals articles, reference works, genealogies, and other primary source documents, all of which contain Sino-Korean vocabulary.This course will assist students who work for the government or need to take advanced proficiency test to do well and excel on such tests in their future professions.

KOREA 443 : Korean Literature after 1900. (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: KOREA 302

DESCRIPTION: Literary texts from major post-1900 authors, in Korean, emphasizing reading, translating, and criticism.

**Course Outcomes**

- Students will learn of the poetry, short stories and novels of the 20th and 21st centuries.Major literature from Korea before the division in 1945, and post-division in South Korea (with a little readings of North Korean literature) will be covered.

MUSIC 203 : World Music Cultures. (3:3:0)

WHEN Fall; Winter

TAUGHT:
PREREQUISITE: Non-music major status.
DESCRIPTION: Traditional music of selected cultures of Asia, Oceania, Africa, Europe, and the Americas, including both folk and art music traditions.
NOTE: For non-music majors. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will recognize the diversity of aesthetic values among the world's cultures.
- Students will understand and appreciate cultural traditions outside of their own.
- Students will transcend natural tendencies towards ethnocentricity.
- Students will discover the various ways in which the arts can express values and devotion.

MUSIC 336R : Balinese Gamelan. (1:2:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Playing and performing on the Balinese gamelan (percussion) instruments.

**Course Outcomes**

- Students participating in Gamelan will learn the mental and technical skills required to memorize and perform works from the traditional Balinese gamelan repertoire, including becoming proficient on one or more of the instruments in the ensemble.
- Students will also use music as a window into the relationship between Balinese musical practice and Balinese social and religious culture, and, more broadly, develop a deep appreciation for this musicâ s profound contribution to the life experience.
- In the spirit of BYUâ s global mission and the breadth of educational experience advocated in BYUâ s guiding documents, successful students in gamelan will develop a greater understanding of and respect for music and traditions outside of their native experience. This respect will better prepare them to represent BYU and the Church in an increasingly interconnected global society.

POLI 348 : Government and Politics of Asia. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Comparative analysis of political developments of the major countries of Asia not covered in other country-specific classes.

**Course Outcomes**

There are no course outcomes available

(cannot be double counted with item 5 above)
POLI 353 : China: Government and Politics. (3:3:0)
DESCRIPTION: Structure and behavior of politics; contemporary problems.

**Course Outcomes**

There are no course outcomes available

POLI 354 : Japan: Government and Politics. (3:3:0)
DESCRIPTION: Structure and behavior of politics; contemporary problems.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 385 : International Relations of Asia. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Foreign policies and international relations of China, Japan, and Northeast and Southeast Asia; historical and contemporary review and analysis.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

(cannot be double counted with item 5 above)
POLI 386 : Japanese Foreign Policy. (3:3:0)
DESCRIPTION: Process and outcomes of Japan's foreign policy; analysis of its relations with other nations in a historical and contemporary setting.

**Course Outcomes**

There are no course outcomes available

POLI 388 : Chinese Foreign Policy. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Structure and process of foreign policy of the People's Republic of China.

**Course Outcomes**

There are no course outcomes available

REL C 351 : Survey of World Religions. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Explores the origins, theological doctrines, scriptural works, and religious practices of several internationally religious traditions, including Christianity, Islam, Judaism, Hinduism, Sikhism, Buddhism, Taoism, Confucianism, and Shinto. Comparisions are offered between these religions, and Latter-day Saints belief and practice.

**Course Outcomes**

There are no course outcomes available

: Honors Survey of World Religions.

**Course Outcomes**

Other electives: If approved beforehand, up to 9 hours of 330R or 399R credit may be counted for overseas work done under one of the following: Study Abroad, internships, mentored research, or independent field studies.

*Hours include courses that may fulfill university core requirements.

## Show all Asian Studies (Asian) Courses

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**Course Information**
- International and Area Studies (IAS) Courses

**African Studies**

**Minor**
- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:
- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**
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**Course Information**
- Asian Studies (Asian) Courses

**European Studies**

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**International Development**

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- International Development

**International Relations**

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- BA in Latin American Studies

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**Course Information**
- Latin American Studies (Lt Am) Courses

# BA in Asian Studies: Korea Studies Emphasis (50–70 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Courses cannot be double counted between the different requirement sections in the major.
2. Complete the GE languages of learning requirement in Korean.
3. There is a strong expectation that majors will do work in Asia via Study Abroad, internships, etc.
4. Complete the following core courses:

ASIAN 200 : Introduction to Asian Studies: Methods and Materials. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Sources, materials, and methods of research and writing; critical analysis of research project.
NOTE: Required of all Asian Studies majors early in the program.

**Course Outcomes**
- The student can identify countries and major geographic features of Asia on a map. The student can relate basic facts about the history, economics, politics, society and cultures of the countries of Asia.
- The student will be able to apply effective search strategies to locate and to evaluate information on Asia in all formats (print, electronic, microform, video, DVD) and of all types (books, articles, reference materials, etc.). The student will be able to employ proper research skills to carry out research on a topic related to Asia and present results in oral and written academic reports.

ASIAN 342 : Asian Literary Traditions. (3:3:0)
DESCRIPTION: Comparative analysis of Asian literary works spanning several traditions.

**Course Outcomes**
- Apply basic concepts of comparative literary analysis to course texts.
- Gain familiarity with Asian literary traditions, particularly India, China, and Japan.
- Demonstrate strong critical reading, writing, and analytical skills across linguistic and national traditions.

HIST 231 : Introduction to East Asian History. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Major themes in the history, thought, and culture of Asian societies from antiquity to the present.

**Course Outcomes**
- Students will be able to explain and analyze the major political, economic, and social developments in the history of China, Korea, and Japan from antiquity to the present
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meaning and significance of historical events on contemporary identity and foreign relations.
- Students will be able to analyze historical arguments.

IHUM 240 : Introduction to the Humanities of Asia. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Major arts of Asian cultures in their historical, religious, and philosophical settings.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

5. Complete one course from the following:

POLI 348 : Government and Politics of Asia. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Comparative analysis of political developments of the major countries of Asia not covered in other country-specific classes.

**Course Outcomes**

There are no course outcomes available

POLI 385 : International Relations of Asia. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Foreign policies and international relations of China, Japan, and Northeast and Southeast Asia; historical and contemporary review and analysis.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

6. Complete the following core course:

ASIAN 495 : Senior Seminar. (1:Arr:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Senior status or program coordinator's consent.

DESCRIPTION: Learning research and writing skills necessary to prepare and present major senior research paper.

NOTE: Most all major requirements should be completed before registering for this course.

**Course Outcomes**

- In this course, you will learn how to complete a significant research project using appropriate methods of research, analysis, and a professional standard of writing. In doing so, you will draw heavily from your knowledge from previous courses.
- You will do this by studying a specialized topic in Asian Studies under the guidance of a professor. Thus, you will deepen your familiarity with a sub-field within Asian Studies and Asian Studies more broadly.
- You will also learn how to present your findings in a high-quality oral presentation, and how to give and receive appropriate feedback within a community of scholars.

7. Complete the following history core courses (history core courses cannot be double counted as electives):

HIST 337 : Pre-modern Korea. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, economic, and social history of Korea from antiquity to 1850.

**Course Outcomes**

- An understanding of the major features of Korean history and culture both in breadth and in depth.
- An understanding of Korean history contextualized both within the framework of Korean history and in relationship to other histories and other constructions of history.
- The ability to think and write about issues in Korean history in a critical and compelling manner.

HIST 338 : Modern Korea. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Political, economic, and social history of Korea from 1850 to the present.

**Course Outcomes**

- Students will be able to describe the most significant aspects of the polity, economy, society and ideology of Korea from 1850 to the present.
- Students will be able to recognize and analyze change over time in East Asia
- Students will be able to evaluate and apply primary source texts to broad historical themes
- Students will be able to conduct individual research and situate it in the broader historical context

8. Complete the required courses for the Language Certificate in Korean and take the OPI and WPT assessments. These assessments must be done on the BYU campus, and must be completed before graduation. See http://languagecertificate.byu.edu/program-requirements for complete details. Complete the following:

KOREA 302 : Third-Year Korean 2. (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Korea 301 or equivalent.

DESCRIPTION: Continuation of Korea 301. Vocabulary, grammar, discourse, hanja, composition, pronunciation, and culture.

**Course Outcomes**

- Korean 302Students will be able to;1. Speak in most social language situations and some complicated language situations with confidence. ACTFL 3
- 2. Read and understand some intermediate level of formal topics.
- 3. Compose one page Korean using some four-character proverbs and some high level vocabulary without major structural flaws.

KOREA 345 : Korean Culture. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Selected topics in traditional, modern, and contemporary Korean culture. All readings in English.

**Course Outcomes**

- -- become familiar with the historical framework of Korea, the major dynasties and historic events.-- become familiar with major religions including shamanism, Buddhism, Confucianism, and Christianity as well as some "new religions".-- learn basic concepts of lineage and family structure, organization and activities, including ancestor veneration ceremonies.-- learn the political structure of South Korea and North Korea

KOREA 321 : Selected Readings of Modern Korean. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Korea 301 or equivalent.

DESCRIPTION: Mixed script (with hanja) and other readings from modern documentary and literary texts, emphasizing comprehension, grammar, and vocabulary building.

**Course Outcomes**

- students will develop skills in reading advanced level texts in literature and social sciences.

**Or**:

KOREA 340 : Korean Literature to 1900. (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 302

DESCRIPTION: Korean literature from the earliest times to 1900. Emphasis on basic literary concepts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will learn of the wide range of literary genre available in Korea prior to the 20th century.
- Students will learn at least five styles of poetry common in Korea from the Silla period to the late Joseon period, including hyangga, Chinese (Tang) poetry, sijo, gasa, and the poetry of the Yongbi-eo cheon'ga.
- Fiction, in the form of tales, legends, fables, and uniquely Korean "pansori" novels will become familiar to students in this course.

**Or**:

KOREA 441 : Classical Korean (Hanmun). (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 321; or CHIN 441

DESCRIPTION: Reading of premodern, documentary Sino-Korean texts, including genealogy records and the Chosŏn Dynasty Annals.

**Course Outcomes**

- Students will learn to read academic journals articles, reference works, genealogies, and other primary source documents, all of which contain Sino-Korean vocabulary.This course will assist students who work for the government or need to take advanced proficiency test to do well and excel on such tests in their future professions.

Note: These courses cannot be double counted as electives.

9. Complete 18 hours from the following elective courses (no more than 6 hours may be selected from any one department):

ANTHR 335 : Peoples of India. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Society and culture on the Indian subcontinent. Stratification, kinship, marriage, religion, politics, economics.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be provided an overview of the peoples and cultures of South Asia with an emphasis on India; a region consisting of several hundred languages, multiple ethnicities, many religious traditions, and competing political orientations.
- Students will receive increased knowledge of the cultures of India through in-depth readings, lectures, discussions, and films.
- Students will increase their capacity for critical thinking skills and writing within the discipline through discussions, exams, and a written research papers.

ANTHR 336 : Cinema and Culture in India. (3:3:0)

WHEN TAUGHT: Spring

DESCRIPTION: Anthropology of film in India; the world's largest film industry. Indian cultural and linguistic diversity. How different film genres reflect, distort, or utilize Indian cultural diversity. Evidences in the film work of Satyajit Ray.

**Course Outcomes**

There are no course outcomes available

ANTHR 341 : Ethnonationalism and Southeast Asia. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Anthr 101.
DESCRIPTION: Historical and ethnographic perspectives on social and political dynamics in Southeast Asia, including upland ethnic minority issues, ethnonationalistic movements, geopolitical influences, war, genocide, religious dynamics, and the rise of nationalism in the region.

**Course Outcomes**

There are no course outcomes available

ANTHR 343 : Chinese Culture and Society. (3:3:0)
WHEN TAUGHT: Fall; Winter Odd Yrs.
DESCRIPTION: Cultural and social institutions of traditional and modern China, including mainland China, Taiwan, Hong Kong, or other areas of Chinese impact.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain knowledge of the varieties of cultures encompassed in the vast domains of China as well as the basic social paradigms of Chinese society. Through this study, students will also gain a basic knowledge of the history of China and its importance in both past and present world contexts.

ANTHR 348 : Contemporary Japan. (3:3:0)
DESCRIPTION: Using movies and popular media to examine the social structures and family life dynamics of contemporary Japan.

**Course Outcomes**

There are no course outcomes available

ARTHC 203 : Survey of Oriental Art and Architecture. (3:3:0)
DESCRIPTION: Art and architecture of China, Korea, Japan, Southeast Asia, and India, considering social, religious, and environmental context of various cultures.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

No outcomes are available at this time.

ARTHC 375 : Japanese Art and Architecture. (3:3:0)
PREREQUISITE: ARTHC 201 & ARTHC 202
DESCRIPTION: Japanese art and architecture from its neolithic origins through the dawn of the modern age. Literary, social, and religious contexts considered.

**Course Outcomes**

No outcomes are available at this time.

CHIN 342 : Chinese Film in Translation. (3:2:3)
WHEN TAUGHT: Winter
DESCRIPTION: Survey course covering the silent era to the present, including selections from Republican China, the People's Republic of China, Taiwan, and Hong Kong.

**Course Outcomes**

There are no course outcomes available

CHIN 343 : Chinese Literature in Translation--Poetry. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: All readings in English; topics vary.

**Course Outcomes**

- Outline the basic facts of early Chinese poetry: authors, genres, titles (see Chinese major expected learning outcome 3).
- Utilize the basic approaches to analyzing and appreciating literature (see Chinese major expected learning outcome 3).
- Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

CHIN 344 : Chinese Literature in Translation--Prose. (3:3:0)
WHEN TAUGHT: Winter
DESCRIPTION: All readings in English; topics vary.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Acquire and apply knowledge of literary terminology and frameworks for literary analysis (see Chinese major expected learning outcome 3).
- Analyze and discuss classical and modern Chinese narrative literature and its relations to Chinese cultural traditions (see Chinese major expected learning outcome 3).

- Write coherently and cohesively in English.

CHIN 345R : Chinese Culture. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Selected topics in traditional, modern, and contemporary Chinese culture.

**Course Outcomes**

- Demonstrate cultural literacy of the foundations of Chinese civilization: geography, history, philosophy, thought, political systems and social structures (see Chinese major expected learning outcome 3).
- Explain how cultural factors and institutions have shaped and continue to shape allied disciplines in Chinese studies including language, literature, linguistics, and the visual arts (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

CHIN 346 : Introduction to Chinese Philosophy. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Introduction to native Chinese philosophies of Confucianism and Taoism. Readings in translation of *Lun-yu, Meng-tsu, Lao-tzu,* and *Chuang-tzu.* Themes include self, society, and cosmos.

**Course Outcomes**

- Summarize the important facts, figures, and dates relevant to early Chinese philosophy (see Chinese major expected learning outcome 3).
- Explain the broad outlines of the major schools of Confucianism, Mohism, Daoism, and Legalism, and understand their roles in the development of Chinese society and thought (see Chinese major expected learning outcome 3).
- Formulate philosophical questions.
- Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

CHIN 441 : Classical and Literary Chinese. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: Chin 301 or equivalent.

DESCRIPTION: Introduction to syntax and stylistic patterns.

**Course Outcomes**

- Explain the use of the common grammatical particles and patterns essential in mastering the intricacies and subtleties of "classical" Chinese prose (see Chinese major expected learning outcome 3).
- Discuss and apply the meanings and usages of the standard vocabulary of classical Chinese (see Chinese major expected learning outcome 3).
- Summarize the thought of each important early thinker (see Chinese major expected learning outcome 3).

CHIN 442 : Classical and Literary Chinese. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: CHIN 441

DESCRIPTION: Introduction to syntax and stylistic patterns.

**Course Outcomes**

- Read, analyze, and discuss documentary Chinese prose (see Chinese major expected learning outcome 3).
- Compare and contrast the literary craftsmanship exhibited by the writers of documentary Chinese and discuss traditional Chinese history, literature, and religion (see Chinese major expected learning outcome 3).
- Explain the use of the basic grammatical particles introduced in Chin 441, learn some more advanced ones, and practice using them in new contexts (see Chinese major expected learning outcome 3).

CHIN 443 : Modern Chinese Literature. (3:3:0)

PREREQUISITE: Chin 321 or 322.

DESCRIPTION: Authors, themes, and writing styles of the period 1915--1949. Texts in Chinese.

**Course Outcomes**

- Read, analyze, and discuss Chinese literary texts from the modern (1900-1949) period in Chinese (see Chinese major expected learning outcomes 2 and 3).
- Discuss modern Chinese literary texts in Chinese with fluency and increasing sophistication, demonstrating facility for expressing subjective judgments on literature and other abstract topics in Chinese (see Chinese major expected learning outcomes 1-3).
- Analyze and discuss modern Chinese literary genres, works and authors in their social, historical, and religious contexts (see Chinese major expected learning outcome 3).

CHIN 444 : Contemporary Chinese Literature. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Chin 321 or 322.

DESCRIPTION: Contemporary literature of Taiwan and the PRC. Texts in Chinese.

**Course Outcomes**

- Read, analyze, and write about Chinese literary texts from the contemporary (1949-present) period in

Chinese (see Chinese major expected learning outcomes 2 and 3).
- Discuss contemporary Chinese literary texts in Chinese with fluency and increasing sophistication, demonstrating facility for expressing subjective judgments on literature and other abstract topics in Chinese (see Chinese major expected learning outcomes 1 and 3).
- Analyze and discuss contemporary Chinese literary genres, works and authors in their social, historical, and religious contexts (see Chinese major expected learning outcome 3).

CHIN 445R : Chinese Poetry. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: CHIN 343 & CHIN 441

DESCRIPTION: Readings in Chinese poetry. Topics vary from classical and modern poetry. Various themes and genres introduced, emphasizing shi poetry. Texts in Chinese.

**Course Outcomes**

There are no course outcomes available

GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 273 : Southeast Asia. (3:3.0:0)

WHEN TAUGHT: Fall Contact Department

DESCRIPTION: Fundamental issues of geography relating to Southeast Asia, including the extraction and marketing of natural resources, economic development, neighborly relations, and how diffusion has influenced the unique cultural, religious, and linguistic characteristics of the region.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

HIST 337 : Pre-modern Korea. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, economic, and social history of Korea from antiquity to 1850.

**Course Outcomes**

- An understanding of the major features of Korean history and culture both in breadth and in depth.
- An understanding of Korean history contextualized both within the framework of Korean history and in relationship to other histories and other constructions of history.
- The ability to think and write about issues in Korean history in a critical and compelling manner.

HIST 338 : Modern Korea. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Political, economic, and social history of Korea from 1850 to the present.

**Course Outcomes**

- Students will be able to describe the most significant aspects of the polity, economy, society and ideology of Korea from 1850 to the present.
- Students will be able to recognize and analyze change over time in East Asia
- Students will be able to evaluate and apply primary source texts to broad historical themes
- Students will be able to conduct individual research and situate it in the broader historical context

HIST 340 : Traditional China. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: From a loose federation of Neolithic societies, Chinese civilization emerges as East Asia's dominant political and cultural force; developments to ca. 1500.

**Course Outcomes**

- Students will be able to explain and analyze the major social, political, economic, intellectual and cultural developments in the history of Early China (ca. 5000 BC–220 AD
- Students will demonstrate a basic geographical knowledge of China, including significant geological features and major historical cities Moreover, they will be able to discuss how geographical and environmental realities have impacted historical development.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve.

HIST 341 : China Since 1200. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Economic and political foundations of modernity during high Imperial China; challenge of new order from the West; rise of Chinese nationalism, revolution, and development to the present.

**Course Outcomes**

There are no course outcomes available

HIST 343 : Traditional Japan. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, social, religious, and cultural developments to ca. 1700.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history until around 1600.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 344 : Modern Japan. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Main themes in Japanese history from Tokugawa times to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history from approximately 1600 to the present.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 347 : Chinese Cultural History. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Methods and approaches of the cultural historian; in-depth investigation of a selected topic in Chinese cultural history. Topics may include women, Silk Roads, material culture, etc.

**Course Outcomes**

- Students will be able to explain and understand the methods and approaches of the cultural historian through an investigation of select topics in Chinese cultural history.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve

HIST 348 : Modern South East Asia. (3:3:0)

DESCRIPTION: Complex history of the varied nations of this vast area: religion, colonialism, nationalism, independence.

**Course Outcomes**

- Gain a historical consciousness by demonstrating a knowledge of major developments in South East Asia and world history and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions by using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

HIST 349 : History of Asian Religions and Thought. (3:3:0)

DESCRIPTION: Major themes in religion, philosophy, and ideas in Asia.

**Course Outcomes**

- Students will be able to understand and analyze key concepts in Chinese thought and religion as well as the logic behind core beliefs and practices
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions.

JAPAN 321 : Reading Modern Documentary Styles. (3:3:0)

PREREQUISITE: Japan 302 or equivalent.

DESCRIPTION: Readings in modern documentary styles, emphasizing reading comprehension, grammar, and vocabulary building.

**Course Outcomes**

- Students will increase their ability to understand vocabulary commonly used in newspapers
- Students will be able to read a range of types of news articles (politics, business, human interest, sports, etc.)
- Students will be able to compare and contrast print and television news reports. A written sample will be included in the individual student portfolio. The student portfolio will be formally reviewed at the conclusion of this course.

JAPAN 322 : Reading Modern Short Fiction. (3:3:0)

PREREQUISITE: Japan 302 or equivalent.

DESCRIPTION: Readings in modern short fiction, emphasizing grammar, reading comprehension, vocabulary building, and stylistic analysis.

**Course Outcomes**

- Students will be able to use a variety of dictionary sources that will enable them to read and comprehend modern Japanese prose
- Students will be able to recognize a majority of standard-usage kanji and identify various readings for the characters
- Students will be able to analyze and discuss a variety of modern Japanese literary texts at an intermediate level in the target language. A writing sample will be included in the individual student portfolio.

JAPAN 345 : Traditional Japanese Culture. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department

DESCRIPTION: General survey emphasizing aesthetics, religion, and value systems. All readings in English.

**Course Outcomes**

- Students will be able to speak and write about such features of culture as language, literature, thought, religion, aesthetics, art and music. A writing sample will be included in the individual student portfolio.

JAPAN 350 : Japanese Literature in Translation--Eighth Through Sixteenth Centuries. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 700 through 1600 (Nara, Heian, and medieval periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of premodern literature in verbal and written forms. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their knowledge and understanding of major works and genres in verbal and written forms.

JAPAN 351 : Japanese Literature in Translation--Seventeenth Through Nineteenth Centuries. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 1600 through 1900 (Edo and Meiji periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of early modern Japanese literature orally and in writing. A writing sample will be included in individual student portfolio.
- Students will demonstrate their understanding of key literary works and genres in early modern Japanese literature in verbal and written forms.

JAPAN 352 : Japanese Literature in Translation: The Modern Era. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from Meiji period to the present.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of human aspects in works of modern Japanese literature orally and in writing. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their ability to analyze key works and genres in modern Japanese literature in oral and written form.

JAPAN 441 : Introduction to Classical Japanese. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: JAPAN 321 & JAPAN 322

DESCRIPTION: Reading of premodern texts, emphasizing grammar and syntax, and showing differences from and influences on the modern idiom.

**Course Outcomes**

- Students will be able to analyze and discuss the influence of the pre-modern language on present-day

Japanese.
- Students will read and analyze the content and linguistic features of important premodern literary texts. A writing sample will be included in the individual student portfolio.

JAPAN 444 : Reading Modern Japan. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 321, 322; or equivalents.

DESCRIPTION: Fictional texts from major twentieth-century authors. Texts primarily in Japanese.

**Course Outcomes**

- Students will demonstrate their ability to read and interpret modern literary texts with sophistication in both oral and written forms. A writing sample will be included in the individual student portfolio.

KOREA 321 : Selected Readings of Modern Korean. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Korea 301 or equivalent.

DESCRIPTION: Mixed script (with hanja) and other readings from modern documentary and literary texts, emphasizing comprehension, grammar, and vocabulary building.

**Course Outcomes**

- students will develop skills in reading advanced level texts in literature and social sciences.

KOREA 340 : Korean Literature to 1900. (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 302

DESCRIPTION: Korean literature from the earliest times to 1900. Emphasis on basic literary concepts.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will learn of the wide range of literary genre available in Korea prior to the 20th century.
- Students will learn at least five styles of poetry common in Korea from the Silla period to the late Joseon period, including hyangga, Chinese (Tang) poetry, sijo, gasa, and the poetry of the Yongbi-eo cheon'ga.
- Fiction, in the form of tales, legends, fables, and uniquely Korean "pansori" novels will become familiar to students in this course.

KOREA 345 : Korean Culture. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Selected topics in traditional, modern, and contemporary Korean culture. All readings in English.

**Course Outcomes**

- -- become familiar with the historical framework of Korea, the major dynasties and historic events.-- become familiar with major religions including shamanism, Buddhism, Confucianism, and Christianity as well as some "new religions".-- learn basic concepts of lineage and family structure, organization and activities, including ancestor veneration ceremonies.-- learn the political structure of South Korea and North Korea

KOREA 441 : Classical Korean (Hanmun). (3:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: KOREA 321; or CHIN 441

DESCRIPTION: Reading of premodern, documentary Sino-Korean texts, including genealogy records and the Chosŏn Dynasty Annals.

**Course Outcomes**

- Students will learn to read academic journals articles, reference works, genealogies, and other primary source documents, all of which contain Sino-Korean vocabulary.This course will assist students who work for the government or need to take advanced proficiency test to do well and excel on such tests in their future professions.

KOREA 443 : Korean Literature after 1900. (3:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: KOREA 302

DESCRIPTION: Literary texts from major post-1900 authors, in Korean, emphasizing reading, translating, and criticism.

**Course Outcomes**

- Students will learn of the poetry, short stories and novels of the 20th and 21st centuries.Major literature from Korea before the division in 1945, and post-division in South Korea (with a little readings of North Korean literature) will be covered.

MUSIC 203 : World Music Cultures. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Non-music major status.
DESCRIPTION: Traditional music of selected cultures of Asia, Oceania, Africa, Europe, and the Americas, including both folk and art music traditions.
NOTE: For non-music majors. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will recognize the diversity of aesthetic values among the world's cultures.
- Students will understand and appreciate cultural traditions outside of their own.
- Students will transcend natural tendencies towards ethnocentricity.
- Students will discover the various ways in which the arts can express values and devotion.

MUSIC 336R : Balinese Gamelan. (1:2:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Playing and performing on the Balinese gamelan (percussion) instruments.

**Course Outcomes**

- Students participating in Gamelan will learn the mental and technical skills required to memorize and perform works from the traditional Balinese gamelan repertoire, including becoming proficient on one or more of the instruments in the ensemble.
- Students will also use music as a window into the relationship between Balinese musical practice and Balinese social and religious culture, and, more broadly, develop a deep appreciation for this musicâ s profound contribution to the life experience.
- In the spirit of BYUâ s global mission and the breadth of educational experience advocated in BYUâ s guiding documents, successful students in gamelan will develop a greater understanding of and respect for music and traditions outside of their native experience. This respect will better prepare them to represent BYU and the Church in an increasingly interconnected global society.

POLI 348 : Government and Politics of Asia. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Comparative analysis of political developments of the major countries of Asia not covered in other country-specific classes.

**Course Outcomes**

There are no course outcomes available

(cannot be double counted with item 5 above)
POLI 353 : China: Government and Politics. (3:3:0)
DESCRIPTION: Structure and behavior of politics; contemporary problems.

**Course Outcomes**

There are no course outcomes available

POLI 354 : Japan: Government and Politics. (3:3:0)
DESCRIPTION: Structure and behavior of politics; contemporary problems.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 385 : International Relations of Asia. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Foreign policies and international relations of China, Japan, and Northeast and Southeast Asia; historical and contemporary review and analysis.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

(cannot be double counted with item 5 above)
POLI 386 : Japanese Foreign Policy. (3:3:0)
DESCRIPTION: Process and outcomes of Japan's foreign policy; analysis of its relations with other nations in a historical and contemporary setting.

**Course Outcomes**

There are no course outcomes available

POLI 388 : Chinese Foreign Policy. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Structure and process of foreign policy of the People's Republic of China.

**Course Outcomes**

There are no course outcomes available

REL C 351 : Survey of World Religions. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Explores the origins, theological doctrines, scriptural works, and religious practices of several internationally religious traditions, including Christianity, Islam, Judaism, Hinduism, Sikhism, Buddhism, Taoism, Confucianism, and Shinto. Comparisions are offered between these religions, and Latter-day Saints belief and practice.

**Course Outcomes**

There are no course outcomes available

: Honors Survey of World Religions.

**Course Outcomes**

Other electives: If approved beforehand, up to 9 hours of 330R or 399R credit may be counted for overseas work done under one of the following: Study Abroad, internships, mentored research, or independent field studies.

*Hours include courses that may fulfill university core requirements.

## Show all Asian Studies (Asian) Courses

**International and Area Studies Programs Home**

**Course Information**
- International and Area Studies (IAS) Courses

**African Studies**

**Minor**
- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:
- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

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**Course Information**
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**European Studies**

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**International Development**

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**International Relations**

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**Minors**
- Latin American Studies

**Course Information**
- Latin American Studies (Lt Am) Courses

# Minor in Asian Studies (12–28 hours*)

Show All Course Descriptions
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## Program Requirements

1. Complete the following:

HIST 231 : Introduction to East Asian History. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Major themes in the history, thought, and culture of Asian societies from antiquity to the present.

**Course Outcomes**
- Students will be able to explain and analyze the major political, economic, and social developments in the history of China, Korea, and Japan from antiquity to the present
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meaning and significance of historical events on contemporary identity and foreign relations.
- Students will be able to analyze historical arguments.

2. Complete one of the following tracks:

*China Track*

- Complete the following prerequisite courses (or equivalent experience):

CHIN 101 : Beginning Mandarin. (4:5:2)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Basic grammar, vocabulary building, speaking.

**Course Outcomes**
There are no course outcomes available

CHIN 102 : Beginning Mandarin. (4:5:2)
WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Chin 101 or equivalent.
DESCRIPTION: Continuation of Chin 101.

**Course Outcomes**
- Listen to conversations, dialogs, and live interaction at the ACTFL novice high level. (See Chinese major learning outcome 1).
- Speak and understand Mandarin Chinese at the ACTFL novice high level. (See Chinese major learning outcome 1).
- Write short paragraphs, notes, and similar texts at the ACTFL novice mid level. (See Chinese major learning outcome 2).
- Demonstrate a basic understanding of a variety of Chinese cultural practices and communicative conventions. (See Chinese major learning outcome 3)

CHIN 201 : Intermediate Mandarin. (4:5:1)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: Chin 102.
DESCRIPTION: Advanced grammar, the writing system, reading and writing, speaking.

**Course Outcomes**
- Speak and understand Mandarin Chinese at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Understand conversations and dialogs at the ACTFL intermediate low level. (See Chinese major learning outcome 1)
- Write short essays, journal entries, and notes at the ACTFL novice mid level. (See Chinese major learning outcome 2)
- Demonstrate an introductory level understanding of Chinese cultural practices. (See Chinese major learning outcome 3)

CHIN 202 : Intermediate Mandarin. (4:5:1)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Chin 201.
DESCRIPTION: Advanced grammar, the writing system, reading and writing, speaking.

**Course Outcomes**

- Speak and understand Mandarin Chinese at the ACTFL intermediate mid level. (See Chinese major learning outcome 1)
- Understand conversations and dialogs at the ACTFL intermediate mid level. (See Chinese major learning outcome 1)
- Write short essays, journal entries, and notes at the ACTFL novice high level. (See Chinese major learning outcome 2)
- Demonstrate a fundamental understanding of Chinese social practices as well as linguistically and culturally appropriate behavior. (See Chinese major learning outcome 3)

- Complete three courses from the following (**Note:** Only one course per discipline area will count toward the minor):

ANTHR 343 : Chinese Culture and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter Odd Yrs.
DESCRIPTION: Cultural and social institutions of traditional and modern China, including mainland China, Taiwan, Hong Kong, or other areas of Chinese impact.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain knowledge of the varieties of cultures encompassed in the vast domains of China as well as the basic social paradigms of Chinese society. Through this study, students will also gain a basic knowledge of the history of China and its importance in both past and present world contexts.

CHIN 343 : Chinese Literature in Translation--Poetry. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: All readings in English; topics vary.

**Course Outcomes**

- Outline the basic facts of early Chinese poetry: authors, genres, titles (see Chinese major expected learning outcome 3).
- Utilize the basic approaches to analyzing and appreciating literature (see Chinese major expected learning outcome 3).
- Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

CHIN 344 : Chinese Literature in Translation--Prose. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: All readings in English; topics vary.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Acquire and apply knowledge of literary terminology and frameworks for literary analysis (see Chinese major expected learning outcome 3).
- Analyze and discuss classical and modern Chinese narrative literature and its relations to Chinese cultural traditions (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

CHIN 345R : Chinese Culture. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: Selected topics in traditional, modern, and contemporary Chinese culture.

**Course Outcomes**

- Demonstrate cultural literacy of the foundations of Chinese civilization: geography, history, philosophy, thought, political systems and social structures (see Chinese major expected learning outcome 3).
- Explain how cultural factors and institutions have shaped and continue to shape allied disciplines in Chinese studies including language, literature, linguistics, and the visual arts (see Chinese major expected learning outcome 3).
- Write coherently and cohesively in English.

CHIN 346 : Introduction to Chinese Philosophy. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Introduction to native Chinese philosophies of Confucianism and Taoism. Readings in translation of *Lun-yu, Meng-tsu, Lao-tzu,* and *Chuang-tzu.* Themes include self, society, and cosmos.

**Course Outcomes**

- Summarize the important facts, figures, and dates relevant to early Chinese philosophy (see Chinese major expected learning outcome 3).

- Explain the broad outlines of the major schools of Confucianism, Mohism, Daoism, and Legalism, and understand their roles in the development of Chinese society and thought (see Chinese major expected learning outcome 3).
- Formulate philosophical questions.
- Write clear, convincing prose, and understand the basics of proper formatting and documentation for scholarly prose.

GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

HIST 340 : Traditional China. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: From a loose federation of Neolithic societies, Chinese civilization emerges as East Asia's dominant political and cultural force; developments to ca. 1500.

**Course Outcomes**

- Students will be able to explain and analyze the major social, political, economic, intellectual and cultural developments in the history of Early China (ca. 5000 BC–220 AD
- Students will demonstrate a basic geographical knowledge of China, including significant geological features and major historical cities Moreover, they will be able to discuss how geographical and environmental realities have impacted historical development.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve.

HIST 341 : China Since 1200. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Economic and political foundations of modernity during high Imperial China; challenge of new order from the West; rise of Chinese nationalism, revolution, and development to the present.

**Course Outcomes**

There are no course outcomes available

HIST 347 : Chinese Cultural History. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Methods and approaches of the cultural historian; in-depth investigation of a selected topic in Chinese cultural history. Topics may include women, Silk Roads, material culture, etc.

**Course Outcomes**

- Students will be able to explain and understand the methods and approaches of the cultural historian through an investigation of select topics in Chinese cultural history.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve

POLI 353 : China: Government and Politics. (3:3:0)

DESCRIPTION: Structure and behavior of politics; contemporary problems.

**Course Outcomes**

There are no course outcomes available

POLI 388 : Chinese Foreign Policy. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Structure and process of foreign policy of the People's Republic of China.

**Course Outcomes**

There are no course outcomes available

**Note:** Study Abroad/Internship credit is also applicable with prior approval from the Asian

Studies coordinator.

*Japan Track*

- Complete the following prerequisite courses (or equivalent experience):

JAPAN 101 : First-Year Japanese. (4:5:1)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

DESCRIPTION: Writing systems, grammar and vocabulary-building fundamentals, basic conversation and reading.

**Course Outcomes**

- Students will be able to read and write hiragana and katakana. A writing sample will be included in the individual student portfolio.
- Students will be able to ask and give directions
- Students will be able to discuss schedules and itineraries

JAPAN 102 : First-Year Japanese. (4:5:1)

WHEN TAUGHT: Fall; Winter; Summer Contact Department

PREREQUISITE: Japan 101, or equivalent.

DESCRIPTION: Writing systems, grammar and vocabulary-building fundamentals, basic conversation and reading. Includes introduction to Chinese characters.

**Course Outcomes**

- Students will be able to make social introductions covering various levels of formality and honorifics
- Students will be able to read and write simple texts based on 200 elementary kanji characters. A written sample will be included in the individual student portfolio.
- Students will be able to make comparisons

JAPAN 201 : Second-Year Japanese. (4:5:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 102 or equivalent.

DESCRIPTION: Further practice in conversation; basic reading and writing skills.

**Course Outcomes**

- Students will be able to recognize and produce approximately 400 kanji characters with their readings and meanings. A written sample will be included in the individual student portfolio.
- Students will be able to describe and model proper etiquette when visiting a home, making hotel reservations, talking about the weather, clothing terms, etc. They will be able to use verbals of giving and receiving; compare activities; use different patterns of reporting information; and employ embedded questions.

JAPAN 202 : Second-Year Japanese. (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Japan 201 or equivalent.

DESCRIPTION: Further practice in conversation, reading, and writing; introducing culture through short stories, articles.

NOTE: Not for returned missionaries. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be able to recognize and use an additional 150 kanji characters in context. A written sample will be included in the individual student portfolio.
- Students will interact appropriately in vertical society situations, using proper levels of honorific language.

- Complete three courses from the following (**Note:** Only one course per discipline area will count toward the minor):

ANTHR 348 : Contemporary Japan. (3:3:0)

DESCRIPTION: Using movies and popular media to examine the social structures and family life dynamics of contemporary Japan.

**Course Outcomes**

There are no course outcomes available

GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

HIST 343 : Traditional Japan. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, social, religious, and cultural developments to ca. 1700.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history until around 1600.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 344 : Modern Japan. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Main themes in Japanese history from Tokugawa times to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history from approximately 1600 to the present.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

JAPAN 345 : Traditional Japanese Culture. (3:3:0)

WHEN TAUGHT: Winter; Spring Contact Department

DESCRIPTION: General survey emphasizing aesthetics, religion, and value systems. All readings in English.

**Course Outcomes**

- Students will be able to speak and write about such features of culture as language, literature, thought, religion, aesthetics, art and music. A writing sample will be included in the individual student portfolio.

JAPAN 350 : Japanese Literature in Translation--Eighth Through Sixteenth Centuries. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 700 through 1600 (Nara, Heian, and medieval periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of premodern literature in verbal and written forms. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their knowledge and understanding of major works and genres in verbal and written forms.

JAPAN 351 : Japanese Literature in Translation--Seventeenth Through Nineteenth Centuries. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from 1600 through 1900 (Edo and Meiji periods).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of the human aspects of early modern Japanese literature orally and in writing. A writing sample will be included in individual student portfolio.
- Students will demonstrate their understanding of key literary works and genres in early modern Japanese literature in verbal and written forms.

JAPAN 352 : Japanese Literature in Translation: The Modern Era. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Reading and discussing selected topics in Japanese literature (narrative, lyric, drama) from Meiji period to the present.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate their understanding of human aspects in works of modern

Japanese literature orally and in writing. A writing sample will be included in the individual student portfolio.
- Students will demonstrate their ability to analyze key works and genres in modern Japanese literature in oral and written form.

JAPAN 390 : Japanese for Special Purposes. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Japan 321 or equivalent.

DESCRIPTION: Readings, video materials, discussions, and projects in content areas related specifically to business, science, and technology.

**Course Outcomes**

- Students will gain proficiency in analyzing and discussing, in Japanese, important aspects of the business environment in Japan as compared to that in America.
- Students will acquire and be able to use specialized vocabulary in Japanese relating to their fields of interest.

POLI 354 : Japan: Government and Politics. (3:3:0)

DESCRIPTION: Structure and behavior of politics; contemporary problems.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 386 : Japanese Foreign Policy. (3:3:0)

DESCRIPTION: Process and outcomes of Japan's foreign policy; analysis of its relations with other nations in a historical and contemporary setting.

**Course Outcomes**

There are no course outcomes available

**Note:** Study Abroad/Internship credit is also applicable with prior approval from the Asian Studies coordinator.

*Korea Track*

- Complete the following prerequisite courses (or equivalent experience):

KOREA 101 : First-Year Korean 1. (4:5:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Han'gul, the phonetic system, basic grammar and vocabulary, discourse, reading, and culture.

**Course Outcomes**

There are no course outcomes available

KOREA 102 : First-Year Korean 2. (4:5:0)

WHEN TAUGHT: Winter

PREREQUISITE: Korea 101 or equivalent.

DESCRIPTION: Continuation of Korea 101. Phonetic system, basic grammar, vocabulary, discourse, reading, and culture.

**Course Outcomes**

- Students will be able to;1. Comprehend basic reading material2. Use low language in addition to middle and high language3. Use expanded grammar and vocabulary in speech ACTFL 1

KOREA 201 : Second-Year Korean 1. (4:5:0)

WHEN TAUGHT: Fall

PREREQUISITE: Korea 102 or equivalent.

DESCRIPTION: Further practice in discourse and basic reading and writing skills; culture.

**Course Outcomes**

- Students will be able to;Speak somewhat comfortably in everyday situations with peers and acquaintances.Read and write basic Korean (with grammatical and spelling mistakes).Translate from basic Korean to English and English to KoreanGrasp Korean surface and deep culture

KOREA 202 : Second-Year Korean 2. (4:5:0)

WHEN TAUGHT: Winter

PREREQUISITE: Korea 201 or equivalent.

DESCRIPTION: Continuation of Korea 201. Conversation, basic reading and writing skills, culture.

Introduction to Chinese characters.

NOTE: Not for returned missionaries. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- 1. Speak and understand Korean at an ACTFL 2
- 2. Read and understand modified or early intermediate level readings
- 3. Recognize basic hanja
- 4. Write in Korean without major spelling or grammatical mistakes

- Complete three courses from the following (**Note:** Only one course per discipline area will count toward the minor):

GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

HIST 337 : Pre-modern Korea. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, economic, and social history of Korea from antiquity to 1850.

**Course Outcomes**

- An understanding of the major features of Korean history and culture both in breadth and in depth.
- An understanding of Korean history contextualized both within the framework of Korean history and in relationship to other histories and other constructions of history.
- The ability to think and write about issues in Korean history in a critical and compelling manner.

HIST 338 : Modern Korea. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Political, economic, and social history of Korea from 1850 to the present.

**Course Outcomes**

- Students will be able to describe the most significant aspects of the polity, economy, society and ideology of Korea from 1850 to the present.
- Students will be able to recognize and analyze change over time in East Asia
- Students will be able to evaluate and apply primary source texts to broad historical themes
- Students will be able to conduct individual research and situate it in the broader historical context

KOREA 345 : Korean Culture. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Selected topics in traditional, modern, and contemporary Korean culture. All readings in English.

**Course Outcomes**

- -- become familiar with the historical framework of Korea, the major dynasties and historic events.-- become familiar with major religions including shamanism, Buddhism, Confucianism, and Christianity as well as some "new religions".-- learn basic concepts of lineage and family structure, organization and activities, including ancestor veneration ceremonies.-- learn the political structure of South Korea and North Korea

POLI 348 : Government and Politics of Asia. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Comparative analysis of political developments of the major countries of Asia not covered in other country-specific classes.

**Course Outcomes**

There are no course outcomes available

**Note:** Study Abroad/Internship credit is also applicable with prior approval from the Asian Studies coordinator.

*Pan Asia Track*

- Complete 8 hours of a single Asian language (excluding Mandarin, Japanese, and Korean).
- Complete three courses from the following (**Note:** Only one course per discipline area will count toward the minor, and it should coincide with the language choice if possible):

ANTHR 335 : Peoples of India. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Society and culture on the Indian subcontinent. Stratification, kinship, marriage, religion, politics, economics.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will be provided an overview of the peoples and cultures of South Asia with an emphasis on India; a region consisting of several hundred languages, multiple ethnicities, many religious traditions, and competing political orientations.
- Students will receive increased knowledge of the cultures of India through in-depth readings, lectures, discussions, and films.
- Students will increase their capacity for critical thinking skills and writing within the discipline through discussions, exams, and a written research papers.

ANTHR 336 : Cinema and Culture in India. (3:3:0)

WHEN TAUGHT: Spring

DESCRIPTION: Anthropology of film in India; the world's largest film industry. Indian cultural and linguistic diversity. How different film genres reflect, distort, or utilize Indian cultural diversity. Evidences in the film work of Satyajit Ray.

**Course Outcomes**

There are no course outcomes available

ASIAN 342 : Asian Literary Traditions. (3:3:0)

DESCRIPTION: Comparative analysis of Asian literary works spanning several traditions.

**Course Outcomes**

- Apply basic concepts of comparative literary analysis to course texts.
- Gain familiarity with Asian literary traditions, particularly India, China, and Japan.
- Demonstrate strong critical reading, writing, and analytical skills across linguistic and national traditions.

GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 273 : Southeast Asia. (3:3.0:0)

WHEN TAUGHT: Fall Contact Department

DESCRIPTION: Fundamental issues of geography relating to Southeast Asia, including the extraction and marketing of natural resources, economic development, neighborly relations, and how diffusion has influenced the unique cultural, religious, and linguistic characteristics of the region.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

HIST 337 : Pre-modern Korea. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, economic, and social history of Korea from antiquity to 1850.

**Course Outcomes**

- An understanding of the major features of Korean history and culture both in breadth and in depth.
- An understanding of Korean history contextualized both within the framework of Korean history and in relationship to other histories and other constructions of history.
- The ability to think and write about issues in Korean history in a critical and compelling manner.

HIST 338 : Modern Korea. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Political, economic, and social history of Korea from 1850 to the present.

**Course Outcomes**

- Students will be able to describe the most significant aspects of the polity, economy, society and ideology of Korea from 1850 to the present.
- Students will be able to recognize and analyze change over time in East Asia
- Students will be able to evaluate and apply primary source texts to broad historical themes
- Students will be able to conduct individual research and situate it in the broader historical context

HIST 340 : Traditional China. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: From a loose federation of Neolithic societies, Chinese civilization emerges as East Asia's dominant political and cultural force; developments to ca. 1500.

**Course Outcomes**

- Students will be able to explain and analyze the major social, political, economic, intellectual and cultural developments in the history of Early China (ca. 5000 BC–220 AD
- Students will demonstrate a basic geographical knowledge of China, including significant geological features and major historical cities Moreover, they will be able to discuss how geographical and environmental realities have impacted historical development.
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions
- Students ability to identify arguments (assertions, claims, theses) and analyze supporting evidence in secondary scholarship should improve.

HIST 341 : China Since 1200. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Economic and political foundations of modernity during high Imperial China; challenge of new order from the West; rise of Chinese nationalism, revolution, and development to the present.

**Course Outcomes**

There are no course outcomes available

HIST 343 : Traditional Japan. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, social, religious, and cultural developments to ca. 1700.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history until around 1600.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 344 : Modern Japan. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Main themes in Japanese history from Tokugawa times to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history from approximately 1600 to the present.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 348 : Modern South East Asia. (3:3:0)

DESCRIPTION: Complex history of the varied nations of this vast area: religion, colonialism, nationalism, independence.

**Course Outcomes**

- Gain a historical consciousness by demonstrating a knowledge of major developments in South East Asia and world history and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions by using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

HIST 349 : History of Asian Religions and Thought. (3:3:0)

DESCRIPTION: Major themes in religion, philosophy, and ideas in Asia.

**Course Outcomes**

- Students will be able to understand and analyze key concepts in Chinese thought and religion as well as the logic behind core beliefs and practices
- Students will be able to analyze and interpret primary source documents, both in writing and in class discussions.

IHUM 240 : Introduction to the Humanities of Asia. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Major arts of Asian cultures in their historical, religious, and philosophical settings.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 348 : Government and Politics of Asia. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Comparative analysis of political developments of the major countries of Asia not covered in other country-specific classes.

**Course Outcomes**

There are no course outcomes available

POLI 385 : International Relations of Asia. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Foreign policies and international relations of China, Japan, and Northeast and Southeast Asia; historical and contemporary review and analysis.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

**Note:** Study Abroad/Internship credit is also applicable with prior approval from the Asian Studies coordinator.

*Hours include courses that may fulfill university core requirements.

**International and Area Studies Programs Home**

**Course Information**
- International and Area Studies (IAS) Courses

**African Studies**

**Minor**
- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:
- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**
- Asian Studies

**Course Information**
- Asian Studies (Asian) Courses

**European Studies**

**Majors**
- BA in European Studies

**Minors**
- European Studies

**Course Information**
- European Studies (Europ) Courses

**International Development**

**Minors**
- International Development

**International Relations**

**Majors**
- BA in International Relations

**Course Information**
- International Relations (IR) Courses

**Latin American Studies**

**Majors**
- BA in Latin American Studies

**Minors**
- Latin American Studies

**Course Information**
- Latin American Studies (Lt Am) Courses

# Asian Studies (Asian)

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## Undergraduate Courses

### 200-Level Courses

ASIAN 200 : Introduction to Asian Studies: Methods and Materials. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Sources, materials, and methods of research and writing; critical analysis of research project.
NOTE: Required of all Asian Studies majors early in the program.

**Course Outcomes**

- The student can identify countries and major geographic features of Asia on a map. The student can relate basic facts about the history, economics, politics, society and cultures of the countries of Asia.
- The student will be able to apply effective search strategies to locate and to evaluate information on Asia in all formats (print, electronic, microform, video, DVD) and of all types (books, articles, reference materials, etc.). The student will be able to employ proper research skills to carry out research on a topic related to Asia and present results in oral and written academic reports.

### 300-Level Courses

ASIAN 330R : Asian Studies Abroad. (.5-5:ARR:ARR)

DESCRIPTION: Preparatory course approved for Asian Seminar (Study Abroad).

**Course Outcomes**

There are no course outcomes available

ASIAN 342 : Asian Literary Traditions. (3:3:0)

DESCRIPTION: Comparative analysis of Asian literary works spanning several traditions.

**Course Outcomes**

- Apply basic concepts of comparative literary analysis to course texts.
- Gain familiarity with Asian literary traditions, particularly India, China, and Japan.
- Demonstrate strong critical reading, writing, and analytical skills across linguistic and national traditions.

### 400-Level Courses

ASIAN 495 : Senior Seminar. (1:Arr:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Senior status or program coordinator's consent.
DESCRIPTION: Learning research and writing skills necessary to prepare and present major senior research paper.
NOTE: Most all major requirements should be completed before registering for this course.

**Course Outcomes**

- In this course, you will learn how to complete a significant research project using appropriate methods of research, analysis, and a professional standard of writing. In doing so, you will draw heavily from your knowledge from previous courses.
- You will do this by studying a specialized topic in Asian Studies under the guidance of a professor. Thus, you will deepen your familiarity with a sub-field within Asian Studies and Asian Studies more broadly.
- You will also learn how to present your findings in a high-quality oral presentation, and how to give and receive appropriate feedback within a community of scholars.

## 500-Level Graduate Courses (available to advanced undergraduates)

ASIAN 501R : Intensive Introduction to Asian Studies for Teachers and Prospective Teachers. (.5-3:ARR:0)

DESCRIPTION: Readings, lectures, individual study, and curriculum development; integration for school teachers of Asian Studies into the curriculum of social studies, world history, and geography.

**Middle and Near Eastern Studies**

**Majors**

- BA in Ancient Near Eastern Studies
- BA in Middle East Studies/Arabic

**Minors**

- Ancient Near Eastern Studies
- Middle East Studies

**Course Information**

- Ancient Near Eastern Studies (ANES) Courses
- Middle East Studies/Arabic (MESA) Courses

**Course Outcomes**

No outcomes are available at this time.

**Back to International and Area Studies Home**

**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

**Course Information**

- European Studies (Europ) Courses

**International Development**

**Minors**

- International Development

**International Relations**

**Majors**

- BA in International Relations

**Course Information**

- International Relations (IR) Courses

**Latin American Studies**

**Majors**

- BA in Latin American Studies

**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# European Studies

## The Discipline

European Studies is an interdisciplinary field that focuses on Europe's rich cultural history and its ongoing contributions to the modern world. Scholars in the field come from across the university, researching everything from medieval art and literature to twenty-first-century politics nad economics. European Studies majors primarily take courses in the humantiies and social sciences, developing strong foreign language skills and a deep understanding of European history, culture and current affairs.

## Career Opportunities

A bachelor's degree in European Studies can lead to a wide range of fulfilling careers. Recent graduates from BYU's program have found employment in areas such as diplomacy, business, and higher education. The major also provides excellent preparation for graduate studies in international business, law, medicine, journalism, history, and literature.

**Middle and Near Eastern Studies**

**Majors**

- BA in Ancient Near Eastern Studies
- BA in Middle East Studies/Arabic

**Minors**

- Ancient Near Eastern Studies
- Middle East Studies

**Course Information**

- Ancient Near Eastern Studies (ANES) Courses
- Middle East Studies/Arabic (MESA) Courses

**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

**Course Information**

- European Studies (Europ) Courses

**International Development**

**Minors**

- International Development

**International Relations**

**Majors**

- BA in International Relations

**Course Information**

- International Relations (IR) Courses

**Latin American Studies**

**Majors**

- BA in Latin American Studies

**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# BA in European Studies (42–58 hours*)

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## Program Requirements | View MAP

1. Complete the GE Languages of Learning requirement in a European language.
2. Complete the following:

   EUROP 200 : Introduction to European Studies. (3:3:0)
   WHEN TAUGHT: Fall
   DESCRIPTION: Introduction to the major, the core disciplines involved and integrated in European studies, and European studies as a discipline.

   **Course Outcomes**
   - Students will gain a basic understanding of the definition, history, and purpose of European Studies.
   - Students will become familiar with the major disciplines involved with European Studies and be able to define -- and know when to engage -- various disciplinary methods.
   - Students will gain an understanding of many of the major topics and issues of European Studies.
   - Students will develop some ideas about how to orient their subsequent studies within the major.
   - Students willdevelop the habit of reading international news in order to keep abreast of European affairs and to cross-check perspectives from country to country.
   - Students willlearn how to locate, use, and cite high-quality and reliable resources from the library and online and use that research in the creation of a substantive research paper.

3. Complete the following history requirement:
   - Complete the following:

     HIST 250 : Europe 1500 to the Present. (3:3:0)
     WHEN TAUGHT: Fall Even Yrs.
     RECOMMENDED: WRTG 150.
     DESCRIPTION: Overview of key political, cultural, economic and social developments in Europe during the early modern and modern periods, 1500—Present.

     **Course Outcomes**
     There are no course outcomes available

   - Complete three courses from the following:

     CL CV 304 : (Cl Cv-Hist 247) Greek History. (3:3:0)
     WHEN TAUGHT: Winter
     DESCRIPTION: Political, economic, social, and intellectual history of Greece from Mycenaean times to the Hellenistic period.

     **Course Outcomes**
     There are no course outcomes available

     CL CV 307 : (ClCv-Hist 248) Roman History. (3:3:0)
     WHEN TAUGHT: Fall
     DESCRIPTION: Political, economic, social, and intellectual history of Rome from the foundation of the city to Constantine.

     **Course Outcomes**
     There are no course outcomes available

     HIST 232 : Introduction to the History of Christianity. (3:3:0)
     WHEN TAUGHT: Fall Odd Yrs.
     DESCRIPTION: Survey of major developments in Christianity from its origins in the ancient Roman Empire to its global presence today.

**Course Outcomes**

There are no course outcomes available

HIST 300 : The Early Middle Ages. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Decline of Rome and the early formative stages of early medieval civilization; analysis of political, economic, and social changes from A.D. 285 to 950.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in the Early Middle Ages.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers

HIST 301 : The Late Middle Ages. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Europe from 950 to 1350; maturation of medieval civilization; failure of German, success of French leadership; economic, religious, cultural, intellectual trends.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in the Late Middle Ages.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers

HIST 302 : The Italian Renaissance. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Major political, social, and cultural events in Italy from 1200 to 1530, emphasizing concept of the Renaissance in modern historiography.

**Course Outcomes**

- Students will understand and be able to analyze the major political, economic, social, and religious developments in Italian Renaissance history
- Students will be able to trace the historiographical evolution of the Italian Renaissance and analyze historical questions within this historiographical context
- Students will refine and improve historical research, writing and analytical skills

HIST 303 : The Reformation: Age of Turmoil. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Sixteenth-century religious upheaval; ideological, cultural, political, and socioeconomic struggles to mid-seventeenth century.

**Course Outcomes**

- Students will be able to explain and analyze the major religious developments in Europe during the Reformation (1500-1700).
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze and interpret secondary source documents
- Students will be able to interpret and debate the meanings and historical value of primary and secondary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 304 : The Expansion of Europe, 1400-1800. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Early voyages of discovery and the actions of Europeans in the wider world from about 1400 to 1800.

**Course Outcomes**

There are no course outcomes available

HIST 305 : The Age of Enlightenment. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Developments in Europe from 1650 to the French Revolution, emphasizing political thought, science, and philosophy in the Enlightenment.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, intellectual, and

cultural developments in Europe between 1650 and 1815.
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills
- Students will analyze historical questions and place them in historiographical context
- Students will understand the ideas central to the Enlightenment.

HIST 306 : Nineteenth-Century Europe. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Political, economic, social, and intellectual history of Europe from 1815 to 1914.

**Course Outcomes**

- Students will understand and be able to explain and analyze the international affairs and the political, intellectual, social, and economic history of Europe from 1815-1914
- Students will understand how to use and will be able to analyze and interpret primary source documents.
- Students will be able to review, critique, and evaluate historiographical works from a variety of European nations, as well as analyze historical questions and place them in a historiographical context.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts.

HIST 307 : Europe Since 1914. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: International affairs and political and economic history of major European countries (including Russia) from World War I to the present.

**Course Outcomes**

- Students will understand and be able to explain and analyze the international affairs and the political, cultural, military, social, and economic history of Europe from the two world wars until the present
- Students will understand how to use and will be able to analyze and interpret primary source documents.
- Students will be able to review, critique, and evaluate historiographical works.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to analyze and discuss current events from more than one national viewpoint.

EUROP 336R : European Studies. (.5-6:ARR:ARR)

DESCRIPTION: Social sciences core course approved for Study Abroad programs in London, Vienna, Paris, and other locations.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate a sound, general understanding of the historical development of modern Britain. Students will be familiar with all major historical periods: pre-Roman, Roman, Anglo-Saxon, Norman/medieval, Tudors/Enlightenment, Stuarts/civil war/revolution, Hanoverian/Georgian, Victorian/imperial, 20th century/world wars/postwar. But not all periods will be covered equally, and different classes will have different emphases.
- Students will demonstrate the ability accurately and intelligently to discuss how historical sites in London and throughout Britain relate to key historical developments in British history. Site visits will be directly tied to class discussions and writing assignments.
- Students will demonstrate a general understanding of how the history of Britain is reflected in other elements of the study abroad experience, such as literature and humanities course work, museum visits, performances, and visits to cultural sites.
- Students will demonstrate general understanding of the similarities and differences between the British and American political systems (e.g., constitutional monarchy, written vs. unwritten constitutions, presidents vs. prime ministers, etc.).
- Students will demonstrate awareness of British contact with and assimilation of non-western cultures (e.g., imperialism, decolonization, immigration).

4. Complete one of the following disciplinary tracks:

*Social Sciences Track*

- Complete two courses from the following:

BUS M 430 : Introduction to International Business. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Complexities confronting U.S. firms and their management in international environments. Emphasizes functional and planning areas, including organization, market research, financial analysis.

**Course Outcomes**

There are no course outcomes available

ECON 257 : International Trade and Finance. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 110

DESCRIPTION: Economic analysis of the mechanisms, problems, institutions, and policies of trade among countries. Financial and monetary arrangements that facilitate trade.

**Course Outcomes**

- Explain the key developments (models) in the intellectual history of the study of the patterns of trade in goods and services from Adam Smith through the present.Broadly discuss the evidence which supports or is contrary to the application of these developments to particular countries and goods and services.Analyze policy within the context of these models in order to gain insights about the patterns of trade.Analyze the gains from international trade with these key models and understand the political economy of trade (who gains and who loses from trade).Analyze the patterns, gains, and losses from international trade (migration) in financial and direct foreign investment and labor migration in the short and long runs.Analyze the reasons for international outsourcing portions of production and the gains and losses from doing so.Identify how trade in goods, services, and capital enter the international income accounts and the balance of payments.Discuss how exchange rates affect trade and how trade, fiscal, and monetary policy affects exchange rates.Explain the essential differences in fiscal and monetary effects for floating and fixed exchange rates.Broadly discuss the development of U.S. trade policy and the world institutions that support international trade and finance.

GEOG 260 : Europe. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Systematic approach to physical base, social and political problems, economic issues, and regional summary.

**Course Outcomes**

- To use other students input to effectively enhance European geographic understanding.
- To demonstrate the connection of the underlying physical "stage" of Europe to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To comprehend the regional geographic structure of Europe's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in Europe including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era. Emphasis will be given to the formation and spread of the European Union.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of the European realm.
- To write geographic research that is fluent, relevant, and creative.

HIST 310 : European Economic History. (3:3:0)

WHEN TAUGHT: Spring Odd Yrs.

DESCRIPTION: Economic development of Europe from antiquity to the early twentieth century; impact of the economy on social and political institutions.

**Course Outcomes**

- Students will acquire content knowledge about the economic history of Europe from antiquity to the present
- Students will master the skills necessary to summarize, evaluate, and critique historical arguments.
- Students will understand the way evidence is used to construct historical arguments.
- Students will pose historical questions and support them with appropriate evidence
- Students will gain experience collaborating with each other in formulating and carrying out a research project using historical research skills.

POLI 341 : Western European Politics. (3:3:0)

RECOMMENDED: Poli 200.

DESCRIPTION: Politics and policy in western Europe. State-building, party systems, nationalism, and cooperation among advanced industrial countries in comparative, historical perspective. Social and Christian democracy; European Union.

**Course Outcomes**

There are no course outcomes available

POLI 347 : Russia/Former Soviet Politics. (3:3:0)

DESCRIPTION: Comparative politics of Russia and Soviet successor states. Development of political systems from common Soviet heritage, emphasizing post-independence politics and institution building.

**Course Outcomes**

There are no course outcomes available

SOC 310 : Social Inquiry. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 111; or SOC 112; or SOC 113
DESCRIPTION: Basic ideas and arguments forming sociological inquiry, including philosophical foundations, philosophy of social science, and development of classical theory and contemporary theory.

**Course Outcomes**

There are no course outcomes available

SOC 345 : World Populations. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Fertility, mortality, and migration patterns of world populations as they relate to current social, economic, political, and religious issues.

**Course Outcomes**

There are no course outcomes available

SOC 361 : Theoretical Foundations of Marriage and Family. (3:3:0)
WHEN TAUGHT: Fall; Spring
DESCRIPTION: Comparative analysis of basic ideas and arguments for understanding marriage and family found in social science, social and political theory, law, and other forms of cultural discourse.

**Course Outcomes**

There are no course outcomes available

- Complete two courses from the following:

HIST 308 : The Mediterranean. (3:3:0)
DESCRIPTION: Examining the historiography and key political, cultural, economic, and social developments of the Mediterranean in the medieval and/or early modern periods.

**Course Outcomes**

- Students will understand and be able to analyze the major political, economic, social, and religious developments in Mediterranean history
- Students will be able to trace the historiographical evolution of Mediterranean history and analyze historical questions within this historiographical context
- Students will refine and improve historical research, writing and analytical skills.
- Students will refine and improve oral presentation skills.

HIST 309 : European Revolutions Since 1500. (3:3:0)
WHEN TAUGHT: Winter Odd Yrs.
DESCRIPTION: Social and political revolutions in European history since 1500. Successful and unsuccessful cases of state breakdown; the Dutch Revolt, English Revolution, French Revolution, Revolution of 1848, and Russian Revolution.

**Course Outcomes**

- Students will gain a historical consciousness by demonstrating knowledge about crisis and change in European societies.
- Students will acquire the ability to evaluate and analyze historical documents
- Students will understand the way evidence is used to construct historical arguments.
- Students will gain experience collaborating with each other in formulating and carrying out a research project using historical research skills.

HIST 312 : History of Ideas. (3:3:0)
WHEN TAUGHT: Winter Odd Yrs.
DESCRIPTION: Interrelationship of influential ideas and historical events from the end of the eighteenth century to the present.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Recognize the usefulness, but also the problematic nature of historical periodization.
- Develop interdisciplinary, synthetic, thinking skills, particularly in being able to see history in cultural artifacts and then identify and place these into discursive contexts.
- Relate and trace how ideas continue to influence societies and their institutions
- Awaken in you the realization of how certain modes of modern thought that you might have taken for granted as having existed "forever" can be seen as developments in response to specific historical circumstances.
- Explain how ideas, when extended to their logical conclusions, may challenge your personal world view and consider, as well as articulate, how to resolve such conflicts.
- Write an intellectual history research paper.
- Identify broadly how different approaches to intellectual history operate, e.g. Lovejoy, Cambridge School (Skinner), Berlin, Koselleck, Strauss, etc.

HIST 314 : European Fascisms, 1914 to Present. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Political, cultural, and social bases of fascist movements, especially in Italy, Germany, and Spain. Rise to power, family policies, warfare, propaganda, racism, genocide, neofascisms.

**Course Outcomes**

- Students will understand and be able to explain and analyze the origins, impacts, foreign policy, theories, and legacy of Fascism, Nazism, and other competing political ideologies
- Students will understand how to use and will be able to analyze and interpret primary source documents and secondary historiographical works.
- Students will understand how to research and write.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 315 : European Jews and the Holocaust. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Attempted genocide of European Jews by Hitler's Third Reich; motives, methods, and implications.

**Course Outcomes**

- Study the genocide of European Jews by Hitler's Third Reich and to explore the motives, methods, and implications of this, as well as the fundamental questions thrown into relief by it.
- Analyze key issues that informed the Holocaust, the context and processees related to it, and to engage with the debates ignited by its legacy. Further develop proficiency in using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Foster specific skills of critical thinking, argumentative and narrative writing, as well as careful reading. Analyze historical questions and issues clearly, assess historical information accurately and distinguish between questionable and valid historical assertions.
- Skillfully integrate data into coherent arguments expressed through a clear, well-written style in exams, papers, and class discussion.

HIST 318 : European Women's History. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

RECOMMENDED: Hist 200.

DESCRIPTION: European women and gender from 1400 to the present.

**Course Outcomes**

- Students will be able to understand and explain major trends in European women's experiences and history since 1400
- Students will be able to analyze and synthesize historiographyof women's history, gender history, and feminism
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another
- Students will interpret important shifts or trends in the experience of women and attitudes about gender. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate contemporary attitudes to women and men's history and gender and how these affect interpretations of the past.

HIST 319 : The Family in Europe. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Nature and development of marriage and family life and structure from the ancient to modern era.

NOTE: Independent Study also.

**Course Outcomes**

- Students will be able to understand and explain major trends in European family life, relationships, and law between 1100 and the present
- Students will be able to analyze and synthesize historiography of family history
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another.
- Students will interpret important shifts or trends in the experience of family functions and relationships and their connections with the law. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends.
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate historical experiences and historiographic interpretations

HIST 320 : Society in Europe. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Common life in Europe from 1500 to the present: family problems, social customs, marriage, superstition, death, diet, work, hardships, migration, and childhood.

**Course Outcomes**

- Students will be able to explain and analyze themes and trends in European social history in both the early modern and modern periods.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze and interpret secondary source documents
- Students will be able to interpret and debate the meanings and historical value of primary and secondary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

*Humanities Track*

- Complete one course from the following:

ARTHC 304 : Greek Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: History and appreciation of Greek art, with consideration of formative cultures.

**Course Outcomes**

There are no course outcomes available

ARTHC 306 : Roman Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art and architecture of the Etruscans and Romans.

**Course Outcomes**

There are no course outcomes available

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**

There are no course outcomes available

ARTHC 316 : Art of the Medieval West. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art in western Europe from 400 AD to 1400.

**Course Outcomes**

There are no course outcomes available

ARTHC 320 : Italian Renaissance. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Art and architecture in Italy from 1200 to 1580.

**Course Outcomes**

There are no course outcomes available

ARTHC 325 : Northern Renaissance Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Fifteenth- and sixteenth-century art in northern Europe.

**Course Outcomes**

There are no course outcomes available

ARTHC 329 : Renaissance and Baroque Architecture. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: History of architecture in Italy, Spain, France, Germany, Austria, and England, 1400?1700.

**Course Outcomes**

There are no course outcomes available

ARTHC 330 : Southern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter

PREREQUISITE: ARTHC 202
DESCRIPTION: History of baroque painting, sculpture, and architecture in Italy, Spain, and France.

**Course Outcomes**
There are no course outcomes available

ARTHC 335 : Northern Baroque Art. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Baroque painting in Flanders and Holland.

**Course Outcomes**
There are no course outcomes available

ARTHC 340 : Nineteenth-Century European Art. (3:3:0)
PREREQUISITE: ARTHC 202
DESCRIPTION: Nineteenth-century art in Europe.

**Course Outcomes**
There are no course outcomes available

ARTHC 350 : Modern Art. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Modern European art and theory, 1900--1945.

**Course Outcomes**
There are no course outcomes available

BULGN 330 : Cultural History of Bulgaria. (3:3:1)
PREREQUISITE: Bulgn 201 or foreign residence experience.
DESCRIPTION: Entry course for returned missionaries or others with extensive Bulgarian language experience.
NOTE: Required course for obtaining language credit by examination (Bulgn 101, 102, 201, 211R). Culminating course for Languages of Learning requirement.

**Course Outcomes**
- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Fulfill GE "Languages of Learning" requirements.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).

CZECH 330 : Cultural History of Czech Republic. (3:3:1)
PREREQUISITE: Czech 201 or foreign residence experience.
DESCRIPTION: Entry course for returned missionaries or others with extensive Czech or Slovak language experience.
NOTE: Required course for obtaining language credit by examination (Czech 101, 102, 201, 211R). Culminating course for Languages of Learning requirement.

**Course Outcomes**
- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfill GE "Languages of Learning" requirements.

CL CV 241 : Greek and Roman Mythology. (3:3:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Greek and Roman gods, heroes, and myths, emphasizing literature but also giving attention to representations in the visual arts.

**Course Outcomes**
There are no course outcomes available

: Honors Greek and Roman Mythology.

**Course Outcomes**

CL CV 245 : Golden Age of Greece. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: History of Civilization, culture, and daily life of Greece as indicated through its literature, art, history, and archaeology.

NOTE: All readings in English. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

CL CV 246 : Golden Age of Rome. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: History of Civilization, culture, and daily life of Rome as indicated through its literature, art, history, and archaeology.

NOTE: All readings in English. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

FREN 361 : French Civilization from the Beginning to 1715. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: Fren 321.

RECOMMENDED: Fren 322.

DESCRIPTION: Historical survey of institutions, fine arts, and social conditions to the death of Louis XIV.

NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

FREN 362 : French Civilization from 1715 to the Present. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

PREREQUISITE: Fren 321.

RECOMMENDED: Fren 322.

DESCRIPTION: Historical survey of institutions, fine arts, and social conditions.

NOTE: Fulfills GE Arts or Letters elective.

**Course Outcomes**

- Demonstrate knowledge of the chronology of French civilization and identify the major intellectual and artistic movements, their defining characteristics and contexts.
- Locate and evaluate resources relevant to course assignments.
- Apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations of a given event or topic and communicate findings coherently).
- Establish connections between events, movements, and ideas for the time period covered in this course.
- Articulate and defend clear, orderly thought on cultural topics.

GERM 330 : Cultural History of German-Speaking Peoples. (3:3:1.5)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Germ 202 or equivalent experience.

DESCRIPTION: Culture, with listening, speaking, reading, writing, and grammar as secondary emphases. Includes International Cinema.

NOTE: Entry course for returned missionaries or others with equivalent German language experience. Required course for obtaining language credit by examination (Germ 101, 102, 201, 311R). Prerequisite to all 400-level courses. Culminating course for Languages of Learning requirement.

**Course Outcomes**

There are no course outcomes available

HUNG 330 : Cultural History of Hungary. (3:3:1)

PREREQUISITE: Hung 201 or foreign residence experience.

NOTE: For returned missionaries and others with extensive Hungarian language experience. Required course for obtaining language credit by examination (Hung 101, 102, 201, 211R). Culminating course for Languages of Learning requirement.

**Course Outcomes**

- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfills the GE "Languages of Learning" requirements.

ITAL 420 : Italian Civilization from the Beginning to 1600. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Ital 340.

DESCRIPTION: Survey of history, music, architecture, literature, and arts that shaped the Italian culture and civilization from the beginning through the Renaissance.

NOTE: Fulfills GE Arts elective.

**Course Outcomes**

- Become familiar with the major intellectual and artistic traditions of Italy from the Etruscan period to the Renaissance by identifying the chronology and main characteristics of each period listed in the syllabus.
- Apply vocabulary, grammar, theory, and history to the texts, music, artifacts, and works of art listed in the syllabus to discover, interpret, and evaluate multiple meanings.
- Develop critical skills and informed aesthetic judgment to discuss and analyze the music, architecture, and works of art listed in the syllabus, paying particular attention to their historical or social setting and their place in shaping culture.
- Locate and evaluate resources relevant to course assignments and apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations, and communicate findings coherently both orally and in writing).

ITAL 421 : Italian Civilization from 1600 to the Modern Era. (3:3:0)

WHEN TAUGHT: Winter

RECOMMENDED: Ital 340.

DESCRIPTION: Survey of institutions, fine arts, and great writers that shaped the history of Italy from the Baroque period to the modern era.

NOTE: Fulfills GE Arts elective.

**Course Outcomes**

- Become familiar with the major intellectual and artistic traditions of Italy from the Baroque Period to modern times by identifying the chronology and main characteristics of each period listed in the syllabus.
- Apply critical concepts, theory, and history to the texts, music, artifacts, and works of art listed in the syllabus to discover, interpret, and evaluate their multiple meanings.
- Develop critical skills and informed aesthetic judgment to discuss and analyze the music, architecture, and works of art listed in the syllabus, paying particular attention to their historical or social setting and their place in shaping culture.
- Locate and evaluate resources relevant to course assignments and apply appropriate methods of investigation (e.g., formulate hypotheses, make valid arguments, use evidence, cope with ambiguity, evaluate competing interpretations), and communicate findings coherently both orally and in writing).

LATVI 330 : Cultural History of Latvia. (3:3:1)

PREREQUISITE: Latvi 201 or foreign residence experience.

NOTE: Entry course for returned missionaries or others of equivalent language experience. Required course for obtaining language credit by examination. May fulfill the GE Languages of Learning requirement.

**Course Outcomes**

- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfills the GE "Languages of Learning" requirements.

LITHU 330 : Cultural History of Lithuania. (3:3:1)

PREREQUISITE: Lithu 201 or foreign residence experience.

NOTE: Entry course for returned missionaries or others of equivalent language experience. Required course for obtaining language credit by examination. May fulfill the GE Languages of Learning requirement.

**Course Outcomes**

- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfills the GE "Languages of Learning" requirements.

POLSH 330 : Cultural History of Poland. (3:3:1)

PREREQUISITE: Polsh 202 or foreign residence experience.

NOTE: Entry course for returned missionaries or others of equivalent language experience. Required course for obtaining language credit by examination. May fulfill the GE Languages of Learning requirement.

**Course Outcomes**

- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfills the GE "Languages of Learning" requirements.Fulfills the GE "Languages of Learning" requirements.

PORT 345 : Portuguese Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: Port 321.

DESCRIPTION: Culture, history, art, music, and traditions of Portugal.

**Course Outcomes**

- Describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe the linear progression of historical periods that might include important political, social, and artistic events.
- Recognize and describe important cultural products such as art, literature, architecture, and music, including important works and individuals.
- Describe important cultural institutions that might include family, religion, education and government.
- Discuss important cultural practices, including customs related to birth, marriage and death, as well as traditions and holidays.
- Analyze recent developments, including political, social, religious, and artistic activities.
- Interpret cultural products and practices within the framework of historical, geographic, religious, and social factors that influence them.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced awareness of cultural and historical knowledge
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

ROM 340 : Introduction to Romanian Literature and Culture. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Foreign residence experience in Romania.

DESCRIPTION: For returned missionaries or others with extensive Romanian language experience.

NOTE: Required course for obtaining language credit by examination. Culminating course for GE Foreign Language requirement.

**Course Outcomes**

- Meet all program-level learning outcomes.
- Demonstrate knowledge and understanding of the history, politics and culture of Romania both past and present, in a European and world context.
- Place the issues studied in a European and world context and make connections between Romanian events and issues, and important events and facts that have affected Europe or the world in general.
- Be able to analyze and interpret specific Romanian topics at a high academic level using appropriate theories, concepts and research materials.
- Be able to read complex a variety of texts in Romanian, and express (orally or in writing) complex ideas in Romanian.
- Develop the curiosity and habits of thought that will encourage life-long learning and continued interest and even love of Romania, its people and culture.

RUSS 330 : Cultural History of Russia. (3:3:1)

WHEN TAUGHT: Fall; Winter; Summer
PREREQUISITE: Russ 202 or foreign residence experience.
NOTE: Required course for obtaining language credit by examination (Russ 101, 102, 201, 211R). Culminating course for Languages of Learning requirement. Includes International Cinema.

**Course Outcomes**

There are no course outcomes available

SCAND 430 : Cultural History of Scandinavia. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: Scandinavian culture from the Vikings to the present.
NOTE: Works may be read in English translation.

**Course Outcomes**

There are no course outcomes available

SLN 330 : Cultural History of Slovenia. (3:3.0:1.0)

PREREQUISITE: SLN 201 or foreign residence experience.
NOTE: Entry course for returned missionaries or others of equivalent language experience. Required course for obtaining language credit by examination. May fulfill the GE Languages of Learning requirement.

**Course Outcomes**

- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfills the GE "Languages of Learning" requirements.

SPAN 345 : Iberian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spain.

**Course Outcomes**

- Students will be able to describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe and analyze historical periods and current events (e.g., political, social, artistic, and religious developments).
- Recognize and describe important cultural products (e.g., art, literature, architecture, and music, including important works and individuals), cultural institutions (e.g., family, religion, education, and government), and cultural practices (e.g., customs related to birth, marriage, death, holidays, and traditions).
- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

SRBCR 330 : Cultural History of the Former Yugoslavia. (3:3:1)

PREREQUISITE: SrbCr 201 or foreign residence experience.
NOTE: For returned missionaries or others with extensive Serbo-Croatian language experience. Required course for obtaining language credit by examination (SrbCr 101, 102, 201, 211R). Culminating course for Languages of Learning requirement.

**Course Outcomes**

- Meet all program-level learning outcomes.

TMA 395 : Dramatic Literature 1. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre arts studies major or minor status.
DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through Western literary theories, emphasizing performance.

**Course Outcomes**

- Students will synthesize linguistic theory and the social theories and great works of dramatic literature through reading, writing, discussion, film viewing.
- Students will create socially conscious, ideologically-grounded performances that respond both to their world views and contemporary issues in critical theory.
- Students will create cogent, compelling, and mechanically writing for the Humanities in a variety of different mediums—informal responses, production reviews, persuasive essays, and critical analyses.

TMA 396 : Dramatic Literature 2. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: TMA 115 & TMA 201 & TMA 202; Theatre arts studies major or minor status.

DESCRIPTION: Survey of dramatic texts, from ancient Greek to today, through global literary theories, emphasizing performance.

**Course Outcomes**

- Students will synthesize linguistic theory and the social theories and great works of dramatic literature through reading, writing, discussion, film viewing.
- Students will create socially conscious, ideologically-grounded performances that respond both to their world views and contemporary issues in critical theory.
- Students will create cogent, compelling, and mechanically writing for the Humanities in a variety of different mediums—informal responses, production reviews, persuasive essays, and critical analyses.

UKRAI 330 : Cultural History of Ukraine. (3:3:1)

PREREQUISITE: Ukrai 201 or foreign residence experience.

NOTE: Entry course for returned missionaries or others of equivalent language experience. Required course for obtaining language credit by examination. May fulfill the GE Languages of Learning requirement.

**Course Outcomes**

- In both written and spoken target language, communicate accurately with well educated members of the target-culture about real-world activities.
- Understand detailed written and verbal instructions. Comprehend historical passages, newspaper and magazine articles, and broadcast news reports well educated native speakers encounter routinely in their daily life.
- Acquire background knowledge of important achievements related to the target culture (historical figures and events, major literary and artistic movements, government and religious institutions, etc.). Discuss in the target language cultural practices related to major life events in the target culture (birth, marriage, death, etc.).
- Fulfills the GE "Languages of Learning" requirements.

**Or** any IHum 400-level seminar on European topic

- Complete the following literature, film, and philosophy requirement:

1. Complete one course from the following:

   Any 300- or 400-level literature course from student's foreign language.

   Any 300- or 400-level comparative literature course with a European emphasis.

2. Complete two courses from the following:

   Any 300- or 400-level literature, film, or philosophy course with a European emphasis.

   Select 200-level literature and film courses:

CL CV 241 : Greek and Roman Mythology. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Greek and Roman gods, heroes, and myths, emphasizing literature but also giving attention to representations in the visual arts.

**Course Outcomes**

There are no course outcomes available

: Honors Greek and Roman Mythology.

**Course Outcomes**

CL CV 245 : Golden Age of Greece. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: History of Civilization, culture, and daily life of Greece as indicated through its literature, art, history, and archaeology.

NOTE: All readings in English. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

CL CV 246 : Golden Age of Rome. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: History of Civilization, culture, and daily life of Rome as indicated through its literature, art, history, and archaeology.

NOTE: All readings in English. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

CL CV 261 : Greek and Roman Civilization and Literature in Film. (3:3:0)
DESCRIPTION: Literature and civilization of ancient Greece and Rome as depicted in modern film with attendant problems of accuracy and historicity.

**Course Outcomes**
There are no course outcomes available

ENGL 291 : British Literary History 1. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in early English literature as illustrated through representative texts.

**Course Outcomes**
There are no course outcomes available

ENGL 292 : British Literary History 2. (3:3:0)
OFFERED: Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: ENGL 251; or concurrent enrollment.
DESCRIPTION: Development of ideas, movements, genres, and styles in later English literature as illustrated through representative texts.

**Course Outcomes**
There are no course outcomes available

GERM 217 : (Germ-Scand) German and Scandinavian Cinema. (3:3:3)
WHEN TAUGHT: Fall Odd Yrs.
RECOMMENDED: A first-year writing course.
DESCRIPTION: Background for understanding and appreciating the best of motion picture art in Germany and Scandinavia.
NOTE: Language of instruction is English; no knowledge of German or Scandinavian languages is required. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

IHUM 270R : European Humanities and the Arts. (.5-6:ARR:ARR)
OFFERED: Study Abroad only.

**Course Outcomes**
No outcomes are available at this time.

SCAND 217 : (Scand-Germ) German and Scandinavian Cinema. (3:3:3)
WHEN TAUGHT: Fall
RECOMMENDED: A first-year writing course.
DESCRIPTION: Background for understanding and appreciating the best of motion picture art in Germany and Scandinavia.
NOTE: Language of instruction is English; no knowledge of German or Scandinavian languages is required. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

5. Complete 12 hours of supporting course work. In consultation with the program coordinator, propose a list of advanced courses (typically senior level) that are European focused and that have a coherent logic relative to educational and career goals. This list must then be approved by the European Studies Executive Committee. Note that courses approved for this requirement may not be used to fulfill any other European Studies requirement. Students are strongly encouraged to take Europ 490R (Senior Seminar in European Studies) as part of this requirement.

6. Complete an exit interview during the final semester. Students come to the interview prepared to lead a discussion on one major European issue of their choice that they've encountered in their program. This could be a current political/economic issue like the European Union or immigration, or it could be a historical/interpretive issue regarding our understanding of

European identity, history, culture, etc.

**Recommended Courses**

These courses can be used to fill the Arts and Letters and Social Science GE requirements or for enrichment electives:

*Arts and Letters*

ArtHC 111.
Engl 230.
Hum 101, 201, 202.
Music 101.
Phil 110.

*Social Sciences*

Anthr 101.
Econ 110.
Pl Sc 150, 170.
Soc 111

*Hours include courses that may fulfill university core requirements.

**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

**Course Information**

- European Studies (Europ) Courses

**International Development**

**Minors**

- International Development

**International Relations**

**Majors**

- BA in International Relations

**Course Information**

- International Relations (IR) Courses

**Latin American Studies**

**Majors**

- BA in Latin American Studies

**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# Minor in European Studies (15–28 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the GE Languages of Learning requirement in a European language.
2. Complete the following:

EUROP 200 : Introduction to European Studies. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Introduction to the major, the core disciplines involved and integrated in European studies, and European studies as a discipline.

**Course Outcomes**

- Students will gain a basic understanding of the definition, history, and purpose of European Studies.
- Students will become familiar with the major disciplines involved with European Studies and be able to define -- and know when to engage -- various disciplinary methods.
- Students will gain an understanding of many of the major topics and issues of European Studies.
- Students will develop some ideas about how to orient their subsequent studies within the major.
- Students willdevelop the habit of reading international news in order to keep abreast of European affairs and to cross-check perspectives from country to country.
- Students willlearn how to locate, use, and cite high-quality and reliable resources from the library and online and use that research in the creation of a substantive research paper.

HIST 250 : Europe 1500 to the Present. (3:3:0)
WHEN TAUGHT: Fall Even Yrs.
RECOMMENDED: WRTG 150.
DESCRIPTION: Overview of key political, cultural, economic and social developments in Europe during the early modern and modern periods, 1500—Present.

**Course Outcomes**

There are no course outcomes available

3. Complete three courses from the following:

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 201
DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**

There are no course outcomes available

ARTHC 316 : Art of the Medieval West. (3:3:0)
WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 201
DESCRIPTION: Art in western Europe from 400 AD to 1400.

**Course Outcomes**

There are no course outcomes available

ARTHC 320 : Italian Renaissance. (3:3:0)
WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Art and architecture in Italy from 1200 to 1580.

**Course Outcomes**

There are no course outcomes available

ARTHC 325 : Northern Renaissance Art. (3:3:0)

WHEN TAUGHT: Fall
PREREQUISITE: ARTHC 202
DESCRIPTION: Fifteenth- and sixteenth-century art in northern Europe.

**Course Outcomes**

There are no course outcomes available

ARTHC 329 : Renaissance and Baroque Architecture. (3:3:0)

PREREQUISITE: ARTHC 202
DESCRIPTION: History of architecture in Italy, Spain, France, Germany, Austria, and England, 1400?1700.

**Course Outcomes**

There are no course outcomes available

ARTHC 330 : Southern Baroque Art. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: History of baroque painting, sculpture, and architecture in Italy, Spain, and France.

**Course Outcomes**

There are no course outcomes available

ARTHC 335 : Northern Baroque Art. (3:3:0)

WHEN TAUGHT: Winter
PREREQUISITE: ARTHC 202
DESCRIPTION: Baroque painting in Flanders and Holland.

**Course Outcomes**

There are no course outcomes available

ARTHC 340 : Nineteenth-Century European Art. (3:3:0)

PREREQUISITE: ARTHC 202
DESCRIPTION: Nineteenth-century art in Europe.

**Course Outcomes**

There are no course outcomes available

ENGL 300R : English Literature in a Cultural Setting. (.5-6:ARR:ARR)

WHEN TAUGHT: Contact Department.
NOTE: For Study Abroad students only.

**Course Outcomes**

- Students will identify and define significant characteristics of the literature from each period of British literary history that we study.
- Students will display in several short essays detailed knowledge of the author, time period, and literary text for each of the sites we visit in Britain.
- Students will demonstrate their knowledge of the historical relations among the texts we study by preparing a timeline that features both the birth date and the death date of each author and the composition and publication dates of their works.

EUROP 336R : European Studies. (.5-6:ARR:ARR)

DESCRIPTION: Social sciences core course approved for Study Abroad programs in London, Vienna, Paris, and other locations.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate a sound, general understanding of the historical development of modern Britain. Students will be familiar with all major historical periods: pre-Roman, Roman, Anglo-Saxon, Norman/medieval, Tudors/Enlightenment, Stuarts/civil war/revolution, Hanoverian/Georgian, Victorian/imperial, 20th century/world wars/postwar. But not all periods will be covered equally, and different classes will have different emphases.
- Students will demonstrate the ability accurately and intelligently to discuss how historical sites in London and throughout Britain relate to key historical developments in British history. Site visits will be directly tied to class discussions and writing assignments.
- Students will demonstrate a general understanding of how the history of Britain is reflected in other elements of the study abroad experience, such as literature and humanities course work, museum visits, performances, and visits to cultural sites.
- Students will demonstrate general understanding of the similarities and differences between the British and American political systems (e.g., constitutional monarchy, written vs. unwritten constitutions, presidents vs. prime ministers, etc.).
- Students will demonstrate awareness of British contact with and assimilation of non-western cultures (e.g., imperialism, decolonization, immigration).

EUROP 490R : Senior Seminar in European Studies. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: EUROP 200; Senior status or program coordinator's consent.

DESCRIPTION: Interdisciplinary study of an issue central to European studies; topics vary.

**Course Outcomes**

- Students will gain an in-depth understanding of an issue central to European Studies and be able to articulate that understanding using theories, concepts, research materials, and ideas from the perspectives of more than one European-Studies-related discipline.
- Students will identify a valid research topic and research that topic using appropriate disciplinary methods, and they will write a cogent, scholarly essay in which they report the results of their research.
- Students will understand the relationship of the course's central issue to their country or countries of interest.

FNART 270R : European Fine Arts. (.5-6:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Art, design, music, and theatre of host countries and other European cultures.

**Course Outcomes**

- Students will identify and analyze art, design, music, and theatre of host countries and other European cultures.

GEOG 260 : Europe. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Systematic approach to physical base, social and political problems, economic issues, and regional summary.

**Course Outcomes**

- To use other students input to effectively enhance European geographic understanding.
- To demonstrate the connection of the underlying physical "stage" of Europe to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To comprehend the regional geographic structure of Europe's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in Europe including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era. Emphasis will be given to the formation and spread of the European Union.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of the European realm.
- To write geographic research that is fluent, relevant, and creative.

HIST 232 : Introduction to the History of Christianity. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Survey of major developments in Christianity from its origins in the ancient Roman Empire to its global presence today.

**Course Outcomes**

There are no course outcomes available

HIST 300 : The Early Middle Ages. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Decline of Rome and the early formative stages of early medieval civilization; analysis of political, economic, and social changes from A.D. 285 to 950.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in the Early Middle Ages.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers

HIST 301 : The Late Middle Ages. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Europe from 950 to 1350; maturation of medieval civilization; failure of German, success of French leadership; economic, religious, cultural, intellectual trends.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in the Late Middle Ages.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze historical questions and place them in a historiographical context.

- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers

HIST 302 : The Italian Renaissance. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Major political, social, and cultural events in Italy from 1200 to 1530, emphasizing concept of the Renaissance in modern historiography.

**Course Outcomes**

- Students will understand and be able to analyze the major political, economic, social, and religious developments in Italian Renaissance history
- Students will be able to trace the historiographical evolution of the Italian Renaissance and analyze historical questions within this historiographical context
- Students will refine and improve historical research, writing and analytical skills

HIST 303 : The Reformation: Age of Turmoil. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Sixteenth-century religious upheaval; ideological, cultural, political, and socioeconomic struggles to mid-seventeenth century.

**Course Outcomes**

- Students will be able to explain and analyze the major religious developments in Europe during the Reformation (1500-1700).
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze and interpret secondary source documents
- Students will be able to interpret and debate the meanings and historical value of primary and secondary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 304 : The Expansion of Europe, 1400-1800. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Early voyages of discovery and the actions of Europeans in the wider world from about 1400 to 1800.

**Course Outcomes**

There are no course outcomes available

HIST 305 : The Age of Enlightenment. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Developments in Europe from 1650 to the French Revolution, emphasizing political thought, science, and philosophy in the Enlightenment.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, intellectual, and cultural developments in Europe between 1650 and 1815.
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills
- Students will analyze historical questions and place them in historiographical context
- Students will understand the ideas central to the Enlightenment.

HIST 306 : Nineteenth-Century Europe. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Political, economic, social, and intellectual history of Europe from 1815 to 1914.

**Course Outcomes**

- Students will understand and be able to explain and analyze the international affairs and the political, intellectual, social, and economic history of Europe from 1815-1914
- Students will understand how to use and will be able to analyze and interpret primary source documents.
- Students will be able to review, critique, and evaluate historiographical works from a variety of European nations, as well as analyze historical questions and place them in a historiographical context.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts.

HIST 307 : Europe Since 1914. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: International affairs and political and economic history of major European countries (including Russia) from World War I to the present.

**Course Outcomes**

- Students will understand and be able to explain and analyze the international affairs and the political, cultural, military, social, and economic history of Europe from the two world wars until the present
- Students will understand how to use and will be able to analyze and interpret primary source documents.
- Students will be able to review, critique, and evaluate historiographical works.

- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to analyze and discuss current events from more than one national viewpoint.

HIST 308 : The Mediterranean. (3:3:0)

DESCRIPTION: Examining the historiography and key political, cultural, economic, and social developments of the Mediterranean in the medieval and/or early modern periods.

**Course Outcomes**

- Students will understand and be able to analyze the major political, economic, social, and religious developments in Mediterranean history
- Students will be able to trace the historiographical evolution of Mediterranean history and analyze historical questions within this historiographical context
- Students will refine and improve historical research, writing and analytical skills.
- Students will refine and improve oral presentation skills.

HIST 309 : European Revolutions Since 1500. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Social and political revolutions in European history since 1500. Successful and unsuccessful cases of state breakdown; the Dutch Revolt, English Revolution, French Revolution, Revolution of 1848, and Russian Revolution.

**Course Outcomes**

- Students will gain a historical consciousness by demonstrating knowledge about crisis and change in European societies.
- Students will acquire the ability to evaluate and analyze historical documents
- Students will understand the way evidence is used to construct historical arguments.
- Students will gain experience collaborating with each other in formulating and carrying out a research project using historical research skills.

HIST 310 : European Economic History. (3:3:0)

WHEN TAUGHT: Spring Odd Yrs.

DESCRIPTION: Economic development of Europe from antiquity to the early twentieth century; impact of the economy on social and political institutions.

**Course Outcomes**

- Students will acquire content knowledge about the economic history of Europe from antiquity to the present
- Students will master the skills necessary to summarize, evaluate, and critique historical arguments.
- Students will understand the way evidence is used to construct historical arguments.
- Students will pose historical questions and support them with appropriate evidence
- Students will gain experience collaborating with each other in formulating and carrying out a research project using historical research skills.

HIST 318 : European Women's History. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

RECOMMENDED: Hist 200.

DESCRIPTION: European women and gender from 1400 to the present.

**Course Outcomes**

- Students will be able to understand and explain major trends in European women's experiences and history since 1400
- Students will be able to analyze and synthesize historiographyof women's history, gender history, and feminism
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another
- Students will interpret important shifts or trends in the experience of women and attitudes about gender. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate contemporary attitudes to women and men's history and gender and how these affect interpretations of the past.

HIST 319 : The Family in Europe. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Nature and development of marriage and family life and structure from the ancient to modern era.

NOTE: Independent Study also.

**Course Outcomes**

- Students will be able to understand and explain major trends in European family life, relationships, and law between 1100 and the present
- Students will be able to analyze and synthesize historiography of family history
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another.
- Students will interpret important shifts or trends in the experience of family functions and relationships and their connections with the law. Students will apply this understanding to the legal, religious, and

culture contexts for those shifts or trends.
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate historical experiences and historiographic interpretations

HIST 320 : Society in Europe. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Common life in Europe from 1500 to the present: family problems, social customs, marriage, superstition, death, diet, work, hardships, migration, and childhood.

**Course Outcomes**

- Students will be able to explain and analyze themes and trends in European social history in both the early modern and modern periods.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to analyze and interpret secondary source documents
- Students will be able to interpret and debate the meanings and historical value of primary and secondary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

IHUM 270R : European Humanities and the Arts. (.5-6:ARR:ARR)

OFFERED: Study Abroad only.

**Course Outcomes**

No outcomes are available at this time.

IAS 399R : Academic Internship: International. (.5-9:ARR:ARR)

PREREQUISITE: Acceptance into program.

DESCRIPTION: Individualized work or volunteer experience in an international setting.

NOTE: Class must be coordinated through International Study Programs.

**Course Outcomes**

- · Apply skills and material learned in traditional courses to a real-world workplace environment.· Demonstrate proficiency in the skills required by the internship supervisor.· Demonstrate an ability to link insights gained from traditional classes and from real-world workplace experiences.

POLI 341 : Western European Politics. (3:3:0)

RECOMMENDED: Poli 200.

DESCRIPTION: Politics and policy in western Europe. State-building, party systems, nationalism, and cooperation among advanced industrial countries in comparative, historical perspective. Social and Christian democracy; European Union.

**Course Outcomes**

There are no course outcomes available

POLI 347 : Russia/Former Soviet Politics. (3:3:0)

DESCRIPTION: Comparative politics of Russia and Soviet successor states. Development of political systems from common Soviet heritage, emphasizing post-independence politics and institution building.

**Course Outcomes**

There are no course outcomes available

POLI 351 : British Government and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Examination of the origin and contemporary operation of British political institutions as they relate to British society.

**Course Outcomes**

There are no course outcomes available

SPAN 345 : Iberian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Culture, history, art, music, and traditions of Spain.

**Course Outcomes**

- Students will be able to describe the principal geographic regions, that might include topological features, important cities, and local traditions, customs, and languages.
- Describe and analyze historical periods and current events (e.g., political, social, artistic, and religious developments).
- Recognize and describe important cultural products (e.g., art, literature, architecture, and music, including important works and individuals), cultural institutions (e.g., family, religion, education, and government), and cultural practices (e.g., customs related to birth, marriage, death, holidays, and

traditions).

- By comparison, recognize and discuss the influence of their own cultural background on their attitudes, beliefs, and worldview.

**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

**Course Information**

- European Studies (Europ) Courses

**International Development**

**Minors**

- International Development

**International Relations**

**Majors**

- BA in International Relations

**Course Information**

- International Relations (IR) Courses

**Latin American Studies**

**Majors**

- BA in Latin American Studies

**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# European Studies (Europ)

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## Undergraduate Courses

### 200-Level Courses

EUROP 200 : Introduction to European Studies. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to the major, the core disciplines involved and integrated in European studies, and European studies as a discipline.

**Course Outcomes**

- Students will gain a basic understanding of the definition, history, and purpose of European Studies.
- Students will become familiar with the major disciplines involved with European Studies and be able to define -- and know when to engage -- various disciplinary methods.
- Students will gain an understanding of many of the major topics and issues of European Studies.
- Students will develop some ideas about how to orient their subsequent studies within the major.
- Students willdevelop the habit of reading international news in order to keep abreast of European affairs and to cross-check perspectives from country to country.
- Students willlearn how to locate, use, and cite high-quality and reliable resources from the library and online and use that research in the creation of a substantive research paper.

### 300-Level Courses

EUROP 336R : European Studies. (.5-6:ARR:ARR)

DESCRIPTION: Social sciences core course approved for Study Abroad programs in London, Vienna, Paris, and other locations.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will demonstrate a sound, general understanding of the historical development of modern Britain. Students will be familiar with all major historical periods: pre-Roman, Roman, Anglo-Saxon, Norman/medieval, Tudors/Enlightenment, Stuarts/civil war/revolution, Hanoverian/Georgian, Victorian/imperial, 20th century/world wars/postwar. But not all periods will be covered equally, and different classes will have different emphases.
- Students will demonstrate the ability accurately and intelligently to discuss how historical sites in London and throughout Britain relate to key historical developments in British history. Site visits will be directly tied to class discussions and writing assignments.
- Students will demonstrate a general understanding of how the history of Britain is reflected in other elements of the study abroad experience, such as literature and humanities course work, museum visits, performances, and visits to cultural sites.
- Students will demonstrate general understanding of the similarities and differences between the British and American political systems (e.g., constitutional monarchy, written vs. unwritten constitutions, presidents vs. prime ministers, etc.).
- Students will demonstrate awareness of British contact with and assimilation of non-western cultures (e.g., imperialism, decolonization, immigration).

### 400-Level Courses

EUROP 490R : Senior Seminar in European Studies. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: EUROP 200; Senior status or program coordinator's consent.

DESCRIPTION: Interdisciplinary study of an issue central to European studies; topics vary.

**Course Outcomes**

- Students will gain an in-depth understanding of an issue central to European Studies and be able to articulate that understanding using theories, concepts, research materials, and ideas from the perspectives of more than one European-Studies-related discipline.
- Students will identify a valid research topic and research that topic using appropriate disciplinary methods, and they will write a cogent, scholarly essay in which they report the results of their research.
- Students will understand the relationship of the course's central issue to their country or countries of interest.

**Middle and Near Eastern Studies**

**Majors**

- BA in Ancient Near Eastern Studies
- BA in Middle East Studies/Arabic

**Minors**

- Ancient Near Eastern Studies
- Middle East Studies

**Course Information**

- Ancient Near Eastern Studies (ANES) Courses
- Middle East Studies/Arabic (MESA) Courses

**Back to International and Area Studies Home**

**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

**Course Information**

- European Studies (Europ) Courses

**International Development**

**Minors**

- International Development

**International Relations**

**Majors**

- BA in International Relations

**Course Information**

- International Relations (IR) Courses

**Latin American Studies**

**Majors**

- BA in Latin American Studies

**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# International Development

## The Discipline

International development is the study of basic social needs in developing areas or countries. It includes academic disciplines such as formal and nonformal education and literacy, economic development, primary health care, small business activities, water sanitation, agricultural productivity, nutrition, ecological preservation, etc. Development obviously implies raising the level and quality of life throughout the "underdeveloped" world.

Students should pursue solid preparation in an established major as well as classroom knowledge and experience in international development. This minor is designed to strengthen and expand the chosen major. Students will be assigned a faculty mentor in their major department who will help coordinate the minor with the major. In addition to a focused course of study, internship experience is highly encouraged. Internships provide valuable experience in applying development theory as well as allowing students to earn credit toward the minor (and in some cases the major as well).

**Middle and Near Eastern Studies**

**Majors**

- BA in Ancient Near Eastern Studies
- BA in Middle East Studies/Arabic

**Minors**

- Ancient Near Eastern Studies
- Middle East Studies

**Course Information**

- Ancient Near Eastern Studies (ANES) Courses
- Middle East Studies/Arabic (MESA) Courses

**International and Area Studies Programs Home**

**Course Information**
- International and Area Studies (IAS) Courses

**African Studies**

**Minor**
- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:
- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**
- Asian Studies

**Course Information**
- Asian Studies (Asian) Courses

**European Studies**

**Majors**
- BA in European Studies

**Minors**
- European Studies

**Course Information**
- European Studies (Europ) Courses

**International Development**

**Minors**
- International Development

**International Relations**

**Majors**
- BA in International Relations

**Course Information**
- International Relations (IR) Courses

**Latin American Studies**

**Majors**
- BA in Latin American Studies

**Minors**
- Latin American Studies

**Course Information**
- Latin American Studies (Lt Am) Courses

# Minor in International Development (18 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. No double-counting courses within the different areas of this minor is allowed.
2. Complete the following:

IAS 220 : Introduction to Development Studies. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Exploration of international development in non-formal education, micro-enterprises, community organizations; hunger, poverty, and other special problems in developing areas of the world.

**Course Outcomes**

- Upon successfully completing this course, a student will be able to recognize the historical origins of international development and the various agendas that it embodies. Upon successfully completing this course, a student will be able to recognize and articulate the complexity of international development issues and their interdisciplinary nature. Upon successfully completing this course, a student will be able to identify major theories and approaches to international development both in general and across different key disciplines. Upon successfully completing this course, a student will be intellectually ready to embark on an International Development Minor Internship.

3. Complete two courses from the following (6 hours):

ANTHR 441 : Anthropology of Development. (3:3:3)

DESCRIPTION: Theory, practice, and research methods regarding the anthropological study and resolution of poverty, disease, malnutrition, displacement, and inadequate educational opportunities.

**Course Outcomes**

- To enable the students to apply anthropological theory and ideas in a practical manner and by so doing to assess how the process of development has traditionally been done, say from 1945 to the present. Has that system worked? What have been its successes and failures, and why? We will study what the difficulties are that impede development, structurally, culturally, and environmentally. In addition, we will ask whether the cross-cultural analysis and communication perspective that anthropology (supposedly) excels in helps. Does or can the use of anthropological techniques and analysis help make development more successful? Has anthropologically-informed development worked? Where, when, why? And if not, why not? In a word, can the principles and practices of anthropology be used in development projects to produce something more successful and reliable in the way of development? Can the principles and skills be identified and learned or imparted to a group of students so that new practitioners can be more successful if they enter into some kind of development enterprise or project? These objectives will be achieved by a] studying class texts; b] undertaking an individual research project; c] preparing and presenting a critique of a development project based on a journal account. Outcomes will be the ability to better understand the role of Anthropology in development work coupled with greater knowledge and skills in carrying out personal development projects. This in turn will contribute to greater confidence; a greater ability to analyze and understand human activity, sociality and thought; a greater awareness of cultural diversity, and an increased ability to communicate both orally and in written work.

COMMS 382 : Issues in Global Communication. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Communications or international relations major or minor status.

DESCRIPTION: Issues relating to communicating in a global village. Approaches may include global information and policy, cultural imperialism, intercultural interaction, and multinational communication strategies.

**Course Outcomes**

There are no course outcomes available

ECON 230 : Economic Development and Growth. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: ECON 110

DESCRIPTION: Problems and processes of economic growth and development, emphasizing less-developed nations.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Be familiar with the labor and consumption patterns among the world's poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 110 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property RightsGain a basic understanding of econometric methods used in testing economic theories in growth and development.Analyze the Solow Growth model and its implications for economic growth.Explain the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Discuss the potential role of government in economic development. Especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

(prerequisite: Econ 110)

EDLF 363 : Education, Poverty, and Community Development. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Examines the nexus between education, poverty, and socioeconomic development challenges facing developing countries through the perspective of economics, religion, and the state.

**Course Outcomes**

- Identify and critically reflect upon issues and theories of poverty and human development causes, interrelations, feedback, and be able to offer possible solutions.
- Locate, understand, and critically review development theories and research within their respective disciplines and within the interdisciplinary field of Development Studies
- Analyze relevant development phenomena in a complex manner using key concepts and theories studied during the course.
- Formulate complex research questions regarding development.
- Communicate scientific issues and follow the development of knowledge.
- Develop a more effective understanding of the economics, social, and political dimensions of educational development within and across national boundaries.
- Compare the benefits and limitations of different policy construction and aggregation methods and the kinds of results that one might obtain in interventions.
- Improve critical thinking and reasoning, and writing skills.

POLI 444 : The Political Economy of Development. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Econ 110, Poli 200.

DESCRIPTION: Political foundations of growth, providing public goods, and political reform in developing countries. Development and how institutions and culture shape it.

**Course Outcomes**

There are no course outcomes available

SOC 340 : Sociology of International Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Soc 111 or 112; IAS 220.

DESCRIPTION: Paradigms of development and poverty; international, national, and grass roots approaches to promote development and reduce poverty; and application in developing nations.

**Course Outcomes**

- Become familiar with different theories about development.
- Understand the relationship between development and major social insitutions.
- Learn about what different organizations are doing to promote beneficial development.
- Learn to apply what you have learned to a specific aspect of development.
- Integrate what you have learned to develop your own approach to development.

4. Complete 9 hours from the electives below. (Courses counted above do not double count.):

ANTHR 247 : Applied Anthropology. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Anthropological principles and methods applied to business, education, environment, government, communication, national and international development, and health sectors. Ethically and culturally appropriate strategies for researching and participating in planned socio-cultural change.

**Course Outcomes**

- This course has the objectives to introduce students to career options outside academia and to help them explore graduate programs that will prepare them for those careers. This course will also introduce them to theoretical and ethical issues in applied and practicing anthropology and to some of the current social problems that are dominating the field. Students will learn the basic training in the skills and methodologies, (including report writing), that they will use as an applied anthropologist.

**ANTHR 441 : Anthropology of Development. (3:3:3)

DESCRIPTION: Theory, practice, and research methods regarding the anthropological study and resolution of poverty, disease, malnutrition, displacement, and inadequate educational opportunities.

**Course Outcomes**

- To enable the students to apply anthropological theory and ideas in a practical manner and by so doing to assess how the process of development has traditionally been done, say from 1945 to the present. Has that system worked? What have been its successes and failures, and why? We will study what the difficulties are that impede development, structurally, culturally, and environmentally. In addition, we will ask whether the cross-cultural analysis and communication perspective that anthropology (supposedly) excels in helps. Does or can the use of anthropological techniques and analysis help make development more successful? Has anthropologically-informed development worked? Where, when, why? And if not, why not? In a word, can the principles and practices of anthropology be used in development projects to produce something more successful and reliable in the way of development? Can the principles and skills be identified and learned or imparted to a group of students so that new practitioners can be more successful if they enter into some kind of development enterprise or project? These objectives will be achieved by a] studying class texts; b] undertaking an individual research project; c] preparing and presenting a critique of a development project based on a journal account. Outcomes will be the ability to better understand the role of Anthropology in development work coupled with greater knowledge and skills in carrying out personal development projects. This in turn will contribute to greater confidence; a greater ability to analyze and understand human activity, sociality and thought; a greater awareness of cultural diversity, and an increased ability to communicate both orally and in written work.

**ECON 230 : Economic Development and Growth. (3:3:0)

WHEN TAUGHT: Spring

PREREQUISITE: ECON 110

DESCRIPTION: Problems and processes of economic growth and development, emphasizing less-developed nations.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Be familiar with the labor and consumption patterns among the world's poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 110 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property RightsGain a basic understanding of econometric methods used in testing economic theories in growth and development.Analyze the Solow Growth model and its implications for economic growth.Explain the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Discuss the potential role of government in economic development. Especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

ECON 431 : Economic Development. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 380; Econ 388 (or concurrent enrollment) or Pl Sc 328.

DESCRIPTION: Microeconomic analysis of the causes of income differences across countries.

**Course Outcomes**

- Discuss the labor and consumption patterns among the world's poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property Rights.Discuss the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Explain the potential role of government in economic development, especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

ECON 432 : Economic Growth. (3:3:0)

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Econ 388.

DESCRIPTION: Theory and evidence relating to economic growth, including physical and human capital accumulation, population, technological change, institutions, and government.

**Course Outcomes**

- Adjust values in one currency to values in another currency controlling for purchasing power parity (PPP) deviations.Demonstrate an understanding of basic dynamic models of economic growth, including:The Solow modelThe Solow model with population growthThe Harrod-Domar modelAK modelsModels of product varietySchumpeterian models.Discuss growth and development accounting, and decompose observed differences across countries into efficiency and technology components.Discuss Lorenz curves and Gini coefficients.Discuss how growth interacts with:Population & demographyHuman capitalTechnical progressOpennessGovernmentInequalityCultureGeography, Climate & Resources.

ECON 459 : International Monetary Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 381 & ECON 388; or ECON 381 & PL SC 328

DESCRIPTION: Monetary and macroeconomic aspects of international relations dealing primarily with short-run balance-of-payments disequilibrium and adjustments.

**Course Outcomes**

- Demonstrate a familiarity with the key issues in two broad fields:International Finance, particularly exchange rate behavior, Open Economy Macroeconomics.Discuss the nature of the foreign exchange market, including:It's market organizationThe role of vehicle currenciesThe instruments tradedThe role of arbitrage.Understand and use models of exchange rate behavior:Covered and uncovered interest rate parityLong-run monetary and equilibrium models.Understand financial portfolio theory to the extent that it is useful in explaining exchange rate behavior, including:The determination of risk premiaHow it may explain the "forward bias" puzzle.Discuss the history of the international financial system since the late 1700's.Discuss the international aspects of the national income and product accounts, along with the balance of payments accounts.Apply simple dynamic models of consumption smoothing to the current account.

EDLF 362 : Introduction to International Development Education. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Major concepts and research in educational aspects of poverty alleviation and human development. Role of education as foundation of poverty alleviation, expanding human capabilities, and for promoting national development.

**Course Outcomes**

- Develop basic literacy in the historical and current debates on the meaning and goals of education and development and a framework.
- Become aware of key theoretical concepts and different understandings on education and development, and the significance of human rights mainstreaming as a pillar in disciplinary and professional divide.
- Grasp the interdependence of socio-cultural, political, and economic systems in education and development.
- Understand development as a problem-solving process advanced through policies and programs at different levels by diverse actors.
- Examine strengths and weaknesses of development architectures--particularly in relation to key problems and issues like poverty, exclusion, gender, empowerment and dignity, sustainability, capabilities and functioning and human rights. Learn to question the "Washington Consensus" wisdom and existing systems, structures, and models are working and, if not, what might work instead.
- Begin the process of coming to a personal definition of poverty and development, in harmony with global guidelines and professional standards.
- Study development as part of the larger International Development community and integrate IDE framework into this professional learning community.

**EDLF 363 : Education, Poverty, and Community Development. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Examines the nexus between education, poverty, and socioeconomic development challenges facing developing countries through the perspective of economics, religion, and the state.

**Course Outcomes**

- Identify and critically reflect upon issues and theories of poverty and human development causes, interrelations, feedback, and be able to offer possible solutions.
- Locate, understand, and critically review development theories and research within their respective disciplines and within the interdisciplinary field of Development Studies
- Analyze relevant development phenomena in a complex manner using key concepts and theories studied during the course.
- Formulate complex research questions regarding development.
- Communicate scientific issues and follow the development of knowledge.
- Develop a more effective understanding of the economics, social, and political dimensions of educational development within and across national boundaries.
- Compare the benefits and limitations of different policy construction and aggregation methods and the kinds of results that one might obtain in interventions.
- Improve critical thinking and reasoning, and writing skills.

GEOG 101 : Global Environment: Understanding Physical Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Physical environment, distribution and interrelationships of climates, landforms, ecosystems and their human significance.

**Course Outcomes**

There are no course outcomes available

GEOG 306 : Public Land Conservation. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Environmental and social geography of public lands; analyzing historical, planning, management, and ecological issues.

**Course Outcomes**

There are no course outcomes available

HLTH 100 : Introduction to Public Health. (1:1:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Introduction to public health professions including exploration of current issues, job opportunities,

the essential public health services, and an overview of the public health major.

**Course Outcomes**

- 1. Identify key events in the history of public health that have shaped the current state of the profession
- 2. Describe core public health values
- 3. Identify the ten essential public health services and describe which aspects of the profession hold the most relevance for employment and personal fulfillment
- 4. Delineate how health is defined and measured as well as recognize the impact of social, environmental, and behavioral determinants of health
- 5. Describe the importance of global health and recognize how actions in the US impact the rest of the world and vice versa
- 6. Identify the critical roles and contributions of epidemiology, environmental/occupational health, health promotion, medicine, and allied health within the public health profession
- 7. Determine their interest in the public health degree and identify the types of professional and educational opportunities available to them within public health

HLTH 322 : Environmental Health. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

RECOMMENDED: HIth 100.

DESCRIPTION: Environmental factors as determinants of human health: ecosystem and population dynamics; biological, chemical, and physical hazards; risk assessment; economic, political, cultural, and genetic factors.

**Course Outcomes**

- Provide a global perspective of environmental issues impacting human health
- Describe the various biological, chemical and physical hazards of the ambient, indoor, and work environment that can adversely affect human health
- Discuss those determinents and factors that affect human health and the health of the environment
- Describe how environmental management practices may contribute to or help control emerging diseases
- Provide an assessment of those national and international health agencies, programs, and other resources that play critical roles in improving human health relative to environmental factors
- Discuss elements of policy making as they influence environmental health issues

HLTH 403R : Health Problems Workshop. (.5-5:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Summer

**Course Outcomes**

- Reflect a focused analysis of readings and conduct applied projects for a special readings topic important to public health.

HLTH 420 : Injury and Violence Prevention. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: HLTH 100

DESCRIPTION: Concepts and interventions related to both unintentional injuries and violence.

**Course Outcomes**

- Describe the impact of injures on health and on society in terms of mortality, morbidity, disability, and cost.
- Define the terms used in the injury prevention field.
- Describe the models used to analyze injuries and determine interventions.
- Select valid sources of injury prevention information.
- Select and recommend proven and effective injury prevention interventions.

HLTH 450 : Women's Health Issues. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Overview of selected health topics affecting women's health status. Primary emphasis on steps to enhance personal health and fulfill divine roles from childhood through adulthood.

**Course Outcomes**

- Identify and understand the determinants of women's health issues.(Learning activities: lecture, class discussion, videos, out of class activites, guest lecturers)
- Identify and report on specific chronic and infectious diseases that affect women.(Learning activities: lecture, class discussion, book review, guest lecture)
- Identify ways to improve women's health using a variety of assessment sources.(Learning activities: lecture, class discussion, review of CDC and other health statistics, interviews, guest lecture)

HLTH 480 : International Health. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Identifying disease patterns in "developing" countries, exploring the social and cultural context of health, and reviewing behavior change strategies for improving well-being.

**Course Outcomes**

- Idenitfy behaviors that improve maternal and child health and how they may be specific for particular groups.
- Discuss the determinants of global diseases and why inequalities and inequities exist.
- Explain how culture, our own and others, facilitates or hinders practicing optimal health behaviors.
- Describe the leading causes of morbidity (sickness) and mortablity among women and children in the

developing world.
- Discuss how undernutrition and overnutrition contribute to morbidity and mortality related to infectious and chronic disease.
- Using principles of epidemiology, identify the leading causes of morbidity (sickness) and mortablity among women and children in the developing world and compare the burden of disease across different regions of the world.
- Describe how monitoring, evaluation, and applied research improve health programs.
- Discuss successful, evidence-based strategies for changing behaviors and improving health.

HLTH 496R : Academic Internship. (.5-9:ARR:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: HLTH 439
DESCRIPTION: Senior capstone experience.

**Course Outcomes**

- Obtain experience, as proctored by an approved internship supervisor, to apply professional competencies in public health as assessed through an internship report and internship supervisor rating

IAS 397R : Topics in International and Area Studies. (.5-3:ARR:ARR)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Instructor's consent.
DESCRIPTION: Study relating to current world problems.

**Course Outcomes**

- Students will gain knowledge through advanced study in focused area of IAS
- The student will develop these skills by producing a well-reasoned and well-written research paper
- Develop techniques of advanced research appropriate to the study

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**Course Outcomes**

***IAS 399R : Academic Internship: International. (.5-9:ARR:ARR)

PREREQUISITE: Acceptance into program.
DESCRIPTION: Individualized work or volunteer experience in an international setting.
NOTE: Class must be coordinated through International Study Programs.

**Course Outcomes**

- · Apply skills and material learned in traditional courses to a real-world workplace environment.· Demonstrate proficiency in the skills required by the internship supervisor.· Demonstrate an ability to link insights gained from traditional classes and from real-world workplace experiences.

(Note: Students must complete IAS 220 prior to participating in an international development-related internship)

NDFS 380 : International Nutrition. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: NDFS 100
DESCRIPTION: Causes and consequences of nutrient deficiencies common in developing countries. Appropriate interventions to prevent or treat malnutrition.

**Course Outcomes**

- Relate critical nutrient requirements deficiencies to nutritional diseases and poor cognitive devolopment
- Understand the breadth of undernutrition, poverty and hunger that plague the developing world.
- Understand the scientific literature that relates to nutional problems in devloping societies
- Relate the nutritional status of undernourished children to their diets and suggest plausible solutions

(prerequisite: NDFS 200)

POLI 302 : Experimental Research Methods. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200 and Poli 328, or concurrent enrollment.
DESCRIPTION: Students will learn how to conduct experiments in the social sciences. All students will conduct an original experiment, learn how to analyze the data, and present their results in a publishable format.

**Course Outcomes**

There are no course outcomes available

POLI 372 : International Political Economy. (3:3:0)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Political implications of international trade, investment, and monetary policies within an increasingly interdependent global context; transnationalism.

**Course Outcomes**

There are no course outcomes available

POLI 374 : Ethics and International Affairs. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Ethical considerations in study and practice of international politics. Realism, idealism, and other theories of state behavior subjected to ethical standards.

**Course Outcomes**

There are no course outcomes available

POLI 378 : International Conflict. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 150, 170, 250, or 270; Poli 200.

DESCRIPTION: Causes of war; alliances and empires; military innovation; civil-military relations; fungibility of forces; terrorism; security studies methods; use and misuse of history.

**Course Outcomes**

There are no course outcomes available

**POLI 444 : The Political Economy of Development. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Econ 110, Poli 200.

DESCRIPTION: Political foundations of growth, providing public goods, and political reform in developing countries. Development and how institutions and culture shape it.

**Course Outcomes**

There are no course outcomes available

POLI 472 : International Political Economy of Women. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Effects upon national, international, and developmental policies when women are rendered visible and valued.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

PWS 115 : Introduction to Wildlife and Wildlands Conservation. (1:1:0)

WHEN TAUGHT: Fall

DESCRIPTION: Assisting students in choosing individual professions and curricula.

**Course Outcomes**

- Student will be able to make an informed decision on majoring in Wildlife and Wildlands Conservation based on career opportunities and course work required to qualify for career positions.
- Students will be able to articulate stewardship responsibilities of managers to represent multiple uses of resources by multiple users with divergent opinions and perspectives.

PWS 150 : Environmental Biology. (3:3:0)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Conservation and management of natural resources concurrent with increasing socioeconomic and human population demands; factors such as soil, water, and air pollution, resources management, bioremediation, nutrient cycles, and global climate changes

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Gain a deep appreciation for the Lord's admonition to Adam and Eve regarding the Earth to dress it and keep it
- Engage others and participate in discussions about major environmental problems, movements, and solutions (e.g., desertification, invasive species, water pollution, green revolution, and renewable energy).
- Understand how “science” is conducted.
- Demonstrate a fundamental knowledge (i.e., scientific literacy) of the environment and current environmental problems facing us locally, regionally, and globally.
- Devise experiments with testable hypotheses based the scientific method—process of making observations and logically integrating those observations into a model of how the world works.
- Foster and promote environmental stewardship within your realm of influence and your community.

PWS 282 : Introduction to Soil Science. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PWS 283 or concurrent enrollment.

DESCRIPTION: Physical, chemical and microbiological properties of soils that affect plant growth in natural, agricultural, and urban environments.

**Course Outcomes**

- Enhance critically thinking skills as they apply to soil resource management and conservation
- Demonstrate a fundamental knowledge of soil chemistry, genesis, microbiology, physics, taxonomy, and nutrient and water relations
- Create a conceptual framework to help manage soil resources (i.e., animal habitat, plant nutrient fertility, salinity, soil and water quality, and wind and water erosion) in agricultural, urban, and ecological settings
- Understand the historical and current problems, and cultural concerns facing soils as a natural resource essential to human life

PWS 303 : Soils Conservation and Resources. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: PWS 282 & CHEM 105; or PWS 282 & CHEM 101; PWS 100 or equivalent; Math 110 or equivalent.

RECOMMENDED: Geol 111.

DESCRIPTION: Taxonomy of world soils; conservation and management of agricultural, wildland, wetland, and urban soils.

**Course Outcomes**

- Understand soil physics, chemistry, taxonomy, and water movement to maintain natural resources.
- Apply soil conservation practices and principles to regions sensitive to soil degradation.
- Understand the history, development, and terminology associated with USDA Soil Taxonomy and be familiar with other soil taxonomic systems. Recognize soil orders and suborders from the physical and chemical characteristics of the soil

RECM 306 : Introduction to Nonprofit Organizations. (3:3:0)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Leading in nonprofit organizations using effective administrative practices; financial issues; history and development of nonprofits; organizational structure; membership requirements, fund raising, and marketing.

**Course Outcomes**

There are no course outcomes available

RECM 326 : Nonprofit Resource Development. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Understanding philanthropy and applying fundraising principles and techniques in a nonprofit organization.

**Course Outcomes**

There are no course outcomes available

RECM 336 : Nonprofit Management. (3:3:2)

WHEN TAUGHT: Winter

DESCRIPTION: Management practices in nonprofit setting; analyzing and evaluating personnel; measuring performance evaluations; articulating and appreciating volunteer motivations.

**Course Outcomes**

There are no course outcomes available

RECM 453 : Grant Writing. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Oral and written communication skills; financial issues in the nonprofit field; grant writing history; writing successful grants; needs of foundations.

**Course Outcomes**

There are no course outcomes available

SOC 301 : Applied Social Research Methods. (3:3:0)

PREREQUISITE: STAT 121 & SOC 300

DESCRIPTION: Research methods training for conducting research in applied settings using social research methods such as needs assessments, social impact analysis, and program evaluations.

**Course Outcomes**

- Graduates know the full range of methodologies, the basic epistemological assumptions associated with each, the criteria for evaluating quality research, and how to select and implement the appropriate method to test a hypothesis or address a research question.
- Graduates are able to estimate and interpret univariate and bivariate statistics and generalize their meaning to the appropriate population.

Graduates know how to code and interpret qualitative data or how to code and prepare quantitative data for statistical analysis.
- Graduates have the necessary skills to analyze data and summarize findings including a. basic familiarity with spreadsheet programs and statistical packages, b. the analytic process of comparing across categories, c. how to chart historical trends, and d. how to summarize findings for written or oral presentation.

SOC 339 : Social Organization and Change. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Soc 111 and 310.

DESCRIPTION: Understanding processes of social organization, change, and development in contemporary society.

**Course Outcomes**

There are no course outcomes available

**SOC 340 : Sociology of International Development. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Soc 111 or 112; IAS 220.

DESCRIPTION: Paradigms of development and poverty; international, national, and grass roots approaches to promote development and reduce poverty; and application in developing nations.

**Course Outcomes**

- Become familiar with different theories about development.
- Understand the relationship between development and major social insitutions.
- Learn about what different organizations are doing to promote beneficial development.
- Learn to apply what you have learned to a specific aspect of development.
- Integrate what you have learned to develop your own approach to development.

SOC 345 : World Populations. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Fertility, mortality, and migration patterns of world populations as they relate to current social, economic, political, and religious issues.

**Course Outcomes**

There are no course outcomes available

SOC 422 : Inequality and Society. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: SOC 307 & SOC 310

RECOMMENDED: Soc 404 or 405 or concurrent enrollment.

DESCRIPTION: Distribution of economic and social resources (financial, status, prestige, power, and authority) as they relate to life changes, lifestyle, and social justice.

**Course Outcomes**

There are no course outcomes available

SOC W 585 : Global Issues of Children at Risk. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Analyzing major challenges facing children and their families globally, including poverty, malnutrition, poor health care, gender-based discrimination, child labor and sexual exploitation, AIDS orphans, child soldiers, and refugees.

**Course Outcomes**

There are no course outcomes available

Other courses with the approval of the development coordinator.

**Note:** **These courses may be counted in this section if not already counted in the previous section.

**Note:** ***Students must have completed IAS 220 before doing an internship.

**Note:** Students cannot count both Econ 230 and 431 or Econ 230 and 432. They should choose to take either the 200-level course or the 400-level course.

**Note:** Because the International Development Minor is interdisciplinary, it is critical that students are exposed to multiple disciplinary perspectives and methods as they address the larger topic of international development. Thus, no more than 6 credit hours from any one discipline can be counted toward fulfillment of the minor. The one exception to this is IAS credits through IAS 220, 380R, 397R, or 399R. Counting the required IAS 220, no more than 12 hours of IAS credit can count toward the minor.

*Hours include courses that may fulfill university core requirements.

**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

**Course Information**

- European Studies (Europ) Courses

**International Development**

**Minors**

- International Development

**International Relations**

**Majors**

- BA in International Relations

**Course Information**

- International Relations (IR) Courses

**Latin American Studies**

**Majors**

- BA in Latin American Studies

**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# International Relations

## The Discipline

International relations is an interdisciplinary major emphasizing the systematic study of political and economic relations between governments and people in different states, as well as comparisons across different political and economic systems. Students majoring in international relations also come to understand the historical and geographic basis for current international relationships.

## Career Opportunities

The international relations major gives students a strong liberal arts education along with useful technical skills. In addition to substantive knowledge, international relations majors will learn analytical concepts and ideas that allow them to organize, explain, and make sense of relations between states and comparisons among them. High proficiency in math and statistics, writing, and a foreign language will prepare for a wide variety of career paths—including, but not limited to, government, law, business, and international organizations. Many career paths will require graduate-level training. Therefore, the international relations degree should be seen as certifying fluency in the ideas and methods of multiple fields so that students can find and pursue their own specialized interests rather than as a terminal degree.

It is important to distinguish international relations as a field from a more general definition of "international," which might include anything (people, language, culture, traditions, etc.) beyond the territorial boundaries of the United States. For students interested in the broad study of anything international and foreign, BYU's international relations degree will not provide the best training. In fact, no reasonable degree can include the systematic study of everything international and foreign. It should be remembered that BYU students have a wealth of options through which to pursue their particular international and foreign interests. These include:

- Social science majors with a strong international component, such as economics, geography, history, or political science.
- Area studies majors, including Asian, European, Latin American, Ancient Near Eastern, and Middle East studies.
- Foreign Language majors.
- Other majors combined with a minor in one of the above areas.

**Middle and Near Eastern Studies**

**Majors**

- BA in Ancient Near Eastern Studies
- BA in Middle East Studies/Arabic

**Minors**

- Ancient Near Eastern Studies
- Middle East Studies

**Course Information**

- Ancient Near Eastern Studies (ANES) Courses
- Middle East Studies/Arabic (MESA) Courses

**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

**Course Information**

- European Studies (Europ) Courses

**International Development**

**Minors**

- International Development

**International Relations**

**Majors**

- BA in International Relations

**Course Information**

- International Relations (IR) Courses

**Latin American Studies**

**Majors**

- BA in Latin American Studies

**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# BA in International Relations (60–86 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. No double counting courses within the major unless noted otherwise.
2. Complete the following introductory core courses:

ECON 110 : Economic Principles and Problems. (3:3:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

GEOG 120 : Geography and World Affairs. (3:3:0)
OFFERED: Honors also. Independent Study also.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Survey of the world, stressing geography of major political regions.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

3. Complete one of the following:

POLI 150 : Comparative Government and Politics. (3:3:0)
OFFERED: Honors also.
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Patterns of European, Asian, Latin American, and other political systems.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

POLI 250 : Principles of Comparative Politics. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: Poli 200.
DESCRIPTION: An introduction to the subfield of comparative politics for advanced students and majors. Basic concepts, theories, and methods of comparative politics and political science.

**Course Outcomes**
There are no course outcomes available

4. Complete one of the following:

POLI 170 : Introduction to International Politics. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
DESCRIPTION: Basic forces, practices, institutions, and foreign policies of major powers; problem areas in international politics.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 270 : Principles of International Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Poli 200.

DESCRIPTION: An introduction to the subfield of international relations for advanced students and majors. Basic concepts, theories, and methods of international relations and political science.

**Course Outcomes**

There are no course outcomes available

5. Complete the following research foundations and methods courses:

POLI 200 : Political Inquiry. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Methodology of political science, including theory and techniques of qualitative and quantitative research design.

NOTE: Prerequisite to all upper-division courses.

**Course Outcomes**

There are no course outcomes available

**And** complete the following:

MATH 112 : Calculus 1. (4:5:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Differential and integral calculus: limits; continuity; the derivative and applications; extrema; the definite integral; fundamental theorem of calculus; L'Hopital's rule.

**Course Outcomes**

- This course is designed for students majoring in the mathematical and physical sciences, engineering, or mathematics education and for students minoring in mathematics or mathematics education. Calculus is the foundation for most of the mathematics studied at the university level. The mastery of calculus requires well-developed skills, clear conceptual understanding, and the ability to model phenomena in a variety of settings. Calculus 1 develops the concepts of limit, derivative, and integral, and is fundamental for many fields of mathematics. This course contributes to all the expected learning outcomes of the Mathematics BS. For more detailed information, visit the Math 112 Wiki page.

: Honors Calculus 1.

**Course Outcomes**

**And** complete one of the following options:

**Either**

ECON 378 : Statistics for Economists. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ECON 110 & MATH 112

DESCRIPTION: Introduction to matrix algebra and statistics in preparation for regression analysis. Other topics include: probability, random variables, density and distribution functions, estimation, hypothesis testing.

**Course Outcomes**

- Demonstrate an understanding of the basic principles and terminology of probability, simple distribution theory, statistics, and matrix algebra in preparation for a successful introduction to econometric methods in Economics 388. These principles and concepts include:The language, intuition, and notation necessary to understand basic approaches to probability, including basic combinatoric counting techniques, the additive and multiplicative laws of probability, conditional probability and independence, the law of total probability, and Bayes' rule, and to solve basic probability problems using these techniques.Random variables, both univariate and bivariate, including: distribution functions, density functions, conditional density, expected values, variance, covariance, and correlation coefficients. Specific examples of useful random variables.Statistics and sampling distributions.Law of Large Numbers and Central Limit Theorem. Parameter estimators and their derivation using the Method of Moments and Method of Maximum Likelihood.Statistical inference, including the idea of sampling error, sampling distributions, the construction of confidence intervals, and formal hypothesis tests.Basic matrix theory and the properties of matrix operations, including addition, subtraction, matrix products, matrix determinants, and matrix inversion.Use these statistical

techniques to analyze data in diverse applications. Recognize the usefulness of statistics in a variety of career fields.

ECON 388 : Introduction to Econometrics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Mathematical and statistical techniques used in estimating, predicting, and testing hypotheses associated with quantifiable economic relationships.

**Course Outcomes**

- Demonstrate an understanding of the theoretical foundations of estimating and testing the basic regression model, employing tools from matrix algebra, calculus, and statistics.Perform basic regression and testing procedures using Stata. Complete an empirical research project that includes the following elements:.Formulate an econometric model.Collect and prepare relevant data for use in estimating the model.Use appropriate methods of estimation.Test relevant behavioral hypotheses.Understand and test the Gauss-Markov assumptions.Analyze and interpret the estimated model.Prepare a written report summarizing the research results.

(This course can double count for an elective under specialization B and G)

**Or**

POLI 328 : Statistical Analysis. (4:3:1)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: POLI 200

DESCRIPTION: Quantitative techniques in political research.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

6. Complete the following:

ECON 380 : Intermediate Price Theory 1. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 110 & MATH 112

DESCRIPTION: Producer, consumer, and equilibrium theories; mathematical techniques of unconstrained and constrained optimization introduced and applied extensively.

**Course Outcomes**

- Recognize the common building blocks of economic models (actors, choices, objectives, constraints)Solve economic models (constrained optimization, equilibrium conditions) Interpret the results (comparative statics)Explain concepts using graphs, prose, and mathematical analysis
- ConsumerThe axioms upon which standard microeconomic consumer theory is based.The implications of consumer demand including price and income responses in absolute and elasticity forms in both utility maximization and expenditure minimization problems.FirmsThe meaning and representation of technologyThe implications of cost and profit maximization for firmsMarketsIntegrate consumers and producers into a market in order to perform market analysis on equilibrium traded quantities and pricesUse market analysis to understand the effects of public policy
- Compare the impact on equilibrium behavior of altering the assumptions of canonical modelsContrast the results of different market imperfections

ECON 381 : Intermediate Macroeconomics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 110 & MATH 112; Math 112 can be concurrent enrollment.

DESCRIPTION: Intermediate macroeconomic theory, emphasizing income, unemployment, and price-level analysis.

**Course Outcomes**

- Demonstrate an understanding of the nature and construction of key macroeconomic data;Demonstrate an understanding of the connection between microeconomics and macroeconomics;Demonstrate an understanding of standard models ofeconomic growthlong-run macroeconomic behaviorshort-run macroeconomic behaviorUse these models to analyze the macroeconomic effects of monetary and fiscal policy changes as well as other economic shocks;Use these models to interpret historical and current events; andDemonstrate an understanding of issues regarding the value and limitations of monetary and fiscal policy.

7. Complete one course from the following:

ECON 431 : Economic Development. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 380; Econ 388 (or concurrent enrollment) or Pl Sc 328.

DESCRIPTION: Microeconomic analysis of the causes of income differences across countries.

**Course Outcomes**

Discuss the labor and consumption patterns among the world's poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property Rights.Discuss the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Explain the potential role of government in economic development, especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

ECON 432 : Economic Growth. (3:3:0)

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Econ 388.

DESCRIPTION: Theory and evidence relating to economic growth, including physical and human capital accumulation, population, technological change, institutions, and government.

**Course Outcomes**

- Adjust values in one currency to values in another currency controlling for purchasing power parity (PPP) deviations.Demonstrate an understanding of basic dynamic models of economic growth, including:The Solow modelThe Solow model with population growthThe Harrod-Domar modelAK modelsModels of product varietySchumpeterian models.Discuss growth and development accounting, and decompose observed differences across countries into efficiency and technology components.Discuss Lorenz curves and Gini coefficients.Discuss how growth interacts with:Population & demographyHuman capitalTechnical progressOpennessGovernmentInequalityCultureGeography, Climate & Resources.

ECON 458 : International Trade Theory and Applications. (3:3:0)

PREREQUISITE: ECON 380

DESCRIPTION: Microeconomic analysis of why nations trade, who wins and loses from trade, and the costs and benefits of various trade policies.

**Course Outcomes**

- Discuss why all kinds of nations—rich and poor, large and small—gain from international trade.Demonstrate an understanding of comparative advantage and how it creates gains from trade.Analyze the Ricardian model of trade and thereby learn how different technologies in different nations create comparative advantage and gains from trade.Analyze the Heckscher-Ohlin model of trade and thereby learn: 1) How different factor endowments in different nations create comparative advantage and gains from trade, and 2) Why some people lose from trade even though nations as a whole gain from trade.Discuss economies of scale and how they can generate gains from trade.Discuss how trade generates extra gains by reducing market power.Demonstrate an understanding of the main causes and effects of direct foreign investment.Demonstrate an understanding of the main causes and effects of international migration.Discuss how various trade policies affect national welfare and why such policies help some while hurting others.Discuss the politics of trade.

ECON 459 : International Monetary Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 381 & ECON 388; or ECON 381 & PL SC 328

DESCRIPTION: Monetary and macroeconomic aspects of international relations dealing primarily with short-run balance-of-payments disequilibrium and adjustments.

**Course Outcomes**

- Demonstrate a familiarity with the key issues in two broad fields:International Finance, particularly exchange rate behavior, Open Economy Macroeconomics.Discuss the nature of the foreign exchange market, including:It's market organizationThe role of vehicle currenciesThe instruments tradedThe role of arbitrage.Understand and use models of exchange rate behavior:Covered and uncovered interest rate parityLong-run monetary and equilibrium models.Understand financial portfolio theory to the extent that it is useful in explaining exchange rate behavior, including:The determination of risk premiaHow it may explain the "forward bias" puzzle.Discuss the history of the international financial system since the late 1700's.Discuss the international aspects of the national income and product accounts, along with the balance of payments accounts.Apply simple dynamic models of consumption smoothing to the current account.

8. Complete one course from the following:

HIST 393 : U.S. Foreign Relations. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: U.S. diplomatic history from the American revolution to the present; examines major themes and critical events within both domestic and international contexts.

**Course Outcomes**

- Students will be able to explain and analyze the major themes and problems in the making, implementation, and evolution of U.S. foreign relations from 1776 to the present.
- Students will be able to analyze, interpret, and debate the meanings and historical significance of primary source documents.
- Students will be able to produce an original, analytical, and primary source based historical essay examining a key issue, theme, or individual from the history of U.S. foreign relations.

POLI 376 : U.S. Foreign Policy. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Formation, implementation, analysis, and criticism of themes in American foreign policy.

**Course Outcomes**

There are no course outcomes available

9. Complete one of the following international relations courses:

POLI 372 : International Political Economy. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Political implications of international trade, investment, and monetary policies within an increasingly interdependent global context; transnationalism.

**Course Outcomes**

There are no course outcomes available

POLI 373 : International Law. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Nature and function of international law; recognition, succession, jurisdiction rights, and immunities of states; nationality and jurisdiction over nations.

**Course Outcomes**

There are no course outcomes available

POLI 375 : International Organizations. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: International institutions; transnational relations; rise of newer political organizations: League of Nations, United Nations, European communities, world religions, multinational corporations, terrorist groups, global regimes.

**Course Outcomes**

There are no course outcomes available

POLI 376 : U.S. Foreign Policy. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Formation, implementation, analysis, and criticism of themes in American foreign policy.

**Course Outcomes**

There are no course outcomes available

POLI 377 : National Security Affairs. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Foreign policy, defense strategy, and intelligence.

**Course Outcomes**

There are no course outcomes available

POLI 378 : International Conflict. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 150, 170, 250, or 270; Poli 200.

DESCRIPTION: Causes of war; alliances and empires; military innovation; civil-military relations; fungibility of forces; terrorism; security studies methods; use and misuse of history.

**Course Outcomes**

There are no course outcomes available

POLI 473 : Human Rights. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Causes of human rights violations and societal and state responses; nature, history, and impacts of international human rights norms; ways to define and promote rights.

**Course Outcomes**

There are no course outcomes available

10. Complete one of the following comparative politics courses:

POLI 341 : Western European Politics. (3:3:0)

RECOMMENDED: Poli 200.

DESCRIPTION: Politics and policy in western Europe. State-building, party systems, nationalism, and cooperation among advanced industrial countries in comparative, historical perspective. Social and Christian democracy; European Union.

**Course Outcomes**

There are no course outcomes available

POLI 343 : Comparative Institutional Design. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 150 or 250.

RECOMMENDED: Poli 328.

DESCRIPTION: Studies the rich variety of political institutions around the world, in both developed and developing countries, democracies, and dictatorships, and their implications for policy decisions and political, social and economic outcomes such as political violence, economic development, and democratization.

**Course Outcomes**

There are no course outcomes available

POLI 344 : Comparative Political Economy. (3:3:0)

PREREQUISITE: Poli 150 or 250; Poli 200.

DESCRIPTION: Overview of political economy from a comparative perspective. Classic theorists (Smith, Marx, Schumpeter, etc.); classic questions (industrialization, national economic policy, property, globalization, law, and economics).

**Course Outcomes**

There are no course outcomes available

POLI 347 : Russia/Former Soviet Politics. (3:3:0)

DESCRIPTION: Comparative politics of Russia and Soviet successor states. Development of political systems from common Soviet heritage, emphasizing post-independence politics and institution building.

**Course Outcomes**

There are no course outcomes available

POLI 348 : Government and Politics of Asia. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Comparative analysis of political developments of the major countries of Asia not covered in other country-specific classes.

**Course Outcomes**

There are no course outcomes available

POLI 352 : African Politics. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Processes of change and development of nation states; African regionalism and relations with other nations; contemporary political issues.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 353 : China: Government and Politics. (3:3:0)

DESCRIPTION: Structure and behavior of politics; contemporary problems.

**Course Outcomes**

There are no course outcomes available

POLI 354 : Japan: Government and Politics. (3:3:0)

DESCRIPTION: Structure and behavior of politics; contemporary problems.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 355 : Canadian Government and Politics. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Growth and development of Canada and its government; Canada's role in the contemporary world

**Course Outcomes**

No outcomes are available at this time.

POLI 357 : Middle East: Political Systems. (3:3:0)

WHEN TAUGHT: Fall; Winter
RECOMMENDED: Poli 200.
DESCRIPTION: Social, philosophical, and religious impact on Middle East political institutions in an era of modernization and conflict.

**Course Outcomes**

There are no course outcomes available

POLI 358 : Latin American Politics. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200 or Lt Am 211.
DESCRIPTION: Conceptual and contemporary issues in Latin America's search for political order and economic development.

**Course Outcomes**

There are no course outcomes available

POLI 475 : Civil Wars and Ethnic Violence. (3:3:0)
PREREQUISITE: Poli 200.
RECOMMENDED: Poli 150 or 250; 170 or 270; 328.
DESCRIPTION: Foundations of ethnic and nationalist identities and how they related to civil wars worldwide, emphasizing theoretical explanations of civil wars and their resolution. Key civil war cases examined.

**Course Outcomes**

There are no course outcomes available

11. Achieve proficiency in a foreign language: Students are to complete courses for one language to a specified level with all attendant prerequisites. Some courses may be waived depending upon previous language training. The specific requirements for each language are listed on a separate sheet available from the International and Area Studies Advisement Office or the international relations coordinator. This requirement is waived for international students for whom English is their second language.
12. Specializations: Complete one of the following tracks (no double-counting of major courses allowed):
    a. International Politics

Complete four courses from the following. At least one course must be from history and at least one course from political science.

ANTHR 432 : Economic and Political Institutions. (3:3:0)
WHEN TAUGHT: Winter
DESCRIPTION: Connections between wealth and power: political and legal systems in state and nonstate societies; global expansion of capitalism and technology.

**Course Outcomes**

- This course is designed to enhance student knowledge and skills as a scholar with relation to critical reading within the discipline, intelligent and informed discussion, and writing about past and current issues in global economics.
- Students will gain a working knowledge of political, legal, and economic anthropology as a preparation for the senior thesis, graduate programs, and possible careers in anthropological, political, legal, or economic fields.
- Students will expand their capacities to read with increased comprehension and to write coherently and persuasively in the discipline.
- Students will be given many opportunities to think critically about topics pertinent to the course content and their individual research assignments.
- Students will present their own individual research assignment in both written form and through the venues of a class presentation and discussion of the central themes and tenets as well as methodologies utilized within their individual research project.

COMMS 381 : International Media Systems. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Communications or international relations major or minor status.
DESCRIPTION: Comparison of media systems in countries and regions outside the United States. Approaches may include media systems analysis, normative theories of the media, and cultural values and norms.

**Course Outcomes**

No outcomes are available at this time.

COMMS 382 : Issues in Global Communication. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Communications or international relations major or minor status.
DESCRIPTION: Issues relating to communicating in a global village. Approaches may include global information and policy, cultural imperialism, intercultural interaction, and

multinational communication strategies.

**Course Outcomes**

There are no course outcomes available

GEOG 341 : Political Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Spatial analysis of global politics; focus on geopolitics, territory and conflict, nationalism, and the politics of resources.

**Course Outcomes**

There are no course outcomes available

HIST 293 : World War II: A Global Perspective, 1939-1945. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Causes, flow, and consequences of World War II emphasizing the American experience at home and abroad.

**Course Outcomes**

- Students will be able to explain and analyze the history and memory of the global conflict of 1939 to 1945.
- Students will be able to analyze and interpret primary and secondary source documents.
- Students will be able to interpret and discuss the meanings and history and memory.
- Students will be able to formulate historical arguments based on primary sources and place them in a historiographical context.

HIST 307 : Europe Since 1914. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: International affairs and political and economic history of major European countries (including Russia) from World War I to the present.

**Course Outcomes**

- Students will understand and be able to explain and analyze the international affairs and the political, cultural, military, social, and economic history of Europe from the two world wars until the present
- Students will understand how to use and will be able to analyze and interpret primary source documents.
- Students will be able to review, critique, and evaluate historiographical works.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to analyze and discuss current events from more than one national viewpoint.

HIST 376 : U.S. History from 1945 to 2000. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Movements and ideas that shaped society, politics, economy, and diplomacy of the United States from 1945 to 2000.

**Course Outcomes**

- Students will be able to explain and analyze the major political, social, diplomatic, economic, cultural, and constitutional developments in U.S. history from 1945 to the present.
- Students will be able to analyze, interpret, and debate the meanings and historical significance of primary source documents.
- Students will be able to produce an original, analytical, and primary source based historical essay examining a key issue, theme, or individual from U.S. history since 1945.

HIST 391 : U.S. in Vietnam, 1945-1975. (3:3:0)

DESCRIPTION: U.S. involvement in the wars in Vietnam from both a domestic and international perspective, focusing on the conflict independently and in context of the broader Cold War.

**Course Outcomes**

- Students will be able to explain and analyze political, social, cultural, diplomatic, and military developments; short- and long-term influences; and ramifications or “lessons” deriving from the U.S. experience during the Vietnam War from 1945 to 1975 from both a domestic and international perspective.
- Students will be able to analyze, interpret, and debate the meanings and historical significance of primary source documents.
- Students will be able to produce an original, analytical, and primary source based historical essay examining a key issue, theme, or individual from the U.S. experience in Vietnam.

HIST 393 : U.S. Foreign Relations. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: U.S. diplomatic history from the American revolution to the present; examines major themes and critical events within both domestic and international contexts.

**Course Outcomes**

- Students will be able to explain and analyze the major themes and problems in the making, implementation, and evolution of U.S. foreign relations from 1776 to the present.
- Students will be able to analyze, interpret, and debate the meanings and historical significance of primary source documents.
- Students will be able to produce an original, analytical, and primary source based historical essay examining a key issue, theme, or individual from the history of U.S. foreign relations.

POLI 270 : Principles of International Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Poli 200.

DESCRIPTION: An introduction to the subfield of international relations for advanced students and majors. Basic concepts, theories, and methods of international relations and political science.

**Course Outcomes**

There are no course outcomes available

POLI 371 : Foreign Policy Analysis. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200; Poli 170 or 270.

DESCRIPTION: Survey of research regarding multiple levels of foreign policy analysis: individual, group, bureaucratic, societal, economic, systemic.

**Course Outcomes**

No outcomes are available at this time.

POLI 373 : International Law. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Nature and function of international law; recognition, succession, jurisdiction rights, and immunities of states; nationality and jurisdiction over nations.

**Course Outcomes**

There are no course outcomes available

POLI 374 : Ethics and International Affairs. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Ethical considerations in study and practice of international politics. Realism, idealism, and other theories of state behavior subjected to ethical standards.

**Course Outcomes**

There are no course outcomes available

POLI 375 : International Organizations. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: International institutions; transnational relations; rise of newer political organizations: League of Nations, United Nations, European communities, world religions, multinational corporations, terrorist groups, global regimes.

**Course Outcomes**

There are no course outcomes available

POLI 377 : National Security Affairs. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Foreign policy, defense strategy, and intelligence.

**Course Outcomes**

There are no course outcomes available

POLI 378 : International Conflict. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 150, 170, 250, or 270; Poli 200.
DESCRIPTION: Causes of war; alliances and empires; military innovation; civil-military relations; fungibility of forces; terrorism; security studies methods; use and misuse of history.

**Course Outcomes**
There are no course outcomes available

POLI 382 : International Relations of North America. (3:3:0)
DESCRIPTION: Examination and analysis of factors that affect foreign relations of Canada, U.S., and Mexico, emphasizing trade, security, migration, environment.

**Course Outcomes**
There are no course outcomes available

POLI 472 : International Political Economy of Women. (3:3:0)
WHEN TAUGHT: Contact Department.
DESCRIPTION: Effects upon national, international, and developmental policies when women are rendered visible and valued.
NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
There are no course outcomes available

POLI 473 : Human Rights. (3:3:0)
PREREQUISITE: Poli 200.
DESCRIPTION: Causes of human rights violations and societal and state responses; nature, history, and impacts of international human rights norms; ways to define and promote rights.

**Course Outcomes**
There are no course outcomes available

POLI 475 : Civil Wars and Ethnic Violence. (3:3:0)
PREREQUISITE: Poli 200.
RECOMMENDED: Poli 150 or 250; 170 or 270; 328.
DESCRIPTION: Foundations of ethnic and nationalist identities and how they related to civil wars worldwide, emphasizing theoretical explanations of civil wars and their resolution. Key civil war cases examined.

**Course Outcomes**
There are no course outcomes available

POLI 476 : Terrorism. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200.
RECOMMENDED: Poli 150 or 250; 170 or 270; 328.
DESCRIPTION: Defining and conceptualizing terrorism; causes and varieties of terrorism; counterterrorism; the future of terrorism.

**Course Outcomes**
There are no course outcomes available

b. Political Economy

Complete four courses from at least two disciplines. At least two courses must be from economics.

ECON 382 : Intermediate Price Theory 2. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380
DESCRIPTION: Welfare theory, imperfect information, imperfect competition, uncertainty, externalities, and public goods.

**Course Outcomes**
- Formally express and analyze economic modelsRecognize the common building blocks of economic models (actors, choices, objectives, constraints)Solve economic models (constrained optimization, equilibrium conditions)Interpret the results (comparative statics)Demonstrate an understanding of the core microeconomic models ofPerfect competition in general equilibrium (exchange and production)Monopoly and oligopolyExternalities and public goodsDecision-making under uncertainty (expected utility)Information problems (moral hazard, adverse selection)Adapt models to new scenariosCompare the impact on equilibrium behavior of altering the assumptions of canonical modelsContrast the results of different market imperfectionsEstablish a

knowledge base that will be useful in economic field classesApply models in various real-world examples and identify the positive and normative conclusions in that environment

ECON 388 : Introduction to Econometrics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Mathematical and statistical techniques used in estimating, predicting, and testing hypotheses associated with quantifiable economic relationships.

**Course Outcomes**

- Demonstrate an understanding of the theoretical foundations of estimating and testing the basic regression model, employing tools from matrix algebra, calculus, and statistics.Perform basic regression and testing procedures using Stata. Complete an empirical research project that includes the following elements:.Formulate an econometric model.Collect and prepare relevant data for use in estimating the model.Use appropriate methods of estimation.Test relevant behavioral hypotheses.Understand and test the Gauss-Markov assumptions.Analyze and interpret the estimated model.Prepare a written report summarizing the research results.

ECON 431 : Economic Development. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 380; Econ 388 (or concurrent enrollment) or Pl Sc 328.

DESCRIPTION: Microeconomic analysis of the causes of income differences across countries.

**Course Outcomes**

- Discuss the labor and consumption patterns among the world's poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property Rights.Discuss the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Explain the potential role of government in economic development, especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

ECON 432 : Economic Growth. (3:3:0)

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Econ 388.

DESCRIPTION: Theory and evidence relating to economic growth, including physical and human capital accumulation, population, technological change, institutions, and government.

**Course Outcomes**

- Adjust values in one currency to values in another currency controlling for purchasing power parity (PPP) deviations.Demonstrate an understanding of basic dynamic models of economic growth, including:The Solow modelThe Solow model with population growthThe Harrod-Domar modelAK modelsModels of product varietySchumpeterian models.Discuss growth and development accounting, and decompose observed differences across countries into efficiency and technology components.Discuss Lorenz curves and Gini coefficients.Discuss how growth interacts with:Population & demographyHuman capitalTechnical progressOpennessGovernmentInequalityCultureGeography, Climate & Resources.

ECON 458 : International Trade Theory and Applications. (3:3:0)

PREREQUISITE: ECON 380

DESCRIPTION: Microeconomic analysis of why nations trade, who wins and loses from trade, and the costs and benefits of various trade policies.

**Course Outcomes**

- Discuss why all kinds of nations—rich and poor, large and small—gain from international trade.Demonstrate an understanding of comparative advantage and how it creates gains from trade.Analyze the Ricardian model of trade and thereby learn how different technologies in different nations create comparative advantage and gains from trade.Analyze the Heckscher-Ohlin model of trade and thereby learn: 1) How different factor endowments in different nations create comparative advantage and gains from trade, and 2) Why some people lose from trade even though nations as a whole gain from trade.Discuss economies of scale and how they can generate gains from trade.Discuss how trade generates extra gains by reducing market power.Demonstrate an understanding of the main causes and effects of direct foreign investment.Demonstrate an understanding of the main causes and effects of international migration.Discuss how various trade policies affect national welfare and why such policies help some while hurting others.Discuss the politics of trade.

ECON 459 : International Monetary Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 381 & ECON 388; or ECON 381 & PL SC 328

DESCRIPTION: Monetary and macroeconomic aspects of international relations dealing primarily with short-run balance-of-payments disequilibrium and adjustments.

**Course Outcomes**

- Demonstrate a familiarity with the key issues in two broad fields:International Finance, particularly exchange rate behavior, Open Economy Macroeconomics.Discuss the nature of the foreign exchange market, including:It's market organizationThe role of vehicle currenciesThe instruments tradedThe role of arbitrage.Understand and use models of exchange rate behavior:Covered and uncovered interest rate parityLong-run monetary and equilibrium models.Understand financial portfolio theory to the extent that it is useful in explaining exchange rate behavior, including:The determination of risk premiaHow it may explain the "forward bias" puzzle.Discuss the history of the international financial system since the late 1700's.Discuss the international aspects of the national income and product accounts, along with the balance of payments accounts.Apply simple dynamic models of consumption smoothing to the current account.

ECON 478 : Game Theory and Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Application of game theory to study strategic interaction between individuals and organizations. Applications include imperfect competition, insurance markets, and bargaining.

**Course Outcomes**

- Demonstrate an understanding of the game theoretic method of analysis.Define a Nash Equilibrium and discuss refinements of the Nash Equilibrium Concept.Think abstractly and rigorously about strategic interaction.

POLI 344 : Comparative Political Economy. (3:3:0)

PREREQUISITE: Poli 150 or 250; Poli 200.

DESCRIPTION: Overview of political economy from a comparative perspective. Classic theorists (Smith, Marx, Schumpeter, etc.); classic questions (industrialization, national economic policy, property, globalization, law, and economics).

**Course Outcomes**

There are no course outcomes available

POLI 372 : International Political Economy. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Political implications of international trade, investment, and monetary policies within an increasingly interdependent global context; transnationalism.

**Course Outcomes**

There are no course outcomes available

POLI 444 : The Political Economy of Development. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Econ 110, Poli 200.

DESCRIPTION: Political foundations of growth, providing public goods, and political reform in developing countries. Development and how institutions and culture shape it.

**Course Outcomes**

There are no course outcomes available

**Note:** Completion of the Econ 378/388 sequence for the statistics requirement above will also count as fulfillment of one course in this track.

c. Asian Politics and History

Complete four courses from the following. At least one course must be from political science and one course from history.

ANTHR 348 : Contemporary Japan. (3:3:0)

DESCRIPTION: Using movies and popular media to examine the social structures and family life dynamics of contemporary Japan.

**Course Outcomes**

There are no course outcomes available

GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication

systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 273 : Southeast Asia. (3:3.0:0)

WHEN TAUGHT: Fall Contact Department

DESCRIPTION: Fundamental issues of geography relating to Southeast Asia, including the extraction and marketing of natural resources, economic development, neighborly relations, and how diffusion has influenced the unique cultural, religious, and linguistic characteristics of the region.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

HIST 231 : Introduction to East Asian History. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Major themes in the history, thought, and culture of Asian societies from antiquity to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, and social developments in the history of China, Korea, and Japan from antiquity to the present
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and discuss the meaning and significance of historical events on contemporary identity and foreign relations.
- Students will be able to analyze historical arguments.

HIST 337 : Pre-modern Korea. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, economic, and social history of Korea from antiquity to 1850.

**Course Outcomes**

- An understanding of the major features of Korean history and culture both in breadth and in depth.
- An understanding of Korean history contextualized both within the framework of Korean history and in relationship to other histories and other constructions of history.
- The ability to think and write about issues in Korean history in a critical and compelling manner.

HIST 338 : Modern Korea. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: Political, economic, and social history of Korea from 1850 to the present.

**Course Outcomes**

- Students will be able to describe the most significant aspects of the polity, economy, society and ideology of Korea from 1850 to the present.
- Students will be able to recognize and analyze change over time in East Asia
- Students will be able to evaluate and apply primary source texts to broad historical themes
- Students will be able to conduct individual research and situate it in the broader historical context

HIST 341 : China Since 1200. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Economic and political foundations of modernity during high Imperial China; challenge of new order from the West; rise of Chinese nationalism, revolution, and development to the present.

**Course Outcomes**

There are no course outcomes available

HIST 344 : Modern Japan. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Main themes in Japanese history from Tokugawa times to the present.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and cultural developments in Japanese history from approximately 1600 to the present.
- Students will be able to analyze and interpret primary source documents.

Students will be able to interpret and discuss the meanings and historical and historiographical value of primary and secondary source texts.
- Students will be able to analyze historical arguments and place them in a historiographical context.

HIST 348 : Modern South East Asia. (3:3:0)

DESCRIPTION: Complex history of the varied nations of this vast area: religion, colonialism, nationalism, independence.

**Course Outcomes**

- Gain a historical consciousness by demonstrating a knowledge of major developments in South East Asia and world history and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions by using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.

POLI 348 : Government and Politics of Asia. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Comparative analysis of political developments of the major countries of Asia not covered in other country-specific classes.

**Course Outcomes**

There are no course outcomes available

POLI 353 : China: Government and Politics. (3:3:0)

DESCRIPTION: Structure and behavior of politics; contemporary problems.

**Course Outcomes**

There are no course outcomes available

POLI 354 : Japan: Government and Politics. (3:3:0)

DESCRIPTION: Structure and behavior of politics; contemporary problems.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 385 : International Relations of Asia. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Foreign policies and international relations of China, Japan, and Northeast and Southeast Asia; historical and contemporary review and analysis.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 386 : Japanese Foreign Policy. (3:3:0)

DESCRIPTION: Process and outcomes of Japan's foreign policy; analysis of its relations with other nations in a historical and contemporary setting.

**Course Outcomes**

There are no course outcomes available

POLI 388 : Chinese Foreign Policy. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Structure and process of foreign policy of the People's Republic of China.

**Course Outcomes**

There are no course outcomes available

d. Latin American Politics and History

Complete four courses from the following. At least one course must be from political science and one course from history.

GEOG 255 : Middle and South America. (3:3:0)

WHEN TAUGHT: Winter Contact Department

DESCRIPTION: Environmental, cultural, economic, and political parameters of Latin American societies.

**Course Outcomes**

- To link how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to the overall study of the Latin American realm.
- To gain a working knowledge of the connection of the underlying physical "stage" of Latin America to the distributions of people and their activities.
- To gain an understanding of the geographic structure of Latin America's cultural components including languages, ethnic groups, settlement patterns, and religious beliefs.
- To develop geographic writing and research skills that result in papers that are fluent, relevant, and creative.
- To use other students' input to effectively enhance Latin American geographic understanding through group work and discussions
- To discover the significance of Latin America's increasing impact on the world's economy, as well as the growing Hispanization of the United States and the Church of Jesus Christ of Latter-day Saints

HIST 252 : Modern Latin America. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: National period (1810 to present): independence, institutional development, culture, and inter-American relations.

**Course Outcomes**

- Students will be exposed to the major economic, political, and cultural shifts that shaped the "modern" Latin American state in the nineteenth and twentieth century, as well as its variants, notably the cult of caudillo rule and its twentieth century offshoots
- Students will become conversant with major theoretical arguments and approaches to Latin American history in the contemporary era.
- Students will gain oral proficiency in discussing historiographical and thematic issues in modern Latin America during weekly discussion.
- Students will either broaden their understanding of literature on one topic in Latin American history by way of an intensive literature survey or deepen their knowledge on a particular topic in Latin American history by way of an original research paper.
- Students will make connections between cultural and polotico-economic issues by way of a wide variety of course readings that expose students to literature, as well as traditional historical themes.

HIST 326 : The History of Mexico. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: The historical evolution of Mexico including pre-Colombian civilizations, the Spanish conquest, the colonial era, national formation, and the modern Mexican state. The impact of foreign relations on Mexican society.

**Course Outcomes**

- Students will gain an understanding of the challenges Mexico faced during the transitions from pre-Colomiban empires to the colonial period, as well as from the colonial period to the national era.
- Students will gain an understanding of the principle factors that created and transformed modern Mexican society, principally the Porfiriato, the Mexican Revolution, and the modern Mexican state structure (twentieth century).
- By way of supplementary readings and writing assignments, students will gain a stronger understanding of the social andcultural issues in Mexican history that have been shaped by the nation's unique political and economic conditions.
- Students will explore the scholarship and sources for a single issue in Mexican history, producing a research paper based on primary and secondary sources
- Students will develop oral proficiency in debating controversialhistorical and contemporary issues during class discussion, including debates on decisive factors in the Spanish conquest, immigration, and bi-national solutions to drug trafficking.

HIST 355 : History of Argentina. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Rise of modern Argentina from colonial times, focusing on the dynamic political, economic, social, and cultural developments since independence.

**Course Outcomes**

- Learn and understand more about the historical processes that have shaped the nation of Argentina from colonial times up to the present.
- To be able to discuss and explain those processes through the written and spoken word with clarity, persuasiveness, and proper use of evidence
- To write a well written, organized, and developed term paper using the critical thinking and writing skills of a historian
- To be able to read primary sources and discuss their utility in constructing historical arguments.

HIST 356 : Brazil. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: From 1500 to present, emphasizing relationship between colonial patterns and twentieth-century reality and dilatory transformation of Brazil's political and economic culture.

**Course Outcomes**

- Students will become academically conversant in the major social, economic, and cultural developments of Brazil's history since 1500.
- Students will be able to analyze and evaluate the content and meaning of primary sources, and through critical interpretation, draw reasonable conclusions.
- Students will be able to formulate original historical questions and answer them by careful and systematic research in primary and secondary sources.
- Students will be able to write history that is coherent and persuasive by following discipline's norms for writing and careful documentation.

HIST 358 : Gender and History in Latin America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: How gender roles have been defined legally, socially, and culturally in Latin America from the colonial period to the present, emphasizing the nineteenth and twentieth centuries.

**Course Outcomes**

- To understand how gender relations and gender roles developed in Latin America from colonial times to the present.
- To be able to discuss and explain those developments through the written and spoken word with clarity, persuasiveness, and proper use of evidence.
- To write a well written, organized, and developed term paper using the critical thinking and writing skills of a historian.
- To be able to read primary sources and discuss their utility in constructing historical arguments.

POLI 358 : Latin American Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200 or Lt Am 211.

DESCRIPTION: Conceptual and contemporary issues in Latin America's search for political order and economic development.

**Course Outcomes**

There are no course outcomes available

POLI 380 : International Relations of Latin America. (3:3:0)

PREREQUISITE: Poli 200 or Lt Am 211.

DESCRIPTION: Factors that affect foreign relations of Latin American countries, including the U.S. role, emphasizing intervention, democracy, development, and trade.

**Course Outcomes**

There are no course outcomes available

e. Middle Eastern Politics and History

Complete four courses from at least two disciplines. At least one course must be from history.

ANTHR 340 : Peoples of the Middle East. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Ecology, social organization, and beliefs of nomadic, rural, and urban groups between western Africa and Pakistan.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain an introductory level understanding of the variety of cultures, ethnic groups, religious variances, and competing political entities representative of the regions included in the MIddle East. Special emphasis will be placed on applying this knowledge to archaeological and anthropological perspectives, disciplines, and professions.
- Through course assignments, students will increase their skills in creative thinking, analysis of data, research, and writing.
- Through course assignments, students will gain a knowledge and demonstrate their comprehension of the ecologies, social organizations, religious beliefs, and variances between nomadic, rural, and urban groups in the Middle East.

GEOG 271 : Middle East. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Physical and cultural geography of Southwest Asia and North Africa, emphasizing the cultural mosaic, geopolitics, environment, and resources of the region.

**Course Outcomes**

There are no course outcomes available

HIST 240 : Middle East History to 1800. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: History of the Middle East from the rise of of Islam until 1800.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, cultural and religious developments in the Islamic Near East between approximately AD 640-1800.
- Students will be able to analyze and interpret translations of primary source documents from the Islamic Near East.
- Students will be able to analyze historical questions and place them in a historiographical context..

HIST 241 : Middle East History from 1800. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: History of the Middle East in the modern period form 1800; rise of nation states, relationship with West, role of Islam.

**Course Outcomes**

- Gain a historical consciousness by demonstrating a knowledge of major developments in Middle East and world history and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions by using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.
- Demonstrate how faith and reason intersect.

HIST 244 : Jewish History: A.D. 70 to the Present. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Jewish diaspora, Jewish life in Moslem and Christian countries; Jewish religious movements; development of Zionism; Jewish communities in modern Israel and the United States.

**Course Outcomes**

- Gain a historical consciousness by demonstrating an understanding of major developments in Jewish and history, and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately and distinguish between questionable and valid historical assertions.
- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using interdisciplinary prinary and secondary sources.
- Skillfully integrate sources into a coherent argument expressed through a clear, well-written style and throrough oral communication.
- Recognize anti-Semitic arguments.
- Gain an understanding of the complexities of modern Jewish identity.
- Appreciate the contribution of Jewish people to the world.

MESA 350 : Islam in Contemporary Society. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MESA 250

DESCRIPTION: Islam in modern society: doctrine, practices, institutions, approaches to the challenges of modern life; the rise of fundamentalism.

**Course Outcomes**

- Class on issues which face contemporary Muslims throughout world.

POLI 357 : Middle East: Political Systems. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Poli 200.

DESCRIPTION: Social, philosophical, and religious impact on Middle East political institutions in an era of modernization and conflict.

**Course Outcomes**

There are no course outcomes available

POLI 381 : International Relations of the Middle East. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Interregional relations and conflicts, political economics, Arab nationalism, processes of political change, alliances, and superpower relations.

**Course Outcomes**

No outcomes are available at this time.

POLI 452 : Islam and Politics. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Tensions and accommodations between religion and politics in Muslim nations.

**Course Outcomes**

There are no course outcomes available

POLI 474 : Arab-Palestinian-Israeli Conflict. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Emphasizes historical background, current situation, and alternatives leading to conflict resolution.

**Course Outcomes**

There are no course outcomes available

**Note:** Hist 242 and 243 do not substitute here.

f. European Politics and History

Complete four courses from the following. At least one course must be from political science and one course from history.

GEOG 260 : Europe. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Systematic approach to physical base, social and political problems, economic issues, and regional summary.

**Course Outcomes**

- To use other students input to effectively enhance European geographic understanding.
- To demonstrate the connection of the underlying physical "stage" of Europe to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To comprehend the regional geographic structure of Europe's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in Europe including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era. Emphasis will be given to the formation and spread of the European Union.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of the European realm.
- To write geographic research that is fluent, relevant, and creative.

GEOG 265 : Russia and the Former Soviet Union. (3:3:0)

DESCRIPTION: Physical features, resources, political issues, economy and industries, population concerns, and role in world affairs.

**Course Outcomes**

- To use other students input to effectively enhance geographic understanding of the region.
- To comprehend the regional geographic structure of the region's cultural components including languages, demographics, ethnic groups, and religious beliefs.
- To explicate and define the important historical and contemporary geographic linkages in the region including settlement structure and major industries (e.g., agriculture, manufacturing, tourism, and transportation).
- To become knowledgeable concerning the ongoing geographical manifestations of political and economic restructuring in the modern era, including relationship to the European Union and other political entities.
- To grasp how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to our overall studies of this region.
- To demonstrate the connection of the underlying physical "stage" of the region to the distributions of people and their activities. This includes studying the locations and distributions of climates, mountains, rivers, and natural barriers of the region.
- To write geographic research that is fluent, relevant, and creative.

HIST 307 : Europe Since 1914. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: International affairs and political and economic history of major European countries (including Russia) from World War I to the present.

**Course Outcomes**

- Students will understand and be able to explain and analyze the international affairs and the political, cultural, military, social, and economic history of Europe from the two world wars until the present

- Students will understand how to use and will be able to analyze and interpret primary source documents.
- Students will be able to review, critique, and evaluate historiographical works.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to analyze and discuss current events from more than one national viewpoint.

HIST 309 : European Revolutions Since 1500. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Social and political revolutions in European history since 1500. Successful and unsuccessful cases of state breakdown; the Dutch Revolt, English Revolution, French Revolution, Revolution of 1848, and Russian Revolution.

**Course Outcomes**

- Students will gain a historical consciousness by demonstrating knowledge about crisis and change in European societies.
- Students will acquire the ability to evaluate and analyze historical documents
- Students will understand the way evidence is used to construct historical arguments.
- Students will gain experience collaborating with each other in formulating and carrying out a research project using historical research skills.

HIST 310 : European Economic History. (3:3:0)

WHEN TAUGHT: Spring Odd Yrs.

DESCRIPTION: Economic development of Europe from antiquity to the early twentieth century; impact of the economy on social and political institutions.

**Course Outcomes**

- Students will acquire content knowledge about the economic history of Europe from antiquity to the present
- Students will master the skills necessary to summarize, evaluate, and critique historical arguments.
- Students will understand the way evidence is used to construct historical arguments.
- Students will pose historical questions and support them with appropriate evidence
- Students will gain experience collaborating with each other in formulating and carrying out a research project using historical research skills.

HIST 312 : History of Ideas. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Interrelationship of influential ideas and historical events from the end of the eighteenth century to the present.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Recognize the usefulness, but also the problematic nature of historical periodization.
- Develop interdisciplinary, synthetic, thinking skills, particularly in being able to see history in cultural artifacts and then identify and place these into discursive contexts.
- Relate and trace how ideas continue to influence societies and their institutions
- Awaken in you the realization of how certain modes of modern thought that you might have taken for granted as having existed "forever" can be seen as developments in response to specific historical circumstances.
- Explain how ideas, when extended to their logical conclusions, may challenge your personal world view and consider, as well as articulate, how to resolve such conflicts.
- Write an intellectual history research paper.
- Identify broadly how different approaches to intellectual history operate, e.g. Lovejoy, Cambridge School (Skinner), Berlin, Koselleck, Strauss, etc.

HIST 318 : European Women's History. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

RECOMMENDED: Hist 200.

DESCRIPTION: European women and gender from 1400 to the present.

**Course Outcomes**

- Students will be able to understand and explain major trends in European women's experiences and history since 1400
- Students will be able to analyze and synthesize historiographyof women's history, gender history, and feminism
- Students will read, analyze, and write about primary and secondary sources and explain their connections to one another
- Students will interpret important shifts or trends in the experience of women and attitudes about gender. Students will apply this understanding to the legal, religious, and culture contexts for those shifts or trends
- Working in tandem with each other students will have opportunities to question, investigate, and interrogate contemporary attitudes to women and men's history and gender and how these affect interpretations of the past.

HIST 323 : English History Since 1689. (3:3:0)

DESCRIPTION: Emergence of Britain as a great colonial and industrial power, as well as more recent decline of Britain's influence. Emphasis also on cultural developments.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in England Since 1689.
- Students will be able to analyze and interpret primary source documents
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 324 : France. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: French history from Roman times to the present, emphasizing the French Revolution, Napoleon, and subsequent developments.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in French history between approximately 700 and 1950.
- Students will be able to analyze and interpret primary source documents.
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.
- Students will be able to analyze historical questions and place them in a historiographical context.

HIST 325 : Spain. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Political, social, and economic factors in Spanish history from Roman times to present. Emphasis on Reconquest, Golden Age, and Civil War.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, intellectual, and cultural developments in Spain from Roman times to the late twentieth century
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills.
- Students will analyze historical questions and place them in historiographical context.

HIST 327 : Italy in the Modern World Since 1848. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Political, social, economic, and cultural history of Italians and the Italian peninsula in Europe and the world, including nationalism, church and state, migration, Mafia, fascism, and European union.

**Course Outcomes**

- Students will understand and be able to explain and analyze contemporary Italian history, including themes of economic development, state formation, fascism, internationalism, and church/state relations.
- Students will understand and will be able to analyze and interpret primary source documents and secondary historiographical works.
- Students will understand how to research and write.
- Students will be able to analyze, interpret, and debate with their peers in a classroom setting the meanings and historical value of theory, art, media, and primary source texts.
- Students will be able to analyze historical questions and place them in a historiographical context.
- Students will be able to present a topic and argument in class with multimedia and discussion

HIST 328 : Modern Germany. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Political, military, economic and cultural development of Germany during the nineteenth and twentieth centuries.

**Course Outcomes**

- Understand how historians interpret the German past.
- Alert you to how historians construct their narratives.
- Read and dismantle primary and secondary sources.
- Synthesize material from interdisciplinary sources.
- Show essay skills by writing timed essays on a set of primary and secondary sources.
- Demonstrate your ability to use primary sources in a research project.

HIST 331 : Soviet Union and Post-Soviet Russia. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: History of the Soviet Union and post-Soviet developments in Russia and other successor states; governing structures and ideology and the relationship between state and society.

**Course Outcomes**

There are no course outcomes available

HIST 332 : Scandinavian History. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Political, social, religious, cultural, and economic factors in Denmark, Finland, Iceland, Norway, and Sweden from Viking era to present highly developed society.

**Course Outcomes**

- Students will be able to learn about Scandinavian history from prehistoric times through to the Viking Age, Middle Ages/Renaissance to the Era of Swedish Great Power Politics and Great Northern War, in the 1600s and early 1700s.
- Students will be able to learn about the big picture of Scandinavian history from the period of the Napoleonic Wars (esp. Napoleon's erstwhile general, Bernadotte, later King of Sweden-Norway), Industrialization of the North, nationalistic movements and periods of Swedish-Norwegian and russo-Finnish union, through the World Wars and establishment of the Modern Welfare state (since the 1920s)

POLI 341 : Western European Politics. (3:3:0)

RECOMMENDED: Poli 200.

DESCRIPTION: Politics and policy in western Europe. State-building, party systems, nationalism, and cooperation among advanced industrial countries in comparative, historical perspective. Social and Christian democracy; European Union.

**Course Outcomes**

There are no course outcomes available

POLI 347 : Russia/Former Soviet Politics. (3:3:0)

DESCRIPTION: Comparative politics of Russia and Soviet successor states. Development of political systems from common Soviet heritage, emphasizing post-independence politics and institution building.

**Course Outcomes**

There are no course outcomes available

POLI 351 : British Government and Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: Examination of the origin and contemporary operation of British political institutions as they relate to British society.

**Course Outcomes**

There are no course outcomes available

g. Economic and Political Development

Complete the following (3 hours):

ECON 431 : Economic Development. (3:3:0)

WHEN TAUGHT: Winter; Spring

PREREQUISITE: ECON 380; Econ 388 (or concurrent enrollment) or Pl Sc 328.

DESCRIPTION: Microeconomic analysis of the causes of income differences across countries.

**Course Outcomes**

- Discuss the labor and consumption patterns among the world's poor.Demonstrate an understanding of how modifying the neoclassical assumptions learned in Econ 380 can affect the welfare implications of markets. In particular, how the welfare implications are affected byExternalities and Public GoodsFixed Costs or Increasing ReturnsPoorly Enforced Property Rights.Discuss the functioning of the credit and capital market:How it relates to alleviating poverty and stimulating economic growth.Why it may be prone to information problems and the implications of those problems.Explain the potential role of government in economic development, especially as it relates to:Public Goods and ExternalitiesEnforcing ContractsCorruptionExplain the importance of labor, health, and education to the lives of those in developing countries and how these fields relate to improving outcomes among the poor.

**Note:** This course cannot be double-counted for the 400-level economics course in the core; Econ 388 is the preferred route to fill the statistics prerequisite for this course.

Complete three courses from the following, of which one course must be from political science:

ECON 388 : Introduction to Econometrics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: ECON 378 & ECON 380; or STAT 201 & MATH 313 & ECON 380

DESCRIPTION: Mathematical and statistical techniques used in estimating, predicting, and testing hypotheses associated with quantifiable economic relationships.

**Course Outcomes**

- Demonstrate an understanding of the theoretical foundations of estimating and testing the basic regression model, employing tools from matrix algebra, calculus, and statistics.Perform basic regression and testing procedures using Stata. Complete an empirical research project that includes the following elements:.Formulate an econometric model.Collect and prepare relevant data for use in estimating the model.Use appropriate methods of estimation.Test relevant behavioral hypotheses.Understand and test the Gauss-Markov assumptions.Analyze and interpret the estimated model.Prepare a written report summarizing the research results.

ECON 432 : Economic Growth. (3:3:0)

PREREQUISITE: ECON 380 & ECON 381

RECOMMENDED: Econ 388.

DESCRIPTION: Theory and evidence relating to economic growth, including physical and human capital accumulation, population, technological change, institutions, and government.

**Course Outcomes**

- Adjust values in one currency to values in another currency controlling for purchasing power parity (PPP) deviations.Demonstrate an understanding of basic dynamic models of economic growth, including:The Solow modelThe Solow model with population growthThe Harrod-Domar modelAK modelsModels of product varietySchumpeterian models.Discuss growth and development accounting, and decompose observed differences across countries into efficiency and technology components.Discuss Lorenz curves and Gini coefficients.Discuss how growth interacts with:Population & demographyHuman capitalTechnical progressOpennessGovernmentInequalityCultureGeography, Climate & Resources.

ECON 440 : Natural Resources and Environmental Economics. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ECON 380 & ECON 388

RECOMMENDED: Econ 382.

DESCRIPTION: Economic theory applied to allocation of natural resources and environmental amenities. Issues relating to externalities, common property resources, public goods, allocation of depletable natural resources over time, economic factors of environmental polarization, and others.

**Course Outcomes**

- Utilize economic principles and models to address private and public policy issues related to allocating natural resources and environmental amenities.Demonstrate an active understanding of the following elements of economic theory as it relates to natural resource and environmental economics:Welfare economics and concepts of Pareto optimality, efficiency, and equityThe role of property, property rights, and the bundle of rights conceptThe role of externalities, common property resources, and public goodsConcepts and measures of economic value including non-market valuation.Demonstrate a basic knowledge of the role of markets and market failure with regards to the allocation of natural resources and environmental amenities.Gain a basic understanding of the effects and relative merits of public environmental policy efforts, including cap-and-trade schemes, Pigovian taxes, regulation, and public ownership and/or management.Become knowledgeable about and be able to use economic principles and non-market valuation techniques to address a variety of continuing and contemporary natural resource and environmental issues. These issues may include, but are not exclusive to:Population growth and the environmentGlobal warmingWilderness protection and related public lands issuesAir pollution and public healthIntergenerational allocation of soil, forest, and other depleteable natural resourcesImpacts of environmental features on property values.

ECON 458 : International Trade Theory and Applications. (3:3:0)

PREREQUISITE: ECON 380

DESCRIPTION: Microeconomic analysis of why nations trade, who wins and loses from trade, and the costs and benefits of various trade policies.

**Course Outcomes**

- Discuss why all kinds of nations—rich and poor, large and small—gain from international trade.Demonstrate an understanding of comparative advantage and how it creates gains from trade.Analyze the Ricardian model of trade and thereby learn how different technologies in different nations create comparative advantage and gains from trade.Analyze the Heckscher-Ohlin model of trade and thereby learn: 1) How different factor endowments in different nations create comparative advantage and gains from trade, and 2) Why some people lose from trade even though nations as a whole gain from trade.Discuss economies of scale and how they can generate gains from trade.Discuss how trade generates extra gains by reducing market power.Demonstrate an understanding of the main causes and effects of direct foreign investment.Demonstrate an understanding of the main causes and effects of international migration.Discuss how various trade policies affect national welfare and why such policies help some while hurting others.Discuss the politics of trade.

ECON 459 : International Monetary Theory. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ECON 381 & ECON 388; or ECON 381 & PL SC 328

DESCRIPTION: Monetary and macroeconomic aspects of international relations dealing primarily with short-run balance-of-payments disequilibrium and adjustments.

**Course Outcomes**

- Demonstrate a familiarity with the key issues in two broad fields:International Finance, particularly exchange rate behavior, Open Economy Macroeconomics.Discuss the nature of the foreign exchange market, including:It's market organizationThe role of vehicle currenciesThe instruments tradedThe role of arbitrage.Understand and use models of exchange rate behavior:Covered and uncovered interest rate parityLong-run monetary and equilibrium models.Understand financial portfolio theory to the extent that it is useful in explaining exchange rate behavior, including:The determination of risk premiaHow it may explain the "forward bias" puzzle.Discuss the history of the international financial system since the late 1700's.Discuss the international aspects of the national income and product accounts, along with the balance of payments accounts.Apply simple dynamic models of consumption smoothing to the current account.

GEOG 255 : Middle and South America. (3:3:0)

WHEN TAUGHT: Winter Contact Department

DESCRIPTION: Environmental, cultural, economic, and political parameters of Latin American societies.

**Course Outcomes**

- To link how the "5 Themes of Geography" [Location, Place, Human Environment Interaction, Region, and Movement] relate to the overall study of the Latin American realm.
- To gain a working knowledge of the connection of the underlying physical "stage" of Latin America to the distributions of people and their activities.
- To gain an understanding of the geographic structure of Latin America's cultural components including languages, ethnic groups, settlement patterns, and religious beliefs.
- To develop geographic writing and research skills that result in papers that are fluent, relevant, and creative.
- To use other students' input to effectively enhance Latin American geographic understanding through group work and discussions
- To discover the significance of Latin America's increasing impact on the world's economy, as well as the growing Hispanization of the United States and the Church of Jesus Christ of Latter-day Saints

GEOG 271 : Middle East. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Physical and cultural geography of Southwest Asia and North Africa, emphasizing the cultural mosaic, geopolitics, environment, and resources of the region.

**Course Outcomes**

There are no course outcomes available

GEOG 272 : East Asia. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Region of monsoon Asia and its basic human (demographics, nations and ethnic groups, settlement patterns, religious beliefs, transportation and communication systems, political structures), and physical geographic characteristics (land forms, physiography, climatic characteristics, and natural resources).

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 273 : Southeast Asia. (3:3.0:0)

WHEN TAUGHT: Fall Contact Department

DESCRIPTION: Fundamental issues of geography relating to Southeast Asia, including the extraction and marketing of natural resources, economic development, neighborly relations, and how diffusion has influenced the unique cultural, religious, and linguistic characteristics of the region.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GEOG 285 : Africa South of the Sahara. (3:3:0)

WHEN TAUGHT: Winter Contact Department

DESCRIPTION: Geographical analysis focusing on resource management, political issues, development, environmental problems, economic development, and urban-rural change; case studies from selected countries.

**Course Outcomes**

There are no course outcomes available

POLI 357 : Middle East: Political Systems. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Poli 200.

DESCRIPTION: Social, philosophical, and religious impact on Middle East political institutions in an era of modernization and conflict.

**Course Outcomes**

There are no course outcomes available

POLI 358 : Latin American Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200 or Lt Am 211.

DESCRIPTION: Conceptual and contemporary issues in Latin America's search for political order and economic development.

**Course Outcomes**

There are no course outcomes available

POLI 444 : The Political Economy of Development. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Econ 110, Poli 200.

DESCRIPTION: Political foundations of growth, providing public goods, and political reform in developing countries. Development and how institutions and culture shape it.

**Course Outcomes**

There are no course outcomes available

POLI 452 : Islam and Politics. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Tensions and accommodations between religion and politics in Muslim nations.

**Course Outcomes**

There are no course outcomes available

POLI 472 : International Political Economy of Women. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Effects upon national, international, and developmental policies when women are rendered visible and valued.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

**Note:** Completion of the Econ 378/388 sequence for the statistics requirement above will also count as fulfillment of one course in this track.

With the prior approval of the international relations coordinator, a maximum of 3 hours of IR 398R, 399R, or IAS 351R may be used toward meeting the four-course requirement of specialization. Only the second semester of IAS 351R would be allowed.

13. Complete a capstone research experience in one of the following ways:

ASIAN 495 : Senior Seminar. (1:Arr:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Senior status or program coordinator's consent.

DESCRIPTION: Learning research and writing skills necessary to prepare and present major senior research paper.

NOTE: Most all major requirements should be completed before registering for this course.

**Course Outcomes**

- In this course, you will learn how to complete a significant research project using appropriate methods of research, analysis, and a professional standard of writing. In doing so, you will draw heavily from your knowledge from previous courses.

You will do this by studying a specialized topic in Asian Studies under the guidance of a professor. Thus, you will deepen your familiarity with a sub-field within Asian Studies and Asian Studies more broadly.
- You will also learn how to present your findings in a high-quality oral presentation, and how to give and receive appropriate feedback within a community of scholars.

LT AM 495 : Senior Seminar in Latin American Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Instructor's consent for minors.
DESCRIPTION: Sources, materials, and methods of research and writing; critical analysis of a research project.
NOTE: Required for all Latin American Studies majors their senior year.

**Course Outcomes**

- This a capstone course taylored to individual research and study topics.

MESA 495 : Senior Seminar in Middle East Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: PL SC 200 & ARAB 302
DESCRIPTION: Capstone course, including major research paper demonstrating ability to integrate cross-disciplinary information and methodology.

**Course Outcomes**

- The Capstone Seminar is the final course in the major. It combines in-depth research on a narrow topic with a research, analysis and writing of a substantive research paper in multiple drafts utilizing peer reviews at two stages, an oral presentation of findings, and research utilizing Arabic sources.

POLI 450 : Research Project in Comparative Politics. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 150 & POLI 200; or POLI 250 & POLI 200; or instructor's consent.
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.

**Course Outcomes**

There are no course outcomes available

POLI 470 : Research Project in International Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department
PREREQUISITE: POLI 170 & POLI 200; or POLI 270 & POLI 200; or instructor's consent.
DESCRIPTION: Advanced research skills and advanced writing for students in their junior year.

**Course Outcomes**

There are no course outcomes available

**Note 1:** Only MESA 495, Poli 450, or Poli 470 can fill the GE Advanced Written and Oral Communication requirement when coupled with Poli 200.

**Note 2:** For students in the relevant specialization, Asian 495, Lt Am 495, and MESA 495 will satisfy the capstone requirement.

**Note 3:** It may be possible to fulfill the capstone requirement by completing a professional quality research project. Students who wish to do this must receive *prior* approval of the IR coordinator.

**Note 4:** Students majoring in international relations may not pursue a double major or minor in either economics or political science because of the course overlap between international relations and those majors.

## Recommended

**Either** Hist 201, 202
**Or** Poli 201, 202.

Rel C 351.

*Hours include courses that may fulfill university core requirements.

**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

**Course Information**

- European Studies (Europ) Courses

**International Development**

**Minors**

- International Development

**International Relations**

**Majors**

- BA in International Relations

**Course Information**

- International Relations (IR) Courses

**Latin American Studies**

**Majors**

- BA in Latin American Studies

**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# International Relations (IR)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

**300-Level Courses**

IR 398R : Directed International Study. (1-3:Arr:0.0)
PREREQUISITE: Instructor's consent; international relations major coordinator's consent.
DESCRIPTION: Study and research in an international setting.

**Course Outcomes**
There are no course outcomes available

IR 399R : Academic Internship: International. (.5-12:0:0)
PREREQUISITE: Acceptance into program; international relations major coordinator's consent.
DESCRIPTION: Individualized work or volunteer experience in an international setting.
NOTE: Must be coordinated through International Study Programs.

**Course Outcomes**

- Students will be able to connect and integrate their academic experiences and learning with their work experiences.

**Back to International and Area Studies Home**

**Middle and Near Eastern Studies**

**Majors**

- BA in Ancient Near Eastern Studies
- BA in Middle East Studies/Arabic

**Minors**

- Ancient Near Eastern Studies
- Middle East Studies

**Course Information**

- Ancient Near Eastern Studies (ANES) Courses
- Middle East Studies/Arabic (MESA) Courses

**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

**Course Information**

- European Studies (Europ) Courses

**International Development**

**Minors**

- International Development

**International Relations**

**Majors**

- BA in International Relations

**Course Information**

- International Relations (IR) Courses

**Latin American Studies**

**Majors**

- BA in Latin American Studies

**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# Latin American Studies

## The Discipline

Designed to give a rich background in the languages, culture, and conditions of Latin America, the Latin American Studies program provides a multidisciplinary approach to university education. Courses from BYU's various academic departments (anthropology, Spanish and Portuguese, political science, geography, sociology, history, etc.) teach skills in perceptive reading, analytical thinking, and clear and forceful writing, as well as provide in-depth understanding of Latin American cultures, languages, and history.

Students are invited to consult with their faculty advisor regarding selection of classes.

## Career Opportunities

Excellent career opportunities exist for those who prepare well in Latin American Studies. The degree offers a broad, general background in the liberal arts, and graduates are well prepared for careers in government, private industry, nonprofit organizations, some domestic and foreign teaching opportunities, the Peace Corps, the military, and other professions in which an understanding and appreciation of Latin America are required. Many graduates go into law, medicine, business, journalism, editing, advertising, etc. Others have had success in government, such as working for the State Department, immigration, the FBI, and other agencies.

Students are encouraged to consider a double major or a strong minor in a single academic discipline to enhance their career objectives. The combination of another discipline and Latin American Studies makes the student attractive to employers desiring specific job skills as well as cultural understanding and appreciation.

## General Information

**Foreign Experience.** Latin American Studies students are strongly encouraged to participate in international study programs in Latin American locations. These programs include Study Abroad, international internships, international field studies, and/or direct enrollment with one of our partner schools. See http://kennedy.byu.edu/isp,index.php for more information.

**Middle and Near Eastern Studies**

**Majors**

- BA in Ancient Near Eastern Studies
- BA in Middle East Studies/Arabic

**Minors**

- Ancient Near Eastern Studies
- Middle East Studies

**Course Information**

- Ancient Near Eastern Studies (ANES) Courses
- Middle East Studies/Arabic (MESA) Courses

**International and Area Studies Programs Home**

**Course Information**
- International and Area Studies (IAS) Courses

**African Studies**

**Minor**
- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:
- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**
- Asian Studies

**Course Information**
- Asian Studies (Asian) Courses

**European Studies**

**Majors**
- BA in European Studies

**Minors**
- European Studies

**Course Information**
- European Studies (Europ) Courses

**International Development**

**Minors**
- International Development

**International Relations**

**Majors**
- BA in International Relations

**Course Information**
- International Relations (IR) Courses

**Latin American Studies**

**Majors**
- BA in Latin American Studies

**Minors**
- Latin American Studies

**Course Information**
- Latin American Studies (Lt Am) Courses

# BA in Latin American Studies (36–52 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements | View MAP

1. Courses cannot be double counted between the different requirements sections in the major.
2. Complete the following:

LT AM 211 : Introduction to Latin American Studies. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: History, politics, sociology, geography, and culture of Latin America.

**Course Outcomes**
There are no course outcomes available

3. Complete the following prerequisite courses or equivalents:

**Either**

PORT 101 : First-Year Portuguese. (4:5:1)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Pronunciation, conversation, reading, and fundamentals of grammar. Specific attention to Portuguese as the language of Brazil.
NOTE: Native speakers of Portuguese must enroll in Port 321.

**Course Outcomes**
- Participate in classroom activities in Portuguese.
- Communicate verbally in routine situations such as greeting people and becoming acquainted.
- Understand simple conversations about some familiar, concrete topics such as daily activities, likes and dislikes, family, and home.
- Create simple sentences using basic grammar rules and vocabulary with limited accuracy.
- Read short “cultural blurbs” from the textbook, as well as other short texts such as personal ads, menus, and advertisements.
- Write word- and sentence-length messages such as lists, biographical information on forms, and descriptions of people and things.
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 102 : First-Year Portuguese. (4:5:1)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Port 101.
DESCRIPTION: Pronunciation, conversation, reading, and fundamentals of grammar. Specific attention to Portuguese as the language of Brazil.
NOTE: Native speakers of Portuguese must enroll in Port 321.

**Course Outcomes**
- Participate in classroom activities in Portuguese.
- Participate in conversations about some familiar, concrete topics such as daily activities, family, home, work, and school.
- Understand simple conversations about some familiar, concrete topics such as daily activities, likes and dislikes, family, and home.
- Create simple sentences using basic grammar rules and vocabulary with limited accuracy.
- Read short “cultural blurbs” from the textbook, as well as other short texts such as advertisements, letters, recipes, and stories.
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 201 : Third-Semester Portuguese. (4:5:0)
PREREQUISITE: Port 102 or three units of high school Portuguese.
DESCRIPTION: Second-year grammar, reading, writing, and conversation.
NOTE: Native speakers of Portuguese must take Port 321.

**Course Outcomes**

- Maintain a simple face-to-face conversation about concrete topics such as self, family, friends, and daily activities.
- Handle a simple transactional situation (making purchases, interviewing for a job, etc.)
- Discuss some topics of general interest (school, geography, finances, business, etc.)
- Use grammar principles, including the present, past, and future indicative and subjunctive, with increasing accuracy.
- Understand conversations, announcements, and media reports on familiar topics.
- Read short journalistic and literary texts.
- Write short, simple compositions in a variety of genres (stories, résumés, skits, etc.)
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 202 : Fourth-Semester Portuguese: Reading and Comprehension. (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 201.

DESCRIPTION: Fourth-semester class introducing grammar and culture through study of literature.

NOTE: Not for returned missionaries. Culmination of GE Mathematics/Foreign Language requirement. Native speakers of Portuguese must take Port 321. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Maintain a simple face-to-face conversation about an increasing range of topics of general interest (politics, transportation, the media, the arts, sports, etc.)
- Handle some situations with a complication (resolving disagreements, traffic violations, etc.)
- Use previously-learned grammar principles with increasing accuracy.
- Understand oral conversations, announcements, and media reports about familiar topics.
- Read medium-length journalistic and literary texts on familiar topics, including a short story and a play.
- Write simple compositions in a variety of genres (letters, pamphlets, articles, short stories, etc.).
- Discuss some differences between the cultural norms and perspectives of Americans and Portuguese speakers.
- Discuss some common themes from Portuguese-speaking cultures.

**Or**

SPAN 101 : Foundational Spanish 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

NOTE: For students with no previous Spanish.

**Course Outcomes**

- Respond in Spanish to simple ques-tions on the most commonfeatures of daily life
- Convey minimal meaning tointerlocutors experiencedwith dealing with foreign-ers by using isolated words,lists of words, memorizedphrases and some personal-ized recombinations ofwords and phrases
- Satisfy a very limited num-ber of immediate needs through the use of spoken Spanish.
- Respond in written Spanish at the same level as indicated in outcomes related to speaking.
- Understand common basic cultural practices and products related to greetings and family life in some Spanish-speaking countries.

SPAN 102 : Foundational Spanish 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 101.

DESCRIPTION: Continuation of Span 101. Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

**Course Outcomes**

- Using Spanish, participate in simple, directconversations on generallypredictable topics related todaily activities and personalenvironment.
- Create with the languageand communicate personalmeaning to sympatheticinterlocutors by combininglanguage elements in dis-crete sentences and stringsof sentences.
- Obtain and give informationby asking and answeringquestions.
- Sustain and bring to a closea number of basic, uncom-plicated communicativeexchanges, mostly in a reac-tive mode.
- Satisfy simple personalneeds and social demandsto survive in the target lan-guage culture.
- Respond in written Spanish at the same level as indicated in preceding objectives related to spoken Spanish.
- Understand common basic cultural practices and products related to travel in some Spanish-speaking countries.

SPAN 105 : University Spanish 1. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Two years of high school Spanish or Span 101/102 or placement by diagnostic test.

DESCRIPTION: Continued development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational courses. Students are expected to attain an *Intermediate-Mid* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 106 : University Spanish 2. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 105.

DESCRIPTION: Expanded development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational and intermediate courses. Students are expected to attain an *Intermediate-Mid* to *Intermediate-High* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 205 : University Spanish 3. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Four years of high school Spanish, Span 106, or placement by test.

DESCRIPTION: Continued development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain an *Intermediate-High* proficiency level.

NOTE: Fulfills the University Core Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Consolidate the student's understanding of the basic structures of the Spanish language and demonstrate intermediate proficiency in Spanish as defined by the American Council on the Teaching of Foreign Languages (ACTFL) proficiency guidelines for reading, writing, speaking, and listening.
- Provide students with a moderate knowledge of the Spanish language and cultures, thus broadening their perception of humanity and its varied manifestations.
- Interpret and analyze a selection of literary works in Spanish within their historical and cultural context.

SPAN 206 : University Spanish 4. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Spanish 205 or placement by test.

DESCRIPTION: Expanded development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain a strong *Intermediate-High* or *Advanced-Low* proficiency level.

**Course Outcomes**

- Consolidate the student's command of the basic structures of the Spanish language.
- Develop literacy and oral language skills at the intermediate-advanced range.
- Obtain an adequate knowledge of the Spanish language and cultures through the study of selected perceptions and manifestations.
- Understanding the natural speech of native speakers from any Spanish-speaking country and interpret the general idea in their proper cultural background.

4. Complete one of the following options:

**Either**

PORT 321 : Third-Year Portuguese Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Placement by test.

NOTE: First class for returned Portuguese-speaking missionaries. Fulfills GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

PORT 355 : Brazilian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 321.

DESCRIPTION: Culture, history, art, music, and traditions of Brazil.

**Course Outcomes**

There are no course outcomes available

**Or**

SPAN 321 : Third-Year Spanish Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Placement by test.

DESCRIPTION: Intensive study and practice with Spanish grammar, vocabulary, and writings incorporating cultural and literary readings.

NOTE: First class for returned Spanish-speaking missionaries. Fullfills the University Core Languages of Learning requirement. Required for Spanish major and minor.

**Course Outcomes**

There are no course outcomes available

SPAN 355 : Spanish American Culture and Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Culture, history, art, music, and traditions of Spanish America.

**Course Outcomes**

There are no course outcomes available

5. Complete three social science courses from the following (no more than one course from each discipline):

GEOG 255 : Middle and South America. (3:3:0)

WHEN TAUGHT: Winter Contact Department

DESCRIPTION: Environmental, cultural, economic, and political parameters of Latin American societies.

**Course Outcomes**

- To link how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to the overall study of the Latin American realm.
- To gain a working knowledge of the connection of the underlying physical "stage" of Latin America to the distributions of people and their activities.
- To gain an understanding of the geographic structure of Latin America’s cultural components including languages, ethnic groups, settlement patterns, and religious beliefs.
- To develop geographic writing and research skills that result in papers that are fluent, relevant, and creative.
- To use other students’ input to effectively enhance Latin American geographic understanding through group work and discussions
- To discover the significance of Latin America's increasing impact on the world's economy, as well as the growing Hispanization of the United States and the Church of Jesus Christ of Latter-day Saints

HIST 251 : Conquest and Colonization of Latin America. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Pre-Columbian civilizations, Iberian exploration and conquest of the New World, and colonial development of Hispanic and Portuguese America from 1492 to 1823.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, religious, and cultural characteristics of Spanish and Portuguese colonialism in the Americas between 1492 and 1825.
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills.
- Students will analyze historical questions and place them in historiographical context.

**Or**

HIST 252 : Modern Latin America. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: National period (1810 to present): independence, institutional development, culture, and inter-American relations.

**Course Outcomes**

- Students will be exposed to the major economic, political, and cultural shifts that shaped the "modern" Latin American state in the nineteenth and twentieth century, as well as its variants, notably the cult of caudillo rule and its twentieth century offshoots
- Students will become conversant with major theoretical arguments and approaches to Latin American history in the contemporary era.
- Students will gain oral proficiency in discussing historiographical and thematic issues in modern Latin America during weekly discussion.
- Students will either broaden their understanding of literature on one topic in Latin American history by way of an intensive literature survey or deepen their knowledge on a particular topic in Latin American history by way of an original research paper.
- Students will make connections between cultural and polotico-economic issues by way of a wide variety of course readings that expose students to literature, as well as traditional historical themes.

POLI 358 : Latin American Politics. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200 or Lt Am 211.
DESCRIPTION: Conceptual and contemporary issues in Latin America's search for political order and economic development.

**Course Outcomes**

There are no course outcomes available

**Or**

POLI 380 : International Relations of Latin America. (3:3:0)
PREREQUISITE: Poli 200 or Lt Am 211.
DESCRIPTION: Factors that affect foreign relations of Latin American countries, including the U.S. role, emphasizing intervention, democracy, development, and trade.

**Course Outcomes**

There are no course outcomes available

SOC 345 : World Populations. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Fertility, mortality, and migration patterns of world populations as they relate to current social, economic, political, and religious issues.

**Course Outcomes**

There are no course outcomes available

6. Complete two humanities courses from the following:

IHUM 260 : Humanities of Latin America. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Achievements of Latin American culture regarding art, philosophy, literature, and music from the pre-Columbian era to the present.

**Course Outcomes**

There are no course outcomes available

PORT 439R : Luso-Brazilian Theatre Production. (3:3:0)
WHEN TAUGHT: Winter
DESCRIPTION: Theory and practice of dramatic performance. Includes participation in play to be performed during semester.
NOTE: No more than 3 hours of 439R credit may count toward any degree.

**Course Outcomes**

- Demonstrate understanding of the theory and practice of dramatic performances.
- Participate in the production of a play during the course of the semester.
- Develop advanced skills in research techniques and academic writing.

PORT 451 : Survey of Brazilian Literature. (3:3:0)
WHEN TAUGHT: Fall; Winter Contact Department
PREREQUISITE: PORT 339
DESCRIPTION: Literary periods, genres, and great writers of Brazil.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Brazilian literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literature.
- Write essays in Portuguese, including a final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

SPAN 339 : Introduction to Spanish Literature. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Readings in modern Hispanic literatures, focusing on formal literary analysis.
NOTE: Course is prerequisite to 400-level literature courses.

**Course Outcomes**

- Demonstrate a working knowledge of the most salient elements of the most important literary genres, including, for example, short story, novel, poetry, theater, essay, and film.
- Students will demonstrate a mastery of basic tools of literary analysis, including versification and basic elements of narratology, and interpretation through the study of a variety of works from authors from

Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstrate the ability to speak and write in Spanish about literature with a reasonable degree of grammatical correctness and fluency.

**Or**

PORT 339 : Introduction to Portuguese and Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Port 321.
DESCRIPTION: Readings in modern literature; formal literary analysis.

**Course Outcomes**

- Contextualize and analyze literature written in Portuguese from various genres and periods.
- Acquire and apply the fundamental tools for literary analysis, appreciation, and interpretation through a study of a balanced selection of foundational works from Portugal and Brazil and some areas of Lusophone Africa.
- Demonstrate through written exercises mastery of the basic terms of literary analysis and the formal patterns of fiction (narration, plot, characterization, structure, etc.) drama (tragedy, comedy, dialogue, structure, staging, etc.), and poetry (meter, rhyme, syllabification, figurative language, including tropes and figures).
- Produce several interpretive essays that demonstrate mastery of the formal components of fiction, drama, and poetry, and that reveal competence in library research skills, appropriate use of secondary sources, and proper adherence to MLA bibliographic style.

SPAN 365 : Mexican-American Culture. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Contemporary culture (education, popular and fine arts, worldview, attitudes, etc.) of the Mexican-American in the U.S.

**Course Outcomes**

- Recognize and describe important cultural products, such as art, literature, architecture, and music, including important works and individuals, as pertaining to Mexican American culture.
- Describe important cultural institutions, including family and religion.
- Discuss important cultural practices, including customs, traditions, celebrations, festivals, etc
- Analyze recent cultural and social developments, including political, social, religious, and artistic events, placing them in historical context.
- Students should be able to recognize, compare, and evaluate the influence of their own cultural background on their attitudes, beliefs, and worldview, in relation to the Mexican- American world.

SPAN 423 : Border Spanish. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Span 326 or Span 329.
DESCRIPTION: Mexican-American speech patterns, including language contact and bilingualism.
NOTE: Previous course in linguistics strongly recommended.

**Course Outcomes**

- Students will demonstrate a knowledge of principal features of (Mexican-American) Popular Spanish in terms of semantics, morphosyntax, and phonetics/phonology.
- Students will understand and be able to describe succinctly S-E bilingual contact phenomena, such as borrowing, code-switching, and language maintenance/shift.
- Students will gain a greater understanding of and appreciation for Mexicans and Mexican-Americans living in the U.S.

SPAN 451 : Survey of Hispanic-American Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
PREREQUISITE: SPAN 339
DESCRIPTION: Literary masterpieces of Spanish America.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, literary theory as well as other critical and philosophical concepts which may apply to Spanish American literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Define and recognize the periods, significant authors, schools or movements of Spanish American literature.
- Recognize and value the contributions, past and present, of Spanish American literature to the cultures of its respective countries.
- Develop the habits and skills of lifelong readers of Spanish American literature.
- Demonstrate and apply a strong understanding of the basic structures of the Spanish language as they apply to literature.
- Write analytical and descriptive essays in Spanish that demonstrate an advanced knowledge of the works studied, a proper command of the Spanish language, mastery of the tools of literary criticism, and familiarity with research methodologies.

SPAN 461 : Spanish-Speaking American (Mexican-American) Literature. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Even Yrs.; Spring Contact Department; Summer Contact Department

PREREQUISITE: SPAN 451
DESCRIPTION: Spanish-English literature of the Mexican-American within the United States.

**Course Outcomes**

- Demonstrate thorough understanding of the history of Mexican-American literary history.
- Develop advanced skills in research techniques and academic writing.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Mexican-American Literature.

7. Complete at least 6 elective hours from the following:

ANTHR 326 : Guatemalan Society and Culture. (3:3:0)
WHEN TAUGHT: Winter
DESCRIPTION: History, culture, society, and life (economic, familial, religious) among peoples of Guatemala. Guatemala as exemplar of colonial, cultural, and global processes evident throughout Latin America.

**Course Outcomes**

- Using Guatemala as a case, which exemplifies the political, economic, and religious histories of Latin America, students will learn the basic relationships between cultural principles, social structure, environmental constraint, and important symbols in Latin America, and how these were constructed through historical processes of violent and peaceful social interaction.

ANTHR 355 : Mesoamerican Archaeology. (3:2:ARR)
WHEN TAUGHT: Fall
DESCRIPTION: Cultural and environmental bases of ancient civilizations in Mexico and Central America. Olmec, Maya, Toltec, and Aztec cultures.

**Course Outcomes**

- Students will gain knowledge of the major archaeological sites excavated and studied in Meso-America with an emphasis on critiquing archaeological methodologies and theory as they have been applied to specific archaeological sites in the field. Through this study, students will also gain a knowledge of the history and cultural development of the major societies and cultures of this region and the role that archaeology plays in assisting in providing data related to questions associated with the development and decline of these entities.

BUS M 596R : Business Language. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: For experienced speakers of the language being taught. Emphasizes business concepts; practice and case study including conversation, reading,and presenting, while enriching business vocabulary.

**Course Outcomes**

No outcomes are available at this time.

(Spanish or Portuguese)
HIST 251 : Conquest and Colonization of Latin America. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Pre-Columbian civilizations, Iberian exploration and conquest of the New World, and colonial development of Hispanic and Portuguese America from 1492 to 1823.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, religious, and cultural characteristics of Spanish and Portuguese colonialism in the Americas between 1492 and 1825.
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills.
- Students will analyze historical questions and place them in historiographical context.

HIST 252 : Modern Latin America. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: National period (1810 to present): independence, institutional development, culture, and inter-American relations.

**Course Outcomes**

- Students will be exposed to the major economic, political, and cultural shifts that shaped the "modern" Latin American state in the nineteenth and twentieth century, as well as its variants, notably the cult of caudillo rule and its twentieth century offshoots
- Students will become conversant with major theoretical arguments and approaches to Latin American history in the contemporary era.
- Students will gain oral proficiency in discussing historiographical and thematic issues in modern Latin America during weekly discussion.
- Students will either broaden their understanding of literature on one topic in Latin American history by way of an intensive literature survey or deepen their knowledge on a particular topic in Latin American history by way of an original research paper.

- Students will make connections between cultural and polotico-economic issues by way of a wide variety of course readings that expose students to literature, as well as traditional historical themes.

HIST 326 : The History of Mexico. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: The historical evolution of Mexico including pre-Colombian civilizations, the Spanish conquest, the colonial era, national formation, and the modern Mexican state. The impact of foreign relations on Mexican society.

**Course Outcomes**

- Students will gain an understanding of the challenges Mexico faced during the transitions from pre-Colomiban empires to the colonial period, as well as from the colonial period to the national era.
- Students will gain an understanding of the principle factors that created and transformed modern Mexican society, principally the Porfiriato, the Mexican Revolution, and the modern Mexican state structure (twentieth century).
- By way of supplementary readings and writing assignments, students will gain a stronger understanding of the social andcultural issues in Mexican history that have been shaped by the nation's unique political and economic conditions.
- Students will explore the scholarship and sources for a single issue in Mexican history, producing a research paper based on primary and secondary sources
- Students will develop oral proficiency in debating controversialhistorical and contemporary issues during class discussion, including debates on decisive factors in the Spanish conquest, immigration, and bi-national solutions to drug trafficking.

HIST 355 : History of Argentina. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Rise of modern Argentina from colonial times, focusing on the dynamic political, economic, social, and cultural developments since independence.

**Course Outcomes**

- Learn and understand more about the historical processes that have shaped the nation of Argentina from colonial times up to the present.
- To be able to discuss and explain those processes through the written and spoken word with clarity, persuasiveness, and proper use of evidence
- To write a well written, organized, and developed term paper using the critical thinking and writing skills of a historian
- To be able to read primary sources and discuss their utility in constructing historical arguments.

HIST 356 : Brazil. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: From 1500 to present, emphasizing relationship between colonial patterns and twentieth-century reality and dilatory transformation of Brazil's political and economic culture.

**Course Outcomes**

- Students will become academically conversant in the major social, economic, and cultural developments of Brazil's history since 1500.
- Students will be able to analyze and evaluate the content and meaning of primary sources, and through critical interpretation, draw reasonable conclusions.
- Students will be able to formulate original historical questions and answer them by careful and systematic research in primary and secondary sources.
- Students will be able to write history that is coherent and persuasive by following discipline's norms for writing and careful documentation.

HIST 357 : The Indian in Latin American History. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: History of Latin American Indians from preconquest days to the present; achievements, contributions, and problems.

**Course Outcomes**

- Students will be able to explain and analyze the political, economic, social, religious, and cultural structures of the Mayas, Aztecs, and Incas, how they were transformed by the Spanish conquest, and how they developed in reaction to European colonialism.
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills.
- Students will analyze historical questions and place them in historiographical context.

HIST 358 : Gender and History in Latin America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: How gender roles have been defined legally, socially, and culturally in Latin America from the colonial period to the present, emphasizing the nineteenth and twentieth centuries.

**Course Outcomes**

- To understand how gender relations and gender roles developed in Latin America from colonial times to the present.
- To be able to discuss and explain those developments through the written and spoken word with clarity,

persuasiveness, and proper use of evidence.
- To write a well written, organized, and developed term paper using the critical thinking and writing skills of a historian.
- To be able to read primary sources and discuss their utility in constructing historical arguments.

HIST 359 : Inter-American Relations. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Decline of Europe's American empires, legacies bequeathed to the new republics by their European heritage, and how those legacies have affected relations among the various American republics.

**Course Outcomes**

- Students will gain an understanding of the major historiographical schools of thought in Inter-American relations
- Students will gain an in-depth understanding of at least one major figure in Inter-American relations each term the class is taught by way of reading primary sources and writing about the legacy of that individual.
- Students will be exposed to a variety of thematic approaches to Inter-American relations, including gender, health and the environment, culture, tourism, film, and literature. It is expected that these alternatives to traditional diplomatic relations will inform their selection of a research topic for the course.
- Students will write a research paper focusing on one of the thematic approaches presented in class and informed by primary sources, as well as secondary literature, in order to arrive at a stronger understanding of Inter-American relations.
- Students will obtain a stronger cross-cultural understanding of Inter-American relations by debating and discussing issues, informed by our class readings, during our weekly discussions. At times students will be asked to embrace perspectives that they may not entirely agree with or understand.
- Students will become conversant with the watershed events of the Haitian Revolution, the Latin American Revolutions, the Spanish American War, the Cuban Revolution, and the Washington Consensus,and why they have been critical to the tenor of Inter-American Relations.

HIST 363 : The Spanish Frontier in North America. (3:3:0)

DESCRIPTION: Spanish exploration, occupation, and institutions of northern Mexico, the American southwest, and Florida, 1521-1821; Mexican period to 1848.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in the history of the Spanish and Mexican northern frontier in North America between approximately 1492 and 2011
- Students will be able to analyze and interpret primary source documents
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.

HIST 385 : Latinos in the United States. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: The place of Latin Americans within the context of U.S. history. The growth and development of the largest Latino communities from pre-colonial times to present day and how Latinos may influence future policies within the U.S.

**Course Outcomes**

- Students will learn the history of Latinos in this country beginning with the circumstances which brought them to this country, the ways they have integrated or resisted integration, and the efforts they have made to claim their rights as citizens.
- Students will learn to interpret the documents and rhetoric of this community which will help them understand the intellectual, cultural and political thought of Latinos over the last 100 years.
- Students will learn the current state of Latino social and cultural integration in the Utah community.
- Students will learn to write a major essay on the history of Latinos in order to understand the literature as well as the primary sources available on this community.

HIST 424 : Romance Language Handwriting and Documents. (3:3:0)

DESCRIPTION: Interpretation of handwriting in vernacular scripts in the Romance languages of Europe (especially Spanish, French, and Italian), sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

- Students will be able to read with fluency documents in italic style handwriting;
- Students will be able to recognize and use documents and understand the legal, ecclesiastical and civil systems behind them;
- Students will be able to understand basic concepts of paleography and the impacts of language on the historical development of handwriting
- Students will be able to develop familiarity with secretary (cortesana or procesal) handwriting

IAS 399R : Academic Internship: International. (.5-9:ARR:ARR)

PREREQUISITE: Acceptance into program.

DESCRIPTION: Individualized work or volunteer experience in an international setting.

NOTE: Class must be coordinated through International Study Programs.

**Course Outcomes**

- · Apply skills and material learned in traditional courses to a real-world workplace environment.· Demonstrate proficiency in the skills required by the internship

supervisor.· Demonstrate an ability to link insights gained from traditional classes and from real-world workplace experiences.

POLI 379R : Topics in International Relations. (.5-3:3:0)

PREREQUISITE: Poli 200 or equivalent.

**Course Outcomes**

There are no course outcomes available

POLI 380 : International Relations of Latin America. (3:3:0)

PREREQUISITE: Poli 200 or Lt Am 211.

DESCRIPTION: Factors that affect foreign relations of Latin American countries, including the U.S. role, emphasizing intervention, democracy, development, and trade.

**Course Outcomes**

There are no course outcomes available

PORT 339 : Introduction to Portuguese and Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Port 321.

DESCRIPTION: Readings in modern literature; formal literary analysis.

**Course Outcomes**

- Contextualize and analyze literature written in Portuguese from various genres and periods.
- Acquire and apply the fundamental tools for literary analysis, appreciation, and interpretation through a study of a balanced selection of foundational works from Portugal and Brazil and some areas of Lusophone Africa.
- Demonstrate through written exercises mastery of the basic terms of literary analysis and the formal patterns of fiction (narration, plot, characterization, structure, etc.) drama (tragedy, comedy, dialogue, structure, staging, etc.), and poetry (meter, rhyme, syllabification, figurative language, including tropes and figures).
- Produce several interpretive essays that demonstrate mastery of the formal components of fiction, drama, and poetry, and that reveal competence in library research skills, appropriate use of secondary sources, and proper adherence to MLA bibliographic style.

PORT 355 : Brazilian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 321.

DESCRIPTION: Culture, history, art, music, and traditions of Brazil.

**Course Outcomes**

There are no course outcomes available

PORT 395R : Contemporary Culture. (.5-3:0:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Contemporary Portuguese or Brazilian culture: the people and their customs and institutions.

NOTE: For Study Abroad programs only.

**Course Outcomes**

- Through readings, develop a familiarity with macro forces (historical, political, economical) that have shaped the host culture.
- Through a series of cultural proofs (visits, interviews, observations), develop a familiarity with the host culture at the level of the individual.

PORT 439R : Luso-Brazilian Theatre Production. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Theory and practice of dramatic performance. Includes participation in play to be performed during semester.

NOTE: No more than 3 hours of 439R credit may count toward any degree.

**Course Outcomes**

- Demonstrate understanding of the theory and practice of dramatic performances.
- Participate in the production of a play during the course of the semester.
- Develop advanced skills in research techniques and academic writing.

PORT 451 : Survey of Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: PORT 339

DESCRIPTION: Literary periods, genres, and great writers of Brazil.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Brazilian literature.

Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literature.
- Write essays in Portuguese, including a final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 452 : Machado de Assis. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: PORT 451

**Course Outcomes**

- Demonstrate thorough understanding of Brazilian literary history, the cultural context for the work of Machado de Assis, and the reception of Machado's work.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.

PORT 453 : Twentieth-Century Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

PREREQUISITE: PORT 451

**Course Outcomes**

- Demonstrate thorough understanding of twentieth-century literary history in Brazil.
- Demonstrate ability to apply key terms in critical practice (e.g., practical criticism, structural analysis, hermeneutics, etc.).
- Develop advanced skills in research techniques and academic writing.

PORT 459R : Special Topics in Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PORT 451

DESCRIPTION: Specific topics in Portuguese (Brazilian) literature. Course content will vary each semester to offer optimum exposure to all areas of Brazilian literature.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literary texts.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Develop the habits and skills for Brazilian literary study that inspire continued learning.
- Write essays in Portuguese, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

PORT 520 : Advanced Portuguese Grammar. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department

PREREQUISITE: Port 326 or 329.

DESCRIPTION: Applying contemporary grammatical concepts to problems in Portuguese grammar.

**Course Outcomes**

- The student enrolled in Advanced Portuguese Grammar will carefully examine some grammar “problems” by reading and studying selections from grammarians and researchers who provide insights into the problem in question. The student’s ability to synthesize coherent and meaningful generalizations will be objectively tested by exams and further evaluated while he or she participates in classroom discussion.
- The student enrolled in Advanced Portuguese Grammar will acquire a greater understanding of both descriptive and prescriptive grammars and their function and limitations. The student will also acquire specialized terms employed by grammarians and morphosyntacticians. The student’s ability to understand and use these terms appropriately will also be objectively measured by examination.
- Complete a research paper/presentation on a particular grammar point or construction. This assignment will test a student’s ability to locate appropriate refereed sources, read and synthesize them and prepare a written document and oral presentation according to a recognized style manual.

PORT 521 : Romance Philology. (3:3:0)

WHEN TAUGHT: Winter

PREREQUISITE: Port 326 or 329.

DESCRIPTION: Comparative study of evolution of Latin into modern romance languages.

**Course Outcomes**

- Situate Latin and the Romance Languages in their “external” (i.e. political and literary) historical context.
- Recognize the “laws” of regular phonological evolution (e.g. syncope, lenition, diphthongization, etc.).
- Compare the “major” (i.e. literary) Romance languages as far as their phonological development is concerned.
- Lexical Differences and Etymology
- Become familiar with articles published in professional journals relating to the subject matter and produce accurate and meaningful written summaries and reactions to them.
- Learn the rudiments of transcribing medieval or Renaissance manuscripts.

PORT 522 : History of the Portuguese Language. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department
PREREQUISITE: Port 326 or 329.
DESCRIPTION: Linguistic sources that contributed to formation of Portuguese.

**Course Outcomes**

- Acquire a basic knowledge of the changes undergone by the nominal and verbal systems of Latin and Portuguese (e.g., the demise of the case system, the development of new verbal tenses, etc.).
- Demonstrate the ability to summarize and discuss in a clear and concise manner several scholarly articles on the topic of the history of the Portuguese language.
- Situate Latin and Portuguese in their political and literary historical contexts.
- Recognize the laws of regular phonological development (e.g. syncope, lenition, diphthongization, etc.).
- Identify the sources of the Portuguese lexicon.
- Understand the different theories that claim to understand the relation between Latin and the Romance languages, especially the relation between Latin and Portuguese.
- Understand the process of linguistic standardization in Romance and its implications for the linguistic map of the Iberian Peninsula.

PORT 529R : Special Topics in Portuguese Linguistics. (3:3:0)
WHEN TAUGHT: Fall Contact Department; Winter Contact Department
PREREQUISITE: Port 326 or 329, or instructor's approval.
DESCRIPTION: Topics from semantics to dialectology to sociolinguistics.

**Course Outcomes**

- Read and analyze research articles related to special topic in Portuguese linguistics.
- Produce an original research paper/project centered on the theme of the seminar.

PORT 599R : Academic Internship: Portuguese Internship. (1-3:0:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Port 321; instructor's consent.
NOTE: For supervised internship credit on BYU Study Abroad programs only.

**Course Outcomes**

- Successfully complete internship in a Portuguese-speaking country.

SOC 345 : World Populations. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: Fertility, mortality, and migration patterns of world populations as they relate to current social, economic, political, and religious issues.

**Course Outcomes**

There are no course outcomes available

SPAN 339 : Introduction to Spanish Literature. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Readings in modern Hispanic literatures, focusing on formal literary analysis.
NOTE: Course is prerequisite to 400-level literature courses.

**Course Outcomes**

- Demonstrate a working knowledge of the most salient elements of the most important literary genres, including, for example, short story, novel, poetry, theater, essay, and film.
- Students will demonstrate a mastery of basic tools of literary analysis, including versification and basic elements of narratology, and interpretation through the study of a variety of works from authors from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstrate the ability to speak and write in Spanish about literature with a reasonable degree of grammatical correctness and fluency.

SPAN 355 : Spanish American Culture and Civilization. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spanish America.

**Course Outcomes**

There are no course outcomes available

SPAN 365 : Mexican-American Culture. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Contemporary culture (education, popular and fine arts, worldview, attitudes, etc.) of the Mexican-American in the U.S.

**Course Outcomes**

Recognize and describe important cultural products, such as art, literature, architecture, and music, including important works and individuals, as pertaining to Mexican American culture.
- Describe important cultural institutions, including family and religion.
- Discuss important cultural practices, including customs, traditions, celebrations, festivals, etc
- Analyze recent cultural and social developments, including political, social, religious, and artistic events, placing them in historical context.
- Students should be able to recognize, compare, and evaluate the influence of their own cultural background on their attitudes, beliefs, and worldview, in relation to the Mexican- American world.

SPAN 395R : Contemporary Culture. (.5-3:ARR:ARR)

WHEN TAUGHT: Contact Department.
DESCRIPTION: Contemporary Spanish (or Spanish- American) culture: the people and their customs and institutions.
NOTE: For Study Abroad programs only.

**Course Outcomes**

- Through a series of cultural proofs (visits, interviews, observations), develop a familiarity with the host culture at the level of the individual.
- Through readings, develop a familiarity with macro forces (historical, political, economical) that have shaped the host culture.

SPAN 423 : Border Spanish. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Span 326 or Span 329.
DESCRIPTION: Mexican-American speech patterns, including language contact and bilingualism.
NOTE: Previous course in linguistics strongly recommended.

**Course Outcomes**

- Students will demonstrate a knowledge of principal features of (Mexican-American) Popular Spanish in terms of semantics, morphosyntax, and phonetics/phonology.
- Students will understand and be able to describe succinctly S-E bilingual contact phenomena, such as borrowing, code-switching, and language maintenance/shift.
- Students will gain a greater understanding of and appreciation for Mexicans and Mexican-Americans living in the U.S.

SPAN 425 : Contrastive Analysis of the Structures of Spanish and English. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Span 326 or Span 329.
DESCRIPTION: Contrastive analysis of phonology, morphology, syntax, and semantics of Spanish and English.

**Course Outcomes**

- Students will be able to explain the chief differences and similarities between the structures of the English and Spanish languages.
- Learn the basic principles of Spanish phonology, morphology (both derivational and inflectional), syntax and sociolinguistics.
- Learn what the assumptions of modern linguistics are (e.g., natural language is based on the use of signs; language is a social phenomenon; oral language takes precedence over written language; linguistics is descriptive, not prescriptive; variation is intrinsic to language; language is highly structured; there are linguistic universals; etc.)
- Be able to solve linguistic problems in the teaching and learning of a second language.

SPAN 438 : Hispanic Cinema. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 339
DESCRIPTION: Introduction to study of film; background in appreciating best of motion picture art in Spain and Spanish America.
NOTE: Previous experience with film useful but not required.

**Course Outcomes**

- Students will demonstrate a mastery of basic tools of film analysis through the study of a variety of films from the various film industries from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstate the ability to speak and write in Spanish about film with a reasonable degree of grammatical correctness and fluency.

SPAN 450R : Early Spanish-American Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Winter Even Yrs.
PREREQUISITE: SPAN 451
DESCRIPTION: Indigenous literature (Maya, Nahuatl, etc.) and other texts written in Spanish Colonial America through eighteenth century.

**Course Outcomes**

- Apply a variety of analytical and theoretical approaches to the study of early Spanish American writings as literature and as a reflection of the early cultures of the Spanish-speaking countries of the Americas.
- Demonstrate an ability to critically analyze early Spanish American literature through insightful in-class participation, oral presentations, and written assignments.

- Demonstrate a strong knowledge of a broad range of the important literary and historical texts of the early Spanish American period and of the historical and cultural contexts in which they were produced.

SPAN 454R : The Spanish American Novel. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Selected Spanish-American novelists such as Juan Rulfo, Gabriel Garcia Marquez, Alejo Carpentier, Mario Vargas-Llosa, etc.

**Course Outcomes**

There are no course outcomes available

SPAN 455R : Spanish-American Poetry. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Selected Spanish-American poets, movements, and national traditions.

**Course Outcomes**

- Demonstrate critical acuity in interpreting individual poems, making appropriate reference to formal poetic devices.
- Demonstrate a grasp of the historical, social, and literary contexts of the poems and poets studied.
- Express one's insights in a research paper which makes appropriate use of secondary sources.

SPAN 456R : Spanish American Drama. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 451

DESCRIPTION: Twentieth-century theatre from Spanish America and Brazil.

**Course Outcomes**

There are no course outcomes available

SPAN 458R : Hispanic-American Short Story. (3:3:0)

WHEN TAUGHT: Contact Department. Fall Odd Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Introduction and development of an important literary genre in Spanish America, including works of Jorge Luis Borges, Julio Cortazar, Juan Rulfo, Gabriel Garcia Marquez, etc.

**Course Outcomes**

- Master basic bibliographical techniques related to the short story genre.
- Demonstrate a firm grasp of the formal aspects of the short story genre.
- Gain a working knowledge of the history and principal figures of the Spanish American short story.

SPAN 459R : Special Topics in Spanish American Literature. (3:3:0)

WHEN TAUGHT: Contact Department. ; Spring Even Yrs.

PREREQUISITE: SPAN 451

DESCRIPTION: Specific topics in Latin American literature. Course content will vary each semester to offer optimum exposure to all areas of Latin American literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Spanish, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Spanish literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to special topics in Spanish-American Literature.

SPAN 461 : Spanish-Speaking American (Mexican-American) Literature. (3:3:0)

WHEN TAUGHT: Fall Contact Department; Winter Even Yrs.; Spring Contact Department; Summer Contact Department

PREREQUISITE: SPAN 451

DESCRIPTION: Spanish-English literature of the Mexican-American within the United States.

**Course Outcomes**

- Demonstrate thorough understanding of the history of Mexican-American literary history.
- Develop advanced skills in research techniques and academic writing.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Mexican-American Literature.

SPAN 520 : Problems in Spanish Grammar. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs., Contact Department; Spring Contact Department; Summer Even Yrs.

PREREQUISITE: SPAN 326; or SPAN 329

DESCRIPTION: Application of contemporary grammatical concepts to problems in Spanish grammar.

**Course Outcomes**

- The student enrolled in Problems in Spanish Grammar will carefully examine and formulate more accurate and complete rules for several recalcitrant grammar "problems" by reading and studying selections from grammarians and researchers who provide insights into the problem in question. The student's ability to synthesize coherent and meaningful generalizations will be objectively tested by exams and further evaluated while he or she participates in classroom discussion.
- The student enrolled in Problems in Spanish Grammar will acquire a greater understanding of both descriptive and prescriptive grammars and their function and limitations. The student will also acquire specialized terms employed by grammarians and morphosyntacticians. The student's ability to understand and use these terms appropriately will also be objectively measured by examination.
- Complete a research paper/presentation on a particular grammar point or construction. This assignment will test a student's ability to locate appropriate refereed sources, read and synthesize them and prepare a written document and oral presentation according to a recognized style manual.

SPAN 521 : Romance Philology. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 326; or SPAN 329
DESCRIPTION: Comparative study of the evolution of Latin into modern Romance languages.

**Course Outcomes**

- Situate Latin and the Romance Languages in their "external" (i.e. political and literary) historical context.
- Recognize the "laws" of regular phonological evolution (e.g. syncope, lenition, diphthongization, etc.).
- Compare the "major" (i.e. literary) Romance languages as far as their phonological development is concerned.
- Summarize the major lexical differences across Romance languages and some of the basic principles of etymology.
- Become familiar with articles published in professional journals relating to the subject matter and produce accurate and meaningful written summaries and reactions to them.
- Learn the rudiments of transcribing medieval or Renaissance manuscripts.

SPAN 522 : History of the Spanish Language. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.; Summer Odd Yrs.
PREREQUISITE: SPAN 326; or SPAN 329
DESCRIPTION: Linguistic sources that contributed to formation of the Spanish language.

**Course Outcomes**

- Acquire a basic knowledge of the changes undergone by the nominal and verbal systems of Latin and Castilian (e.g. the demise of the case system, the development of new verbal tenses, etc.).
- Demonstrate the ability to summarize and discuss in a clear and concise manner several scholarly articles on the topic of the history of the Spanish language.
- Situate Latin and Castilian in their political and literary historical contexts.
- Recognize the laws of regular phonological development (e.g. syncope, lenition, diphthongization, etc.).
- Identify the sources of the Castilian lexicon.
- Understand the different theories that claim to understand the relation between Latin and the Romance languages, especially the relation between Latin and Castilian.
- Understand the process of linguistic standardization in Romance and its implications for the linguistic map of the Iberian Peninsula.

8. Complete the following:

LT AM 495 : Senior Seminar in Latin American Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Instructor's consent for minors.
DESCRIPTION: Sources, materials, and methods of research and writing; critical analysis of a research project.
NOTE: Required for all Latin American Studies majors their senior year.

**Course Outcomes**

- This a capstone course taylored to individual research and study topics.

9. Complete 3 hours of an internship course, a service learning course, or Study Abroad program course.
   a. Internship students (field study or service learning) will register for IAS 399R.
   b. Study Abroad programs shall be in a Latin American venue, either Portuguese speaking or Spanish speaking; students must enroll in a 3.0 credit hour international or cross-cultural course during their program (e.g. IAS 380R).

**Note:** The hours used for this requirement cannot double count for requirement 7 and 9.

*Hours include courses that may fulfill university core requirements.

**International and Area Studies Programs Home**

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**Majors**

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Emphases:
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**Course Information**
- Latin American Studies (Lt Am) Courses

# Minor in Latin American Studies (18–34 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following prerequisite courses or equivalents:

**Either**

PORT 101 : First-Year Portuguese. (4:5:1)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Pronunciation, conversation, reading, and fundamentals of grammar. Specific attention to Portuguese as the language of Brazil.
NOTE: Native speakers of Portuguese must enroll in Port 321.

**Course Outcomes**
- Participate in classroom activities in Portuguese.
- Communicate verbally in routine situations such as greeting people and becoming acquainted.
- Understand simple conversations about some familiar, concrete topics such as daily activities, likes and dislikes, family, and home.
- Create simple sentences using basic grammar rules and vocabulary with limited accuracy.
- Read short “cultural blurbs” from the textbook, as well as other short texts such as personal ads, menus, and advertisements.
- Write word- and sentence-length messages such as lists, biographical information on forms, and descriptions of people and things.
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 102 : First-Year Portuguese. (4:5:1)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Port 101.
DESCRIPTION: Pronunciation, conversation, reading, and fundamentals of grammar. Specific attention to Portuguese as the language of Brazil.
NOTE: Native speakers of Portuguese must enroll in Port 321.

**Course Outcomes**
- Participate in classroom activities in Portuguese.
- Participate in conversations about some familiar, concrete topics such as daily activities, family, home, work, and school.
- Understand simple conversations about some familiar, concrete topics such as daily activities, likes and dislikes, family, and home.
- Create simple sentences using basic grammar rules and vocabulary with limited accuracy.
- Read short “cultural blurbs” from the textbook, as well as other short texts such as advertisements, letters, recipes, and stories.
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 201 : Third-Semester Portuguese. (4:5:0)

PREREQUISITE: Port 102 or three units of high school Portuguese.
DESCRIPTION: Second-year grammar, reading, writing, and conversation.
NOTE: Native speakers of Portuguese must take Port 321.

**Course Outcomes**
- Maintain a simple face-to-face conversation about concrete topics such as self, family, friends, and daily activities.
- Handle a simple transactional situation (making purchases, interviewing for a job, etc.)
- Discuss some topics of general interest (school, geography, finances, business, etc.)
- Use grammar principles, including the present, past, and future indicative and subjunctive, with increasing accuracy.
- Understand conversations, announcements, and media reports on familiar topics.
- Read short journalistic and literary texts.
- Write short, simple compositions in a variety of genres (stories, résumés, skits, etc.)
- Know basic facts about some Portuguese-speaking countries.
- Identify basic cultural products, practices, and perspectives from Portuguese-speaking countries.

PORT 202 : Fourth-Semester Portuguese: Reading and Comprehension. (4:5:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Port 201.

DESCRIPTION: Fourth-semester class introducing grammar and culture through study of literature.

NOTE: Not for returned missionaries. Culmination of GE Mathematics/Foreign Language requirement. Native speakers of Portuguese must take Port 321. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Maintain a simple face-to-face conversation about an increasing range of topics of general interest (politics, transportation, the media, the arts, sports, etc.)
- Handle some situations with a complication (resolving disagreements, traffic violations, etc.)
- Use previously-learned grammar principles with increasing accuracy.
- Understand oral conversations, announcements, and media reports about familiar topics.
- Read medium-length journalistic and literary texts on familiar topics, including a short story and a play.
- Write simple compositions in a variety of genres (letters, pamphlets, articles, short stories, etc.).
- Discuss some differences between the cultural norms and perspectives of Americans and Portuguese speakers.
- Discuss some common themes from Portuguese-speaking cultures.

**Or**

SPAN 101 : Foundational Spanish 1. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

NOTE: For students with no previous Spanish.

**Course Outcomes**

- Respond in Spanish to simple ques-tions on the most commonfeatures of daily life
- Convey minimal meaning tointerlocutors experiencedwith dealing with foreign-ers by using isolated words,lists of words, memorizedphrases and some personal-ized recombinations ofwords and phrases
- Satisfy a very limited num-ber of immediate needs through the use of spoken Spanish.
- Respond in written Spanish at the same level as indicated in outcomes related to speaking.
- Understand common basic cultural practices and products related to greetings and family life in some Spanish-speaking countries.

SPAN 102 : Foundational Spanish 2. (4:5:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 101.

DESCRIPTION: Continuation of Span 101. Fundamentals of Spanish, emphasizing communication. (Accelerated sections available.) Pass/fail only.

**Course Outcomes**

- Using Spanish, participate in simple, directconversations on generallypredictable topics related todaily activities and personalenvironment.
- Create with the languageand communicate personalmeaning to sympatheticinterlocutors by combininglanguage elements in dis-crete sentences and stringsof sentences.
- Obtain and give informationby asking and answeringquestions.
- Sustain and bring to a closea number of basic, uncom-plicated communicativeexchanges, mostly in a reac-tive mode.
- Satisfy simple personalneeds and social demandsto survive in the target lan-guage culture.
- Respond in written Spanish at the same level as indicated in preceding objectives related to spoken Spanish.
- Understand common basic cultural practices and products related to travel in some Spanish-speaking countries.

SPAN 105 : University Spanish 1. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Two years of high school Spanish or Span 101/102 or placement by diagnostic test.

DESCRIPTION: Continued development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational courses. Students are expected to attain an *Intermediate-Mid* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 106 : University Spanish 2. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 105.

DESCRIPTION: Expanded development of grammar, cultural understanding, reading, writing, and conversation skills as introduced in foundational and intermediate courses. Students are expected to attain an *Intermediate-Mid* to *Intermediate-High* proficiency level.

**Course Outcomes**

- Use Spanish to maintain simple verbal conversations on everyday topics.
- Communicate using paragraph level discourse in writing.
- Be understood by sympathetic native speakers despite occasional misunderstandings.
- Describe and narrate in the past present and future a portion of the time.
- Understand that hispanic culture is vast and diverse.
- Demonstrate understanding of and appreciation for Hispanic cultures.

SPAN 205 : University Spanish 3. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Four years of high school Spanish, Span 106, or placement by test.

DESCRIPTION: Continued development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain an *Intermediate-High* proficiency level.

NOTE: Fulfills the University Core Languages of Learning requirement. This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Consolidate the student's understanding of the basic structures of the Spanish language and demonstrate intermediate proficiency in Spanish as defined by the American Council on the Teaching of Foreign Languages (ACTFL) proficiency guidelines for reading, writing, speaking, and listening.
- Provide students with a moderate knowledge of the Spanish language and cultures, thus broadening their perception of humanity and its varied manifestations.
- Interpret and analyze a selection of literary works in Spanish within their historical and cultural context.

SPAN 206 : University Spanish 4. (4:5:1)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Spanish 205 or placement by test.

DESCRIPTION: Expanded development of grammar, cultural understanding, conversation skills, writing, and reading through the study of literature. Students are expected to attain a strong *Intermediate-High* or *Advanced-Low* proficiency level.

**Course Outcomes**

- Consolidate the student's command of the basic structures of the Spanish language.
- Develop literacy and oral language skills at the intermediate-advanced range.
- Obtain an adequate knowledge of the Spanish language and cultures through the study of selected perceptions and manifestations.
- Understanding the natural speech of native speakers from any Spanish-speaking country and interpret the general idea in their proper cultural background.

2. Complete one of the following courses:

PORT 321 : Third-Year Portuguese Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Placement by test.

NOTE: First class for returned Portuguese-speaking missionaries. Fulfills GE Foreign Language requirement.

**Course Outcomes**

There are no course outcomes available

SPAN 321 : Third-Year Spanish Reading, Grammar, and Culture. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Placement by test.

DESCRIPTION: Intensive study and practice with Spanish grammar, vocabulary, and writings incorporating cultural and literary readings.

NOTE: First class for returned Spanish-speaking missionaries. Fullfills the University Core Languages of Learning requirement. Required for Spanish major and minor.

**Course Outcomes**

There are no course outcomes available

3. Complete one of the following courses:

IHUM 260 : Humanities of Latin America. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Achievements of Latin American culture regarding art, philosophy, literature, and music from the pre-Columbian era to the present.

**Course Outcomes**

There are no course outcomes available

PORT 355 : Brazilian Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Port 321.
DESCRIPTION: Culture, history, art, music, and traditions of Brazil.

**Course Outcomes**

There are no course outcomes available

SPAN 355 : Spanish American Culture and Civilization. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer Contact Department
PREREQUISITE: Span 321 or concurrent enrollment.
DESCRIPTION: Culture, history, art, music, and traditions of Spanish America.

**Course Outcomes**

There are no course outcomes available

4. Complete four courses from the following:

ANTHR 326 : Guatemalan Society and Culture. (3:3:0)

WHEN TAUGHT: Winter
DESCRIPTION: History, culture, society, and life (economic, familial, religious) among peoples of Guatemala. Guatemala as exemplar of colonial, cultural, and global processes evident throughout Latin America.

**Course Outcomes**

- Using Guatemala as a case, which exemplifies the political, economic, and religious histories of Latin America, students will learn the basic relationships between cultural principles, social structure, environmental constraint, and important symbols in Latin America, and how these were constructed through historical processes of violent and peaceful social interaction.

ANTHR 355 : Mesoamerican Archaeology. (3:2:ARR)

WHEN TAUGHT: Fall
DESCRIPTION: Cultural and environmental bases of ancient civilizations in Mexico and Central America. Olmec, Maya, Toltec, and Aztec cultures.

**Course Outcomes**

- Students will gain knowledge of the major archaeological sites excavated and studied in Meso-America with an emphasis on critiquing archaeological methodologies and theory as they have been applied to specific archaeological sites in the field. Through this study, students will also gain a knowledge of the history and cultural development of the major societies and cultures of this region and the role that archaeology plays in assisting in providing data related to questions associated with the development and decline of these entities.

GEOG 255 : Middle and South America. (3:3:0)

WHEN TAUGHT: Winter Contact Department
DESCRIPTION: Environmental, cultural, economic, and political parameters of Latin American societies.

**Course Outcomes**

- To link how the “5 Themes of Geography” [Location, Place, Human Environment Interaction, Region, and Movement] relate to the overall study of the Latin American realm.
- To gain a working knowledge of the connection of the underlying physical "stage" of Latin America to the distributions of people and their activities.
- To gain an understanding of the geographic structure of Latin America’s cultural components including languages, ethnic groups, settlement patterns, and religious beliefs.
- To develop geographic writing and research skills that result in papers that are fluent, relevant, and creative.
- To use other students’ input to effectively enhance Latin American geographic understanding through group work and discussions
- To discover the significance of Latin America’s increasing impact on the world’s economy, as well as the growing Hispanization of the United States and the Church of Jesus Christ of Latter-day Saints

HIST 251 : Conquest and Colonization of Latin America. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: Pre-Columbian civilizations, Iberian exploration and conquest of the New World, and colonial development of Hispanic and Portuguese America from 1492 to 1823.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, religious, and cultural characteristics of Spanish and Portuguese colonialism in the Americas between 1492 and 1825.
- Students will be able to analyze and interpret primary source documents.

Students will gain experience in historical research and improve writing skills.
- Students will analyze historical questions and place them in historiographical context.

HIST 252 : Modern Latin America. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: National period (1810 to present): independence, institutional development, culture, and inter-American relations.

**Course Outcomes**

- Students will be exposed to the major economic, political, and cultural shifts that shaped the "modern" Latin American state in the nineteenth and twentieth century, as well as its variants, notably the cult of caudillo rule and its twentieth century offshoots
- Students will become conversant with major theoretical arguments and approaches to Latin American history in the contemporary era.
- Students will gain oral proficiency in discussing historiographical and thematic issues in modern Latin America during weekly discussion.
- Students will either broaden their understanding of literature on one topic in Latin American history by way of an intensive literature survey or deepen their knowledge on a particular topic in Latin American history by way of an original research paper.
- Students will make connections between cultural and polotico-economic issues by way of a wide variety of course readings that expose students to literature, as well as traditional historical themes.

HIST 355 : History of Argentina. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

DESCRIPTION: Rise of modern Argentina from colonial times, focusing on the dynamic political, economic, social, and cultural developments since independence.

**Course Outcomes**

- Learn and understand more about the historical processes that have shaped the nation of Argentina from colonial times up to the present.
- To be able to discuss and explain those processes through the written and spoken word with clarity, persuasiveness, and proper use of evidence
- To write a well written, organized, and developed term paper using the critical thinking and writing skills of a historian
- To be able to read primary sources and discuss their utility in constructing historical arguments.

HIST 356 : Brazil. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: From 1500 to present, emphasizing relationship between colonial patterns and twentieth-century reality and dilatory transformation of Brazil's political and economic culture.

**Course Outcomes**

- Students will become academically conversant in the major social, economic, and cultural developments of Brazil's history since 1500.
- Students will be able to analyze and evaluate the content and meaning of primary sources, and through critical interpretation, draw reasonable conclusions.
- Students will be able to formulate original historical questions and answer them by careful and systematic research in primary and secondary sources.
- Students will be able to write history that is coherent and persuasive by following discipline's norms for writing and careful documentation.

HIST 357 : The Indian in Latin American History. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: History of Latin American Indians from preconquest days to the present; achievements, contributions, and problems.

**Course Outcomes**

- Students will be able to explain and analyze the political, economic, social, religious, and cultural structures of the Mayas, Aztecs, and Incas, how they were transformed by the Spanish conquest, and how they developed in reaction to European colonialism.
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills.
- Students will analyze historical questions and place them in historiographical context.

HIST 358 : Gender and History in Latin America. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: How gender roles have been defined legally, socially, and culturally in Latin America from the colonial period to the present, emphasizing the nineteenth and twentieth centuries.

**Course Outcomes**

- To understand how gender relations and gender roles developed in Latin America from colonial times to the present.
- To be able to discuss and explain those developments through the written and spoken word with clarity, persuasiveness, and proper use of evidence.
- To write a well written, organized, and developed term paper using the critical thinking and writing skills

of a historian.
- To be able to read primary sources and discuss their utility in constructing historical arguments.

HIST 359 : Inter-American Relations. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Decline of Europe's American empires, legacies bequeathed to the new republics by their European heritage, and how those legacies have affected relations among the various American republics.

**Course Outcomes**

- Students will gain an understanding of the major historiographical schools of thought in Inter-American relations
- Students will gain an in-depth understanding of at least one major figure in Inter-American relations each term the class is taught by way of reading primary sources and writing about the legacy of that individual.
- Students will be exposed to a variety of thematic approaches to Inter-American relations, including gender, health and the environment, culture, tourism, film, and literature. It is expected that these alternatives to traditional diplomatic relations will inform their selection of a research topic for the course.
- Students will write a research paper focusing on one of the thematic approaches presented in class and informed by primary sources, as well as secondary literature, in order to arrive at a stronger understanding of Inter-American relations.
- Students will obtain a stronger cross-cultural understanding of Inter-American relations by debating and discussing issues, informed by our class readings, during our weekly discussions. At times students will be asked to embrace perspectives that they may not entirely agree with or understand.
- Students will become conversant with the watershed events of the Haitian Revolution, the Latin American Revolutions, the Spanish American War, the Cuban Revolution, and the Washington Consensus,and why they have been critical to the tenor of Inter-American Relations.

HIST 363 : The Spanish Frontier in North America. (3:3:0)

DESCRIPTION: Spanish exploration, occupation, and institutions of northern Mexico, the American southwest, and Florida, 1521-1821; Mexican period to 1848.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, and religious developments in the history of the Spanish and Mexican northern frontier in North America between approximately 1492 and 2011
- Students will be able to analyze and interpret primary source documents
- Students will be able to interpret and debate the meanings and historical value of primary source texts with their peers.

HIST 385 : Latinos in the United States. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

DESCRIPTION: The place of Latin Americans within the context of U.S. history. The growth and development of the largest Latino communities from pre-colonial times to present day and how Latinos may influence future policies within the U.S.

**Course Outcomes**

- Students will learn the history of Latinos in this country beginning with the circumstances which brought them to this country, the ways they have integrated or resisted integration, and the efforts they have made to claim their rights as citizens.
- Students will learn to interpret the documents and rhetoric of this community which will help them understand the intellectual, cultural and political thought of Latinos over the last 100 years.
- Students will learn the current state of Latino social and cultural integration in the Utah community.
- Students will learn to write a major essay on the history of Latinos in order to understand the literature as well as the primary sources available on this community.

HIST 424 : Romance Language Handwriting and Documents. (3:3:0)

DESCRIPTION: Interpretation of handwriting in vernacular scripts in the Romance languages of Europe (especially Spanish, French, and Italian), sixteenth through eighteenth centuries, in family history sources.

**Course Outcomes**

- Students will be able to read with fluency documents in italic style handwriting;
- Students will be able to recognize and use documents and understand the legal, ecclesiastical and civil systems behind them;
- Students will be able to understand basic concepts of paleography and the impacts of language on the historical development of handwriting
- Students will be able to develop familiarity with secretary (cortesana or procesal) handwriting

IHUM 260 : Humanities of Latin America. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Achievements of Latin American culture regarding art, philosophy, literature, and music from the pre-Columbian era to the present.

**Course Outcomes**

There are no course outcomes available

IAS 399R : Academic Internship: International. (.5-9:ARR:ARR)

PREREQUISITE: Acceptance into program.
DESCRIPTION: Individualized work or volunteer experience in an international setting.
NOTE: Class must be coordinated through International Study Programs.

**Course Outcomes**

- · Apply skills and material learned in traditional courses to a real-world workplace environment.· Demonstrate proficiency in the skills required by the internship supervisor.· Demonstrate an ability to link insights gained from traditional classes and from real-world workplace experiences.

LT AM 211 : Introduction to Latin American Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: History, politics, sociology, geography, and culture of Latin America.

**Course Outcomes**

There are no course outcomes available

LT AM 495 : Senior Seminar in Latin American Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter
PREREQUISITE: Instructor's consent for minors.
DESCRIPTION: Sources, materials, and methods of research and writing; critical analysis of a research project.
NOTE: Required for all Latin American Studies majors their senior year.

**Course Outcomes**

- This a capstone course taylored to individual research and study topics.

POLI 358 : Latin American Politics. (3:3:0)

WHEN TAUGHT: Contact Department.
PREREQUISITE: Poli 200 or Lt Am 211.
DESCRIPTION: Conceptual and contemporary issues in Latin America's search for political order and economic development.

**Course Outcomes**

There are no course outcomes available

POLI 380 : International Relations of Latin America. (3:3:0)

PREREQUISITE: Poli 200 or Lt Am 211.
DESCRIPTION: Factors that affect foreign relations of Latin American countries, including the U.S. role, emphasizing intervention, democracy, development, and trade.

**Course Outcomes**

There are no course outcomes available

PORT 339 : Introduction to Portuguese and Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Port 321.
DESCRIPTION: Readings in modern literature; formal literary analysis.

**Course Outcomes**

- Contextualize and analyze literature written in Portuguese from various genres and periods.
- Acquire and apply the fundamental tools for literary analysis, appreciation, and interpretation through a study of a balanced selection of foundational works from Portugal and Brazil and some areas of Lusophone Africa.
- Demonstrate through written exercises mastery of the basic terms of literary analysis and the formal patterns of fiction (narration, plot, characterization, structure, etc.) drama (tragedy, comedy, dialogue, structure, staging, etc.), and poetry (meter, rhyme, syllabification, figurative language, including tropes and figures).
- Produce several interpretive essays that demonstrate mastery of the formal components of fiction, drama, and poetry, and that reveal competence in library research skills, appropriate use of secondary sources, and proper adherence to MLA bibliographic style.

PORT 451 : Survey of Brazilian Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter Contact Department
PREREQUISITE: PORT 339
DESCRIPTION: Literary periods, genres, and great writers of Brazil.

**Course Outcomes**

- Define and recognize the periods, areas of specialization, significant authors, schools or movements of Brazilian literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Brazilian literature.

Write essays in Portuguese, including a final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.

SOC 345 : World Populations. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Fertility, mortality, and migration patterns of world populations as they relate to current social, economic, political, and religious issues.

**Course Outcomes**

There are no course outcomes available

SPAN 339 : Introduction to Spanish Literature. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Readings in modern Hispanic literatures, focusing on formal literary analysis.

NOTE: Course is prerequisite to 400-level literature courses.

**Course Outcomes**

- Demonstrate a working knowledge of the most salient elements of the most important literary genres, including, for example, short story, novel, poetry, theater, essay, and film.
- Students will demonstrate a mastery of basic tools of literary analysis, including versification and basic elements of narratology, and interpretation through the study of a variety of works from authors from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstrate the ability to speak and write in Spanish about literature with a reasonable degree of grammatical correctness and fluency.

SPAN 365 : Mexican-American Culture. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Span 321 or concurrent enrollment.

DESCRIPTION: Contemporary culture (education, popular and fine arts, worldview, attitudes, etc.) of the Mexican-American in the U.S.

**Course Outcomes**

- Recognize and describe important cultural products, such as art, literature, architecture, and music, including important works and individuals, as pertaining to Mexican American culture.
- Describe important cultural institutions, including family and religion.
- Discuss important cultural practices, including customs, traditions, celebrations, festivals, etc
- Analyze recent cultural and social developments, including political, social, religious, and artistic events, placing them in historical context.
- Students should be able to recognize, compare, and evaluate the influence of their own cultural background on their attitudes, beliefs, and worldview, in relation to the Mexican- American world.

SPAN 395R : Contemporary Culture. (.5-3:ARR:ARR)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Contemporary Spanish (or Spanish- American) culture: the people and their customs and institutions.

NOTE: For Study Abroad programs only.

**Course Outcomes**

- Through a series of cultural proofs (visits, interviews, observations), develop a familiarity with the host culture at the level of the individual.
- Through readings, develop a familiarity with macro forces (historical, political, economical) that have shaped the host culture.

SPAN 423 : Border Spanish. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Span 326 or Span 329.

DESCRIPTION: Mexican-American speech patterns, including language contact and bilingualism.

NOTE: Previous course in linguistics strongly recommended.

**Course Outcomes**

- Students will demonstrate a knowledge of principal features of (Mexican-American) Popular Spanish in terms of semantics, morphosyntax, and phonetics/phonology.
- Students will understand and be able to describe succinctly S-E bilingual contact phenomena, such as borrowing, code-switching, and language maintenance/shift.
- Students will gain a greater understanding of and appreciation for Mexicans and Mexican-Americans living in the U.S.

SPAN 438 : Hispanic Cinema. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: SPAN 339

DESCRIPTION: Introduction to study of film; background in appreciating best of motion picture art in Spain and

Spanish America.
NOTE: Previous experience with film useful but not required.

**Course Outcomes**

- Students will demonstrate a mastery of basic tools of film analysis through the study of a variety of films from the various film industries from Spain and Spanish America.
- Students will write cogent, persuasive essays of literary interpretation.
- Students will demonstate the ability to speak and write in Spanish about film with a reasonable degree of grammatical correctness and fluency.

SPAN 450R : Early Spanish-American Literature. (3:3:0)
WHEN TAUGHT: Contact Department. ; Winter Even Yrs.
PREREQUISITE: SPAN 451
DESCRIPTION: Indigenous literature (Maya, Nahuatl, etc.) and other texts written in Spanish Colonial America through eighteenth century.

**Course Outcomes**

- Apply a variety of analytical and theoretical approaches to the study of early Spanish American writings as literature and as a reflection of the early cultures of the Spanish-speaking countries of the Americas.
- Demonstrate an ability to critically analyze early Spanish American literature through insightful in-class participation, oral presentations, and written assignments.
- Demonstrate a strong knowledge of a broad range of the important literary and historical texts of the early Spanish American period and of the historical and cultural contexts in which they were produced.

SPAN 451 : Survey of Hispanic-American Literature. (3:3:0)
WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer, Contact Department
PREREQUISITE: SPAN 339
DESCRIPTION: Literary masterpieces of Spanish America.

**Course Outcomes**

- Understand and properly apply the tools of literary analysis, literary theory as well as other critical and philosophical concepts which may apply to Spanish American literature.
- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Define and recognize the periods, significant authors, schools or movements of Spanish American literature.
- Recognize and value the contributions, past and present, of Spanish American literature to the cultures of its respective countries.
- Develop the habits and skills of lifelong readers of Spanish American literature.
- Demonstrate and apply a strong understanding of the basic structures of the Spanish language as they apply to literature.
- Write analytical and descriptive essays in Spanish that demonstrate an advanced knowledge of the works studied, a proper command of the Spanish language, mastery of the tools of literary criticism, and familiarity with research methodologies.

SPAN 454R : The Spanish American Novel. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 451
DESCRIPTION: Selected Spanish-American novelists such as Juan Rulfo, Gabriel Garcia Marquez, Alejo Carpentier, Mario Vargas-Llosa, etc.

**Course Outcomes**

There are no course outcomes available

SPAN 455R : Spanish-American Poetry. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 451
DESCRIPTION: Selected Spanish-American poets, movements, and national traditions.

**Course Outcomes**

- Demonstrate critical acuity in interpreting individual poems, making appropriate reference to formal poetic devices.
- Demonstrate a grasp of the historical, social, and literary contexts of the poems and poets studied.
- Express one's insights in a research paper which makes appropriate use of secondary sources.

SPAN 456R : Spanish American Drama. (3:3:0)
WHEN TAUGHT: Contact Department.
PREREQUISITE: SPAN 451
DESCRIPTION: Twentieth-century theatre from Spanish America and Brazil.

**Course Outcomes**

There are no course outcomes available

SPAN 459R : Special Topics in Spanish American Literature. (3:3:0)
WHEN TAUGHT: Contact Department. ; Spring Even Yrs.

TAUGHT:
PREREQUISITE: SPAN 451
DESCRIPTION: Specific topics in Latin American literature. Course content will vary each semester to offer optimum exposure to all areas of Latin American literature.

**Course Outcomes**

- Recognize aesthetic constructs, genre differences and similarities, ideological trends, and historical contexts.
- Write essays in Spanish, including one final research paper, that demonstrate an advanced knowledge of the use of language and literary criticism.
- Develop the habits and skills for Spanish literary study that inspire continued learning.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to special topics in Spanish-American Literature.

SPAN 461 : Spanish-Speaking American (Mexican-American) Literature. (3:3:0)
WHEN TAUGHT: Fall Contact Department; Winter Even Yrs.; Spring Contact Department; Summer Contact Department
PREREQUISITE: SPAN 451
DESCRIPTION: Spanish-English literature of the Mexican-American within the United States.

**Course Outcomes**

- Demonstrate thorough understanding of the history of Mexican-American literary history.
- Develop advanced skills in research techniques and academic writing.
- Understand and properly apply the tools of literary analysis, as well as critical and philosophical concepts which may apply to Mexican-American Literature.

5. With prior approval from the program coordinator, students may receive up to 3 elective hours for service learning, an internship, or Study Abroad.

*Hours include courses that may fulfill university core requirements.

**International and Area Studies Programs Home**

**Course Information**
- International and Area Studies (IAS) Courses

**African Studies**

**Minor**
- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:
- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**
- Asian Studies

**Course Information**
- Asian Studies (Asian) Courses

**European Studies**

**Majors**
- BA in European Studies

**Minors**
- European Studies

**Course Information**
- European Studies (Europ) Courses

**International Development**

**Minors**
- International Development

**International Relations**

**Majors**
- BA in International Relations

**Course Information**
- International Relations (IR) Courses

**Latin American Studies**

**Majors**
- BA in Latin American Studies

**Minors**
- Latin American Studies

**Course Information**
- Latin American Studies (Lt Am) Courses

# Latin American Studies (Lt Am)

Show All Course Descriptions
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## Undergraduate Courses

### 200-Level Courses

LT AM 211 : Introduction to Latin American Studies. (3:3:0)
WHEN TAUGHT: Fall; Winter
DESCRIPTION: History, politics, sociology, geography, and culture of Latin America.

**Course Outcomes**
There are no course outcomes available

### 300-Level Courses

LT AM 302 : Project Work in Latin America. (2:0:0)
DESCRIPTION: Teaching literacy, health, nutrition, gardening, leadership development, construction, etc., in Latin America.

**Course Outcomes**
No outcomes are available at this time.

### 400-Level Courses

LT AM 495 : Senior Seminar in Latin American Studies. (3:3:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: Instructor's consent for minors.
DESCRIPTION: Sources, materials, and methods of research and writing; critical analysis of a research project.
NOTE: Required for all Latin American Studies majors their senior year.

**Course Outcomes**
- This a capstone course taylored to individual research and study topics.

**Back to International and Area Studies Home**

**Middle and Near Eastern Studies**

**Majors**

- BA in Ancient Near Eastern Studies
- BA in Middle East Studies/Arabic

**Minors**

- Ancient Near Eastern Studies
- Middle East Studies

**Course Information**

- Ancient Near Eastern Studies (ANES) Courses
- Middle East Studies/Arabic (MESA) Courses

**International and Area Studies Programs Home**

**Course Information**
- International and Area Studies (IAS) Courses

**African Studies**

**Minor**
- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:
- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**
- Asian Studies

**Course Information**
- Asian Studies (Asian) Courses

**European Studies**

**Majors**
- BA in European Studies

**Minors**
- European Studies

**Course Information**
- European Studies (Europ) Courses

**International Development**

**Minors**
- International Development

**International Relations**

**Majors**
- BA in International Relations

**Course Information**
- International Relations (IR) Courses

**Latin American Studies**

**Majors**
- BA in Latin American Studies

**Minors**
- Latin American Studies

**Course Information**
- Latin American Studies (Lt Am) Courses

# BA in Ancient Near Eastern Studies (61–65 hours*)

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## The Discipline

Ancient Near Eastern Studies deals with the history, literature, religions, and cultures of the ancient Near East from 3000 B.C. to A.D. 640. It involves study in the humanities, social sciences, and ancient scripture. Geographically the ancient Near East consists of the region currently designated the Middle East. The Ancient Near Eastern Studies major is structured to provide students with a broad understanding of the civilizations of the ancient Near East and to emphasize the study of the Hebrew Bible and related literature or the Greek New Testament and related literature in their broader ancient Near Eastern context.

## Career Opportunities

The Ancient Near Eastern Studies major prepares students to pursue graduate work and an academic career in all areas of biblical and ancient Near Eastern studies. Ancient Near Eastern Studies, with its emphasis on critical reading, thinking, and writing skills, also provides quality training for students entering professional or library science programs. Additionally, an Ancient Near Eastern Studies degree offers relevant preparation for students seeking to teach seminary and institute in the Church Educational System.

## Program Requirements | View MAP

1. Complete the following core courses:

ANES 201 : Introduction to Ancient Near Eastern Studies. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Historical background, research skills, and methods of academic inquiry relevant to ancient Near Eastern Studies.

**Course Outcomes**
- Introduce students to the field of Ancient Near Eastern Studies, including the historical and geographical breadth from 3000 b.c.e down to 600 c.e., the development of the field of study, the major texts and their standard editions, research skills, major terms, and employment possibilities.
- Introduce students to the issues in the study of the Ancient Near East that have an impact on understanding the Hebrew Bible and the New Testament, including a discussion on the challenges “believing” students face, LDS in particular. This will include a discussion of some of the ethical issues in current scholarship.
- Help students critically read, discuss, research and write about ancient texts with methodological rigor and academic integrity.

ANES 310 : History and Culture of Ancient Israel. (3:3:0)
WHEN TAUGHT: Fall Odd Yrs.
PREREQUISITE: HIST 238; or HIST 239
DESCRIPTION: Israelite history and culture in Canaan/Israel from c. 2000 B.C. to A.D. 200. Methodology for using the Bible in historical research.

**Course Outcomes**
- Students will know and be able to interpret the significant events and developments in the history of ancient Israel within the large context of the ANE, and know and be able to interpret the main features of the culture of ancient Israel, based on textual and artifactual data.
- be able to analyze and discuss the value and limitations of the Bible as a reliable source of historical information, and be able to relate and analyze major opinions on this issue in the field of biblical studies.
- be able to research, analyze, and write clearly and persuasively about the issues just listed.
- have considered how their own faith-views impact their approach to certain of the issues just listed.

ANES 495 : Senior Seminar in Ancient Near Eastern Studies. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Capstone seminar utilizing research, analytical, and writing skills to produce a senior research paper on an ancient Near Eastern topic.

**Course Outcomes**
- Students will be ableto do rigorous research in the area of their academic specialty that will result in a

**Middle and Near Eastern Studies**

**Majors**

- BA in Ancient Near Eastern Studies
- BA in Middle East Studies/Arabic

**Minors**

- Ancient Near Eastern Studies
- Middle East Studies

**Course Information**

- Ancient Near Eastern Studies (ANES) Courses
- Middle East Studies/Arabic (MESA) Courses

20-25 page publishable senior paper, which, in turn, should prepare the student for further graduate work.
- Students will learn how to better present their own research and do quality peer review of other's work.
- Students will learn how to navigate and understand the publishing process, includinghow to solicit publication of work and how to find scholarly symposia and other suitable venues to present their research.

HIST 238 : Ancient Near East to 330 BC. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Ancient cultures of the Near East (Egypt, Mesopotamia, Syro-Palestine, Anatolia, Iran) from the beginnings of civilization to the conquests of Alexander the Great.

**Course Outcomes**

- Students will gain a historical consciousness of the Ancient Near East by demonstrating a critical literacy of major developments in Ancient Near East history, key historical terms, primary sources, and narratives of Ancient Near East history up to Alexander.
- Students will develop an ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions about ancient Near East primary sources.
- Students will develop use of the historical method of research effectively by skillfully and honestly using primary and secondary sources in the formation of answers to major questions surrounding the narratives of the ancient Near East
- Students will develop their writing ability through a range of pre-writing and writing assignments.

HIST 239 : Ancient Near East, 330 BC - 640 AD. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Cultures and empires of the Near East (Persia, Hellenistic kingdoms, Judaism, early Christianity, Rome, and Byzantium) from Alexander the Great to the Arab conquests.

**Course Outcomes**

- Gain a firsthand understanding of the Hellenistic and Christian Near East through studying and analyzing primary sources, using a template of (suggested) questions
- Understand basic issues of faith and reason, as they relate to Christianity and Judaism in the formative period of the former
- Master an early Christian primary source well enough to present, as a group, its gist, meaning, and significance
- Understand how the political and social changes in the Eastern Mediterranean in the Hellenistic period contributed to the development of science, technology, philosophy, and religion
- Understand the basic historical issues surrounding the origin of Christianity
- Understand the development of the Christian Roman Empire (Byzantium)

REL A 211 : The New Testament. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Historical background, narrative, and doctrines of the New Testament. Covers the life and teachings of Jesus Christ set forth in the four Gospels.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the New Testament bears witness of the mission and message of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected New Testament passages can be applied to daily living.

REL A 212 : The New Testament. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Historical background, narrative, and doctrines of the New Testament. Covers the Acts of the Apostles through the Revelation of John.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the New Testament bears witness of the mission and message of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected New Testament passages can be applied to daily living.

REL A 301 : The Old Testament. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Historical background, narrative, and doctrines of the Old Testament. Covers Genesis through 2 Samuel.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how selected Old Testament passages can be applied to daily living.

REL A 302 : The Old Testament. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Historical background, narrative, and doctrines of the Old Testament. Covers 1 Kings through Malachi.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how selected Old Testament passages can be applied to daily living.

**And** complete one of the following:

ANTHR 351 : Archaeology and the Bible. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.; Winter Odd Yrs.

DESCRIPTION: Setting and context of the Bible as clarified and supplemented from archaeology, history, and related studies. Archaeological methods.

**Course Outcomes**

- Students will gain knowledge of the development of Biblical archaeology as a field within the overall umbrella of the discipline of anthropology. This study will include extensive study of the both the defining personalities and methodologies in this sub-area of archaeology, as well as the major excavated sites in the Levant associated with Biblical events. Students will also gain a knowledge of the historical development of the Near East through its archaeological contexts, and the debates existing between differing methodologies associated with the use of the Bible as a primary document.

ANTHR 375 : Archaeology of Egypt. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: ANTHR 101; or ANTHR 110; or ANTHR 215

DESCRIPTION: Survey of the most important archaeological sites, artifacts, and monuments of Egypt, their cultural contexts, as well as major methodological developments in Egyptian archaeology and Egyptology.

**Course Outcomes**

- Survey of the most important archaeological sites, artifacts, and monuments of Egypt, their cultural contexts, as well as major methodological developments in Egyptian archaeology and Egyptology
- Pre-Islamic roots through Ottoman period. Sites, artifacts, and monuments of Islam. Focus on religious and cultural contexts. Relevant Islamic texts and archaeological methods for understanding medieval Islamic sites and artifacts

ANTHR 378 : Near Eastern Archaeology. (3:2:ARR)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Peoples and culture history in Mesopotamia, Syria, Palestine, Egypt, 3500--500 B.C. Substantial reading, writing, discussion.

**Course Outcomes**

- Students will gain an introductory level understanding of the archaeology, history, and ancient

cultural contexts of the major ancient civilizations of Mesopotamia, Syria, Palestine, and Egypt through readings, research assignments, and discussion.
- Students will increase their skill sets with regard to critical thinking, research, analysis of data, and writing through multiple types of course assignments including a final research paper project.

2. Complete one of the following language/literature options:
    - Hebrew Bible and related literature:
        1. Complete one course from the following:

HEB 131 : First-Year Biblical Hebrew. (4:5:0)

WHEN TAUGHT: Fall; Summer

DESCRIPTION: Old Testament Hebrew. Provides foundation in grammar and vocabulary; reading Hebrew prose texts in Bible.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Recite the Hebrew alphabet and recognize the vowels;2. Analyze and discuss most of the fundamental elements of Hebrew grammar;3. Read and translate elemental biblical historical narrative texts with limited use of a lexicon;4. Analyze and parse the verbal system: Pa'al (Qal);5. Define approximately 315 vocabulary words.

HEB 133 : Honors Hebrew and the Old Testament. (4:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: Must be taken in conjunction with specified Honors section of Rel A 301.

DESCRIPTION: Rapid survey of biblical Hebrew.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Recite the Hebrew alphabet and recognize the vowels;2. Analyze and discuss most of the fundamental elements of Hebrew grammar;3. Read and translate elemental biblical historical narrative texts with limited use of a lexicon;4. Analyze and parse the verbal system: Pa'al (Qal);5. Define approximately 315 vocabulary words.

        2. Complete one course from the following:

HEB 132 : First-Year Biblical Hebrew. (4:5:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: HEB 131

DESCRIPTION: Old Testament Hebrew. Provides foundation in grammar and vocabulary; reading Hebrew prose texts in Bible.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Analyze and discuss the fundamental elements of Hebrew grammar.2. Read and translate elemental biblical historical narrative texts with limited use of a lexicon.3. Analyze and parse the verbal system: pa'al, niphal, piel, pual, hiphil, hophal, hithpael.4. Define approximately 400 vocabulary words.

HEB 134 : Honors Hebrew and the Old Testament. (4:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: Must be taken in conjunction with specified Honors section of Rel A 302.

DESCRIPTION: Rapid survey of biblical Hebrew.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Analyze and discuss the fundamental elements of Hebrew grammar.2. Read and translate elemental biblical historical narrative texts with limited use of a lexicon.3. Analyze and parse the verbal system: pa'al, niphal, piel, pual, hiphil, hophal, hithpael.4. Define approximately 400 vocabulary words.

        3. Complete the following:

ANES 331 : Readings in Ancient Near Eastern Texts to 330 B.C. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: HIST 238

DESCRIPTION: Reading and analysis of major ancient Near Eastern texts in English translation. Methodology for dealing with potential biblical parallels.

**Course Outcomes**

- Students will be able to competently read, analyze, and communicate about ANE texts.
- Extrapolate cultural and historical information from primary texts, while accurately placing them in their original historical and cultural context.
- Critically analyze and write about scholarly theories on major ANE texts.

ANES 363 : Hebrew Bible Studies. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.
PREREQUISITE: HEB 331
DESCRIPTION: Current analytical methods used in academic study and interpretation of the Hebrew Bible.

**Course Outcomes**

- Students will be introduced to the variety of interpretative strategies and theories about the Hebrew Bible
- Students will analyze and interpret passages of scripture from the Hebrew Bible assisted by and comparing LDS and non-LDS sources and approaches.
- Students will reflect and write about their own approach to the Hebrew Bible.

ANES 430R : Advanced Topics in Ancient Near Eastern Studies. (3:3:0)
WHEN TAUGHT: Winter Even Yrs.
DESCRIPTION: Seminar involving in-depth examination of an ancient Near Eastern topic and then writing about it.

**Course Outcomes**

- Students will demonstrate at a senior level their ability to research and write / present in-depth about a particular ANE topic, situating it within the larger field of ANES, employing both rigor and academic integrity.

HEB 331 : Readings in the Hebrew Scriptures 1. (4:5:0)
WHEN TAUGHT: Fall
PREREQUISITE: Heb 132, 201, or equivalent.
DESCRIPTION: Grammar review and vocabulary building through reading historical and prophetic books.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Define the top 300 vocabulary words from the Hebrew Bible.2. Analyze and discuss the fundamental elements of Hebrew grammar.3. Analyze and categorize the verbal system: pa'al, piel, hiphil, hophal, niphal, pual, and hithpael.

HEB 431 : Readings in the Hebrew Scriptures 2. (4:4:0)
WHEN TAUGHT: Winter
PREREQUISITE: HEB 331
DESCRIPTION: Readings in the poetic and wisdom literature.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Define the top 600 vocabulary words from the Hebrew Bible.2. Analyze and discuss the fundamental elements of Hebrew grammar.3. Analyze and categorize the verbal system: pa'al, piel, hiphil, hophal, niphal, pual, and hithpael.4. Understand elemental forms of Hebrew parallelistic poetry and figures of speech.

4. Complete two enrollments in the following:
HEB 432R : Ancient Hebrew Texts. (2:2:0)
WHEN TAUGHT: Fall; Winter
PREREQUISITE: HEB 331

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Define the top 600 vocabulary words from the Hebrew Bible.2. Analyze and discuss the fundamental elements of Hebrew grammar.3. Analyze and categorize the verbal system: pa'al, piel, hiphil, hophal, niphal, pual, and hithpael.

- Greek New Testament and related literature:
  1. Complete the following:
  ANES 332 : Readings in Classical Near Eastern Texts. (3:3:0)
  WHEN TAUGHT: Fall Even Yrs.
  DESCRIPTION: Reading and analyzing major ancient Near Eastern texts in English translation. Methodology for dealing with potential biblical parallels.

  **Course Outcomes**

  - Students will be able to competently read, analyze, and communicate about Classical Near Eastern texts.
  - Extrapolate cultural and historical information from primary texts, while accurately placing them in their original historical and cultural context.
  - Critically analyze and write about scholarly theories on major Classical Near Eastern texts.

CL CV 363 : Judaism and Christianity in the Classical Near East. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Historical and cultural contexts of early Judaism and Christianity; analysis of major Jewish and Christian texts produced in classical Near East; methodological emphasis.

**Course Outcomes**

There are no course outcomes available

CLSCS 430R : (Clscs-Hist) Topics in Greek and Roman History. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: Cl Cv 304-Hist 247 and Greek 201 (Greek topics) or Cl Cv 307-Hist 248 and Latin 201 (Roman topics).

DESCRIPTION: Topics vary (e.g., rise of the Greek city-state, Greek political thought, classical historiography, Rome and the Etruscans, imperial Rome).

**Course Outcomes**

There are no course outcomes available

: Greek City-State.

**Course Outcomes**

: Classical Historiography.

**Course Outcomes**

: Hellenistic World.

**Course Outcomes**

: Rome and Etruscans.

**Course Outcomes**

: Rise of Rome.

**Course Outcomes**

: Roman Revolution.

**Course Outcomes**

: Imperial Rome.

**Course Outcomes**

: Roman Politics.

**Course Outcomes**

: Roman Religion.

**Course Outcomes**

: Augustan Rome.

**Course Outcomes**

: Archaic Greece.

**Course Outcomes**

: Athens: Rise and Fall.

**Course Outcomes**

: 4th Century Greece.

**Course Outcomes**

: Late Roman Empire.

**Course Outcomes**

: World of New Testament.

**Course Outcomes**

: Early Christianity.

**Course Outcomes**

: Julio-Claudians.

**Course Outcomes**

**Or**

HIST 430R : (Hist-Clscs) Topics in Greek and Roman History. (3:3:0)

PREREQUISITE: ClCv-Hist 304 and Greek 201 (Greek topics) or ClCv-Hist 307 and Latin 201 (Roman topics).

DESCRIPTION: Topics vary (e.g., rise of the Greek city-state, Greek political thought, classical historiography, Rome and the Etruscans, imperial Rome).

**Course Outcomes**

- By approaching primary historiographical texts and secondary scholarship treating the History of Greece or Rome (depending upon the special topic chosen for the course), successful students will come to understand the history of Greece and Rome. Topics may fall anywhere within the range of events from Bronze Age Greece to the end of the Roman Empire.
- Successful students will consider available primary sources for Greek and Roman history, both prose and verse literature, and learn how to evaluate the reliability of those sources.
- Through oral reports, examinations, and research papers successful students will demonstrate the ability to critically evaluate complex historical issues and to develop original interpretations of those issues.

GREEK 101 : First-Year Greek (First Semester). (4:4:0)

WHEN TAUGHT: Fall

**Course Outcomes**

There are no course outcomes available

GREEK 102 : First-Year Greek (Second Semester). (4:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: GREEK 101; or departmental approval.

**Course Outcomes**

There are no course outcomes available

GREEK 201 : Intermediate Greek. (4:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: GREEK 102; or departmental approval.

DESCRIPTION: Readings from Xenophon with review and continuation of grammar.

**Course Outcomes**

There are no course outcomes available

GREEK 302 : Classical Greek Prose. (3:3:3)

WHEN TAUGHT: Winter

PREREQUISITE: GREEK 201

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

GREEK 311 : New Testament in Greek: Gospels. (3:3:0)

PREREQUISITE: GREEK 201

**Course Outcomes**

There are no course outcomes available

2. Complete two enrollments in the following:

GREEK 411R : Greek New Testament and Early Christian Greek Texts. (3:3:0)

PREREQUISITE: GREEK 311; Greek 302 or concurrent enrollment.

DESCRIPTION: Topics include Greek New Testament, the transmission and translation of New Testament manuscripts, and selections from other early Christian Greek writings.

**Course Outcomes**

There are no course outcomes available

: Synoptic Gospels.

**Course Outcomes**

: Luke-Acts.

**Course Outcomes**

: Pauline Epistles.

**Course Outcomes**

: Apocalypse.

**Course Outcomes**

: Johannine Writings.

**Course Outcomes**

: New Testament Apocrypha.

**Course Outcomes**

: Apostolic Fathers.

**Course Outcomes**

: Pre-Nicene Fathers.

**Course Outcomes**

: Post-Nicene Fathers.

**Course Outcomes**

3. Complete six hours from the following elective courses:

ANES 353R : Archaeological Fieldwork in the Near East. (1-3:Arr:Arr)

PREREQUISITE: Ancient Near Eastern Studies coordinator's consent.

DESCRIPTION: Archaeological fieldwork and corresponding field school activities in the Near East.

**Course Outcomes**

- Credit for those students who participate in an authorized "dig" somewhere in the Near East, thus gaining firsthand experience with archaeological techiques, such as excavating, analyzing, and recording data. A written report on the experience is required for academic credit.

ANES 392R : Topics in Ancient Near Eastern Studies. (2-3:ARR:0)

DESCRIPTION: Topical studies in the ancient Near East based on student interest and faculty expertise.

**Course Outcomes**

- Students will demonstrate their ability to research and write / present in-depthabout a particular ANE topic, situating it within the larger field of ANES, employing both rigor and academic integrity.

ANTHR 351 : Archaeology and the Bible. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.; Winter Odd Yrs.

DESCRIPTION: Setting and context of the Bible as clarified and supplemented from archaeology, history, and related studies. Archaeological methods.

**Course Outcomes**

- Students will gain knowledge of the development of Biblical archaeology as a field within the overall umbrella of the discipline of anthropology. This study will include extensive study of the both the defining personalities and methodologies in this sub-area of archaeology, as well as the major excavated sites in the Levant associated with Biblical events. Students will also gain a knowledge of the historical development of the Near East through its archaeological contexts, and the debates existing between differing methodologies associated with the use of the Bible as a primary document.

**Or**

ANTHR 375 : Archaeology of Egypt. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

PREREQUISITE: ANTHR 101; or ANTHR 110; or ANTHR 215

DESCRIPTION: Survey of the most important archaeological sites, artifacts, and monuments of Egypt, their cultural contexts, as well as major methodological developments in Egyptian archaeology and Egyptology.

**Course Outcomes**

- Survey of the most important archaeological sites, artifacts, and monuments of Egypt, their cultural contexts, as well as major methodological developments in Egyptian archaeology and Egyptology
- Pre-Islamic roots through Ottoman period. Sites, artifacts, and monuments of Islam. Focus on religious and cultural contexts. Relevant Islamic texts and archaeological methods for understanding medieval Islamic sites and artifacts

**Or**

ANTHR 378 : Near Eastern Archaeology. (3:2:ARR)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Peoples and culture history in Mesopotamia, Syria, Palestine, Egypt, 3500--500 B.C. Substantial reading, writing, discussion.

**Course Outcomes**

- Students will gain an introductory level understanding of the archaeology, history, and ancient cultural contexts of the major ancient civilizations of Mesopotamia, Syria, Palestine, and Egypt through readings, research assignments, and discussion.
- Students will increase their skill sets with regard to critical thinking, research, analysis of data, and writing through multiple types of course assignments including a final research paper project.

(whichever is not taken in item 1 above).

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ARTHC 201

DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**

There are no course outcomes available

CL CV 310 : Classical Archaeology. (3:3:0)

DESCRIPTION: Major excavations and antiquities of the Mediterranean region illustrating Greco-Roman history.

**Course Outcomes**

No outcomes are available at this time.

CL CV 340R : Topics in Classical Literature and Civilization. (3:3:0)

DESCRIPTION: Classical literary genres; rhetorical, philosophical, and historical writings; relationships of art and literature; or the classical tradition in the Middle Ages and Renaissance. Topics vary.

**Course Outcomes**

There are no course outcomes available

: Greek Historians.

**Course Outcomes**

: Roman Historians.

**Course Outcomes**

: Latin Literature in Middle America.

**Course Outcomes**

: Troy in Art and Literature.

**Course Outcomes**

: Early Rome.

**Course Outcomes**

: Classic Historiography.

**Course Outcomes**

: Greek Tragedy.

**Course Outcomes**

: Greek Political Thought.

**Course Outcomes**

: Women in Antiquity.

**Course Outcomes**

: Greek Ethical Thought.

**Course Outcomes**

: Roman Religion.

**Course Outcomes**

: The Etruscans.

**Course Outcomes**

:

**Course Outcomes**

: Roman Art and Culture.

**Course Outcomes**

: Augustan Rome.

**Course Outcomes**

: Christianity and the Empire.

**Course Outcomes**

(topic must be relevant to Ancient Near Eastern Studies. The Ancient Near Eastern Studies coordinator's approval is required)

HIST 334 : History of Ancient Iraq. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Examining the social and economic aspects of the rise of cities, inter-regional trade, political exchange, and imperialism in ancient Mesopotamia using primary and secondary sources. Topics include agriculture in Babylon, cities in Mesopotamia, royal courts, Assyrian trade and markets, family and kin.

**Course Outcomes**

- Gain a historical consciousness of social and economic institutions and developments in ancient Iraq.
- Develop an ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Develop use of the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate evidence into a coherent argument or narrative expressed through a clear, well-written style and through oral communication.

NE LG 345 : Texts and Ancient Temples. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Major ancient Near Eastern texts dealing with the temple; analysis of primary elements of ancient temple type as a place of worship.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:Define the concept of sacred space and time.Understand the temples as sacred space.Analyze temple systems in the ancient world.Understand that the church, synagogue, and mosque have decisively been influenced by the temple.

NE LG 511R : Studies in Ancient Near Eastern Languages. (.5-4:4:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Grammar and reading skills.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:Understand and recognize the fundamental elements of subject grammar (i.e., Aramaic, Coptic, Egyptian, Syriac, Akkadian, etc.)Define the top 300 vocabulary words of the subject language.Analyze and categorize the verbal system.

: Akkadian.

**Course Outcomes**

: Aramaic.

**Course Outcomes**

: Coptic.

**Course Outcomes**

: Egyptian.

**Course Outcomes**

: Syriac.

**Course Outcomes**

: Ugaritic.

**Course Outcomes**

REL A 304 : Writings of Isaiah. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Teachings and prophecies of Isaiah in light of their historical context and relevance to latter-day people.

**Course Outcomes**

There are no course outcomes available

REL A 392R : Special Studies in Religion: Ancient Scripture. (.5-3:ARR:0)

OFFERED: Honors also

WHEN TAUGHT: Contact Department.

DESCRIPTION: Topical studies in religion based on student interest and teacher expertise.

**Course Outcomes**

- Students will demonstrably learn relevant doctrine, principles and/or history of a specific aspect

: Writings of John.

**Course Outcomes**

: Honors: Special Studies in Religion: Ancient Scripture.

**Course Outcomes**

: Honors: Writings of John.

**Course Outcomes**

: Special Topics in the Book of Mormon. (2:2:0)

**Course Outcomes**

(topic must be relevant to Ancient Near Eastern Studies. The Ancient Near Eastern Studies coordinator's approval is required)

Any Ancient Near Eastern Studies, Greek, or Biblical Hebrew courses not used in item 2 above.

*Hours include courses that may fulfill university core requirements.

**International and Area Studies Programs Home**

**Course Information**
- International and Area Studies (IAS) Courses

**African Studies**

**Minor**
- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:
- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**
- Asian Studies

**Course Information**
- Asian Studies (Asian) Courses

**European Studies**

**Majors**
- BA in European Studies

**Minors**
- European Studies

**Course Information**
- European Studies (Europ) Courses

**International Development**

**Minors**
- International Development

**International Relations**

**Majors**
- BA in International Relations

**Course Information**
- International Relations (IR) Courses

**Latin American Studies**

**Majors**
- BA in Latin American Studies

**Minors**
- Latin American Studies

**Course Information**
- Latin American Studies (Lt Am) Courses

# BA in Middle East Studies/Arabic (54–69 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## The Discipline

Middle East Studies examines the Arabic-, Turkish-, and Persian-speaking peoples and countries of the Middle East from a variety of perspectives. The region itself provides the focus, but historians, political scientists, anthropologists, economists, geographers, linguists, art historians, and literary and religious scholars all provide important insights into the area, each from the context of their own discipline. Undergirding all of these perspectives is linguistic skill in Arabic, through which access to original sources, press analyses, and native speakers is possible. Middle East Studies as a whole tries to integrate these insights and to provide analysis and understanding that go beyond any single discipline.

## Career Opportunities

The Middle East Studies/Arabic major aims specifically to prepare students to work as analysts and experts on the Middle East for government agencies, businesses, and other organizations. Linguistic skill in Arabic, as well as a solid understanding of the history, politics, and culture of the region is vital to these agencies, many of them desperate for real expertise and language ability. With its integrated, interdisciplinary focus on a single region and a strong emphasis on acquiring a usable knowledge of Arabic, it is also a good liberal arts major for students planning a career in law, medicine, or business in general—in fact, any field where a broad understanding and finely honed analytical and writing skills are valued.

## Program Requirements | View MAP

**Important Note:** In order to gain maximum academic benefit from the MESA curriculum, students should take lower-division (100- and 200-level) courses before taking upper-division (300- and 400-level) courses. Doing so will also help students avoid problems in scheduling classes during later semesters and in making timely progress toward graduation. For these purposes, by the end of the second semester as a MESA major, students are required to create a course map and have it reviewed and approved by both the MESA faculty coordinator and advisor from the International and Area Studies Advisement Office.

1. Complete the following "gateway" courses (i.e. prerequisites and basic skills):

ARAB 101 : First-Year Arabic. (4:5:0)
WHEN TAUGHT: Fall; Winter; Spring
DESCRIPTION: Basic skills of spoken and written Arabic.
NOTE: Suggested first class for students learning Arabic.

**Course Outcomes**
There are no course outcomes available

ARAB 102 : First-Year Arabic. (4:5:0)
WHEN TAUGHT: Winter; Spring; Summer
DESCRIPTION: Second-semester Arabic. Basic language skills, both spoken and written.

**Course Outcomes**
- Demonstrate expanding ability to socially interact with Arabs appropriately.
- Converse successfully with native speakers of Arabic about likes/dislikes, home/school, health, schedule, plans, and accomplish basic tasks such as shopping.
- Comprehend simple but longer written and audio/video texts on an expanded range of familiar topics.
- Write descriptive prose and narrate events occuring in the past, present and future.
- Demonstrate increasing ability to appropriately employ formal and vernacular Arabic.
- Significantly increase control of foundational structures (verb conjugations, complex sentence types).
- Employ expanded range of language learning and communication strategies (knowledge of root and pattern system, circumlocution).

(Arab 101 and 102 may be waived for students with appropriate lanaguage experience.)
MESA 201 : Introduction to Middle East Studies. (3:3:0)
WHEN TAUGHT: Fall
DESCRIPTION: Introduction to Middle East from historical, art/literary, and various social science perspectives, including introduction to disciplinary methodologies and major issues of interest.

**Course Outcomes**

- This course identifies major areas of study necessary to understand the culture, context, and areas of current concern in the Middle East and poses questions as to how we may go about learning.

MESA 250 : Introduction to the Religion of Islam. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Exploring the rise of Islam, the life of Muhammad, basic beliefs and practices, major figures and movements, and contemporary political and social issues.

**Course Outcomes**

- Study of the sources, history, principles of religion, law, and practice from the founding of Islam until the present period.

POLI 200 : Political Inquiry. (4:3:1)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Methodology of political science, including theory and techniques of qualitative and quantitative research design.

NOTE: Prerequisite to all upper-division courses.

**Course Outcomes**

There are no course outcomes available

2. Complete the following prerequisites for Study Abroad:

ARAB 201 : Second-Year Arabic. (4:5:0)

WHEN TAUGHT: Fall; Spring

PREREQUISITE: Arab 102 or equivalent experience.

DESCRIPTION: Significantly expanding proficiency in Modern Standard Arabic and increasing conversational repertoire.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL intermediate low level. Show an elementary ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Read and understand simple written Standard Arabic texts at the ACTFL intermediate low level.
- Understand spoken conversations and dialogues in Standard and Colloquial Arabic at the ACTFL intermediate low level.
- Show a mastery of basic verb conjugations, idaafa, and other basic structures, with some familiarity with more advanced structures (passive, active and passive participles, relative clauses, diptotes and other vowelling issues).

ARAB 202 : Intermediate Arabic. (4:5:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: Arab 201 or equivalent experience.

DESCRIPTION: Continuation of Arab 201.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL intermediate mid level. Show a developing ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Read and understand simple written Standard Arabic texts at the ACTFL intermediate mid level. Show a developing ability to understand front page news articles on familiar topics.
- Understand spoken conversations and dialogues in Standard and Colloquial Arabic at the ACTFL intermediate mid level.
- Write short essays, journal entries and notes at the ACTFL novice high level.
- Show a mastery of verb conjugations (including defective verbs), passive, and other basic structures, and a developing familiarity with advanced Arabic grammatical constructions like cognate accusative, false idaafa, tamyiiz, and haal. Demonstrate an ability to vowel simple texts accurately, and a developing ability to vowel more complicated texts.
- Vocabulary MasteryDemonstrate a mastery of basic Arabic vocabulary, both colloquial and standard (2500 words).

GEOG 271 : Middle East. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Physical and cultural geography of Southwest Asia and North Africa, emphasizing the cultural mosaic, geopolitics, environment, and resources of the region.

**Course Outcomes**

There are no course outcomes available

IHUM 242 : Introduction to the Humanities of the Islamic World. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Major arts of Islamic cultures in their historical, religious, and philosophical settings.

**Course Outcomes**

There are no course outcomes available

3. Complete the one-semester Study Abroad program in the Arab world, during which the following Arabic language courses required for the major are completed:

ARAB 211R : Second-Year Conversation. (2:2:0)

OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: Arab 202.
DESCRIPTION: Intermediate spoken Arabic.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL beginning hi level. Show an ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Demonstrate a mastery of the vocabulary used to describe, narrate and express basic daily functions and interactions

ARAB 300 : Advanced Modern Standard Arabic. (4:5:0)

OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: ARAB 202
DESCRIPTION: Advanced work in reading, writing, listening, speaking.

**Course Outcomes**

- Read and understand written Standard Arabic texts at the ACTFL Advanced Lo level. Demonstrate an ability to read and comprehend front page news articles fluently with little recourse to a dictionary.
- Write short essays, journal entries and notes at the ACTFL intermediate mid level.

ARAB 302 : Newspaper Arabic. (4:5:0)

OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: ARAB 202
DESCRIPTION: Extensive reading of Arabic newspapers and magazines, with appropriate vocabulary building.

**Course Outcomes**

- Read and understand written Standard Arabic texts at the ACTFL Advanced Lo level. Demonstrate an ability to read and comprehend front page news articles fluently with little recourse to a dictionary.
- Write short essays, journal entries and notes at the ACTFL intermediate mid level.

ARAB 311R : Third-Year Conversation. (2:2:0)

OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: ARAB 202
DESCRIPTION: Advanced conversation skills.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL intermediate hi level. Show an ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Demonstrate a mastery of the vocabulary used to describe, narrate and express opinions about current events.

ARAB 331 : Spoken Arabic. (4:5:0)

OFFERED: Study Abroad only.
WHEN TAUGHT: Fall
PREREQUISITE: ARAB 202
DESCRIPTION: Intensive study of the spoken language.

**Course Outcomes**

- Speak Colloquial Arabic at the ACTFL intermediate hi level. Show an ability to distinguish between Colloquial and Standard Arabic in word choice and pronunciation.
- Demonstrate a mastery of the vocabulary necessary to narrate, describe and express opinion on a variety of topics.
- Demonstrate a command of the basic rules of grammatical spoken Arabic: agreement, verb conjugation, word order, etc., and an increasing command of native-like expression, word choice and idiomatic expression.

4. Complete the following courses:

HIST 240 : Middle East History to 1800. (3:3:0)

WHEN TAUGHT: Fall
DESCRIPTION: History of the Middle East from the rise of of Islam until 1800.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, cultural and religious developments in the Islamic Near East between approximately AD 640-1800.
- Students will be able to analyze and interpret translations of primary source documents from the Islamic

Near East.
- Students will be able to analyze historical questions and place them in a historiographical context..

HIST 241 : Middle East History from 1800. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: History of the Middle East in the modern period form 1800; rise of nation states, relationship with West, role of Islam.

**Course Outcomes**

- Gain a historical consciousness by demonstrating a knowledge of major developments in Middle East and world history and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions by using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.
- Demonstrate how faith and reason intersect.

MESA 350 : Islam in Contemporary Society. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MESA 250

DESCRIPTION: Islam in modern society: doctrine, practices, institutions, approaches to the challenges of modern life; the rise of fundamentalism.

**Course Outcomes**

- Class on issues which face contemporary Muslims throughout world.

POLI 357 : Middle East: Political Systems. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Poli 200.

DESCRIPTION: Social, philosophical, and religious impact on Middle East political institutions in an era of modernization and conflict.

**Course Outcomes**

There are no course outcomes available

MESA 495 : Senior Seminar in Middle East Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PL SC 200 & ARAB 302

DESCRIPTION: Capstone course, including major research paper demonstrating ability to integrate cross-disciplinary information and methodology.

**Course Outcomes**

- The Capstone Seminar is the final course in the major. It combines in-depth research on a narrow topic with a research, analysis and writing of a substantive research paper in multiple drafts utilizing peer reviews at two stages, an oral presentation of findings, and research utilizing Arabic sources.

5. Complete six hours from the following elective courses:

ANTHR 340 : Peoples of the Middle East. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Ecology, social organization, and beliefs of nomadic, rural, and urban groups between western Africa and Pakistan.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain an introductory level understanding of the variety of cultures, ethnic groups, religious variances, and competing political entities representative of the regions included in the MIddle East. Special emphasis will be placed on applying this knowledge to archaeological and anthropological perspectives, disciplines, and professions.
- Through course assignments, students will increase their skills in creative thinking, analysis of data, research, and writing.
- Through course assignments, students will gain a knowledge and demonstrate their comprehension of the ecologies, social organizations, religious beliefs, and variances between nomadic, rural, and urban groups in the Middle East.

ANTHR 379 : Archaeology of Islam. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

RECOMMENDED: Anthr 101, 110, or 205.

DESCRIPTION: Pre-Islamic roots through Ottoman period. Sites, artifacts, and monuments of Islam. Focus on religious and cultural contexts. Relevant Islamic texts and archaeological methods for understanding medieval Islamic sites and artifacts.

**Course Outcomes**

- Pre-Islamic roots through Ottoman period. Sites, artifacts, and monuments of Islam. Focus on religious and cultural contexts. Relevant Islamic texts and archaeological methods for understanding medieval Islamic sites and artifacts

FLANG 101R : First-Year Language Study. (4:5:1)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Beginning speaking, listening, reading, and writing skills.

**Course Outcomes**

- Speak the target language well enough to satisfy immediate needs related to basic social situations, simple transactions, basic food and lodging, and routine travel.
- Understand written and spoken target language relating to familiar topics.
- In the target language, write short, simple messages consisting of structurally-accurate sentences on familiar topics.
- Function appropriately in routine, familiar situations in the target culture.

(Turkish or Persian)

FLANG 102R : First-Year Language Study. (4:5:1)

WHEN TAUGHT: Contact Department.

PREREQUISITE: FLANG 101R

DESCRIPTION: Second-semester speaking, listening, reading, and writing skills.

NOTE: Teacher may waive prerequisite based on prior experience.

**Course Outcomes**

No outcomes are available at this time.

(Turkish or Persian)

HEB 101 : First-Year Modern Hebrew 1. (4:5:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Modern Hebrew as spoken in Israel today.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at beginning levels, utilizing pa'al verbs- Read and engage beginning level texts in Hebrew, and express thoughts and ideas in written Hebrew- Understand the modern Israeli cultural tradition (including music, art, and literature)

HEB 102 : First-Year Modern Hebrew 2. (4:5:2)

WHEN TAUGHT: Winter; Spring

DESCRIPTION: Modern Hebrew as spoken in Israel today.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at beginning levels, demonstrating an ability to communicate with others- Use pa'al, pi'el, hif'il, and hitpa'el present and past tense verbs correctly- Read and engage beginning level texts in Hebrew- Express thoughts and ideas in written Hebrew- Appreciate and value the modern Israeli cultural tradition (including music, art, and literature)

HEB 201 : Second-Year Modern Hebrew 1. (4:5:0)

WHEN TAUGHT: Fall

PREREQUISITE: Heb 102 or equivalent.

**Course Outcomes**

- Speak Modern Hebrew at intermediate levels, demonstrating an ability to communicate with others
- Use and understand past tense as well as pa'al and piel future tense verbs
- Read and comprehend intermediate level texts in modern Hebrew, including newspapers and Israeli literature
- Write in Modern Hebrew at the intermediate level
- Appreciate and value the modern Israeli cultural tradition (including music, art, and literature)

HIST 239 : Ancient Near East, 330 BC - 640 AD. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Cultures and empires of the Near East (Persia, Hellenistic kingdoms, Judaism, early Christianity, Rome, and Byzantium) from Alexander the Great to the Arab conquests.

**Course Outcomes**

- Gain a firsthand understanding of the Hellenistic and Christian Near East through studying and analyzing primary sources, using a template of (suggested) questions
- Understand basic issues of faith and reason, as they relate to Christianity and Judaism in the formative period of the former
- Master an early Christian primary source well enough to present, as a group, its gist, meaning, and significance
- Understand how the political and social changes in the Eastern Mediterranean in the Hellenistic period contributed to the development of science, technology, philosophy, and religion
- Understand the basic historical issues surrounding the origin of Christianity

- Understand the development of the Christian Roman Empire (Byzantium)

HIST 244 : Jewish History: A.D. 70 to the Present. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Jewish diaspora, Jewish life in Moslem and Christian countries; Jewish religious movements; development of Zionism; Jewish communities in modern Israel and the United States.

**Course Outcomes**

- Gain a historical consciousness by demonstrating an understanding of major developments in Jewish and history, and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately and distinguish between questionable and valid historical assertions.
- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using interdisciplinary prinary and secondary sources.
- Skillfully integrate sources into a coherent argument expressed through a clear, well-written style and throrough oral communication.
- Recognize anti-Semitic arguments.
- Gain an understanding of the complexities of modern Jewish identity.
- Appreciate the contribution of Jewish people to the world.

IAS 354R : Model Arab League Preparation. (.5-3:Arr:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Understanding Middle Eastern governments and foreign policies. Preparation and attendance at the Model Arab League Conference.

**Course Outcomes**

There are no course outcomes available

IAS 399R : Academic Internship: International. (.5-9:ARR:ARR)

PREREQUISITE: Acceptance into program.

DESCRIPTION: Individualized work or volunteer experience in an international setting.

NOTE: Class must be coordinated through International Study Programs.

**Course Outcomes**

- · Apply skills and material learned in traditional courses to a real-world workplace environment.· Demonstrate proficiency in the skills required by the internship supervisor.· Demonstrate an ability to link insights gained from traditional classes and from real-world workplace experiences.

(with prior approval)

MESA 398R : Directed Middle East Study. (1-3:Arr.:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent; Middle East Studies/Arabic coordinator's consent.

DESCRIPTION: Study and research in the Middle East.

**Course Outcomes**

- This course is for students who wish to follow a well-defined, advanced course of study achieved through readings, research and critique supervised by a professor.

MESA 399R : Academic Internship. (1-3:Arr.:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Middle East Studies/Arabic coordinator's consent.

DESCRIPTION: Individualized work or volunteer experience in the Middle East or with an organization dealing with the Middle East. Must be coordinated through International Study Programs or the Washington Seminar and with the consent of the Middle East Studies/Arabic coordinator.

**Course Outcomes**

No outcomes are available at this time.

MESA 451 : The Figure of Muhammad in Islamic Tradition. (3:3:0)

PREREQUISITE: ARAB 202

DESCRIPTION: Introduction to Muslim views regarding Muhammad as found in two significant Islamic textual traditions: The Sira (biography)/Maghazi (battles) and Hadith (acts) of Muhammad.

**Course Outcomes**

No outcomes are available at this time.

MESA 467R : Topics in Middle East Studies. (.5-3:Arr.:0)

DESCRIPTION: Topics vary.

**Course Outcomes**

- Substantative Research PapersLibrary/Internet Research

MESA 468R : Key Issues In Understanding the Middle East. (.5-3:Arr.:Arr.)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Topics vary. Guest and BYU professors teach subjects in an intensive format over a limited time period through lectures and readings.

**Course Outcomes**

- Course on special topics taught by guest professors at the University.

MESA 494 : Capstone Arabic. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: ARAB 300 & ARAB 302

DESCRIPTION: Readings in Arabic texts supporting research for the MESA capstone seminar.

**Course Outcomes**

- Capstone Arabic provides an advanced course in reading Arabic primary and secondary sources for Capstone Seminar research.

POLI 381 : International Relations of the Middle East. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Interregional relations and conflicts, political economics, Arab nationalism, processes of political change, alliances, and superpower relations.

**Course Outcomes**

No outcomes are available at this time.

POLI 452 : Islam and Politics. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Tensions and accommodations between religion and politics in Muslim nations.

**Course Outcomes**

There are no course outcomes available

POLI 474 : Arab-Palestinian-Israeli Conflict. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Emphasizes historical background, current situation, and alternatives leading to conflict resolution.

**Course Outcomes**

There are no course outcomes available

Any other 300- or 400-level Arabic courses not already taken.

**Note:** Students with a second major in Arabic Language cannot double count the same upper-division Arabic courses for both the double major and for MESA elective credit.

## *Middle East/Government Service Track*

Students interested in using their Arabic language expertise to work in government (Department of State, Central Intelligence Agency, National Security Agency, military services, Federal Bureau of Investigation, etc.) are srongly recommended to complete the following courses, some of which will count for general education credit.

ECON 110 : Economic Principles and Problems. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Strengths and weaknesses of markets and governments for solving problems of social organization or conflict, including policy response to inflation, unemployment, pollution, poverty, growth, etc.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

: Honors Economic Principles and Problems.

**Course Outcomes**

POLI 110 : American Government and Politics. (3:3:0)

OFFERED: Honors also. Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Origin and development of federal Constitution; national, state, and local governments and politics.

**Course Outcomes**

There are no course outcomes available

POLI 150 : Comparative Government and Politics. (3:3:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Patterns of European, Asian, Latin American, and other political systems.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

There are no course outcomes available

POLI 376 : U.S. Foreign Policy. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Formation, implementation, analysis, and criticism of themes in American foreign policy.

**Course Outcomes**

There are no course outcomes available

**Note:** Econ 110 and Poli 110 combined may fill the American Heritage general education requirement.

Other courses to consider:

GEOG 341 : Political Geography. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Spatial analysis of global politics; focus on geopolitics, territory and conflict, nationalism, and the politics of resources.

**Course Outcomes**

There are no course outcomes available

POLI 270 : Principles of International Relations. (3:3:0)

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

PREREQUISITE: Poli 200.

DESCRIPTION: An introduction to the subfield of international relations for advanced students and majors. Basic concepts, theories, and methods of international relations and political science.

**Course Outcomes**

There are no course outcomes available

POLI 313 : Interest Groups. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 110 or 210; Poli 200.

DESCRIPTION: Theories on formation and maintenance of interest groups; tactics of groups in legislative, executive, bureaucratic, and court settings; influence of groups on elections and public policy.

**Course Outcomes**

There are no course outcomes available

POLI 315 : Congress and the Legislative Process. (3:3:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Poli 110 or 210; Poli 200.

DESCRIPTION: Election process; structure, organization, and procedures of legislative bodies; relations with pressure groups, the president, and executive branch.

**Course Outcomes**

There are no course outcomes available

POLI 321 : The Media in American Politics. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: News media's role in processes of American politics, including electoral process, legislative process, and public policy-making.

**Course Outcomes**

There are no course outcomes available

POLI 371 : Foreign Policy Analysis. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200; Poli 170 or 270.

DESCRIPTION: Survey of research regarding multiple levels of foreign policy analysis: individual, group, bureaucratic, societal, economic, systemic.

**Course Outcomes**

No outcomes are available at this time.

POLI 372 : International Political Economy. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Political implications of international trade, investment, and monetary policies within an increasingly interdependent global context; transnationalism.

**Course Outcomes**

There are no course outcomes available

POLI 373 : International Law. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Nature and function of international law; recognition, succession, jurisdiction rights, and immunities of states; nationality and jurisdiction over nations.

**Course Outcomes**

There are no course outcomes available

POLI 375 : International Organizations. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 200.

DESCRIPTION: International institutions; transnational relations; rise of newer political organizations: League of Nations, United Nations, European communities, world religions, multinational corporations, terrorist groups, global regimes.

**Course Outcomes**

There are no course outcomes available

POLI 377 : National Security Affairs. (3:3:0)

WHEN TAUGHT: Contact Department.

DESCRIPTION: Foreign policy, defense strategy, and intelligence.

**Course Outcomes**

There are no course outcomes available

POLI 378 : International Conflict. (3:3:0)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Poli 150, 170, 250, or 270; Poli 200.

DESCRIPTION: Causes of war; alliances and empires; military innovation; civil-military relations; fungibility of forces; terrorism; security studies methods; use and misuse of history.

**Course Outcomes**

There are no course outcomes available

REL A 301 : The Old Testament. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Historical background, narrative, and doctrines of the Old Testament. Covers Genesis through 2 Samuel.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how selected Old Testament passages can be applied to daily living.

REL C 351 : Survey of World Religions. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Explores the origins, theological doctrines, scriptural works, and religious practices of several internationally religious

traditions, including Christianity, Islam, Judaism, Hinduism, Sikhism, Buddhism, Taoism, Confucianism, and Shinto. Comparisions are offered between these religions, and Latter-day Saints belief and practice.

**Course Outcomes**

There are no course outcomes available

: Honors Survey of World Religions.

**Course Outcomes**

Students are strongly encouraged to complete an internship through the Washington Seminar or in the Middle East. The internship should enable the student to apply his or her Arabic language ability or interest in the Middle East or learn the workings of the U.S. Congress.

*Hours include courses that may fulfill university core requirements.

**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

**Course Information**

- European Studies (Europ) Courses

**International Development**

**Minors**

- International Development

**International Relations**

**Majors**

- BA in International Relations

**Course Information**

- International Relations (IR) Courses

**Latin American Studies**

**Majors**

- BA in Latin American Studies

**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# Minor in Ancient Near Eastern Studies (21–23 hours*)

Show All Course Descriptions
Hide All Course Descriptions

## Program Requirements

1. Complete the following core courses:

HIST 238 : Ancient Near East to 330 BC. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Ancient cultures of the Near East (Egypt, Mesopotamia, Syro-Palestine, Anatolia, Iran) from the beginnings of civilization to the conquests of Alexander the Great.

**Course Outcomes**

- Students will gain a historical consciousness of the Ancient Near East by demonstrating a critical literacy of major developments in Ancient Near East history, key historical terms, primary sources, and narratives of Ancient Near East history up to Alexander.
- Students will develop an ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions about ancient Near East primary sources.
- Students will develop use of the historical method of research effectively by skillfully and honestly using primary and secondary sources in the formation of answers to major questions surrounding the narratives of the ancient Near East
- Students will develop their writing ability through a range of pre-writing and writing assignments.

HIST 239 : Ancient Near East, 330 BC - 640 AD. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Cultures and empires of the Near East (Persia, Hellenistic kingdoms, Judaism, early Christianity, Rome, and Byzantium) from Alexander the Great to the Arab conquests.

**Course Outcomes**

- Gain a firsthand understanding of the Hellenistic and Christian Near East through studying and analyzing primary sources, using a template of (suggested) questions
- Understand basic issues of faith and reason, as they relate to Christianity and Judaism in the formative period of the former
- Master an early Christian primary source well enough to present, as a group, its gist, meaning, and significance
- Understand how the political and social changes in the Eastern Mediterranean in the Hellenistic period contributed to the development of science, technology, philosophy, and religion
- Understand the basic historical issues surrounding the origin of Christianity
- Understand the development of the Christian Roman Empire (Byzantium)

2. Complete one of the following language/literature options:
   - Hebrew Bible and related literature:
     1. Complete one course from the following:

HEB 131 : First-Year Biblical Hebrew. (4:5:0)

WHEN TAUGHT: Fall; Summer

DESCRIPTION: Old Testament Hebrew. Provides foundation in grammar and vocabulary; reading Hebrew prose texts in Bible.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Recite the Hebrew alphabet and recognize the vowels;2. Analyze and discuss most of the fundamental elements of Hebrew grammar;3. Read and translate elemental biblical historical narrative texts with limited use of a lexicon;4. Analyze and parse the verbal system: Pa'al (Qal);5. Define approximately 315 vocabulary words.

HEB 133 : Honors Hebrew and the Old Testament. (4:4:0)

WHEN TAUGHT: Fall

PREREQUISITE: Must be taken in conjunction with specified Honors section of Rel A 301.

DESCRIPTION: Rapid survey of biblical Hebrew.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Recite the Hebrew alphabet and recognize the vowels;2. Analyze and discuss most of the fundamental elements of Hebrew grammar;3. Read and translate elemental biblical historical narrative texts with limited use of a lexicon;4. Analyze and parse the verbal system: Pa'al (Qal);5. Define approximately 315 vocabulary words.

2. Complete one course from the following:

HEB 132 : First-Year Biblical Hebrew. (4:5:0)

WHEN TAUGHT: Winter; Summer

PREREQUISITE: HEB 131

DESCRIPTION: Old Testament Hebrew. Provides foundation in grammar and vocabulary; reading Hebrew prose texts in Bible.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Analyze and discuss the fundamental elements of Hebrew grammar.2. Read and translate elemental biblical historical narrative texts with limited use of a lexicon.3. Analyze and parse the verbal system: pa'al, niphal, piel, pual, hiphil, hophal, hithpael.4. Define approximately 400 vocabulary words.

HEB 134 : Honors Hebrew and the Old Testament. (4:4:0)

WHEN TAUGHT: Winter

PREREQUISITE: Must be taken in conjunction with specified Honors section of Rel A 302.

DESCRIPTION: Rapid survey of biblical Hebrew.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:1. Analyze and discuss the fundamental elements of Hebrew grammar.2. Read and translate elemental biblical historical narrative texts with limited use of a lexicon.3. Analyze and parse the verbal system: pa'al, niphal, piel, pual, hiphil, hophal, hithpael.4. Define approximately 400 vocabulary words.

3. Complete one course from the following:

REL A 211 : The New Testament. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Historical background, narrative, and doctrines of the New Testament. Covers the life and teachings of Jesus Christ set forth in the four Gospels.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the New Testament bears witness of the mission and message of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected New Testament passages can be applied to daily living.

REL A 212 : The New Testament. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Historical background, narrative, and doctrines of the New Testament. Covers the Acts of the Apostles through the Revelation of John.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the New Testament bears witness of the mission and message of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected New Testament passages can be applied to daily living.

4. Complete the following:

REL A 301 : The Old Testament. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Historical background, narrative, and doctrines of the Old Testament. Covers Genesis through 2 Samuel.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how selected Old Testament passages can be applied to daily living.

REL A 302 : The Old Testament. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Historical background, narrative, and doctrines of the Old Testament. Covers 1 Kings through Malachi.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how selected Old Testament passages can be applied to daily living.

- Greek New Testament and related literature:
  1. Complete the following:

GREEK 311 : New Testament in Greek: Gospels. (3:3:0)

PREREQUISITE: GREEK 201

**Course Outcomes**

There are no course outcomes available

GREEK 411R : Greek New Testament and Early Christian Greek Texts. (3:3:0)

PREREQUISITE: GREEK 311; Greek 302 or concurrent enrollment.

DESCRIPTION: Topics include Greek New Testament, the transmission and translation of New Testament manuscripts, and selections from other early Christian Greek writings.

**Course Outcomes**

There are no course outcomes available

: Synoptic Gospels.

**Course Outcomes**

: Luke-Acts.

**Course Outcomes**

: Pauline Epistles.

**Course Outcomes**

: Apocalypse.

**Course Outcomes**

: Johannine Writings.

**Course Outcomes**

: New Testament Apocrypha.

**Course Outcomes**

: Apostolic Fathers.

**Course Outcomes**

: Pre-Nicene Fathers.

**Course Outcomes**

: Post-Nicene Fathers.

**Course Outcomes**

REL A 211 : The New Testament. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Historical background, narrative, and doctrines of the New Testament. Covers the life and teachings of Jesus Christ set forth in the four Gospels.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the New Testament bears witness of the mission and message of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected New Testament passages can be applied to daily living.

REL A 212 : The New Testament. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Historical background, narrative, and doctrines of the New Testament. Covers the Acts of the Apostles through the Revelation of John.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the New Testament bears witness of the mission and message of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected New Testament passages can be applied to daily living.

2. Complete one course from the following:

REL A 301 : The Old Testament. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Historical background, narrative, and doctrines of the Old Testament. Covers Genesis through 2 Samuel.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how selected Old Testament passages can be applied to daily living.

REL A 302 : The Old Testament. (2:2:0)

OFFERED: Honors also.

WHEN TAUGHT: Fall; Winter; Spring Contact Department; Summer Contact Department

DESCRIPTION: Historical background, narrative, and doctrines of the Old Testament. Covers 1 Kings through Malachi.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of—how selected Old Testament passages can be applied to daily living.

3. Complete three hours from the following:

ANES 201 : Introduction to Ancient Near Eastern Studies. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Historical background, research skills, and methods of academic inquiry relevant to ancient Near Eastern Studies.

**Course Outcomes**

- Introduce students to the field of Ancient Near Eastern Studies, including the historical and geographical breadth from 3000 b.c.e down to 600 c.e., the development of the field of study, the major texts and their standard editions, research skills, major terms, and employment possibilities.
- Introduce students to the issues in the study of the Ancient Near East that have an impact on understanding the Hebrew Bible and the New Testament, including a discussion on the challenges "believing" students face, LDS in particular. This will include a discussion of some of the ethical issues in current scholarship.
- Help students critically read, discuss, research and write about ancient texts with methodological rigor and academic integrity.

ANES 310 : History and Culture of Ancient Israel. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: HIST 238; or HIST 239

DESCRIPTION: Israelite history and culture in Canaan/Israel from c. 2000 B.C. to A.D. 200. Methodology for using the Bible in historical research.

**Course Outcomes**

- Students will know and be able to interpret the significant events and developments in the history of ancient Israel within the large context of the ANE, and know and be able to interpret the main features of the culture of ancient Israel, based on textual and artifactual data.
- be able to analyze and discuss the value and limitations of the Bible as a reliable source of historical information, and be able to relate and analyze major opinions on this issue in the field of biblical studies.
- be able to research, analyze, and write clearly and persuasively about the issues just listed.
- have considered how their own faith-views impact their approach to certain of the issues just listed.

ANES 331 : Readings in Ancient Near Eastern Texts to 330 B.C. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: HIST 238

DESCRIPTION: Reading and analysis of major ancient Near Eastern texts in English translation. Methodology for dealing with potential biblical parallels.

**Course Outcomes**

- Students will be able to competently read, analyze, and communicate about ANE texts.
- Extrapolate cultural and historical information from primary texts, while accurately placing them in their original historical and cultural context.
- Critically analyze and write about scholarly theories on major ANE texts.

ANES 332 : Readings in Classical Near Eastern Texts. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Reading and analyzing major ancient Near Eastern texts in English translation. Methodology for dealing with potential biblical parallels.

**Course Outcomes**

- Students will be able to competently read, analyze, and communicate about Classical Near Eastern texts.
- Extrapolate cultural and historical information from primary texts, while accurately placing them in their original historical and cultural context.
- Critically analyze and write about scholarly theories on major Classical Near Eastern texts.

ANES 392R : Topics in Ancient Near Eastern Studies. (2-3:ARR:0)

DESCRIPTION: Topical studies in the ancient Near East based on student interest and faculty expertise.

**Course Outcomes**

- Students will demonstrate their ability to research and write / present in-depthabout a particular ANE topic, situating it within the larger field of ANES, employing both rigor and academic integrity.

ANTHR 351 : Archaeology and the Bible. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.; Winter Odd Yrs.

DESCRIPTION: Setting and context of the Bible as clarified and supplemented from archaeology, history, and related studies. Archaeological methods.

**Course Outcomes**

- Students will gain knowledge of the development of Biblical archaeology as a field within the overall umbrella of the discipline of anthropology. This study will include extensive study of the both the defining personalities and methodologies in this sub-area of archaeology, as well as the major excavated sites in the Levant associated with Biblical events. Students will also gain a knowledge of the historical development of the Near East through its archaeological contexts, and the debates existing between differing methodologies associated with the use of the Bible as a primary document.

ANTHR 378 : Near Eastern Archaeology. (3:2:ARR)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Peoples and culture history in Mesopotamia, Syria, Palestine, Egypt, 3500--500 B.C. Substantial reading, writing, discussion.

**Course Outcomes**

- Students will gain an introductory level understanding of the archaeology, history, and ancient cultural contexts of the major ancient civilizations of Mesopotamia, Syria, Palestine, and Egypt through readings, research assignments, and discussion.
- Students will increase their skill sets with regard to critical thinking, research, analysis of data, and writing through multiple types of course assignments including a final research paper project.

ARTHC 310 : Early Christian and Byzantine Art. (3:3:0)

WHEN TAUGHT: Fall

PREREQUISITE: ARTHC 201

DESCRIPTION: Survey of Christian art in the Roman and Byzantine Empire from ca. 200 to 1453.

**Course Outcomes**

There are no course outcomes available

CL CV 363 : Judaism and Christianity in the Classical Near East. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Historical and cultural contexts of early Judaism and Christianity; analysis of major Jewish and Christian texts produced in classical Near East; methodological emphasis.

**Course Outcomes**

There are no course outcomes available

HIST 334 : History of Ancient Iraq. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Examining the social and economic aspects of the rise of cities, inter-regional trade, political exchange, and imperialism in ancient Mesopotamia using primary and secondary sources. Topics include agriculture in Babylon, cities in Mesopotamia, royal courts, Assyrian trade and markets, family and kin.

**Course Outcomes**

- Gain a historical consciousness of social and economic institutions and developments in ancient Iraq.
- Develop an ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions.
- Develop use of the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate evidence into a coherent argument or narrative expressed through a clear, well-written style and through oral communication.

NE LG 340 : Ancient Near Eastern Mythology. (3:3:0)

DESCRIPTION: Major themes in mythological literature of Egypt, Canaan, Mesopotamia, Anatolia, and ancient Iran. All readings in English.

**Course Outcomes**

No outcomes are available at this time.

NE LG 345 : Texts and Ancient Temples. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Major ancient Near Eastern texts dealing with the temple; analysis of primary elements of ancient temple type as a place of worship.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:Define the concept of sacred space and time.Understand the temples as sacred space.Analyze temple systems in the ancient world.Understand that the church, synagogue, and mosque have decisively been influenced by the temple.

*Hours include courses that may fulfill university core requirements.

**International and Area Studies Programs Home**

**Course Information**
- International and Area Studies (IAS) Courses

**African Studies**

**Minor**
- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:
- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**
- Asian Studies

**Course Information**
- Asian Studies (Asian) Courses

**European Studies**

**Majors**
- BA in European Studies

**Minors**
- European Studies

**Course Information**
- European Studies (Europ) Courses

**International Development**

**Minors**
- International Development

**International Relations**

**Majors**
- BA in International Relations

**Course Information**
- International Relations (IR) Courses

**Latin American Studies**

**Majors**
- BA in Latin American Studies

**Minors**
- Latin American Studies

**Course Information**
- Latin American Studies (Lt Am) Courses

# Minor in Middle East Studies (19 hours*)

Show All Course Descriptions
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## Program Requirements

1. Complete eight hours in Arabic, modern Hebrew, Persian, or Turkish.

2. Complete the following:

MESA 201 : Introduction to Middle East Studies. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to Middle East from historical, art/literary, and various social science perspectives, including introduction to disciplinary methodologies and major issues of interest.

**Course Outcomes**
- This course identifies major areas of study necessary to understand the culture, context, and areas of current concern in the Middle East and poses questions as to how we may go about learning.

MESA 250 : Introduction to the Religion of Islam. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Exploring the rise of Islam, the life of Muhammad, basic beliefs and practices, major figures and movements, and contemporary political and social issues.

**Course Outcomes**
- Study of the sources, history, principles of religion, law, and practice from the founding of Islam until the present period.

3. Complete one course from the following:

ANTHR 340 : Peoples of the Middle East. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Ecology, social organization, and beliefs of nomadic, rural, and urban groups between western Africa and Pakistan.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**
- Students will gain an introductory level understanding of the variety of cultures, ethnic groups, religious variances, and competing political entities representative of the regions included in the MIddle East. Special emphasis will be placed on applying this knowledge to archaeological and anthropological perspectives, disciplines, and professions.
- Through course assignments, students will increase their skills in creative thinking, analysis of data, research, and writing.
- Through course assignments, students will gain a knowledge and demonstrate their comprehension of the ecologies, social organizations, religious beliefs, and variances between nomadic, rural, and urban groups in the Middle East.

GEOG 271 : Middle East. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Physical and cultural geography of Southwest Asia and North Africa, emphasizing the cultural mosaic, geopolitics, environment, and resources of the region.

**Course Outcomes**

There are no course outcomes available

HIST 240 : Middle East History to 1800. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: History of the Middle East from the rise of of Islam until 1800.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, cultural and religious developments in the Islamic Near East between approximately AD 640-1800.
- Students will be able to analyze and interpret translations of primary source documents from the Islamic Near East.
- Students will be able to analyze historical questions and place them in a historiographical context..

HIST 241 : Middle East History from 1800. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: History of the Middle East in the modern period form 1800; rise of nation states, relationship with West, role of Islam.

**Course Outcomes**

- Gain a historical consciousness by demonstrating a knowledge of major developments in Middle East and world history and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions by using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.
- Demonstrate how faith and reason intersect.

IHUM 242 : Introduction to the Humanities of the Islamic World. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Major arts of Islamic cultures in their historical, religious, and philosophical settings.

**Course Outcomes**

There are no course outcomes available

POLI 357 : Middle East: Political Systems. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Poli 200.

DESCRIPTION: Social, philosophical, and religious impact on Middle East political institutions in an era of modernization and conflict.

**Course Outcomes**

There are no course outcomes available

4. Complete one course from the following:

ANTHR 340 : Peoples of the Middle East. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Ecology, social organization, and beliefs of nomadic, rural, and urban groups between western Africa and Pakistan.

NOTE: This course is part of a GE Mosaic. See ge.byu.edu/mosaic-list for more information.

**Course Outcomes**

- Students will gain an introductory level understanding of the variety of cultures, ethnic groups, religious variances, and competing political entities representative of the regions included in the MIddle East. Special emphasis will be placed on applying this knowledge to archaeological and anthropological perspectives, disciplines, and professions.
- Through course assignments, students will increase their skills in creative thinking, analysis of data, research, and writing.
- Through course assignments, students will gain a knowledge and demonstrate their comprehension of the ecologies, social organizations, religious beliefs, and variances between nomadic, rural, and urban groups in the Middle East.

GEOG 271 : Middle East. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: Physical and cultural geography of Southwest Asia and North Africa, emphasizing the cultural mosaic, geopolitics, environment, and resources of the region.

**Course Outcomes**

There are no course outcomes available

HIST 240 : Middle East History to 1800. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: History of the Middle East from the rise of of Islam until 1800.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, cultural and religious developments in the Islamic Near East between approximately AD 640-1800.
- Students will be able to analyze and interpret translations of primary source documents from the Islamic Near East.

- Students will be able to analyze historical questions and place them in a historiographical context..

HIST 241 : Middle East History from 1800. (3:3:0)

WHEN TAUGHT: Winter

DESCRIPTION: History of the Middle East in the modern period form 1800; rise of nation states, relationship with West, role of Islam.

**Course Outcomes**

- Gain a historical consciousness by demonstrating a knowledge of major developments in Middle East and world history and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately, and distinguish between questionable and valid historical assertions by using the historical method of research effectively by skillfully and honestly using primary and secondary sources.
- Skillfully integrate data into a coherent argument expressed through a clear, well-written style and through oral communication.
- Demonstrate how faith and reason intersect.

HIST 244 : Jewish History: A.D. 70 to the Present. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Jewish diaspora, Jewish life in Moslem and Christian countries; Jewish religious movements; development of Zionism; Jewish communities in modern Israel and the United States.

**Course Outcomes**

- Gain a historical consciousness by demonstrating an understanding of major developments in Jewish and history, and understand key historical terms and theories.
- Acquire the ability to analyze historical questions and issues clearly, assess historical information accurately and distinguish between questionable and valid historical assertions.
- Demonstrate proficiency in using the historical method of research effectively by skillfully and honestly using interdisciplinary prinary and secondary sources.
- Skillfully integrate sources into a coherent argument expressed through a clear, well-written style and throrough oral communication.
- Recognize anti-Semitic arguments.
- Gain an understanding of the complexities of modern Jewish identity.
- Appreciate the contribution of Jewish people to the world.

HIST 325 : Spain. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Political, social, and economic factors in Spanish history from Roman times to present. Emphasis on Reconquest, Golden Age, and Civil War.

**Course Outcomes**

- Students will be able to explain and analyze the major political, economic, social, intellectual, and cultural developments in Spain from Roman times to the late twentieth century
- Students will be able to analyze and interpret primary source documents.
- Students will gain experience in historical research and improve writing skills.
- Students will analyze historical questions and place them in historiographical context.

IHUM 242 : Introduction to the Humanities of the Islamic World. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Major arts of Islamic cultures in their historical, religious, and philosophical settings.

**Course Outcomes**

There are no course outcomes available

MESA 350 : Islam in Contemporary Society. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MESA 250

DESCRIPTION: Islam in modern society: doctrine, practices, institutions, approaches to the challenges of modern life; the rise of fundamentalism.

**Course Outcomes**

- Class on issues which face contemporary Muslims throughout world.

POLI 357 : Middle East: Political Systems. (3:3:0)

WHEN TAUGHT: Fall; Winter

RECOMMENDED: Poli 200.

DESCRIPTION: Social, philosophical, and religious impact on Middle East political institutions in an era of modernization and conflict.

**Course Outcomes**

There are no course outcomes available

POLI 474 : Arab-Palestinian-Israeli Conflict. (3:3:0)

PREREQUISITE: Poli 200.

DESCRIPTION: Emphasizes historical background, current situation, and alternatives leading to conflict resolution.

**Course Outcomes**

There are no course outcomes available

*Hours include courses that may fulfill university core requirements.

**International and Area Studies Programs Home**

**Course Information**
- International and Area Studies (IAS) Courses

**African Studies**

**Minor**
- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:
- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**
- Asian Studies

**Course Information**
- Asian Studies (Asian) Courses

**European Studies**

**Majors**
- BA in European Studies

**Minors**
- European Studies

**Course Information**
- European Studies (Europ) Courses

**International Development**

**Minors**
- International Development

**International Relations**

**Majors**
- BA in International Relations

**Course Information**
- International Relations (IR) Courses

**Latin American Studies**

**Majors**
- BA in Latin American Studies

**Minors**
- Latin American Studies

**Course Information**
- Latin American Studies (Lt Am) Courses

# Ancient Near Eastern Studies (ANES)

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## Undergraduate Courses

### 200-Level Courses

ANES 201 : Introduction to Ancient Near Eastern Studies. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Historical background, research skills, and methods of academic inquiry relevant to ancient Near Eastern Studies.

**Course Outcomes**
- Introduce students to the field of Ancient Near Eastern Studies, including the historical and geographical breadth from 3000 b.c.e down to 600 c.e., the development of the field of study, the major texts and their standard editions, research skills, major terms, and employment possibilities.
- Introduce students to the issues in the study of the Ancient Near East that have an impact on understanding the Hebrew Bible and the New Testament, including a discussion on the challenges “believing” students face, LDS in particular. This will include a discussion of some of the ethical issues in current scholarship.
- Help students critically read, discuss, research and write about ancient texts with methodological rigor and academic integrity.

### 300-Level Courses

ANES 310 : History and Culture of Ancient Israel. (3:3:0)

WHEN TAUGHT: Fall Odd Yrs.

PREREQUISITE: HIST 238; or HIST 239

DESCRIPTION: Israelite history and culture in Canaan/Israel from c. 2000 B.C. to A.D. 200. Methodology for using the Bible in historical research.

**Course Outcomes**
- Students will know and be able to interpret the significant events and developments in the history of ancient Israel within the large context of the ANE, and know and be able to interpret the main features of the culture of ancient Israel, based on textual and artifactual data.
- be able to analyze and discuss the value and limitations of the Bible as a reliable source of historical information, and be able to relate and analyze major opinions on this issue in the field of biblical studies.
- be able to research, analyze, and write clearly and persuasively about the issues just listed.
- have considered how their own faith-views impact their approach to certain of the issues just listed.

ANES 331 : Readings in Ancient Near Eastern Texts to 330 B.C. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

PREREQUISITE: HIST 238

DESCRIPTION: Reading and analysis of major ancient Near Eastern texts in English translation. Methodology for dealing with potential biblical parallels.

**Course Outcomes**
- Students will be able to competently read, analyze, and communicate about ANE texts.
- Extrapolate cultural and historical information from primary texts, while accurately placing them in their original historical and cultural context.
- Critically analyze and write about scholarly theories on major ANE texts.

ANES 332 : Readings in Classical Near Eastern Texts. (3:3:0)

WHEN TAUGHT: Fall Even Yrs.

DESCRIPTION: Reading and analyzing major ancient Near Eastern texts in English translation. Methodology for dealing with potential biblical parallels.

**Course Outcomes**
- Students will be able to competently read, analyze, and communicate about Classical Near Eastern texts.
- Extrapolate cultural and historical information from primary texts, while accurately placing them in their original historical and cultural context.

**Middle and Near Eastern Studies**

**Majors**

- BA in Ancient Near Eastern Studies
- BA in Middle East Studies/Arabic

**Minors**

- Ancient Near Eastern Studies
- Middle East Studies

**Course Information**

- Ancient Near Eastern Studies (ANES) Courses
- Middle East Studies/Arabic (MESA) Courses

Critically analyze and write about scholarly theories on major Classical Near Eastern texts.

ANES 353R : Archaeological Fieldwork in the Near East. (1-3:Arr:Arr)

PREREQUISITE: Ancient Near Eastern Studies coordinator's consent.

DESCRIPTION: Archaeological fieldwork and corresponding field school activities in the Near East.

**Course Outcomes**

- Credit for those students who participate in an authorized "dig" somewhere in the Near East, thus gaining firsthand experience with archaeological techiques, such as excavating, analyzing, and recording data. A written report on the experience is required for academic credit.

ANES 363 : Hebrew Bible Studies. (3:3:0)

WHEN TAUGHT: Winter Odd Yrs.

PREREQUISITE: HEB 331

DESCRIPTION: Current analytical methods used in academic study and interpretation of the Hebrew Bible.

**Course Outcomes**

- Students will be introduced to the variety of interpretative strategies and theories about the Hebrew Bible
- Students will analyze and interpret passages of scripture from the Hebrew Bible assisted by and comparing LDS and non-LDS sources and approaches.
- Students will reflect and write about their own approach to the Hebrew Bible.

ANES 390R : Directed Readings in Ancient Near Eastern Studies. (1-3:Arr:0)

WHEN TAUGHT: Contact Department.

RECOMMENDED: Written plan of study approved by both instructor and program coordinator.

DESCRIPTION: Directed individual study of historical topics or ancient texts.

**Course Outcomes**

There are no course outcomes available

ANES 392R : Topics in Ancient Near Eastern Studies. (2-3:ARR:0)

DESCRIPTION: Topical studies in the ancient Near East based on student interest and faculty expertise.

**Course Outcomes**

- Students will demonstrate their ability to research and write / present in-depthabout a particular ANE topic, situating it within the larger field of ANES, employing both rigor and academic integrity.

**400-Level Courses**

ANES 430R : Advanced Topics in Ancient Near Eastern Studies. (3:3:0)

WHEN TAUGHT: Winter Even Yrs.

DESCRIPTION: Seminar involving in-depth examination of an ancient Near Eastern topic and then writing about it.

**Course Outcomes**

- Students will demonstrate at a senior level their ability to research and write / present in-depth about a particular ANE topic, situating it within the larger field of ANES, employing both rigor and academic integrity.

ANES 495 : Senior Seminar in Ancient Near Eastern Studies. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Capstone seminar utilizing research, analytical, and writing skills to produce a senior research paper on an ancient Near Eastern topic.

**Course Outcomes**

- Students will be ableto do rigorous research in the area of their academic specialty that will result in a 20-25 page publishable senior paper, which, in turn, should prepare the student for further graduate work.
- Students will learn how to better present their own research and do quality peer review of other's work.
- Students will learn how to navigate and understand the publishing process, includinghow to solicit publication of work and how to find scholarly symposia and other suitable venues to present their research.

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**International and Area Studies Programs Home**

**Course Information**

- International and Area Studies (IAS) Courses

**African Studies**

**Minor**

- African Studies

**Asian Studies**

**Majors**

BA in Asian Studies:
Emphases:

- China Studies Emphasis
- Japan Studies Emphasis
- Korea Studies Emphasis

**Minors**

- Asian Studies

**Course Information**

- Asian Studies (Asian) Courses

**European Studies**

**Majors**

- BA in European Studies

**Minors**

- European Studies

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**International Development**

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- International Relations (IR) Courses

**Latin American Studies**

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**Minors**

- Latin American Studies

**Course Information**

- Latin American Studies (Lt Am) Courses

# Middle East Studies / Arabic (MESA)

Show All Course Descriptions
Hide All Course Descriptions

## Undergraduate Courses

### 200-Level Courses

MESA 201 : Introduction to Middle East Studies. (3:3:0)

WHEN TAUGHT: Fall

DESCRIPTION: Introduction to Middle East from historical, art/literary, and various social science perspectives, including introduction to disciplinary methodologies and major issues of interest.

**Course Outcomes**

- This course identifies major areas of study necessary to understand the culture, context, and areas of current concern in the Middle East and poses questions as to how we may go about learning.

MESA 250 : Introduction to the Religion of Islam. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Exploring the rise of Islam, the life of Muhammad, basic beliefs and practices, major figures and movements, and contemporary political and social issues.

**Course Outcomes**

- Study of the sources, history, principles of religion, law, and practice from the founding of Islam until the present period.

### 300-Level Courses

MESA 350 : Islam in Contemporary Society. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: MESA 250

DESCRIPTION: Islam in modern society: doctrine, practices, institutions, approaches to the challenges of modern life; the rise of fundamentalism.

**Course Outcomes**

- Class on issues which face contemporary Muslims throughout world.

MESA 398R : Directed Middle East Study. (1-3:Arr.:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Instructor's consent; Middle East Studies/Arabic coordinator's consent.

DESCRIPTION: Study and research in the Middle East.

**Course Outcomes**

- This course is for students who wish to follow a well-defined, advanced course of study achieved through readings, research and critique supervised by a professor.

MESA 399R : Academic Internship. (1-3:Arr.:Arr.)

WHEN TAUGHT: Contact Department.

PREREQUISITE: Middle East Studies/Arabic coordinator's consent.

DESCRIPTION: Individualized work or volunteer experience in the Middle East or with an organization dealing with the Middle East. Must be coordinated through International Study Programs or the Washington Seminar and with the consent of the Middle East Studies/Arabic coordinator.

**Course Outcomes**

No outcomes are available at this time.

**400-Level Courses**

MESA 451 : The Figure of Muhammad in Islamic Tradition. (3:3:0)

PREREQUISITE: ARAB 202

DESCRIPTION: Introduction to Muslim views regarding Muhammad as found in two significant Islamic textual traditions: The Sira (biography)/Maghazi (battles) and Hadith (acts) of Muhammad.

**Course Outcomes**

No outcomes are available at this time.

MESA 467R : Topics in Middle East Studies. (.5-3:Arr.:0)

DESCRIPTION: Topics vary.

**Course Outcomes**

- Substantative Research PapersLibrary/Internet Research

MESA 468R : Key Issues In Understanding the Middle East. (.5-3:Arr.:Arr.)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department

DESCRIPTION: Topics vary. Guest and BYU professors teach subjects in an intensive format over a limited time period through lectures and readings.

**Course Outcomes**

- Course on special topics taught by guest professors at the University.

MESA 494 : Capstone Arabic. (1:1:0)

WHEN TAUGHT: Winter

PREREQUISITE: ARAB 300 & ARAB 302

DESCRIPTION: Readings in Arabic texts supporting research for the MESA capstone seminar.

**Course Outcomes**

- Capstone Arabic provides an advanced course in reading Arabic primary and secondary sources for Capstone Seminar research.

MESA 495 : Senior Seminar in Middle East Studies. (3:3:0)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: PL SC 200 & ARAB 302

DESCRIPTION: Capstone course, including major research paper demonstrating ability to integrate cross-disciplinary information and methodology.

**Course Outcomes**

- The Capstone Seminar is the final course in the major. It combines in-depth research on a narrow topic with a research, analysis and writing of a substantive research paper in multiple drafts utilizing peer reviews at two stages, an oral presentation of findings, and research utilizing Arabic sources.

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**Jerusalem Center Home**

**Course Information**

- Jerusalem Center Courses

# Jerusalem Center for Near Eastern Studies

## General Information

1. The Brigham Young University Jerusalem Center for Near Eastern Studies is an educational and cultural center created for study in the Near East, emphasizing religion, the humanities, and the social sciences. The Jerusalem Center has four principal goals:
    a. Provide students an opportunity to study the scriptures in the setting in which the patriarchs, prophets, and the Lord himself lived and taught, and by that study to gain understanding of and commitment to the truths of the gospel of Jesus Christ.

    b. Expand students' understanding of the religions, cultures, history, archaeology, geography, languages, and politics of the ancient and modern Near East.

    c. Foster research and creative endeavors by BYU faculty, students, and visiting scholars.

    d. Promote understanding with other peoples, cultures, and religious faiths that trace their roots to the Holy Land.
2. To achieve these goals, the Jerusalem Center offers a core curriculum with courses in the Old and New Testament and in the ancient and modern Near East. In addition, the center provides specialized courses in archaeology, geography, history, and cultures of the Near East, including language study in Hebrew and Arabic.
3. The Jerusalem Center has marvelous physical facilities on Mount Scopus overlooking the oldest part of the city of Jerusalem. Classrooms, a library, a learning center, auditoriums, student and faculty apartments, a gymnasium and conditioning room, and a cafeteria provide a complete learning environment.

## Academic Program

1. **Calendar and Program Emphasis.** Three programs are offered during the calendar year, scheduled to approximate the Provo campus calendar: fall, winter, and spring-summer (four-month programs).
    a. The semester programs are designed for students who are currently enrolled at a college or university seeking their first undergraduate degree. Most of the courses offered are at the upper-division level. Students are encouraged to prepare themselves in advance for this exceptional experience by taking such courses as Pl Sc 170, Geog 120, Hist 300, 302, Arab 101, Heb 101.

    b. All programs include field trips within the Holy Land and to Jordan and Turkey.
2. **Predeparture Orientation Course.** This Independent Study course (NES 100) is taken the semester or term before a student's work at the Jerusalem Center.
3. **Curriculum.** The following subject areas are currently taught at the center:

    a. Biblical Studies: Old Testament and New Testament

    b. Ancient Near Eastern Studies

    c. Modern Near Eastern Studies

    d. Introductory course in either Hebrew or Arabic.

    e. Elective courses in biblical studies, ancient and modern Near Eastern Studies, and archaeology as arranged each semester.

**Note:** Some courses taken at the Jerusalem Center for Near Eastern Studies may be applied toward degrees in Near Eastern Studies, International Relations, and other majors in the College of Family, Home, and Social Sciences. Students should contact their advisement centers concerning specific degree requirements.

**Jerusalem Center Home**

**Course Information**

- Jerusalem Center Courses

# Jerusalem Center

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## Undergraduate Courses

Courses offered at the Jerusalem Center are *not* offered on the Provo campus and hence cannot be retaken.

## Orientation Course

NES 100 : Jerusalem Center Orientation. (1:2:0)

PREREQUISITE: Application for a Jerusalem Center foreign study program.
DESCRIPTION: Introduction to the peoples and cultures of the Near East.
NOTE: Required of all participants prior to departure.

**Course Outcomes**

No outcomes are available at this time.

## Religion Courses

REL A 101 : Old Testament Survey. (2:2:3)

OFFERED: Offered only at the BYU Jerusalem Center for Near Eastern Studies.
WHEN TAUGHT: Spring; Summer
DESCRIPTION: Survey of the Old Testament, integrated with extensive field study in the biblical world; leads to understanding, appreciation, and application of scriptural teachings today.
NOTE: Jerusalem Center courses may not be repeated.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the Old Testament narrative in its context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements of this course will be able to demonstrate that they have acquired and understanding of how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements of this course will be able to demonstrate that they have acquired an understanding of how selected Old Testament passages can be applied to daily living.

REL A 111 : New Testament Survey of the Gospels. (2:2:3)

OFFERED: Offered only at the BYU Jerusalem Center for Near Eastern Studies.
WHEN TAUGHT: Spring; Summer
DESCRIPTION: Survey of the New Testament Gospels integrated with extensive field experience in the biblical world; leads to understanding, appreciation, and application of scriptural teachings today.
NOTE: Jerusalem Center courses may not be repeated.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the New Testament bears witness of the mission and message of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected New Testament passages can be applied to daily living.

REL A 303R : Old Testament Studies. (1.5-3:Arr.:Arr.)

OFFERED: Offered only at the BYU Jerusalem Center for Near Eastern Studies.
WHEN TAUGHT: Fall; Winter; Spring; Summer
DESCRIPTION: Study of the Old Testament integrated with extensive field experiences in the biblical world; leads to an understanding, appreciation, and application of scriptural teachings today.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the Old Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the Old Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the Old Testament bears witness of the work of Jehovah.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected Old Testament passages can be applied to daily living.

REL A 311R : New Testament Studies of the Gospels. (1.5-3:Arr.:Arr.)

OFFERED: Offered only at the BYU Jerusalem Center for Near Eastern Studies.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Study of the New Testament Gospels integrated with extensive field experiences in the biblical world; leads to an understanding, appreciation, and application of scriptural teachings today.

**Course Outcomes**

- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament narrative in its historical and cultural context.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of the New Testament's fundamental doctrines and principles.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how the New Testament bears witness of the mission and message of Jesus Christ.
- Students who successfully complete the requirements for this course will be able to demonstrate that they have acquired an understanding of how selected New Testament passages can be applied to daily living.

## Near Eastern Studies Courses

NES 101R : Topics in Near Eastern Studies. (.5-3:ARR:ARR)

DESCRIPTION: Studies based on individual and program needs.

NOTE: Elective credit for major and minor. Offered at the Jerusalem Center for Near Eastern Studies only.

**Course Outcomes**

No outcomes are available at this time.

NES 136 : Introduction to Near Eastern Studies. (2:2:1)

DESCRIPTION: Survey core course in social science/humanities.

NOTE: Offered (as part of the summer term program) at the Jerusalem Center for Near Eastern Studies only. Elective credit for major and minor.

**Course Outcomes**

There are no course outcomes available

NES 326 : Introduction to Near Eastern Studies. (2:2:1)

PREREQUISITE: At least junior class standing.

DESCRIPTION: Social science/humanities core course.

NOTE: Elective credit for major and minor. Offered (as part of the summer term program) at the Jerusalem Center for Near Eastern Studies only. Does not receive GE credit.

**Course Outcomes**

No outcomes are available at this time.

NES 336R : Ancient Near Eastern Studies. (1.5-3:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Social science/humanities core course emphasizing ancient history extending to the Byzantine period.

NOTE: Elective credit for major and minor. Offered at the Jerusalem Center for Near Eastern Studies only.

**Course Outcomes**

There are no course outcomes available

NES 347R : (NES-Hist 242R) Arab and Islamic Civilization. (1-2:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Social science/humanities core course covering Arab and Islamic civilization; historical evolution of Middle East to present. Overview of modern Palestinian society.

NOTE: Elective credit for major and minor in NES. Offered at the Jerusalem Center for Near Eastern Studies only. Does not receive GE credit.

**Course Outcomes**

There are no course outcomes available

NES 349R : (NES-Hist 243R) Jewish Civilization. (1-2:Arr.:Arr.)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Social science/humanities core course; broad introduction to Jewish self-understanding and history, focusing on relationships among people, faith, and land.

NOTE: Elective credit for major and minor. Offered at the Jerusalem Center for Near Eastern Studies only. Does not receive GE credit.

**Course Outcomes**

There are no course outcomes available

NES 395R : Jerusalem Center Field Trips. (.5-1:0:Arr.)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Concurrent enrollment in NES 336R.

DESCRIPTION: The history, archaeology, and scriptural relevance of important places visited during participation in the BYU Jerusalem Center program.

**Course Outcomes**

- Field trips correlated with classroom study to maximize the advantage of on-site learning.

NES 398R : Advanced Topics in Near Eastern Studies. (.5-3:ARR:ARR)

DESCRIPTION: Studies based on individual and program needs.

NOTE: Elective credit for major and minor. Also offered at the Jerusalem Center for Near Eastern Studies.

**Course Outcomes**

There are no course outcomes available

NES 499R : Special Topics in Near Eastern Studies. (.5-3:ARR:0)

PREREQUISITE: Instructor's consent.

DESCRIPTION: Studies based on individual and program needs.

**Course Outcomes**

There are no course outcomes available

## Language Courses

ARAB 100R : Introduction to Arabic. (.5-1:Arr.:0)

OFFERED: Offered at the Jerusalem Center for Near Eastern Studies only.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Beginning Arabic

**Course Outcomes**

- Demonstrate ability to socially interact with Arabs appropriately (control basic "God wishes," gender/status sensitive).
- Comprehend simple written and audio/video texts on familiar topics.
- Converse simply but successfully with native speakers of Arabic about self and family; order a meal, ask/give simple directions, and accomplish other basic tasks.

HEB 100R : Introduction to Hebrew. (.5-1:Arr.:0)

OFFERED: Offered at the Jerusalem Center for Near Eastern Studies only.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Beginning Hebrew.

**Course Outcomes**

- Upon completion of this course, participants will have acquired the skills necessary to:- Speak Modern Hebrew at beginning levels- Read and engage beginning level texts in Hebrew, and express thoughts and ideas in written Hebrew- Understand the modern Israeli cultural tradition (including music, art, and literature)

HEB 314R : Intermediate Hebrew Language in Jerusalem. (1-3:Arr:0)

WHEN TAUGHT: Spring; Summer

PREREQUISITE: HEB 202

DESCRIPTION: Emphasizes intermediate conversation in everyday situations. Students role play various situations in class and then apply learning in Jerusalem.

NOTE: Offered at the Jerusalem Center for Near Eastern Studies only. Replaces Jerusalem Center core course equivalent of Hebrew 100R.

**Course Outcomes**

There are no course outcomes available

HEB 346R : Israeli and Jewish Civilization. (1-2:Arr:0)

| | |
|---|---|
| WHEN TAUGHT: | Spring; Summer |
| PREREQUISITE: | HEB 202 |
| DESCRIPTION: | Social science/humanities core course. Broad introduction to Jewish self-understanding and history, focusing on relationships among people, faith, and land. |
| NOTE: | Offered at the Jerusalem Center for Near Eastern Studies only. Replaces Jerusalem Center core course requirement of NES 349R (2 cr. hrs.). Does not receive GE credit. |

**Course Outcomes**

There are no course outcomes available

**Note:** Heb 314R and Heb 346R are offered as part of the Intensive Modern Hebrew program.

Student Activities Courses
Student Development Courses

**Student Activities Home**

**Course Information**

Student Activities (StAc) Courses

# Student Activities

Larry T. Hall, Director of Student Wellness
203B RB, (801) 422-7303

Glenna Padfield, Student Activity Program Coordinator
203C RB, (801) 422-1601

The purpose of activity courses is to provide opportunities for students to participate in a wide range of movement, fitness, and skill-building experiences. Such activities are designed to instill in learners responsible attitudes and behaviors essential to promoting and maintaining a physically active lifestyle throughout life.

**Student Activities Home**

**Course Information**

- Student Activities (StAc) Courses

# Student Activities (StAc)

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## Undergraduate Courses

**100-Level Courses**

STAC 100R : Intercollegiate Athletics. (.5:2:10.5)

WHEN TAUGHT: Fall; Winter

**Course Outcomes**

- Demonstrate competence and proper technique in chosen sport through practice and competition for the University Intercollegiate Athletics team.
- Demonstrate proficiency with the rules, strategies and scoring for the sport in practice and in competition.
- Demonstrate improvement in sport skills and physical fitness in practice and in competition.

: Intercollegiate Athletics: Cheer.

**Course Outcomes**

: Intercollegiate Athletics: Men's Baseball.

**Course Outcomes**

: Intercollegiate Athletics: Men's Basketball.

**Course Outcomes**

: Intercollegiate Athletics: Men's Diving.

**Course Outcomes**

: Intercollegiate Athletics: Men's Football.

**Course Outcomes**

: Intercollegiate Athletics: Men's Golf.

**Course Outcomes**

: Intercollegiate Athletics: Men's Swimming.

**Course Outcomes**

: Intercollegiate Athletics: Men's Tennis.

**Course Outcomes**

: Intercollegiate Athletics: Men's Track and Field.

**Course Outcomes**

: Intercollegiate Athletics: Men's Volleyball.

**Course Outcomes**

: Intercollegiate Athletics: Women's Basketball.

**Course Outcomes**

: Intercollegiate Athletics: Women's Diving.

**Course Outcomes**

: Intercollegiate Athletics: Women's Golf.

**Course Outcomes**

: Intercollegiate Athletics: Women's Gymnastics.

**Course Outcomes**

: Intercollegiate Athletics: Women's Soccer.

**Course Outcomes**

: Intercollegiate Athletics: Women's Softball.

**Course Outcomes**

: Intercollegiate Athletics: Women's Swimming.

**Course Outcomes**

: Intercollegiate Athletics: Women's Tennis.

**Course Outcomes**

: Intercollegiate Athletics: Women's Track and Field.

**Course Outcomes**

: Intercollegiate Athletics: Women's Volleyball.

**Course Outcomes**

STAC 102R : Adapted Physical Education. (.5:0:2)

PREREQUISITE: Medical referral.

**Course Outcomes**

- Accommodate students who are enrolled in a regular activity class and have become injured such that they cannot participate in full activity. Exercise program is geared to accommodate individual needs and abilities.

STAC 104 : Dance Aerobics. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Aerobic dance is an individualized dynamic fitness program designed to bring about an increase in total body fitness for participants of all levels of condition, ability, and needs.

**Course Outcomes**

- Students will learn how to perform a safe and effective workout for total body fitness.
- Students will evaluate their own physical fitness and set individual goals for improvement.
- Students will demonstrate an understanding of basic scientific principles regarding cardiovasular endurance, strength, flexibility, and lean/fat body ratio.

STAC 106 : Badminton, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter

**Course Outcomes**

- Demonstrate competence in the fundamental skills of badminton: clear, smash, drive and drop through class drills, practice and competition.
- Demonstrate an understanding of the rules, strategies, and scoring in badminton by passing a written test.

STAC 107 : Pilates. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Summer

DESCRIPTION: Pilates strengthens and tones muscles, improves posture, provides flexibility and balance, unites body and mind, and enables a sense of mental control.

**Course Outcomes**

- Students will learn how to perform a safe and effective workout for total body fitness.
- Students will evaluate their own physical fitness and set individual goals for improvement.
- Students will demonstrate an understanding of basic scientific principles regarding cardiovasular endurance, strength, flexibility, and lean/fat body ratio.

STAC 108 : Zumba. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Zumba Fitness is a dance exercise program designed to bring about an increase in total body fitness for participants of all levels of condition, ability, and needs.

**Course Outcomes**

- Students will establish healthy perspectives on body image and appropriate health goals.
- Students will evaluate their own health and determine needed changes.
- Students will learn a variety of Latin, international, and folk dance movements adapted for the purpose of exercise.
- Students will gain an understanding of basic principles of exercise, physiology, and health maintenance.

STAC 109 : Yoga. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring

DESCRIPTION: Yoga teaches how to exercise and/or meditate in order to unify the mind, body and spirit, feeling quiet in your mind, strong and energized in your body, and peaceful in your spirit.

**Course Outcomes**

- Students will demonstrate an understanding of basic yoga principles and practices.
- Students will learn basic sequencing and alignment for an Ashtanga Vinyasa practice.
- Students will develop a yoga practice that supports and honors their bodies.

STAC 110 : Indoor Cycling. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Students in the class will be guided through weekly cycling exercise sessions to improve their cardiovascular fitness and aerobic endurance as well as increase their leg muscle strength and power.

**Course Outcomes**

- Students will learn proper bicycle positioning skills and techniques to provide comfort, safety and efficiency while cycling.
- Students will learn some basica principles of endurance training and be exposed to a variety of cycling exercise programs designed to develop muscular endurance, strength and power.
- Students will understand basic principles of nutrition and hydration to support endurance exercise performance.

STAC 111 : Basketball, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Demonstrate competence in the fundamental skills of basketball through class drills, practice and competition.
- Demonstrate an understanding of the rules, strategies, and scoring in basketball by passing a written test.

STAC 112 : Basketball, Intermediate. (.5:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ExSc 111 or equivalent.

**Course Outcomes**

- Demonstrate competence in intermediate basketball skills through class drills, practice and competition.
- Demonstrate an understanding of the rules, strategies, and scoring in basketball by passing a written test.

STAC 116 : Bowling, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

NOTE: Fee.

**Course Outcomes**

- Demonstrate competence in the fundamental skills of bowling through class drills, practice and competition.
- Demonstrate an understanding of the rules, vocabulary, strategies, and scoring in bowling by passing a written exam.
- Identify in a written exam the benefits of bowling as a physical activity and source of life-long enjoyment.

STAC 121 : Diving, Springboard. (.5:0:2)

WHEN TAUGHT: Fall; Winter

**Course Outcomes**

- Demonstrate competence in the fundamentals of diving in eight different dives from five different groups from the 1-meter springboard.
- Demonstrate an understanding of diving mechanics by passing a written midterm evaluation.

STAC 125 : Flexibility. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Demonstrate the ability to assess flexibility progress through the completion of pre and post tests.
- Demonstrate an understanding of the strategies behind and importance of flexibility to improve and maintain good health by passing a written test.
- Demonstrate the ability to make life changing decisions about health and fitness by writing a one-month flexibility program.

STAC 131 : Golf, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Demonstrate in drills and practice competence in the fundamental skills of golf on: drives, approaches, pitches, chips, and putts.
- Demonstrate golfing skills by playing three 9-hole rounds of golf.
- Demonstrate and understanding of the rules, strategies and scoring in golf by passing three open-book quizzes, reading responses and grade sheets.

STAC 132 : Golf, Intermediate. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ExSc 131 or equivalent.

**Course Outcomes**

- Demonstrate in drills and practice competence in the fundamental skills of golf on: drives, approaches, pitches, chips, and putts.
- Demonstrate golfing skills by playing three 9-hole rounds of golf.
- Demonstrate an understanding of the rules, strategies and scoring in golf by passing three open-book quizzes, reading responses and grade sheets.

STAC 136 : Gymnastics, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring

**Course Outcomes**

- Identify specific skills for each apparatus.
- Demonstrate elementary skills on each apparatus.
- Increase strength and flexibility.
- Demonstrate an understanding of the course requirements and gymnastics terminology by passing an exam.

STAC 139 : Jogging. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Demonstrate an understanding of the scientific principles of exercise and nutrition and their effects on the body by passing a written exam.
- Demonstrate an understanding of training laws, principles, and theory by applying them when setting up a personal training program.
- Learn to utilize correct running mechanics, nutritional principles and specific physiological and biomechanical testing to avoid overtraining and injury.

STAC 141 : Martial Arts. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Show and explain proper etiquette expected in martial arts in a written examination and through daily class activities.
- Perform basic grappling control tactics in class to defeat larger and stronger opponents.
- Participate in grappling martial art competition.

STAC 143R : Physical Training--ROTC. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring

PREREQUISITE: For ROTC students only.

**Course Outcomes**

- Demonstrate in class activities knowledge, ability, motivation and experience to maintain Air Force fitness standards.
- Demonstrate in class activities familiarity with customary Air Force exercises and group physical training protocol.
- Learn and practice exericses and techniques to get high scores on the Air Force Physical Fitness Assessment.
- Generate Esprit de Corps, teamwork, and positive attitude toward maintaining a fit lifestyle.
- Demonstrate how to pass the APFT Army Physical Fitness Test scoring at least 70 in each event.Demonstrate how to pass the CWST Combat Water Survival TestTest individual ability to complete a four mile run in 36 minutes or less.Test individual ability to complete a six mile ruck march in 90 minutes or less.Employ a variety of exercise plans.Produce improved cardiovascular endurance.Transform and build physical strength.Discover self-imposed limits.
- Generate determination to overcome challenges as a team.Organize small group exercise periods.
- Manage healthy and well balanced eating habits.

STAC 146 : Racquetball, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Demonstrate an understanding of safety precautions, rules, etiquette of singles, doubles, and cut-throat games of racquetball by passing four online quizzes.
- Demonstrate proper form and technique equivalent to at least a level D on the following skills: Serves, offensive shots, defensive shots, offensive and defensive strategies, drills.

STAC 147 : Racquetball, Intermediate. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Demonstrate an understanding of safety precautions, rules, and etiquette of singles, doubles, and cut-throat games of racquetball by passing four online quizzes.
- Demonstrate proper form and technique equivalent to at least a level C on the following skills: Serves, offensive

shots, defensive shots, offensive and defensive strategies, drills.

STAC 150 : Ice Skating. (.5:0:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Developing figure skating and ice hockey skills.

NOTE: Taught off campus. Fee.

**Course Outcomes**

- Demonstrate the ice skating skills covered in the course using proper technique and form in a 1:00-3:00 minute choreographed group or solo ice skating program to music or during an individual exam on ice with the instructor.
- Demonstrate knowledge of ice skating history, protocol, ice rinks, skates, and figure skating by passing a written exam.

STAC 151 : Ice Hockey. (.5:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ExSc 150 or equivalent.

DESCRIPTION: Basic power skates, puck and stick handling, and game strategies.

NOTE: Taught off campus. Fee.

**Course Outcomes**

- Demonstrate the ice hockey skills covered in the course using proper technique and form in an organized game.
- Demonstrate knowledge of hockey history, hockey equipment, ice rinks, and rules and strategies of playing hockey by passing a written exam.

STAC 152 : Intermediate Ice Skating. (.5:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ExSc 150 or equivalent.

DESCRIPTION: Developing intermediate ice skating skills.

NOTE: Taught off campus. Fee.

**Course Outcomes**

- Demonstrate the ice skating skils covered in the course using proper technique and form in a 1:00-3:00 minute choreographed group or solo ice skating program to music or during an individual exam on ice with the instructor.
- Demonstrate knowledge of ice skating history, protocol, ice rinks, skates and figure skating by passing a written exam.

STAC 153 : Intermediate Ice Hockey. (.5:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ExEc 151 or equivalent.

DESCRIPTION: Developing intermediate ice hockey skills.

NOTE: Taught off campus. Fee.

**Course Outcomes**

- Demonstrate the ice hockey skills covered in the course using proper technique and form in an organized game.
- Demonstrate knowledge of hockey history, hockey equipment, ice rinks, and rules and strategies of hocky by passing a written exam.

STAC 155 : Self-Defense. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Fundamental principles, skills, and techniques.

**Course Outcomes**

- Demonstrate the punch, kick, strike, and block skills used to evade or excape an attack by passing a simulation test.
- Demonstrate a knowledge of effective responses (verbal, physical, use of objects) to escape from an attack by passing a written exam.

STAC 156 : Soccer, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Demonstrate basic soccer skills of : dribbling, trapping, passing, shooting, throw-in, goalkeeping, offense and defense strategies.
- Demonstrate an understanding of the rules and strategies of soccer by passing a written final.

STAC 157 : Soccer, Intermediate. (.5:0:2)

PREREQUISITE: ExSc 156 or equivalent.

**Course Outcomes**

- Demonstrate appropriate soccer skills by passing a skill assessment on: dribbling, trapping, passing, shooting, goalkeeping, heading, give-'n-go, support, through balls, back passing, etc.
- Demonstrate a knowledge and understanding of the game of soccer by passing a written exam.

STAC 161 : Skiing, Beginning. (.5:0:2)

WHEN TAUGHT: Winter

NOTE: Sections formed on basis of ability. Students responsible for following costs: bus transportation, ski equipment, lift fees. Students required to use bus transportation provided. Fee.

**Course Outcomes**

- Demonstrate motor skills sufficient to enjoy participation in skiing or snowboarding by passing a daily skill acquisition assessment.
- Demonstrate an understanding of mountain awareness, mountain responsibility, and equipment maintenance by passing a written exam.

STAC 162 : Skiing, Intermediate. (.5:0:2)

WHEN TAUGHT: Winter

NOTE: Sections formed on basis of ability. Students responsible for following costs: bus transportation, ski equipment, lift fees. Students required to use bus transportation provided. Fee.

**Course Outcomes**

- Demonstrate motor skills sufficient to enjoy participation in skiing or snowboarding as a lifelong physical activity by passing a daily skill acquisition assessment.
- Demonstrate an understanding of mountain awareness, mountain responsibility, and equipment maintenance by passing a written exam.

STAC 164 : Skiing, Cross-Country. (.5:0:2)

WHEN TAUGHT: Winter

NOTE: Students responsible for following costs: bus transportation, ski equipment, trail fees. Students required to use bus transportation provided. Fee.

**Course Outcomes**

- Demonstrate the basic skills of cross country skiing in classic and skating disciplines.
- Demonstrate an understanding of skiing safety, equipment, and fundamental definitions by passing a written exam.

STAC 170 : Swimming for Nonswimmers. (.5:0:2)

WHEN TAUGHT: Fall; Winter

**Course Outcomes**

- Demonstrate proper form and technique in the front and back float, front and back glide, freestyle, backstroke, and elementary backstroke.
- Demonstrate an understanding of swimming technique by passing a written exam.

STAC 171 : Swimming, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring

**Course Outcomes**

- Demonstrate proper form and technique in the standard swimming strokes (freestyle, backstroke, and breaststroke).
- Demonstrate a beginning swimming fitness level by completing a 500-yard swim test.
- Demonstrate ability to correctly set up swimming workouts by submitting a sample workout.

STAC 172 : Swimming, Intermediate. (.5:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ExSc 171 or equivalent.

**Course Outcomes**

- Demonstrate proper form and technique in all four competitive strokes.
- Demonstrate an intermediate swimming fitness level by completing a 650-yard swim test.

STAC 175 : Beginning Scuba Diving. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Developing scuba diving skills. Open Water Diver Certification upon successful completion.

NOTE: Taught off campus. Fee.

**Course Outcomes**

- Demonstrate mastery of the basic, fundamental skills of SCUBA by completing the PADI Open Water Diver certification in both pool and open water.
- Demonstrate an appropriate understanding of SCUBA diving theory by passing 4 quizzes and a final exam on the following subjects: diving physics and physiology, euipment, dive planning, emergency procedures, aqutic life and environment.

STAC 176 : Intermediate Scuba Diving. (.5:2:2)

WHEN Fall; Winter

TAUGHT:

PREREQUISITE: StAc 175 or equivalent.

DESCRIPTION: This class focuses on specialty techniques of SCUBA diving for divers who are already open water certified. The class is taught by Dive Utah (diveutah@diveutah.com).

NOTE: Taught off campus. Fee.

**Course Outcomes**

There are no course outcomes available

STAC 179 : Water Aerobics. (.5:0:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Exercise workout in water emphasizing flexibility, strength, and endurance.

NOTE: For nonswimmers and swimmers.

**Course Outcomes**

- Demonstrate an understanding of a variety of exercises in the water, including cardiovascular, muscle strengthening, and toning by showing an exercise routine to the class.
- Demonstrate an appropriate level of aerobics fitness

STAC 181 : Tennis, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Demonstrate basic tennis stroke techniques of: ground strokes, serves, volleys, overheads and lobs.
- Demonstrate an understanding of essential tennis information regarding equipment, etiquette, facilities, scoring, and playing of the game by passing a written exam.

STAC 182 : Tennis, Intermediate. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ExSc 181 or equivalent.

**Course Outcomes**

- Demonstrate intermediate level tennis stroke techniques on: ground strokes, serves, volleys, overheads and lobs.
- Demonstrate an understanding of essential tennis information regarding equipment, etiquette, facilities, scoring, and playing of the game using singles strategy and doubles strategy by passing a written exam.

STAC 183 : Tennis, Advanced. (.5:0:2)

WHEN TAUGHT: Fall; Winter

PREREQUISITE: ExSc 182 or equivalent.

**Course Outcomes**

- Demonstrate competence in the advanced skills of tennis of: ground strokes, volleys, mashes, and serves.
- Demonstrate improvement in your game by learning how to play as a and against a counterpuncher, all-courter, and serve and volleyer.
- Demonstrate improvement in game by reducing unforced errors.

STAC 186 : Volleyball, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Demonstrate competence in the fundamental skills of volleyball by passing a skill assessment on: underhand and overhand serves, forearm passing, setting, attacking, blocking, serve reception techniques, 4-2 offense and defense strategies.
- Demonstrate an understanding of the rules, strategies, and scoring in volleyball by passing a written test.

STAC 187 : Volleyball, Intermediate. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: StAc 186 or equivalent.

**Course Outcomes**

- Demonstrate competence in intermediate volleyball skills on: floater and top spin serves, forearm passing, setting, back setting, strong side and weak side attacking, blocking, serve reception techniques, 6-6, 5-1, and 6-2 offenses, and 4-2 defensive strategies.
- Demonstrate an understanding of the rules, strategies, and scoring in volleyball by passing a written test.

STAC 188 : Volleyball, Advanced. (.5:0:2)

PREREQUISITE: ExSc 187 or equivalent.

**Course Outcomes**

No outcomes are available at this time.

STAC 191 : Weight Training, Beginning. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Demonstrate an understanding of the concepts and strategies associated with weight training by passing a written exam.
- Demonstrate a foundation of muscle strength by taking a muscle strength test.

STAC 192 : Weight Training, Intermediate. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: ExSc 191 or equivalent.

DESCRIPTION: Theory and technique of maximal strength development, emphasizing "power" and "Olympic" lifts.

**Course Outcomes**

- Demonstrate an understanding of the concepts and strategies associated with weight training by passing a written exam.
- Demonstrate a foundation of muscle strength by taking amuscle strength test.

STAC 199R : Team Manager Internship. (1:0:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Interacting with athletic teams; testing personal management methods under the supervision of trained personnel.

**Course Outcomes**

- Demonstrate organization, competency and reliability as an asset to the management of the assigned team.
- Demonstrate proficiency in practice strategies, NCAA rules and game day preparation with the assigned sport.

### 200-Level Courses

STAC 201R : Extramural Sports. (.5:0:2)

WHEN TAUGHT: Fall; Winter; Spring; Summer

**Course Outcomes**

- Demonstrate competence and proper technique in skills of the sport through practice and competition for the University extramural team.
- Demonstrate proficiency with the rules, strategies and scoring in the sport through game preparation and execution in competition.
- Demonstrate improvement in sport skills and physical fitness.

: Extramural Lacrosse.

**Course Outcomes**

: Extramural Racquetball.

**Course Outcomes**

: Extramural Rugby.

**Course Outcomes**

: Extramural Soccer.

**Course Outcomes**

STAC 277 : Techniques of Lifeguarding. (2:1:3)

WHEN TAUGHT: Winter

PREREQUISITE: Swim competency test (given first day of class).

DESCRIPTION: First-aid and lifeguard skills training, including instruction in CPR, and American Red Cross certification for lifeguard training.

**Course Outcomes**

- Demonstrate competency in all required lifeguarding skills and activities that prevent, recognize and respond to emergencies.
- Demonstrate ability to provide care for injuries and sudden illnesses until emergency medical services take over.

STAC 278 : Water Safety Instructor Training. (2:1:3)

PREREQUISITE: ARC Swimmer--level competency.

DESCRIPTION: Leads to American Red Cross WSI certification. Swimming teaching methods that include teaching swimming to special needs students.

**Course Outcomes**

- Acquire American Red Cross certification to teach swimming and water safety courses.
- Demonstrate how to plan and organize courses using block and lesson plans.
- Practice teaching techniques and demonstrating required skills.

## 500-Level Graduate Courses (available to advanced undergraduates)

STAC 585 : Pedagogical Techniques in Exercise Sciences. (1:1:0)

WHEN TAUGHT: Fall

PREREQUISITE: Graduate student with teaching assistantship in exercise sciences.

DESCRIPTION: Teaching methodologies for instruction in fitness and sports courses.

**Course Outcomes**

- Develop a Semester Unit Plan for an activity class they teach.
- Develop a list of activities appropriate for each of the four parts of the lesson plan for the activity class they teach. Incorporate these activities into the Semester Unit Plan.
- Students will improve their teaching through collaboration with other GTAs teaching their class.
- Students will use evaluation techniques that are fair and reflective of the students' abilities and knowledge. Techniques will be aligned with course objectives and outcomes.

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Course Information

Student Development (StDev) Courses

Faculty

# Student Development Courses

Tyler R. Pedersen, Chair
2516 WSC (801) 422-6291

Counseling and Career Center
2518 WSC, (801) 422-6291

Student development courses are offered by clinical faculty from the Counseling and Career Center, academic advisors from the University Advisement Center and other areas of campus, as well as by professionals in their respective fields. Courses offered in student development are intended to help BYU students with their educational, career, and personal development. When a student enrolls in a student development course they increase their ability to:

1. Raise their grade point average (GPA)
2. Manage their time
3. Be an effective decision maker
4. Improve performance on exams with better test-taking skills
5. Make reading a meaningful experience
6. Handle the notetaking challenge
7. Create strategies to deal with the expectations found in college
8. Explore and identify a major that is suited to their interests, values, and plans
9. Face the university experience with greater confidence
10. Recognize their developing personality and strengths
11. Grow in personal development as a college student
12. Develop personal awareness

**Student Development Home**

**Course Information**

- Student Development (StDev) Courses

**Faculty**

# Student Development (StDev)

Show All Course Descriptions
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## Undergraduate Courses

### 100-Level Courses

STDEV 100 : Essential College Skills. (1:1:0)

OFFERED: Independent Study also.

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Developing essential college skills. Aims of BYU, values and goals, sound thinking skills. Learning styles and adjustment to college courses. College requirements and planning.

**Course Outcomes**

- 1. Articulate their educational values and goals and how they align with the purposes of a BYU education.
- 2. Analyze the effectiveness of their own planning/scheduling system and be able to demonstrate that they understand sound time management and goal setting principles.
- 3. Add new study and test preparation (study) skills to their existing repertoire.

STDEV 109 : Effective Study and Learning. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Learning to learn: motivation, time management, reading, listening, notetaking, test preparation, and memorizing; cognitive and ethical development in a learning environment.

**Course Outcomes**

- Students will be able to apply individualized time management strategies to their coursework and other activities.
- Students will be able to apply intentional memorization strategies.
- Students will demonstrate the application of effective college reading strategies.
- Students will be able to produce course lecture notes using a systematic note-taking system.
- Students will be able to apply effective college test-preparation and test-taking strategies.
- Students will be able to relate theories of college student development to their personal development and academic progress.

STDEV 117 : Career Exploration. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Applying theories of individual, academic, and career development to the university student. Exploring university opportunities and college majors; graduation planning.

**Course Outcomes**

- Increase knowledge of college majors, career options, and additional world-of-work factors that influence career choice.
- Develop greater awareness of personal qualities, interests, skills, and values that play a role in career-decision making.
- Demonstrate increased confidence and ability to make decisions as well as progress towards making career decisions.
- Display an awareness of and ability to access educational and career information resources.

STDEV 132 : Introduction to Tutoring. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Developing college-level tutoring skills; academic success and the tutoring cycle. Leads to level-one tutoring certification of the College Reading and Learning Association.

**Course Outcomes**

- Students will understand the goals, roles and best practices of tutoring.
- Students will achieve CRLA level proficiency in tutoring.
- Students will appreciate the value of tutoring.

STDEV 133 : Advanced Tutoring. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Developing advanced-level tutoring approaches and analytical thinking. Leads to level-two tutoring certification of the College Reading and Learning Association.

**Course Outcomes**

- Students will understand advanced tutoring skills.
- Students will appreciate the value of tutoring specific groups.
- Students will achieve CRLA advanced-level proficiency in tutoring.

STDEV 140 : Life Planning and Decision Making. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Individual development in life planning and decision making, emphasizing personal maturity, goal setting, and decision making abilities in areas of common concern to young adults.

**Course Outcomes**

- Understand developmental theories as they relate to young adult development, and evaluate your individual progress within the scope of these theories.
- Learn the main components of decision making and come to a better understanding of your personal decision making style and ways in which you may want/need to adapt it to better suit your needs.
- Become familiar with basic concepts of personality development and be able to identifyyour individual personality strengths and challenges
- Learn the components of goal setting and accomplishment and be able to set attainable goals for yourself.
- Learn the principles of time management and how it applies to decision making and life planning.

STDEV 141R : Individual Development. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Applying theories of psychological development (including rational living, positive psychology, and dialectical behavior therapy) in a self-assessment approach to promoting self-awareness and psychological development.

**Course Outcomes**

- Learn skills to achieve balance and competency in the developmental challenges facing college students and throughout the lifespan.
- Understand developmental theories on predictable life challenges at different stages of life.
- Learn and practice skills and psychological theories related to six areas of personal development.
- Set goals in each of the six areas, create a plan for implementing these goals, practice skills related to these goals and report on their progress.

STDEV 145 : Integrity for Life: Building Personal Character. (1:1:0)

DESCRIPTION: Exploring integrity in depth, applying critical thinking to moral dilemmas, creating a personal vision for developing character intentionally.

**Course Outcomes**

There are no course outcomes available

STDEV 168R : Law Lecture Series. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Exploring legal professions. Primary focus on guest lecturers representing various legal professions.

**Course Outcomes**

- 1. Understand what a legal education and career requires and provides.
- 2. Accurately assess whether or not a legal education and career is the correct choice for them.

STDEV 170 : Introduction to Health Professions. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Overview of health professions: medical, dental, and other specialties. Primary focus on guest lectures from various practitioners and clinicians.

**Course Outcomes**

- 1. Students will gain a basic understanding of a significant number of health professions.
- 2. Students will increase knowledge of health professions through class presentations with health care professionals.
- 3. Students will learn more about health care provision through service learning in preparation for service-oriented health professions.
- 4. Students will increase awareness of the requirements to enter various health professions and where to find additional information about their preferred health care field.

STDEV 199R : Academic Internship. (.5-3:0:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

PREREQUISITE: Department internship coordinator's consent.

DESCRIPTION: Work experience evaluated by supervisor and faculty mentor and posted on transcript.

**Course Outcomes**

- Students will be able to better determine major and/or career paths based on hands-on experiences in the internship provider workplace setting.

**200-Level Courses**

STDEV 214R : Special Topics in Student Development. (.5-3:1:0)

WHEN TAUGHT: Contact Department.

**Course Outcomes**

There are no course outcomes available

STDEV 247 : Performance Psychology. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Learning psychological barriers to peak performance. Developing effective techniques and routines to enhance performance.

**Course Outcomes**

There are no course outcomes available

STDEV 260 : Constitutional Research. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: The United States Constitution; research on original sources used to create the Constitution.

**Course Outcomes**

- Know and develop interpretation and analytic skills regarding the 7 articles and 27 amendments to the Constitution.
- Understand the current issues surrounding Constitutional articles and amendments.
- Improve their editing and research skills.

STDEV 261 : The Law in Literature. (2:2.0:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Examining how the law--including the justice system, attorneys, judges, and clients--has been portrayed in literary works.

**Course Outcomes**

- Have a better understanding of what a legal education and career requires and provides.
- Be able to more accurately assess whether or not a legal education and career is the correct choice for them.
- Be able to critically analyze portrayals of law in literature and other media forms to assess for accuracy.

STDEV 268R : Prelaw Leadership. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Leadership skills and strategies for members of the PLSA Board. Successful planning, implementation, and execution of prelaw activities.

**Course Outcomes**

- Understand what a legal education and career requires and provides.
- Assess whether or not a legal education and career is the correct choice for them.
- Learn how to effectively plan, implement, and carry-out effective academic activities for large groups of undergraduate students.

STDEV 271 : Preview of Dentistry. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Preview of dentistry with lectures by dentists; overview of required courses; application process; recommended extracurricular opportunities.

**Course Outcomes**

- Increase understanding of the dental profession.
- Understand the application process for dental school and analyze their individual preparation for this process.

STDEV 272 : Preview of Medicine. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Preview of medical practice with lectures by doctors; overview of required courses; application process; recommended extracurricular opportunities.

**Course Outcomes**

- Understand the application process for medical school and analyze their individual preparation for this process.
- Increase understanding of the medical profession.

STDEV 273 : Preview of Optometry. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Preview of optometry with lectures by optometrists; overview of required courses; application process; recommended extracurricular opportunities.

**Course Outcomes**

- Students will increase understanding of the optometry profession.
- Students will understand the application process for optometry school and analyze their individual preparation for this process.

STDEV 274 : Preview of Physician Assistant. (1:1:0)

WHEN TAUGHT: Winter

RECOMMENDED: St Dev 170.

DESCRIPTION: Preview of the physician assistant profession and PA school application process. Guest presentations by practicing PAs, PA school representatives, and pre-health advisors.

**Course Outcomes**

No outcomes are available at this time.

STDEV 278R : Pre-Health Leadership. (1:1:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Leadership skills and strategies for leaders of pre-health clubs. Successful planning, implementation, and execution of pre-health club activities.

**Course Outcomes**

There are no course outcomes available

STDEV 290 : Learning Through Service: Theory and Application of Service. (1:1:1)

WHEN TAUGHT: Fall Contact Department; Winter Contact Department; Spring Contact Department

DESCRIPTION: Theories, applications, methods, and approaches to service.

**Course Outcomes**

- Learn and apply service and learning theories in their personal service interactions.
- Assess personal motivations and capacities for service.
- Facilitate students' service "identity," and aspirations for meaningful future service.
- Explore their roles as citizens and potential service opportunities and responsibilities related to family, civic, career, and church life.
- Enhance students' ability to gain related competence, skill, and understanding by reflecting on their service. Action-reflection tools and concepts will be modeled in the course to encourage students to make intentional learning connections with their personal values, beliefs, academic interests, individual skills, etc, and their service contributions.

### 300-Level Courses

STDEV 305 : Advanced Reading Strategies for College Success. (1-2:Arr:Arr)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Developing improved speed and comprehension skills through selection and practice of college reading strategies.

**Course Outcomes**

There are no course outcomes available

STDEV 317 : Career Strategies for Employment and Internships. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Preparing for employment and internship opportunities. Practical strategies to facilitate internship and/or career preparation: resumes, cover letters, networking, interviewing, and Internet research.

**Course Outcomes**

There are no course outcomes available

STDEV 318 : Graduate School Preparation: Practical Strategies for Becoming a More Competitive Applicant. (2:2:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer

DESCRIPTION: Preparing students to craft competitive graduate school application documents. Pragmatic strategies to facilitate preparation and understanding of references, graduate program research, personal statements, scholarships and financial aid, entrance exams, resumes and interviewing.

**Course Outcomes**

There are no course outcomes available

STDEV 358R : Student Leadership Development. (.5-3:2:2)

WHEN TAUGHT: Fall; Winter

TAUGHT:

PREREQUISITE: Instructor's consent.

DESCRIPTION: Analysis, synthesis, and integration of personal leadership experienced in an academic context. Successful leadership: decision making, communications, planning, team building, motivation, and interpersonal skills.

**Course Outcomes**

There are no course outcomes available

STDEV 359 : Conflict Resolution. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Survey of gospel principles, LDS teachings, secular theories, communication skills, and negotiation strategies for application in varying conflict management and dispute resolution situations. Includes simulation exercises and videos on negotiation and problem-solving techniques.

**Course Outcomes**

- Recognize the different dispute resolution methods and conflict styles most commonly practiced in society and their advantages and disadvantages.
- Describe the nature of conflict in human interactions and how way of being is more important than behavior in influencing relationships and determining outcomes of conflict.
- Apply the concepts about way of being and how to make things go right in relationships through specific homework assignments.
- Describe the primary principles of conflict resolution taught by Christ and leaders of the LDS Church and how those principles strengthen our ability to have a responsive way of being.
- Explain the difference between dialoguing and debating and apply the key skills for dialoguing.
- Describe basic negotiation strategies and practice negotiating in role-play scenarios.

STDEV 364 : Mediation Techniques and Practices. (3:3:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Mediation techniques emphasizing practical application and observation of actual mediations.

**Course Outcomes**

- Know and apply the phases of the basic mediation process.
- Know how to prepare for a mediation session and be able to present the essential elements of a mediator's opening statement.
- Be able to identify issues and interests of the parties and set an agenda for the mediation session.
- Be able to skillfully conduct a mediation conference with joint and private meetings, allowing the disputing parties uninterrupted time for expressing viewpoints and interactive time to effectively exchange information, arguments, and offers of settlement.
- Be able to assist the parties in building and writing an agreement and to properly close the mediation session.
- Understand the basic rules of behavior for the parties in a mediation session and the common ethical practices of mediators.

STDEV 365 : Legal Education and Practice. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Successful legal education and practice. Preparation for those planning to attend law school.

**Course Outcomes**

- Students will be able to read, understand, and brief a legal case.
- Students will be able to effectively study and prepare for a law school final examination.
- Students will understand the major secondary sources used in legal research.
- Students will learn how to effectively communicate with others (focusing on legal aspects)
- Students will practice assimilating all legal research into a deliverable final product (memo/brief)

STDEV 368R : Prelaw Review Journal Writing. (2:2:0)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Editing and publication for Pre-law Review authors and editors.

**Course Outcomes**

- Understand the procedure for publishing the Prelaw Review.
- Know how to use the Bluebook citation style guide.
- Improve essential legal writing skills.
- Work effectively in writing and editing relationships.

STDEV 375 : Dental School Preparation Laboratory Experience. (2:0:2)

WHEN TAUGHT: Fall; Winter

DESCRIPTION: Dental laboratory practices; tooth terminology, morphology, and anatomy. Procedures including oral pathology, diagnosis, and X-rays.

**Course Outcomes**

- Students will gain a basic understanding of dental sciences in preparation for their first semesters of dental school.
- Students will learn basic dental terminology and current issues in dentistry to better prepare them for the dental school interviewing process.
- Students will develop manual dexterity for skills that are required to perform dentistry.

STDEV 399R : Health Professions Internship. (1-3:Arr:Arr)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Internships with health care providers.

**Course Outcomes**

- Students will gain valuable experience by shadowing and working with current health professionals.
- Students will improve their ability to converse with health care professionals.
- Students will learn about different healthcare practices.
- Students will develop meaningful professional relationships with their internship providers.

### 400-Level Courses

STDEV 470 : Medical and Dental School Application. (2:2:0)

WHEN TAUGHT: Fall; Winter
DESCRIPTION: Preparation for medical and dental school applications; entire application process, including school identification and submission.

**Course Outcomes**

- Increase understanding of the medical/dental school application process. They will understand the various components of the application process and how to access resources to facilitate their professional school application.
- Assess their individual preparation for the professional school application process.
- Improve writing skills, particularly in respect to the personal statement.
- Improve interviewing skills.

STDEV 490 : Bachelor of General Studies Capstone. (2:2:0)

OFFERED: Independent Study only.
PREREQUISITE: STDEV 100; completion of all other BGS program requirements.
DESCRIPTION: Culminating course required for bachelor of general studies degree: analyze and evaluate BGS experience in light of the "Aims of a BYU Education" and summarize this experience in a reflective paper, integrate material learned in emphasis by completing a scholarly essay, and demonstrate accomplishment of learning outcomes.

**Course Outcomes**

There are no course outcomes available

STDEV 496R : Advanced Legal Internship. (1-3:Arr:0)

WHEN TAUGHT: Fall; Winter; Spring; Summer
PREREQUISITE: Legal internship coordinator's consent.
DESCRIPTION: Legal research; courtroom observation; client and attorney interaction; and reflection exercises.

**Course Outcomes**

- Understand what a legal education and career requires and provides.
- Accurately assess whether or not a legal education and career is the correct choice for them.
- Increase comfort interacting with legal professionals.

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**Course Information**

- Student Development (StDev) Courses

**Faculty**

# Student Development Faculty

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## Clinical Professors

Beecher, Mark
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1993
MSW, University of Utah, 1995
PhD, Brigham Young University, 1998

Bennion, Lynne
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1981
MS, Purdue University, 1983
PhD, Purdue University, 1986

Chapman, Ronald K.
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1975
PhD, Brigham Young University, 1983

Gleave, Robert L.
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1975
MEd, Brigham Young University, 1976
PhD, Brigham Young University, 1981

Kaiser, David Allen
**COLLEGE:** Student Life
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1984
MS, University of Florida, 1986
EdD, University of Florida, 1994

Moody, Richard A.
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1984
MS, Kansas State University, 1991
PsyD, Central Michigan University, 1996

Morrell, Barbara
**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1982
MEd, Brigham Young University, 1985
PhD, Brigham Young University, 1997

Nielsen, Dianne Lindley

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1977
PhD, Brigham Young University, 2001

Nielsen, Stevan Lars

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1976
PhD, University of Washington, 1984

Pedersen, Tyler R.

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, University of Florida, 1998
PhD, University of Florida, 2000

Preece, Julie

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1985
MEd, Brigham Young University, 1988
PhD, Brigham Young University, 1994

Rice, L. Maureen

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1977
MA, Brigham Young University, 1980
PhD, Brigham Young University, 1997

Roberts, Norman

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BA, Brigham Young University, 1973
MS, University of Utah, 1981
PhD, Brigham Young University, 1994

Smith, Steven

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** BS, Brigham Young University, 1981
MEd, Brigham Young University, 1983
PhD, University of Minnesota, 1988

Worthen, Vaughn Eugene

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Clinical Professor
**DEGREES:** AS, Ricks College, 1980
BS, Brigham Young University, 1983
MEd, Brigham Young University, 1985
PhD, University of Kansas, 1993

## Associate Clinical Professors

Adams, Michael

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Associate Clinical Professor
**DEGREES:** BA, Brigham Young University, 1998
MS, Indiana State University, 2001

PhD, Indiana State University, 2005

Buxton, Michael

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Associate Clinical Professor
**DEGREES:** BS, Brigham Young University, 1985
MS, University of Georgia, 1989
PhD, University of Georgia, 1993

Golightly, Thomas

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Associate Clinical Professor
**DEGREES:** BA, University of Arizona, 2000
MS, Brigham Young University, 2002
PhD, Brigham Young University, 2007

Jensen, Dallas

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Associate Clinical Professor
**DEGREES:** BA, Brigham Young University, 2000
MA, The Ohio State University, 2002
PhD, Brigham Young University, 2006

Leavitt, Lisa

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Associate Clinical Professor
**DEGREES:** BS, University of Utah, 1999
MS, Brigham Young University, 2001
PhD, Brigham Young University, 2005

Rash, Phillip

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Associate Clinical Professor
**DEGREES:** BS, Brigham Young University, 1994
MS, Brigham Young University, 1996
PhD, Brigham Young University, 2004

## Assistant Clinical Professors

Bailey, Russ

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2004
PhD, Brigham Young University, 2010

Bingham, Jennie

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2006
PhD, Brigham Young University, 2011

Cattani, Kara

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 1996
MS, Florida State University, 2000
PhD, Florida State University, 2003

Cavallini, Adriane

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2006

PhD, Brigham Young University, 2011

Conklin, Hoku

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BA, BYU-Hawaii, 2005
PhD, Brigham Young University, 2011

Cox, Jon

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2001
PhD, Brigham Young University, 2008

Griner, Derek

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2002
PhD, Brigham Young University, 2008

Hansen, Kristina

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2001
PhD, Brigham Young University, 2012

Hosford, Scott D.

**COLLEGE:** Student Life
**DEPARTMENT:** Academic Support Office
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2000
MS, Brigham Young University, 2002
PhD, The University of Texas at Austin, 2007

Knestel, Andrea

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BA, Utah State University, 1999
MA, Syracuse University, 2008
MS, Syracuse University, 2008
PhD, Syracuse University, 2010

Salazar, Ben

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BS, Brigham Young University, 2005
PhD, University of Denver, 2013

Wong, Cynthia

**COLLEGE:** Student Life
**DEPARTMENT:** Counseling and Career Center
**RANK:** Assistant Clinical Professor
**DEGREES:** BA, Brigham Young University—Hawaii, 2001
M.M.F.T., University of Southern California, 2005
Ed.D., University of Southern California, 2008